PERTAMINA
HULU ENERGI

DRIVING RESILIENCE
FOR A SUSTAINABLE FUTURE

MENGGERAKKAN KETAHANAN UNTUK
MASA DEPAN YANG BERKELANJUTAN



2024

Laporan Keberlanjutan
Sustainability Report

PT Pertamina Hulu Energi

PERTAMINA
HULU ENERGI

PERNYATAAN DAN BATASAN TANGGUNG JAWAB

STATEMENT AND LIMITATION OF LIABILITY

Laporan Keberlanjutan ini berisikan pernyataan-pernyataan kinerja ekonomi, lingkungan, sosial, dan tata kelola, serta strategi Perusahaan, yang sebagian dapat digolongkan sebagai pernyataan ke depan dalam pengertian perundang-undangan yang berlaku, kecuali hal-hal yang bersifat historis. Pernyataan-pernyataan yang bersifat prospektif memiliki risiko dan ketidakpastian, serta dapat mengakibatkan perkembangan aktual secara material berbeda dari yang tertulis dalam laporan ini. Pernyataan prospektif dalam Laporan Keberlanjutan ini dibuat berdasarkan berbagai asumsi mengenai kondisi terkini dan kondisi mendatang dari Perusahaan, serta lingkungan bisnis, tempat Perusahaan menjalankan kegiatan usaha. Perusahaan tidak menjamin bahwa segala tindakan yang telah diambil untuk memastikan keabsahan dokumen ini akan membawa hasil-hasil tertentu sesuai harapan. Adapun penulisan angka-angka pada seluruh tabel dan grafik menggunakan notasi Bahasa Indonesia.

Adapun penyebutan kata "Perusahaan" dan "PHE Subholding Upstream" merujuk pada PT Pertamina Hulu Energi dan seluruh Anak Perusahaan sektor hulu migas yang terbagi menjadi 5 regional, 2 AP *services*, PT Badak NGL, serta perusahaan afiliasi.

This Sustainability Report contains statements on the Company's economic, environmental, social and governance performance, as well as its strategy, some of which can be classified as forward-looking statements within the meaning of applicable legislation, except for matters of a historical nature. Prospective statements involve risks and uncertainties, and may result in actual developments being materially different from those stated in this report. The prospective statements in this Sustainability Report are made based on various assumptions regarding the current and future conditions of the Company, as well as the business environment in which the Company carries out business activities. The Company does not guarantee that any actions it has taken to ensure the validity of this document will produce specific results as expected. The writing of numbers in all tables and graphs uses Indonesian notation.

The words "the Company" and "PHE Subholding Upstream" refer to PT Pertamina Hulu Energi and all upstream oil and gas sector subsidiaries consisting of 5 regional, 2 AP Services, PT Badak NGL, and affiliated companies.

DRIVING RESILIENCE FOR A SUSTAINABLE FUTURE

MENGGERAKAN KETAHANAN UNTUK MASA DEPAN YANG BERKELANJUTAN

Tema ini menyoroti pendekatan strategis PT Pertamina Hulu Energi (PHE) dalam membangun ketahanan yang mendukung keberlanjutan operasional dan keberlanjutan lingkungan. Dalam menghadapi ancaman perubahan iklim dan volatilitas ekonomi, PHE berfokus pada penguatan infrastruktur tahan iklim, mitigasi risiko operasional, dan pengurangan dampak lingkungan. Upaya ini diwujudkan melalui investasi pada infrastruktur yang ramah lingkungan, pengelolaan risiko iklim yang berbasis data, serta peningkatan efisiensi proses operasional.

PHE juga menempatkan ketahanan sebagai inti dari strategi keberlanjutannya, tidak hanya untuk melindungi aset perusahaan tetapi juga untuk menciptakan nilai bagi masyarakat dan lingkungan. Dengan membangun kapasitas adaptasi terhadap perubahan global, PHE memastikan bahwa pertumbuhan ekonomi tidak mengorbankan keberlanjutan ekosistem. Tema ini merepresentasikan visi jangka panjang PHE untuk menjadi pelopor dalam menciptakan masa depan yang tangguh dan berkelanjutan.

This topic highlights the strategic approach of PT Pertamina Hulu Energi (PHE) in building resilience that supports operational sustainability and environmental sustainability. In facing the threat of climate change and economic volatility, PHE focuses on strengthening climate-resilient infrastructure, mitigating operational risks, and reducing environmental impacts. These efforts are realized through investment in environmentally friendly infrastructure, data-based climate risk management, and increase of operational process efficiency.

PHE also places resilience at the heart of its sustainability strategy, not only to protect the assets of the company but also to create value for the society and the environment. By building adaptive capacity to global changes, PHE ensures that economic growth does not come at the expense of ecosystem sustainability. This topic represents PHE's long-term vision to be a pioneer in creating a resilient and sustainable future.

PERTAMINA
HULU ENERGI

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01

PENDAHULUAN
Preface


PERTAMINA

PERTAMINA
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IKHTISAR KINERJA KEBERLANJUTAN
SUSTAINABILITY PERFORMANCE OVERVIEW



KINERJA EKONOMI
ECONOMIC PERFORMANCE
[OJK B.1, B.1.A, B.1.B, B.1.C, B.1.D, B.1.E]

Produksi Migas
Oil & Gas Production

1.044,60 MBOEPD

2023	2022
1.043,73 MBOEPD	967,37 MBOEPD

Pendapatan
Revenue

14.330,34 Juta USD / Million USD

2023	2022
14.568,38 Juta USD / Million USD	16.183,40 Juta USD / Million USD

Laba (Rugi) Bersih Tahun Berjalan
Net Profit (Loss) of the Year

3.121,04 Juta USD / Million USD

2023	2022
2.725,54 Juta USD / Million USD	4.674,16 Juta USD / Million USD

Distribusi Nilai Ekonomi
Economic Value Distribution

13.851,58 Juta USD / Million USD

2023	2022
15.515,03 Juta USD / Million USD	14.252,29 Juta USD / Million USD

Pelibatan Pemasok Lokal
Local Supplier Involvement

3.562 (99,86%) Pemasok / Supplier

2023	2022
3.987 (99,92%) Pemasok / Supplier	3.572 (92,06%) Pemasok / Supplier

KINERJA LINGKUNGAN
ENVIRONMENTAL PERFORMANCE

[OJK B.2, B.2.A, B.2.B, B.2.C, B.2.D]



Biaya Pengelolaan Lingkungan
Environmental Management Costs

1.135,98 Miliar USD / Billion USD

2023	2022
1.134,43 Miliar USD / Billion USD	1.157,66 Miliar USD / Billion USD

Penggunaan Energi
Energy Usage

180.623,10 TJ

2023	2022
189.216,17 TJ	197.333,08 TJ

Emisi dihasilkan
Emissions produced

14.942,70 Ribu $TonCO_2eq$ / Thousand $TonCO_2eq$

2023	2022
13.966,13 Ribu $TonCO_2eq$ / Thousand $TonCO_2eq$	13.916,59 Ribu $TonCO_2eq$ / Thousand $TonCO_2eq$

Limbah B3 yang dihasilkan
The hazardous waste generated

175.144,45 Ton / Tons

2023	2022
209.622,78 Ton	140.440,37 Ton

Penggunaan Air
Water Usage

11.355 Mega Liter / Mega Liters

2023	2022
11.913 Mega Liter / Mega Liters	12.293 Mega Liter / Mega Liters

Limbah Non-B3 yang dihasilkan
The non-hazardous waste generated

15.569,27 Ton / Tons

2023	2022
13.887,49 Ton	15.856,45 Ton

Jumlah fauna dalam status terancam punah (*critically endangered*) yang di lestarikan
Number of critically endangered fauna species being conserved

11 Jenis fauna / Type of fauna

2023	2022
9 jenis fauna / type of fauna	4 jenis fauna / type of fauna

KINERJA SOSIAL
SOCIAL PERFORMANCE [OJK B.3]



Jumlah Pekerja
Total Employee

14.008 Orang / Persons

2023	2022
14.154 Orang / Persons	14.137 Orang / Persons

Jumlah Pekerja Wanita
Total Female Employee

1.900 Orang / Persons

2023	2022
1.897 Orang / Persons	1.857 Orang / Persons

Perputaran Pekerja
Employee Turnover

1,81%

2023	2022
2,76%	2,64%

Jumlah Kecelakaan Kerja
Total Work Accident

119 Kasus / Cases

2023	2022
131 Kasus / Cases	108 Kasus / Cases

Penyaluran Dana CSR
Distribution of CSR Funds

347,54 Milliar Rupiah / Billion Rupiah

2023	2022
221,11 Milliar Rupiah / Billion Rupiah	210,79 Milliar Rupiah / Billion Rupiah

KILAS PERISTIWA 2024
2024 EVENT HIGHLIGHTS

JAN 3



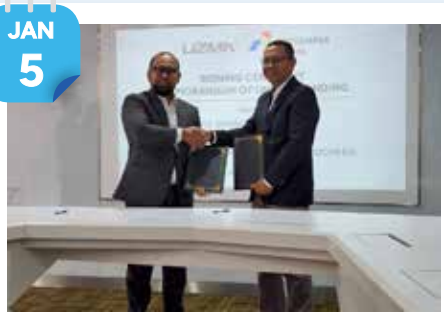
Regional Sumatra Subholding Upstream Pertamina melalui PT Pertamina Hulu Rokan melakukan Tajak Sumur Bor Pertama tahun 2024 Sumur Pengembangan (*Infill Drilling*) 5F 0211B/DURI11162D1 (Regional 1, Struktur Duri, WK Rokan).

Sumatra Regional Subholding Upstream Pertamina through PT Pertamina Hulu Rokan conducted the First Drilling Well in 2024 Development Well (Infill Drilling) 5F 0211B/DURI11162D1 (Regional 1, Duri Structure, Rokan Working Area).

JAN 5

PT Pertamina Drilling Services Indonesia (PDSI) sebagai Anak Perusahaan PT Pertamina Hulu Energi, menandatangani MoU dengan UZMA *Engineering* SDN BHD di Malaysia untuk membuka peluang *overseas project,* salah satunya kerjasama *Integrated Project Management* (IPM) , *Rig* dan *associated services* lainnya.

PT Pertamina Drilling Services Indonesia (PDSI) as a subsidiary of PT Pertamina Hulu Energi, signed an MoU with UZMA Engineering SDN BHD in Malaysia to open up overseas project opportunities, one of which is cooperation in Integrated Project Management (IPM), Rig and other associated services.



JAN 12



a. PT Pertamina Hulu Energi berhasil meraih penghargaan sebagai *Best Corporate Secretary Oil and Gas Company* dalam ajang E2S *Award*.

   PT Pertamina Hulu Energi successfully won the award for Best Corporate Secretary Oil and Gas Company at the E2S Award event.

b. PT Pertamina Drilling Services Indonesia (PDSI) sebagai Anak Perusahaan PT Pertamina Hulu Energi, berhasil meraih penghargaan Program TJSL kategori *Best Social Innovation Oil and Gas Services Company* dengan program "Olah Air Limbah untuk Pertanian Berbasis Energi baru Terbarukan" di Kecamatan Sanga-Sanga.

   PT Pertamina Drilling Services Indonesia (PDSI) as a subsidiary of PT Pertamina Hulu Energi, successfully won the TJSL Program award in the Best Social Innovation Oil and Gas Services Company category with the "*Olah Air Limbah untuk Pertanian Berbasis Energi baru Terbarukan*/Wastewater Treatment for Agriculture Based on Renewable Energy" program in Sanga-Sanga District.

JAN 15



- Regional Kalimantan *Subholding Upstream* Pertamina melalui PT Pertamina Hulu Indonesia dan SKK Migas gelar seremoni *first cut of steel* Proyek Sisi Nubi AOI di *yard* PT Meindo Elang Indah di Tanjung Pinang. Proyek ini diperkirakan akan berproduksi sekitar 130 MMSCFD dan akan menjadi tulang punggung produksi WK Mahakam.

  Kalimantan Regional Subholding Upstream Pertamina through PT Pertamina Hulu Indonesia and SKK Migas held a ceremony for the first cut of steel for the Sisi Nubi AOI Project at the yard of PT Meindo Elang Indah in Tanjung Pinang. This project is estimated to produce around 130 MMSCFD and will be the backbone of WK Mahakam production.

- Regional Kalimantan Subholding Upstream Pertamina melalui PT Pertamina Hulu Sanga Sanga dan Migas Mandiri Pratama Sanga-Sanga menandatangani Perjanjian Pengalihan dan Pengelolaan 10% *Participating Interest* (PI) Wilayah Kerja (WK) Sanga-Sanga untuk Provinsi Kalimantan Timur.

  Kalimantan Regional Subholding Upstream Pertamina through PT Pertamina Hulu Sanga Sanga and Migas Mandiri Pratama Sanga-Sanga signed the Transfer and Management Agreement of 10% Participating Interest (PI) of the Sanga-Sanga Working Area (WK) for East Kalimantan Province.

JAN 23



- Regional Internasional *Subholding Upstream* melalui PT Pertamina Malaysia EP (PMEP) melaksanakan Penandatanganan PSC Blok Eksplorasi SK510 di Malaysia. PSC Blok Eksplorasi SK510 merupakan kerja sama antara PMEP (25%) dengan Petronas Carigali Sdn. Bhd. (PI 40%, INPEX Malaysia E&P SK510 Sdn.Bhd (25%), dan Petroleum Sarawak *Exploration & Production* Sdn. Bhd (10%).

  International Regional Subholding Upstream through PT Pertamina Malaysia EP (PMEP) carried out the Signing of the PSC for the SK510 Exploration Block in Malaysia. The PSC for the SK510 Exploration Block is a collaboration between PMEP (25%) and Petronas Carigali Sdn. Bhd. (PI 40%, INPEX Malaysia E&P SK510 Sdn.Bhd (25%), and Petroleum Sarawak Exploration & Production Sdn. Bhd (10%).

- Sumur Anggrek Violet yang ditajak pada 13 November 2023 dikerjakan oleh Rig PDSI#01.2/N80B-M berhasil membuktikan hidrokarbon melalui DST #3, dengan *rate test extended flow gas* sebesar 0,13 juta standar kaki kubik per hari (MMSCFD) dan minyak 218 barel per hari (BOPD).

  Sumur Anggrek Violet, which was drilled on November 13, 2023, was worked on by Rig PDSI#01.2/N80B-M and successfully proved hydrocarbons through DST #3, with a gas extended flow test rate of 0.13 million standard cubic feet per day (MMSCFD) and oil of 218 barrels per day (BOPD).

FEB 3



PEP memulai pengeboran sumur migas B-2113 di Desa Bunyu Selatan dan ini merupakan tajak perdana PEP Bunyu Field pada tahun 2024. Pengeboran Sumur B-2113 ini dilakukan pada kedalaman 2.700 meter dengan estimasi waktu 42 hari.

PEP started drilling the B-2113 oil and gas well in South Bunyu Village and this is PEP Bunyu Field's first drilling in 2024. Drilling of the B-2113 Well was carried out at a depth of 2,700 meters with an estimated time of 42 days.

FEB 7



Regional 4 Indonesia Timur Subholding Upstream Pertamina melalui JOB Pertamina - Medco E&P Tomori, meresmikan pengoperasion Stasiun Pengukuran Gas PLN - JOB Pertamina - Medco E&P Tomori,untuk PKTMG Luwuk 40 MW. Pasokan Gas dari J JOB Pertamina - Medco E&P Tomori sebesar 5 BBTUD diperkirakan mampu mengalirkan listrik untuk 30.000 rumah di Kabupaten Banggai.

Eastern Indonesia Regional 4 Subholding Upstream Pertamina through JOB Pertamina - Medco E&P Tomori, inaugurated the operation of the PLN Gas Measurement Station - JOB Pertamina -Medco E&P Tomori, for PKTMG Luwuk 40 MW. The gas supply from J JOB Pertamina - Medco E&P Tomori of 5 BBTUD is estimated to be able to supply electricity to 30,000 homes in Banggai Regency.

FEB 14



Regional Sumatra Subholding Upstream Pertamina melalui PT Pertamina Hulu Rokan (PHR), bekerja sama dengan PT Pertamina *Drilling Services* Indonesia berhasil melakukan Tajak sumur MNK yang kedua di Sumur Kelok menggunakan *Rig* PDSI #42.3/N1500-E.

Sumatra Regional Subholding Upstream Pertamina through PT Pertamina Hulu Rokan (PHR), in collaboration with PT Pertamina Drilling Services Indonesia, successfully drilled the second MNK well in Sumur Kelok using PDSI Rig #42.3/N1500-E.

FEB 17



Regional Internasional Subholding Upstream Pertamina melalui PT Pertamina International EP (PIEP), berhasil meraih *Grand Prize* pada ajang *Innovation and Technology Exposition* (IPITEX) 2024 dalam upaya peningkatan produksi minyak dengan melakukan peningkatan keandalan *Electrical Desalter* menggunakan *U-Channel Electrode Clamp* di area Regional 5.

International Regional Subholding Upstream Pertamina through PT Pertamina International EP (PIEP), successfully won the Grand Prize at the 2024 Innovation and Technology Exposition (IPITEX) in an effort to increase oil production by improving the reliability of Electrical Desalter using U-Channel Electrode Clamp in the Regional 5 area.

FEB 20



Pergantian Direksi dan Dewan Komisaris Perseroan serta Penempatan Wakil Perseroan sebagai Direksi dan Dewan Komisaris Anak Perusahaan PT Pertamina Hulu Energi.

Change of the Company's Board of Directors and Board of Commissioners and Placement of the Company's Representatives as Directors and Board of Commissioners of the Subsidiary of PT Pertamina Hulu Energi.

FEB 20-22



PT Pertamina Hulu Energi melalui Fungsi *Production & Project* memberikan penghargaan atas usaha dan komitmen dalam optimasi penggunaan *marine fuel* kepada Gugus Tugas *Marine Fuel Management Control* (MFMC) yang telah berhasil dalam mengoptimasi penggunaan *marine fuel* sebesar 17.877.179 Liter dari target 12.500.000 Liter.

PT Pertamina Hulu Energi through the Production & Project Function gave an award for the efforts and commitment in optimizing the use of marine fuel to the Marine Fuel Management Control (MFMC) Task Force which has succeeded in optimizing the use of marine fuel by 17,877,179 liters from a target of 12,500,000 liters.

FEB 23



PT Elnusa Tbk sebagai Anak Perusahaan PT Pertamina Hulu Energi, dipercaya melakukan pekerjaan survei Seismik 2D Amalia dan *Audio Magnetotelurik* oleh PT Pertamina EP, dengan estimasi panjang lintasan sekitar 296 km yang melintasi 28 Desa di 6 Kecamatan yang terdapat di Kabupaten Muara Enim dan Ogan Komering Ulu.

PT Elnusa Tbk as a subsidiary of PT Pertamina Hulu Energi, is trusted to carry out the Amalia 2D Seismic and Audio Magnetotelluric survey work by PT Pertamina EP, with an estimated track length of around 296 km crossing 28 villages in 6 sub-districts in Muara Enim and Ogan Komering Ulu Regencies.

MAR 1



a. PT Elnusa Tbk sebagai Anak Perusahaan PT Pertamina Hulu Energi, mengembangkan teknologi dalam negeri untuk pembersihan dan inspeksi pipa yang dikenal dengan proses *Pigging* dengan menggunakan benda bernama PIG (*Pipeline Inspector Gauge*).

   PT Elnusa Tbk as a subsidiary of PT Pertamina Hulu Energi, has developed domestic technology for pipe cleaning and inspection known as the Pigging process using an object called PIG (Pipeline Inspector Gauge).

b. Regional Sumatra Subholding Upstream Pertamina melalui PT Pertamina Hulu Rokan (PHR) membuat inovasi baru dalam upaya pemboran sumur minyak dan gas di WK Rokan, yakni *Open-hole Slotter Liner* (Pensl). Inovasi ini membuat penghematan biaya pemboran hingga Rp4,5 miliar setiap sumurnya.

   Sumatra Regional Subholding Upstream Pertamina through PT Pertamina Hulu Rokan (PHR) has made a new innovation in the effort to drill oil and gas wells in the Rokan WK, namely the Open-hole Slotter Liner (Pensl). This innovation saves drilling costs of up to Rp4.5 billion per well.

c. Salah satu Anak Perusahaan PT Pertamina Hulu Energi yaitu PT Pertamina Drilling Services Indonesia (PDSI) melaksanakan Tajak Sumur Perdana Banyu Urip *Infill Clastic* di Bojonegoro bersama Exxon Mobil Cepu Limited (EMCL).

   One of PT Pertamina Hulu Energi's subsidiaries, namely PT Pertamina Drilling Services Indonesia (PDSI), carried out the first drilling of the Tajak Sumur Perdana Banyu Urip Infill Clastic in Bojonegoro together with Exxon Mobil Cepu Limited (EMCL).

MAR 4



PT Pertamina Drilling Services Indonesia (PDSI) sebagai Anak Perusahaan PT Pertamina Hulu Energi, melaksanakan *Inaguration Ceremony* untuk 2 *rig* baru dengan kapasitas 750 *horsepower* sebagai upaya menyukseskan proyek *Integrated Drilling, Engineering, Supervisory and Services* di Pertamina Hulu Rokan.

PT Pertamina Drilling Services Indonesia (PDSI) as a subsidiary of PT Pertamina Hulu Energi, held an Inauguration Ceremony for 2 new rigs with a capacity of 750 horsepower as an effort to make the Integrated Drilling, Engineering, Supervisory and Services project at Pertamina Hulu Rokan a success.

MAR 5-6



IT Days merupakan acara tahunan Fungsi *Information Technology* PT Pertamina Hulu Energi selaku *Subholding Upstream*, yang bertujuan memperkenalkan layanan IT serta memperkenalkan produk inovasi digital yang telah memberikan *value creation* bagi perusahaan. IT Days terdiri dari *exhibition* dan *talkshow* yang diselenggarakan di Kantor Pusat PT Pertamina Hulu Energi dengan mengundang pembicara internal dan eksternal yang kompeten di bidangnya.

IT Days is an annual event of the Information Technology Function of PT Pertamina Hulu Energi as Subholding Upstream, which aims to introduce IT services and introduce digital innovation products that have provided value creation for the company. IT Days consists of an exhibition and talk show held at the Head Office of PT Pertamina Hulu Energi by inviting internal and external speakers who are competent in their fields.

MAR 7



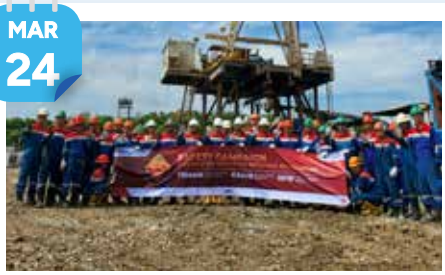
a. PT Pertamina Hulu Energi selaku *Subholding Upstream* beserta anak usahanya berhasil meraih 26 penghargaan dalam ajang The 9th Public Relations Indonesia Award (PRIA) 2024.

   PT Pertamina Hulu Energi as Subholding Upstream and its subsidiaries won 26 awards at the 9th Public Relations Indonesia Award (PRIA) 2024.

b. Regional Sumatra Subholding Upstream Pertamina melalui PHE Jambi Merang, bekerja sama dengan SKK Migas Sumbagsel, memberikan penghargaan kepada Ditreskrimum Polda Jambi atas pengungkapan tindak pidana *illegal tapping* di jalur pipa PHE Jambi Merang di kilometer pipa (KP) 85 SKN-GF Rantau Raya, Jambi.

   Sumatra Regional Subholding Upstream Pertamina through PHE Jambi Merang, in collaboration with SKK Migas Sumbagsel, presented an award to the Jambi Police Criminal Investigation Directorate for disclosing the criminal act of illegal tapping on the PHE Jambi Merang pipeline at pipe kilometer (KP) 85 SKN-GF Rantau Raya, Jambi.

MAR 24



Pertamina EP (PEP) Sangatta Field Regional Kalimantan Subholding Upstream Pertamina, berhasil mencatatkan tingkat produksi minyak tertinggi dengan menghasilkan sebesar 3.545 BOPD, jumlah produksi ini merupakan yang tertinggi sejak tahun 1987.

Pertamina EP (PEP) Sangatta Field Kalimantan regional Subholding Upstream Pertamina, successfully recorded the highest oil production level by producing 3,545 BOPD, this production amount is the highest since 1987.

MAR 26



PT Pertamina Hulu Energi resmi melakukan alih kelola 100% Wilayah Kerja Siak dan Kampar kepada Energi Mega Persada (EMP).

PT Pertamina Hulu Energi officially transferred 100% of the management of the Siak and Kampar Working Areas to Energi Mega Persada (EMP).

MAR 28



Regional Sumatra Subholding Upstream Pertamina melalui PT Pertamina Hulu Rokan (PHR), menorehkan prestasi gemilang di kancah internasional. Program Konservasi Gajah Sumatra yang dijalankan PHR meraih penghargaan bergengsi *Green World Environment Awards* 2024 sebagai *Global Winner* untuk kategori *Fuel, Power & Energy/Conservation & Wildlife Projects* di Brasil.

Sumatra Regional Subholding Upstream Pertamina through PT Pertamina Hulu Rokan (PHR), has made a brilliant achievement in the international arena. The Program Konservasi Gajah Sumetara/ Sumatran Elephant Conservation Program run by PHR won the prestigious Green World Environment Awards 2024 as the Global Winner for the Fuel, Power & Energy/Conservation & Wildlife Projects category in Brazil.

APR 1



Regional Kalimantan *Subholding Upstream* - PT Pertamina Hulu Indonesia, melalui anak Perusahaan PHKT DOBU, PHKT DOBSM dan Pertamina EP Bunyu Field menerima tiga penghargaan internasional "*The Small-Medium Enterprise Corporate Social Responsibility Award* Asia 2024".

Kalimantan Regional Subholding Upstream - PT Pertamina Hulu Indonesia, through its subsidiaries PHKT DOBU, PHKT DOBSM and Pertamina EP Bunyu Field achieved three international awards "The Small-Medium Enterprise Corporate Social Responsibility Award Asia 2024".

APR 6



PT Elnusa sebagai Anak Perusahaan PT Pertamina Hulu Energi (PHE), akan melakukan kegiatan survei seismik di wilayah Indonesia Timur, khususnya Bone dan Seram. Elnusa dipercaya PHE untuk mengerjakan survei seismik di wilayah terbuka (non blok migas).

PT Elnusa as a subsidiary of PT Pertamina Hulu Energi (PHE), will conduct a seismic survey in the Eastern Indonesia region, especially Bone and Seram. Elnusa is trusted by PHE to carry out a seismic survey in an open area (non-block oil and gas).

APR 24



Regional Kalimantan Subholding Upstream Pertamina melalui PT Pertamina EP Tarakan Field, berhasil mendapatkan penghargaan Juara Harapan 3 kategori *Local Hero Inspirations* Awards dari Kementerian Lingkungan Hidup dan Kehutanan dengan program pembebasan sampah botol plastik di laut.

Kalimantan Regional Subholding Upstream Pertamina through PT Pertamina EP Tarakan Field, successfully won the 3rd Runner-up award in the Local Hero Inspirations Awards category from the Ministry of Environment and Forestry with its program to free plastic bottle waste from the sea.

APR 25



PT Pertamina Hulu Energi (PHE) melalui Regional dan anak perusahaannya, berhasil mendapatkan beberapa penghargaan di kancah internasional dalam ajang Global CSR & ESG *Summit Awards* ke-16 di Hanoi, Vietnam.

PT Pertamina Hulu Energi (PHE) through its Regional and subsidiaries, has successfully won several awards on the international stage at the 16th Global CSR & ESG Summit Awards in Hanoi, Vietnam.

APR 30



- PT Elnusa Tbk sebagai Anak Perusahaan Subholding Upstream Pertamina meraih Peringkat ke-3 untuk kategori *Best External Market Penetration.*

  PT Elnusa Tbk as a Subholding Upstream Subsidiary of Pertamina won 3rd place in the Best External Market Penetration category.

- Badak LNG sebagai Anak Perusahaan Subholding Upstream Pertamina, membuktikan komitmennya terhadap budaya Keselamatan dan Kesehatan Kerja (K3) dengan meraih 3 penghargaan bergengsi dalam ajang World Indonesia-Pakistan *Safety Culture Award* (WISCA-WPSCA) 2024.

  Badak LNG as a Subholding Upstream Subsidiary of Pertamina, has proven its commitment to Occupational Safety and Health (K3) culture by winning 3 prestigious awards at the 2024 World Indonesia-Pakistan Safety Culture Award (WISCA-WPSCA).

- Regional Indonesia Timur Subholding Upstream Pertamina melalui PT Pertamina EP Zona 13 Donggi Matindok Field dan JOB Pertamina-Medco E&P Tomori berhasil memenangkan penghargaan pada WISCA-WPSCA (WSO Indonesia-Pakistan *Safety Culture Award*) tahun 2024.

  Eastern Indonesia Regional Subholding Upstream Pertamina through PT Pertamina EP Zone 13 Donggi Matindok Field and JOB Pertamina-Medco E&P Tomori successfully won awards at the WISCA-WPSCA (WSO Indonesia-Pakistan Safety Culture Award) in 2024.

MEI
7



Regional Kalimantan Subholding Upstream Pertamina melalui PT Pertamina Hulu Mahakam (PHM) memperoleh penghargaan CSR & Pengembangan Desa Berkelanjutan (PDB Awards 2024) kategori Emas dari Kementerian Desa, Pembangunan Daerah Tertinggal, dan Transmigrasi.

Kalimantan Regional Subholding Upstream Pertamina through PT Pertamina Hulu Mahakam (PHM) achieved the CSR & Pengembangan Desa Berkelanjutan/ Sustainable Village Development Award (PDB Awards 2024) in the Gold category from the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration.

MEI
14-16



- PT Pertamina Hulu Energi meraih penghargaan Juara 1 kategori "Best Favorite Booth" dan penghargaan 2nd Runner Up "Best Booth Content" pada IPA Convex 2024.

  PT Pertamina Hulu Energi won the 1st Place award in the "Best Favorite Booth" category and the 2nd Runner Up award for "Best Booth Content" at IPA Convex 2024.

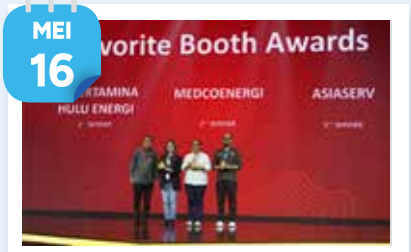
- *Signing Ceremony Agreement related to Preliminary Activities for* HOA *Implementation* & CCS *Hub Development between* Pertamina & ExxonMobil.

  Signing Ceremony Agreement related to Preliminary Activities for HOA Implementation & CCS Hub Development between Pertamina & ExxonMobil.

- *Framework Agreement for* CCS Hub *Development between* Pertamina, KNOC & ExxonMobil.

  Framework Agreement for CCS Hub Development between Pertamina, KNOC & ExxonMobil.

MEI
16



PT Elnusa Tbk sebagai Anak Perusahaan PT Pertamina Hulu Energi (PHE), berhasil meraih penghargaan *The Best Human Capital for Effective and Efficient Human Capital Management to Strengthen Business Development* pada ajang Indonesia Human Capital Awards 2024.

PT Elnusa Tbk as a subsidiary of PT Pertamina Hulu Energi (PHE), has won the Best Human Capital for Effective and Efficient Human Capital Management to Strengthen Business Development award at the 2024 Indonesia Human Capital Awards.

MEI
21-23



Regional Indonesia Timur Subholding Upstream Pertamina melalui PT Pertamina EP Cepu (Zona 11), meraih penghargaan tertinggi yaitu Platinum Award dan The Best Foreign Innovation Award pada *International Invention and Innovation Show* INTARG di Polandia dengan inovasi *Utilization of Sulfur Waste into Eco Sulfur Paving Blocks for Corporate Social Responsibility Activities.*

Eastern Indonesia Regional Subholding Upstream Pertamina through PT Pertamina EP Cepu (Zone 11), won the highest awards, namely the Platinum Award and The Best Foreign Innovation Award at the International Invention and Innovation Show INTARG in Poland with the innovation Utilization of Sulfur Waste into Eco Sulfur Paving Blocks for Corporate Social Responsibility Activities.

MEI
22



Regional Indonesia Timur Subholding Upstream Pertamina melalui PT Pertamina EP Cepu (Zona 12), sebagai operator Lapangan Gas Jambaran-Tiung Biru (JTB) mencatatkan capaian produksi *full capacity* 192 juta standar kaki kubik per hari.

The Eastern Indonesia Regional Subholding Upstream Pertamina through PT Pertamina EP Cepu (Zone 12), as the operator of the Jambaran-Tiung Biru (JTB) Gas Field, recorded a full capacity production achievement of 192 million standard cubic feet per day.

MEI 23



Upaya peningkatan produksi melalui kerja sama *Integrated Drilling, Engineering, Supervisory & Services* (IDESS) antara PT Pertamina Hulu Rokan dengan PT Pertamina Drilling Services Indonesia berhasil melakukan tajak sumur Perdana di Lapangan Benar Wilayah Kerja (WK) Rokan.

Efforts to increase production through the Integrated Drilling, Engineering, Supervisory & Services (IDESS) collaboration between PT Pertamina Hulu Rokan and PT Pertamina Drilling Services Indonesia have succeeded in carrying out the first well drilling in the Benar Field, Rokan Working Area (WK).

MEI 31



Pada RUPS Tahunan PT Pertamina Hulu Energi (PHE) Tahun Buku 2023, PHE mendapatkan apresiasi penuh dari para pemegang saham terkait dengan capaian produksi produksi minyak mencapai 566 MBOPD atau 95% dari RKAP sebesar 595 MBOPD. Total volume produksi gas bumi mencapai 2.766 MMSCFD, atau 100% dari RKAP sebesar 2.762 MMSCFD.

At the Annual General Meeting of Shareholders of PT Pertamina Hulu Energi (PHE) for the 2023 Fiscal Year, PHE achieved full appreciation from shareholders regarding the achievement of oil production reaching 566 MBOPD or 95% of the RKAP of 595 MBOPD. The total volume of natural gas production reached 2,766 MMSCFD, or 100% of the RKAP of 2,762 MMSCFD.

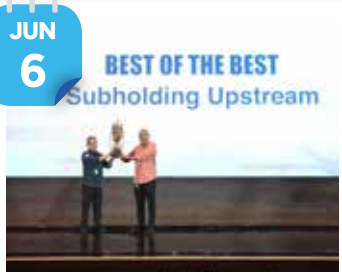
JUN 1



Upacara Peringatan Hari Lahir Pancasila 2024 digelar di Lapangan Garuda, PT Pertamina Hulu Rokan, Dumai. Upacara dihadiri oleh Presiden Republik Indonesia, Menteri Kabinet Republik Indonesia, Direktur Utama PT Pertamina (Persero), Direktur PT Pertamina Hulu Energi, serta Pimpinan Lembaga Tinggi Negara.

The 2024 Pancasila Birth Day Commemoration Ceremony was held at Garuda Field, PT Pertamina Hulu Rokan, Dumai. The ceremony was attended by the President of the Republic of Indonesia, Cabinet Ministers of the Republic of Indonesia, President Director of PT Pertamina (Persero), Director of PT Pertamina Hulu Energi, and Leaders of High State Institutions.

JUN 6



PT Pertamina Hulu Energi meraih penghargaan "*Best of the Best*" serta perhargaan lainnya dalam ajang Annual Pertamina Quality Award (APQA) 2024.

PT Pertamina Hulu Energi won the "Best of the Best" award and other awards at the 2024 Annual Pertamina Quality Award (APQA).

JUN 19



Regional Kalimantan Subholding Upstream Pertamina melalui PT Pertamina Hulu Mahakam, didukung oleh SKK Migas berhasil menyelesaikan Proyek Bekapai Artificial Lift (BKPAL) di WK Mahakam yang diharapkan dapat mendukung penambahan produksi 2.000 barel minyak per hari.

Kalimantan Regional Subholding Upstream Pertamina through PT Pertamina Hulu Mahakam, supported by SKK Migas, has successfully completed the Bekapai Artificial Lift (BKPAL) Project in the Mahakam Working Area which is expected to support additional production of 2,000 barrels of oil per day.

JUN 21



Regional Internasional Subholding Upstream Pertamina melalui PT Pertamina International EP, menginisiasi penandatangan MoU bersama PT Pertamina Drilling Services Indonesia dan PT Elnusa Tbk untuk menjajaki kerja sama operasi hulu migas di wilayah kerja luar negeri.

International Regional Subholding Upstream Pertamina through PT Pertamina International EP, initiated the signing of an MoU with PT Pertamina Drilling Services Indonesia and PT Elnusa Tbk to explore cooperation in upstream oil and gas operations in overseas work areas.

JUN 30



PT Pertamina Hulu Energi berhasil menyelesaikan Survei Seismik 3D *Offshore* di wilayah Bone seluas 821 km² dalam waktu 37 hari & *Southeast* (SE) Seram seluas 700 km² dalam waktu 60 hari, yang dilakukan oleh PT Elnusa Tbk berkolaborasi dengan China Oilfield Services Ltd.

PT Pertamina Hulu Energi successfully completed the 3D Offshore Seismic Survey in the Bone area covering an area of 821 km² in 37 days & Southeast (SE) Seram covering an area of 700 km² in 60 days, which was carried out by PT Elnusa Tbk in collaboration with China Oilfield Services Ltd.

JUL 1



Regional Jawa Subholding Upstream melalui PHE ONWJ, mengaktifkan kembali *platform* LES di lepas pantai Karawang. Diperkirakan menyimpan potensi minyak sebesar 0,34 MMSTB dan 24,23 BSCF untuk gas.

Java Regional Subholding Upstream through PHE ONWJ, reactivated the LES platform offshore Karawang. Estimated to hold oil potential of 0.34 MMSTB and 24.23 BSCF for gas.

JUL 2



Regional Internasional PT Pertamina International EP melakukan pembukaan kantor cabang di Dubai, Uni Emirat Arab, yang akan menjadi kendaraan PIEP untuk ekspansi dan menciptakan peluang penambahan blok baru di Timur Tengah.

International Regional PT Pertamina International EP opened a branch office in Dubai, United Arab Emirates, which will be PIEP's vehicle for expansion and create opportunities for adding new blocks in the Middle East.

JUL 8



Regional Kalimantan Subholding Upstream melalui PT Pertamina Hulu Mahakam melakukan kolaborasi dengan SKK Migas untuk meresmikan Proyek Bekapai *Artificial Lift* (Bekapai AL), Proyek Peciko 8A dan 8B di WK Mahakam. Proyek ini akan berkontribusi untuk menambah kapasitas produksi gas sebesar 36 MMSCFD, minyak dan kondensat sebesar 16.000 BOPD.

Kalimantan Regional Subholding Upstream through PT Pertamina Hulu Mahakam collaborated with SKK Migas to inaugurate the Bekapai Artificial Lift Project (Bekapai AL), Peciko 8A and 8B Projects in the Mahakam Working Area. This project will contribute to increasing gas production capacity by 36 MMSCFD, oil and condensate by 16,000 BOPD.

JUL
9-11



PT Pertamina Hulu Energi selaku *Subholding Upstream* menggelar kegiatan *Community Involvement & Development* (CID) *Upstream Awards* 2024 dengan mengundang Dewan Juri dari Pertamina Holding, SKK Migas, Trisakti Sustainability Center & National Geographic.

PT Pertamina Hulu Energi as Subholding Upstream held the Community Involvement & Development (CID) Upstream Awards 2024 by inviting the Jury from Pertamina Holding, SKK Migas, Trisakti Sustainability Center & National Geographic.

JUL
10



Regional Internasional PT Pertamina International EP berhasil mencatatkan capaian 12 tahun (25,6 juta jam) tanpa *Lost Time Incident* (LTI) melalui PAEP yang telah beroperasi di Lapangan MLN, Aljazair sejak tahun 2012.

PT Pertamina International EP's International Regional has successfully recorded an achievement of 12 years (25.6 million hours) without a Lost Time Incident (LTI) through PAEP which has been operating in the MLN Field, Algeria since 2012.

JUL
11



Regional Jawa *Subholding Upstream* melalui PHE OSES, mendapatkan apresiasi dari Gubernur DKI Jakarta pada ajang Derap Kerja Sama Jakarta (DJK 2024) atas komitmen mengimplementasikan program pemberdayaan Masyarakat bertajuk Pelaut Tangguh yang membawa dampak peningkatan perekonomian nelayan di Kepulauan Seribu.

Java Regional Subholding Upstream through PHE OSES, achieved appreciation from the Governor of DKI Jakarta at the Jakarta Cooperation Summit (DJK 2024) for its commitment to implementing a community empowerment program entitled Resilient Sailors which has had an impact on improving the economy of fishermen in the Seribu Islands.

JUL
17



Regional Sumatra PT Pertamina Hulu Rokan menemukan sumber migas baru melalui pengeboran Sumur Eksplorasi Astrea-1 di wilayah Kecamatan Tanah Putih, Kabupaten Rokan Hilir, Riau dengan potensi produksi hingga 3.000 barel minyak per hari (BOPD).

Sumatra Regional PT Pertamina Hulu Rokan discovered a new oil and gas source through drilling the Astrea-1 Exploration Well in Tanah Putih District, Rokan Hilir Regency, Riau with a production potential of up to 3,000 barrels of oil per day (BOPD).

JUL
23



PT Pertamina Hulu Energi melaksanakan program "Strategic Planning Institute" dengan menggelar kegiatan *sharing knowledge* bertema *Navigating the Corporate Business Global Challenge with Agile Leadership,* yang mengundang Direktur Utama PT Pertamina (Persero) sebagai Narasumber.

PT Pertamina Hulu Energi implementted the "Strategic Planning Institute" program by holding a knowledge sharing activity with the theme Navigating the Corporate Business Global Challenge with Agile Leadership, which invited the President Director of PT Pertamina (Persero) as a resource person.

JUL 25



PT Pertamina Hulu Energi mendapatkan penghargaan "SDG *Innovation Accelelator for Young Professionals* 2024" yang diselenggarakan oleh Indonesia Global *Compact Network* (IGCN).

PT Pertamina Hulu Energi achieved the "SDG Innovation Accelerator for Young Professionals 2024" award organized by the Indonesia Global Compact Network (IGCN).

JUL 27



Regional Sumatra PT Pertamina Hulu Rokan berhasil melakukan eksekusi sumur *Multi Stage Fracturing* (MSF) di lapangan Kota Kotabatak, Kab. Kampar, Provinsi Riau dengan produksi di atas 500 barel minyak per hari (BOPD).

Sumatra Regional PT Pertamina Hulu Rokan successfully executed the Multi Stage Fracturing (MSF) well in the Kota Kotabatak field, Kampar Regency, Riau Province with a production of over 500 barrels of oil per day (BOPD).

JUL 30



PT Pertamina Hulu Energi mendapatkan apresiasi dari acara "Anugerah Ekonomi Hijau" yang diselenggarakan oleh Detikcom dan apresiasi dari *stakeholder* dalam acara "Indonesia's Top Green Leaders Award 2024".

PT Pertamina Hulu Energi achieved appreciation from the "*Anugerah Ekonomi Hijau*" event organized by Detikcom and appreciation from stakeholders at the "Indonesia's Top Green Leaders Award 2024" event.

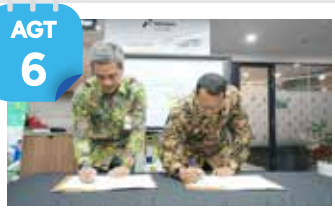
AGT 2



PT Pertamina Drilling Services Indonesia sebagai Anak Perusahaan PT Pertamina Hulu Energi, berhasil menyelesaikan pengeboran Sumur Pinang (PN)-066 di WK Rokan menggunakan Rig PDSI #52.2/PD550-M dengan hasil minyak sebesar 1.000 BOPD.

PT Pertamina Drilling Services Indonesia as a subsidiary of PT Pertamina Hulu Energi, has successfully completed drilling of the Pinang (PN)-066 Well in the Rokan Working Area using the PDSI Rig #52.2/PD550-M with an oil yield of 1,000 BOPD.

AGT 6



PT Pertamina Hulu Energi dan PT Sucofindo menandatangani MoU Penjajakan Potensi & Implementasi ISO dalam Penyelenggaraan Proyek CCS/CCUS.

PT Pertamina Hulu Energi and PT Sucofindo signed an MoU on Potential Exploration & ISO Implementation in the Implementation of CCS/CCUS Projects.

AGT 10



Regional Sumatra *Subholding Upstream* melalui PT Pertamina Hulu Rokan, sukses meningkatkan produksi minyak sebesar 2.598 BOPD dan produksi gas sebesar 1,51 MMSCFD dari pemboran sumur Benuang (BNG)-59.

Sumatra Regional Subholding Upstream through PT Pertamina Hulu Rokan, successfully increased oil production by 2,598 BOPD and gas production by 1.51 MMSCFD from drilling the Benuang (BNG)-59 well.

AGT 12



Regional Kalimantan *Subholding Upstream* melalui PEP Sangasanga Field, berhasil menambah produksi minyak menjadi sebesar 5.649 BOPD dan gas 6.237 MMSCFD, salah satunya dengan penerapan inovasi BioEcoFizz dan Pertanofa.

Kalimantan Regional Subholding Upstream through PEP Sangasanga Field, has succeeded in increasing oil production to 5,649 BOPD and gas to 6,237 MMSCFD, one of which is by implementing the BioEcoFizz and Pertanofa innovations.

AGT 13



Menteri ESDM melakukan kunjungan kerja ke salah satu Anak Perusahaan PT Pertamina Hulu Energi, yaitu Badak LNG, dan melakukan diskusi terkait rencana strategis reaktivasi kilang dengan ditemukannya sumber gas baru dari ENI Indonesia, untuk mendukung ketahanan energi nasional.

The Minister of Energy and Mineral Resources conducted a working visit to one of PT Pertamina Hulu Energi's subsidiaries, namely Badak LNG, and held a discussion regarding the strategic plan for reactivating the refinery with the discovery of a new gas source from ENI Indonesia, to support national energy security.

AGT 14-16



Dalam acara SCM Summit 2024, PT Pertamina Hulu Energi memperoleh penghargaan *"The Best Contribution to National Procurement List* 2024" dari realisasi TKDN Tahun 2023 sebesar Rp16,77 miliar yang meningkat dari tahun 2022 (Rp14,38 miliar). Selain itu, PT Pertamina Hulu Rokan juga memperoleh penghargaan *"The Best Innovation in Material Inventory Optimization"* atas atas pengembangan dan penerapan aplikasi *Integrated Material Management* (IMM) yang terintegrasi dengan Rokan *Market Place* dalam pengelolaan material yang terstandarisasi dan transparan.

In the SCM Summit 2024 event, PT Pertamina Hulu Energi achieved the award for "The Best Contribution to National Procurement List 2024" from the realization of TKDN in 2023 of Rp16.77 billion, which increased from 2022 (Rp14.38 billion). In addition, PT Pertamina Hulu Rokan also achieved the award for "The Best Innovation in Material Inventory Optimization" for the development and implementation of the Integrated Material Management (IMM) application which is integrated with the Rokan Market Place in standardized and transparent material management.

AGT 23



Regional Sumatra *Subholding Upstream* melalui PT Pertamina Hulu Rokan, berhasil mengurangi *declining rate* sumur-sumur *existing* lapangan minyak Minas, dari rata-rata 11% per tahun menjadi 6%, melalui penerapan *Advanced Reservoir Management* berbasis *Artificial Intelligence* (AI) *Expert System*, dalam melakukan evaluasi sumur-sumur produksi di lapangan minyak Minas, WK Rokan di Riau.

Sumatra Regional Subholding Upstream through PT Pertamina Hulu Rokan, has succeeded in reducing the declining rate of existing wells in the Minas oil field, from an average of 11% per year to 6%, through the implementation of Advanced Reservoir Management based on Artificial Intelligence (AI) Expert System, in evaluating production wells in the Minas oil field, WK Rokan in Riau.

AGT 28



PT Pertamina Hulu Energi (PHE) selaku *Subholding Upstream* untuk pertama kalinya mendapatkan penghargaan *Annual Report* di ajang internasional LACP (*League of American Communications Professionals*) Platinum Award, bersanding dengan perusahaan ternama seperti Walt Disney, Porsche, Abbot & Walmart. PHE juga masuk dalam 20 besar ajang penghargaan bergengsi Nasional ARA (*Annual Report Award*) diadakan oleh KNKG (Komite Nasional Kebijakan *Governance*) yang merupakan Komite Gabungan dengan pengurus Kementerian BUMN, Kementerian Keuangan, OJK, BEI, IAI.

PT Pertamina Hulu Energi (PHE) as Subholding Upstream for the first time achieved the Annual Report award at the international LACP (League of American Communications Professionals) Platinum Award, alongside well-known companies such as Walt Disney, Porsche, Abbot & Walmart. PHE also entered the top 20 of the prestigious National ARA (Annual Report Award) held by KNKG (National Committee for Governance Policy) which is a Joint Committee with the management of the Ministry of SOEs, Ministry of Finance, OJK, BEI, IAI.

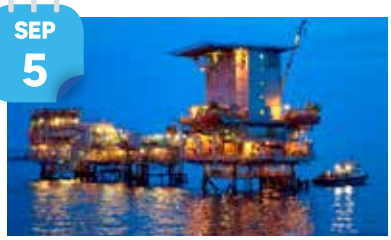
SEP 4



Regional Kalimantan *Subholding Upstream* melalui PT Pertamina Hulu Sanga Sanga, berhasil melakukan pengeboran dengan kedalaman 2.510 ft (766 m) pada sumur SEM-184 di Lapangan Semberah dengan teknik *Casing while Drilling* (CwD). Capaian ini menghemat hari operasi selama 80 jam, atau setara biaya USD120 ribu.

Kalimantan regional Subholding Upstream through PT Pertamina Hulu Sanga Sanga, successfully drilled to a depth of 2,510 ft (766 m) on the SEM-184 well in the Semberah Field using the Casing while Drilling (CwD) technique. This achievement saved 80 hours of operating days, or the equivalent of USD120 thousand.

SEP 5



Penandatangan *Joint Study Agreement* (JSA) terkait "*Feasibility Study on Carbon Capture, Transportation and Storage*" antara PHE ONWJ dengan POSCO International.

Signing of the Joint Study Agreement (JSA) regarding the "Feasibility Study on Carbon Capture, Transportation and Storage" between PHE ONWJ and POSCO International.

SEP 9



Penandatanganan Perjanjian Kerja Sama (PKS) antara beberapa mitra PT Pertamina Hulu Energi dan Anak Usahanya, yaitu Kelompok Usaha Perhutanan Sosial (KUPS) yang berada di seluruh Wilayah Kerja *Subholding Upstream* dengan Kementerian Lingkungan Hidup dan Kehutanan.

Signing of the Cooperation Agreement (PKS) between several partners of PT Pertamina Hulu Energi and its Subsidiaries, namely the Social Forestry Business Group (KUPS) located in all Upstream Subholding Working Areas with the Ministry of Environment and Forestry.

SEP 10



PT Pertamina Hulu Energi beserta Anak Perusahaan menerima 12 (dua belas) The Best kategori penghargaan dari SKK MIGAS Award 2024.

PT Pertamina Hulu Energi and its subsidiaries achieved 12 (twelve) The Best category awards from the 2024 SKK MIGAS Award.

SEP 13



Penandatanganan *Memorandum of Understanding* (MoU) antara PT Pertamina Hulu Energi dan PT Pertamina International Shipping terkait dengan kerja sama penyediaan transportasi *liquified* CO_2 dan *receiving terminal* dalam pengembangan bisnis karbon.

The signing of the Memorandum of Understanding (MoU) between PT Pertamina Hulu Energi and PT Pertamina International Shipping related to cooperation in providing liquefied CO_2 transportation and receiving terminals in developing the carbon business.

SEP 19



Regional Jawa *Subholding Upstream* melalui PHE ONWJ, memulai proyek pengembangan Lapangan OO-OX di Lepas Pantai Utara Jawa Barat, diproyeksikan dapat meningkatkan produksi sebesar 2.996 BOPD dan gas sebesar 21,26 juta MMSCFD.

Java Regional Subholding Upstream through PHE ONWJ, started the OO-OX Field development project in the North Offshore of West Java, projected to increase production by 2,996 BOPD and gas by 21.26 million MMSCFD.

SEP 24



PT Pertamina Hulu Energi mendapatkan pengakuan global dalam 'SDG Innovation Accelerator for Young Professionals 2024' melalui diseminasi program *Waste To Energy For Community* (Wasteco) yang diselenggarakan oleh United Nation Global Compact (UNGC) dan didukung oleh Konsul Jenderal Republik Indonesia di New York.

PT Pertamina Hulu Energi achieved global recognition in the 'SDG Innovation Accelerator for Young Professionals 2024' through the dissemination of the Waste To Energy For Community (Wasteco) program organized by the United Nation Global Compact (UNGC) and supported by the Consul General of the Republic of Indonesia in New York.

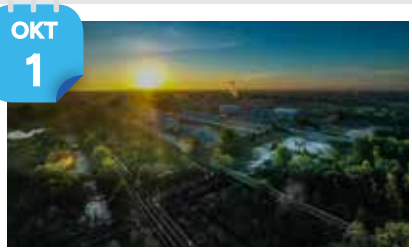
SEP 25



The Fordigi (Forum Digital BUMN) Summit 2024, dengan tema "*Navigating the Digital Horizon: AI Strategies for SOE's Transformation*". Acara ini menyoroti pentingnya kecerdasan buatan (AI) dalam meningkatkan efisiensi, inovasi, dan daya saing bisnis serta layanan publik di Indonesia. Pada FORDIGI Summit 2024, PT. Pertamina Hulu Rokan (PHR) mendapatkan BUMN Fordigi Award dalam menampilkan Inovasi terintegrasi berbasis *Advanced Reservoir Management* (RM) dan *Artificial Intelligence* (AI) yang divisualisasikan dalam *integrated web-based*, bernama VENUS (e-MARS 2.0) yang dikembangkan secara mandiri.

The Fordigi (BUMN Digital Forum) Summit 2024, with the theme "Navigating the Digital Horizon: AI Strategies for SOE's Transformation". This event highlights the importance of artificial intelligence (AI) in improving efficiency, innovation, and competitiveness of businesses and public services in Indonesia. At the FORDIGI Summit 2024, PT. Pertamina Hulu Rokan (PHR) achieved the BUMN Fordigi Award in presenting an integrated Innovation based on Advanced Reservoir Management (RM) and Artificial Intelligence (AI) visualized in an integrated web-based, called VENUS (e-MARS 2.0) which was developed independently.

OKT 1



Penandatanganan *Joint Study Agreement* "Potensi Pengelolaan Aset Pembangkit Tenaga Listrik dan Penyediaan Pembangkit Tenaga Listrik Rendah Karbon di Lingkungan PT Pertamina Hulu Energi" antara PT Pertamina Hulu Energi dengan PT Pertamina Power Indonesia.

Signing of the Joint Study Agreement "Potential Management of Power Plant Assets and Provision of Low Carbon Power Plants in the Environment of PT Pertamina Hulu Energi" between PT Pertamina Hulu Energi and PT Pertamina Power Indonesia.

OKT 7



Subholding Upstream meraih pencapaian Penghargaan Keselamatan Migas 2024 untuk kategori Tanpa Kehilangan Jam Kerja Akibat Kecelakaan (Patra Nirbaya Karya) dan Pembinaan Keselamatan Kerja Migas (Patra Karya Raksa) dari Kementerian ESDM:

Upstream Subholding achieved the Penghargaan Keselamatan Migas 2024/2024 Oil and Gas Safety Award for the category of No Lost Working Hours Due to Accidents (Patra Nirbaya Karya) and Pembinaan Keselamtan Kerja Migas/Oil and Gas Work Safety Development (Patra Karya Raksa) from the Ministry of Energy and Mineral Resources:

a. PT Badak NGL meraih Patra Nirbhaya Karya Utama;

   PT Badak NGL achieved the Patra Nirbhaya Karya Utama Award;

b. PT Pertamina EP Cepu Zona 12 meraih Nirbhaya Karya Utama Adinugraha III dan Karya Raksa Tama, Zona 13 meraih Nirbhaya Karya Utama, JOB Tomori meraih Nirbhaya Karya Utama dan Patra Prakarsa.

   PT Pertamina EP Cepu Zone 12 achieved Nirbhaya Karya Utama Adinugraha III and the Karya Raksa Tama Award, Zone 13 achieved the Nirbhaya Karya Utama, JOB Tomori achieved the Main Work Award and Patra Prakarsa Award.

OKT 10



a. *Subholding Upstream* berhasil meraih berbagai penghargaan bergengsi dalam ajang Subroto Awards 2024:

   Upstream Subholding successfully won various prestigious awards at the 2024 Subroto Awards:

   - Kategori Tanpa Kehilangan Jam Kerja Sebagai Akibat Kecelakaan, Subkategori Kegiatan Usaha Hulu Migas: PT Pertamina EP Cepu;

     Category Without Loss of Working Hours Due to Accidents, Subcategory of Upstream Oil and Gas Business Activities: PT Pertamina EP Cepu;
   - Kategori Optimalisasi Pengelolaan Gas Suar pada Kegiatan Usaha Hulu Minyak dan Gas Bumi, Subkategori Lapangan Gas Bumi: Pertamina Hulu Mahakam;

     Category: Optimization of Flare Gas Management in Upstream Oil and Gas Business Activities, Natural Gas Field Subcategory: Pertamina Hulu Mahakam;
   - Kategori Optimalisasi Pengelolaan Gas Suar pada Kegiatan Usaha Hilir Minyak dan Gas Bumi: PT Badak NGL;

     Category of Optimization of Flare Gas Management in Downstream Oil and Gas Business Activities: PT Badak NGL;
   - Kategori Manajemen Energi pada Industri dan Bangunan Gedung, Subkategori Inovasi Khusus: PT Pertamina EP Limau Field.

     Energy Management Category in Industry and Building Construction, Special Innovation Subcategory: PT Pertamina EP Limau Field.

b. Pada peringatan ke 79 Hari Pertambangan dan Energi, *Subholding Upstream* mendapatkan penghargaan dan Kementerian ESDM:

   On the 79th anniversary of Mining and Energy Day, Subholding Upstream achieved an award from the Ministry of Energy and Mineral Resources:

   - PT Pertamina International EP meraih penghargaan tertinggi Dharma Karya kategori Utama

     PT Pertamina International EP won the highest Dharma Karya award in the Main category
   - PEP Papua Field meraih penghargaan Dharma Karya Tingkat Madya

     PEP Papua Field wins the Middle Level Dharma Karya Award

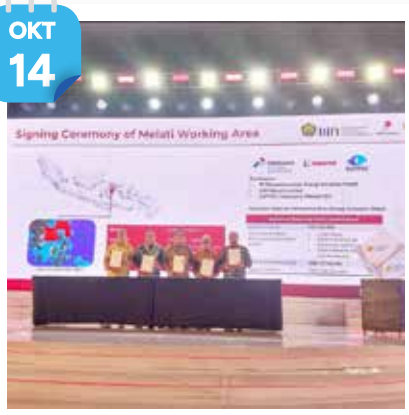
OKT 12



Regional Sumatra *Subholding Upstream* melalui PT Pertamina EP (PEP) Prabumulih Field, berhasil mencatatkan produksi dari pengeboran sumur di struktur Gunung Kemala, GNK-102 dan GNK-103 di Kecamatan Prabumulih Barat, Sumatra Selatan. Hasil pengujian awal menunjukkan sumur GNK-102 memproduksi minyak sebanyak 1.550 barel minyak per hari (BOPD), yang melampaui target awal sebesar 863,8%. Sumur GNK-103 mencatat produksi sebesar 2.630 barel minyak per hari (BOPD), melebihi target awal sebesar 1.421%.

Sumatra Regional Subholding Upstream through PT Pertamina EP (PEP) Prabumulih Field, successfully recorded production from drilling wells in the Gunung Kemala structure, GNK-102 and GNK-103 in Prabumulih Barat District, South Sumatra. Initial test results showed that the GNK-102 well produced 1,550 barrels of oil per day (BOPD), exceeding the initial target of 863.8%. The GNK-103 well recorded production of 2,630 barrels of oil per day (BOPD), exceeding the initial target of 1,421%.

OKT 14



a. PT Pertamina Hulu Energi Sulawesi Melati bersama mitra konsorsium, Sinopec International Energy Investment (SIEI) Melati Limited dan KUFPEC Indonesia (Melati) B.V, melakukan penandatanganan Kontrak Kerja Sama (KKS) dengan SKK Migas pada pertemuan Indonesia Exploration Forum (IEF) 2024 di Surabaya.

   PT Pertamina Hulu Energi Sulawesi Melati together with consortium partners, Sinopec International Energy Investment (SIEI) Melati Limited and KUFPEC Indonesia (Melati) BV, signed a Cooperation Contract (KKS) with SKK Migas at the 2024 Indonesia Exploration Forum (IEF) meeting in Surabaya.

b. *Kick Off Field Trial Interwell* CO_2 *Injection*, yang merupakan kerjasama antara Pertamina dengan JOGMEC dan JAPEX telah berhasil dilaksanakan di *Field* Sukowati, PT Pertamina EP Cepu.

   Kick Off Field Trial Interwell CO_2 Injection, which is a collaboration between Pertamina, JOGMEC and JAPEX has been successfully implemented at the Sukowati Field, PT Pertamina EP Cepu.

OKT
15



a. Tim Pengembangan Aset Utara melakukan terobosan inisiatif berupa digitalisasi peta area sumur serta rekayasa desain *casing 2 string* pada 8 pemboran di Lapangan Minyak Bangko - WK Rokan terbukti berhasil menghemat biaya operasi hingga Rp54 miliar. Dengan proyeksi rencana pemboran hingga 57 sumur pada akhir 2024, PT Pertamina Hulu Rokan berpotensi menghemat hingga Rp414 miliar.

   The Northern Asset Development Team made a breakthrough initiative in the form of digitizing well area maps and engineering 2 string casing designs on 8 drillings in the Bangko Oil Field - Rokan Working Area, which has proven to be successful in saving operating costs of up to Rp54 billion. With a projected drilling plan of up to 57 wells by the end of 2024, PT Pertamina Hulu Rokan has the potential to save up to Rp414 billion.

b. Regional Indonesia Timur melalui PT Pertamina Hulu Energi Tuban East Java, meraih penghargaan Kecelakaan Nihil (*Zero Accident Award*) dari Menteri Ketenagakerjaan Republik Indonesia yang diserahkan diserahkan melalui Disnakertrans Provinsi Jawa Timur merujuk pada capaian 4.526.844 jam kerja orang tanpa kecelakaan kerja terhitung sejak 1 November 2019 - 31 Oktober 2023.

   The Eastern Indonesia Regional through PT Pertamina Hulu Energi Tuban East Java, achieved the Zero Accident Award from the Minister of Manpower of the Republic of Indonesia which was presented through the East Java Provincial Manpower and Transmigration Office referring to the achievement of 4,526,844 working hours without work accidents from November 1, 2019 to October 31, 2023.

c. Regional Indonesia Timur melalui Pertamina EP Donggi Matindok, mendapatkan penghargaan internasional *Concerned Company/Corporation Award* 2024 dari World Safety Organization (WSO) dengan kumulatif jam kerja selamat sejak beroperasi pada 2017 hingga 21 Oktober 2024 sebesar 11.078.070.

   The Eastern Indonesia Region through Pertamina EP Donggi Matindok, achieved the international Concerned Company/Corporation Award 2024 from the World Safety Organization (WSO) with cumulative safe working hours since operating in 2017 to October 21, 2024 of 11,078,070.

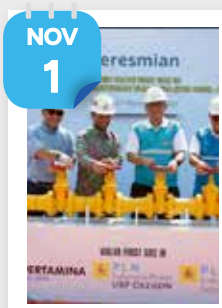
OKT
19



Regional 4 Indonesia Timur, berhasil menemukan sumberdaya migas yang signifikan melalui pengeboran sumur Eksplorasi Tedong (TDG)-001 di Field Donggi Matindok WK Pertamina EP, Kabupaten Morowali Utara, provinsi Sulawesi Tengah. Struktur temuan Tedong ini memiliki kolom hidrokarbon setebal 163 meter, dengan laju alir 15 juta kaki kubik per hari (MMSCFD), dan 185 barel kondensat per hari (BCPD).

Regional 4 Eastern Indonesia successfully discovered significant oil and gas resources through the drilling of the Tedong (TDG)-001 Exploration well in the Donggi Matindok Field, Pertamina EP Working Area, North Morowali Regency, Central Sulawesi Province. The Tedong discovery features a hydrocarbon column measuring 163 meters in thickness, with a flow rate of 15 million standard cubic feet per day (MMSCFD) and 185 barrels of condensate per day (BCPD).

NOV
1



Regional Jawa Subholding Upstream melalui PHE OSES, resmi menyalurkan gas bumi sebesar 5 BBUTD dengan total volume sebesar 9.977 BBTU ke Pembangkit Listrik Tenaga Gas dan Uap (PLTGU) di Cilegon terhitung 1 November 2024 sampai tahun 2029.

Java Regional Subholding Upstream through PHE OSES, officially distributed 5 BBUTD of natural gas with a total volume of 9,977 BBTU to the Gas and Steam Power Plant (PLTGU) in Cilegon starting from November 1, 2024 to 2029.

NOV
4



Regional Sumatra Subholding Upstream melalui PT Pertamina Hulu Rokan, meraih pencapaian luar biasa yang disebut sebagai '*Big Hitter*' melalui pengeboran 2 sumur minyak utama di WK Rokan, yakni sumur Pinang #68 dengan produksi 1.020 BOPD dan sumur Pudu #23 dengan produksi 967 BOPD.

Sumatra Regional Subholding Upstream through PT Pertamina Hulu Rokan, achieved an extraordinary achievement called 'Big Hitter' by drilling 2 main oil wells in WK Rokan, namely the Pinang #68 well with a production of 1,020 BOPD and the Pudu #23 well with a production of 967 BOPD.

NOV 5



Regional Kalimantan Subholding Upstream melalui PT Pertamina Hulu Mahakam, melaksanakan seremoni *Sail Away Jacket* WPS-4, Proyek Sisi Nubi *Area of Interest* (SNB AOI) untuk mendukung peningkatan produksi gas dan minyak dengan kapasitas desain rata-rata 30 MMSCFD/hari/anjungan dengan target mulai akhir tahun 2025.

Kalimantan regional Subholding Upstream through PT Pertamina Hulu Mahakam, held a Sail Away Jacket WPS-4 ceremony, Sisi Nubi Area of Interest (SNB AOI) Project to support increased gas and oil production with an average design capacity of 30 MMSCFD/day/platform with a target starting at the end of 2025.

NOV 19



Regional Sumatra Subholding Upstream melalui PT Pertamina Hulu Rokan, mengkonfirmasi Sumur Migas Non Konvensional (MNK) Gulamo DET-1 sebagai temuan baru (*discovery*) setelah melalui evaluasi d*ata fracturing*, uji rekahan (*flowback test*), serta hasil pengeboran dan pengujian sumur (*well testing*).

Sumatra Regional Subholding Upstream through PT Pertamina Hulu Rokan, confirmed the Gulamo DET-1 Non-Conventional Oil and Gas Well (MNK) as a new discovery after evaluating fracturing data, flowback tests, and drilling and well testing results.

NOV 20



Regional Sumatra Subholding Upstream melalui PHE Jambi Merang, berhasil melakukan pengeboran sumur eksplorasi di Sungai Rotan Downblock-1 (SRD-1) Kecamatan Bayung Lencir, Kabupaten Musi Banyuasin, Sumatra Selatan. Sumur yang dibor secara vertikal ini memiliki total kedalaman 7.900 ft *Measured Depth* (MD) dan setelah uji alir kandungan lapisan, terbukti mampu mengalirkan gas dengan rate mencapai 5 MMSCFD dan kondensat 93 BCPD.

Sumatra Regional Subholding Upstream through PHE Jambi Merang, successfully drilled an exploration well in Sungai Rotan Downblock-1 (SRD-1) Bayung Lencir District, Musi Banyuasin Regency, South Sumatra. The well, which was drilled vertically, has a total depth of 7,900 ft Measured Depth (MD) and after a layer content flow test, it was proven to be able to flow gas at a rate of 5 MMSCFD and condensate of 93 BCPD.

NOV 22



- Regional Sumatra Subholding Upstream melalui PT Pertamina EP Field Jambi, berhasil melakukan pengeboran dua sumur baru yaitu PPS 12 dan PPS 14 di Struktur Puspa Asri Kecamatan Kumpe Ulu, Jambi. Sumur PPS 12 mencatat laju alir minyak sebesar 199,44 BOPD, sedangkan PPS 14 mencapai angka signifikan sebesar 1.245 BOPD.

  Sumatra Regional Subholding Upstream through PT Pertamina EP Field Jambi, successfully drilled two new wells, namely PPS 12 and PPS 14 in the Puspa Asri Structure, Kumpe Ulu District, Jambi. The PPS 12 well recorded an oil flow rate of 199.44 BOPD, while PPS 14 reached a significant figure of 1,245 BOPD.

- PHE ONWJ, PEP Donggi Matindok *Field*, PEP Papua *Field* dan PHE WMO mendapat penghargaan kategori *Great Practice in The Best Practice* melalui 4 program yaitu Peri Berdaya, Jam Pasir, *Salt Centre* Terintegrasi, dan Kokolomboi Lestari dalam Global CSR Award 2024 di Taiwan.

  PHE ONWJ, PEP Donggi Matindok Field, PEP Papua Field and PHE WMO achieved awards in the Great Practice in The Best Practice category through 4 programs, namely Peri Berdaya, Jam Pasir, Integrated Salt Center, and Kokolomboi Lestari in the 2024 Global CSR Award in Taiwan.

DES 5



PT Pertamina Hulu Energi mendapatkan penghargaan sebagai *TOP DIGITAL Implementation* 2024 #Stars 5. Ini merupakan pencapaian luar biasa, karena mencerminkan bahwa manajemen Perusahaan telah mengelola bisnis secara modern, profesional, dan terpercaya melalui penerapan serta pemanfaatan teknologi informasi dan digital yang canggih.

PT Pertamina Hulu Energi achieved an award as TOP DIGITAL Implementation 2024 #Stars 5. This is an extraordinary achievement, because it reflects that the Company's management has managed the business in a modern, professional, and reliable manner through the implementation and utilization of sophisticated information and digital technology.

DES 6



Regional Jawa Subholding Upstream Pertamina melalui PT Pertamina EP (PEP) Pangkalan Susu Field melaksanakan Penandatanganan Perjanjian Jual Beli Tenaga Listrik (PJBTL) dengan PT PLN UID Sumatra Utara UP3 Binjai untuk tambahan daya sebesar 131.000 VA, sebagai upaya mendukung target *Net Zero Emission* 2060.

Java Regional Subholding Upstream Pertamina through PT Pertamina EP (PEP) Pangkalan Susu Field carried out the signing of the Electricity Purchase Agreement (PJBTL) with PT PLN UID North Sumatra UP3 Binjai for an additional power of 131,000 VA, as an effort to support the 2060 Net Zero Emission target.

DES 9



PT Pertamina Hulu Energi mendapatkan *Final Report* dan Badge hasil penilaian ESG *Risk Rating Assessment* oleh MSCI dengan hasil BBB (*Medium Risk*). PHE termasuk kedalam 17% perusahaan *Oil and Gas exploration and production* yang berhasil mendapatkan Rating BBB.

PT Pertamina Hulu Energi received the Final Report and Badge from the ESG Risk Rating Assessment conducted by MSCI, with a result of BBB (Medium Risk). PHE is among the top 17% of oil and gas exploration and production companies that have achieved a BBB rating.

DES 10



Regional Jawa Subholding Upstream Pertamina melalui Pertamina EP (PEP) Jambi *Field* berhasil menyelesaikan tahapan *commissioning* dan *initial start-up* Stasiun Pengumpul Puspa Asri dirancang untuk menampung produksi minyak hingga 600 barel minyak per hari (BOPD), khususnya melalui eksplorasi dan produksi lapangan Puspa Asri di Kecamatan Kumpeh Ulu, Kabupaten Muaro Jambi, Jambi.

Java Regional Subholding Upstream Pertamina through Pertamina EP (PEP) Jambi Field has successfully completed the commissioning and initial start-up stages of the Puspa Asri Gathering Station designed to accommodate oil production of up to 600 barrels of oil per day (BOPD), especially through exploration and production of the Puspa Asri field in Kumpeh Ulu District, Muaro Jambi Regency, Jambi.

DES 11-13



PT Pertamina Hulu Energi sukses menggelar kegiatan Forum *Upstream Improvement & Innovation Award* (UIIA) 2024 dan berhasil membukukan *Value Creation real* berbasis *Cost Optimization* yang terverifikasi hingga Rp2,57 triliun atau sekitar USD170 juta. *Best of The Best'* UIIA 2024 diraih oleh Regional 2 PT Pertamina EP.

PT Pertamina Hulu Energi successfully held the Upstream Improvement & Innovation Award (UIIA) 2024 Forum and successfully recorded a verified real Value Creation based on Cost Optimization of up to Rp2.57 trillion or around USD170 million. Best of The Best' UIIA 2024 was won by Regional 2 PT Pertamina EP.

DES
17



Regional Indonesia Timur Subholding Upstream Pertamina melalui PHE WMO, PEP Sukowati *Field*, PEPC, PEP Donggi Matindok *Field* dan JOB Pertamina-Medco E&P Tomori sukses meraih lima penghargaan kategori Sub Inovasi Khusus dan Manajemen Energi di industri pada ajang Penghargaan Efisiensi Energi Nasional (PEEN) 2024, yang diselenggarakan Direktorat Jenderal Energi Baru Terbarukan dan Konservasi Energi (EBTKE) Kementerian Energi dan Sumber Daya Mineral (ESDM).

The Eastern Indonesia Region of Subholding Upstream Pertamina through PHE WMO, PEP Sukowati Field, PEPC, PEP Donggi Matindok Field and JOB Pertamina-Medco E&P Tomori successfully won five awards in the Special Sub Innovation and Energy Management categories in the industry at the 2024 National Energy Efficiency Awards (PEEN), organized by the Directorate General of New, Renewable Energy and Energy Conservation (EBTKE) of the Ministry of Energy and Mineral Resources (ESDM).

DES
18



PT Pertamina Hulu Energi menemukan cadangan minyak baru di struktur Padang Pancuran, Sumatra Selatan melalui sumur PPC-1 dengan laju alir sebesar 2.040 barel minyak per hari (bph) dan gas ikutan yang terukur kurang dari 0,1 juta kaki kubik per hari (MMSCFD). Sepanjang 2024 total sumber daya migas *Recoverable Resources* (RR) atau sumber daya yang siap diproduksi oleh Subholding Upstream Pertamina sebanyak 143 juta barel minyak (MMBO) dan 1,7 triliun kaki kubik gas (TCF).

PT Pertamina Hulu Energi discovered new oil reserves in the Padang Pancuran structure, South Sumatra through the PPC-1 well with a flow rate of 2,040 barrels of oil per day (bpd) and associated gas measured at less than 0.1 million cubic feet per day (MMSCFD). Throughout 2024, the total oil and gas resources Recoverable Resources (RR) or resources ready to be produced by Subholding Upstream Pertamina are 143 million barrels of oil (MMBO) and 1.7 trillion cubic feet of gas (TCF).

DES
20



PT Pertamina Hulu Energi mencatat sumber daya *in place* gas bumi sebesar lebih dari 1,8 triliun kaki kubik (TCF) atau hampir setara 320 juta barel minyak (MMBOE) dari penemuan eksplorasi di wilayah Sulawesi Tengah. Temuan eksplorasi tersebut berasal dari penemuan gas di struktur Wolai-*East Wolai*, Morea, dan terbaru dari struktur Tedong yang dibor tahun 2024.

PT Pertamina Hulu Energi recorded in-place natural gas resources of more than 1.8 trillion cubic feet (TCF) or almost equivalent to 320 million barrels of oil (MMBOE) from exploration discoveries in the Central Sulawesi region. The exploration findings came from gas discoveries in the Wolai-East Wolai structure, Morea, and most recently from the Tedong structure which was drilled in 2024.

DES
26



Regional Kalimantan Subholding Upstream Pertamina melalui PT Pertamina Hulu Sanga Sanga (PHSS) berhasil meningkatkan produksi Wilayah Kerja (WK) Sanga Sanga, dari sebelumnya pada awal November 2024 sebesar 6.800 barel minyak per hari (BOPD) menjadi 8.600 BOPD pada akhir bulan yang sama melalui pengeboran Sumur Mutiara-351 dan Mutiara-352 di area Sungai Dondang, Kutai Kartanegara, Provinsi Kalimantan Timur.

Kalimantan Regional Subholding Upstream Pertamina through PT Pertamina Hulu Sanga Sanga (PHSS) has succeeded in increasing production in the Sanga Sanga Working Area (WK), from 6,800 barrels of oil per day (BOPD) in early November 2024 to 8,600 BOPD at the end of the same month through drilling the Mutiara-351 and Mutiara-352 Wells in the Sungai Dondang area, Kutai Kartanegara, East Kalimantan Province.

DES
30



Regional Sumatra Subholding Upstream Pertamina melalui PT Pertamina Hulu Rokan berhasil memproduksi 2.350 barel minyak per hari (BOPD) dari sumur Pinang East #1 yang merupakan eksplorasi pertama di Lapangan Pinang East, Blok Rokan.

Sumatra Regional Subholding Upstream Pertamina through PT Pertamina Hulu Rokan has succeeded in producing 2,350 barrels of oil per day (BOPD) from the Pinang East #1 well which is the first exploration in the Pinang East Field, Rokan Block.

PENGHARGAAN
AWARD

Skala Internasional/Regional
International/Regional Scale



***Innovation and Technology Exposition* (IPITEX) 2024**
Innovation and Technology Exposition (IPITEX) 2024

Regional Internasional Subholding Upstream Pertamina melalui PT Pertamina International EP (PIEP), berhasil meraih *Grand Prize* pada ajang *Innovation and Technology Exposition* (IPITEX) 2024 dalam upaya peningkatan produksi minyak dengan melakukan peningkatan keandalan *Electrical Desalter* menggunakan *U-Channel Electrode Clamp* di area Regional 5.
International Region Subholding Upstream Pertamina through PT Pertamina International EP (PIEP), successfully won the Grand Prize at the Innovation and Technology Exposition (IPITEX) 2024 in an effort to increase oil production by improving the reliability of Electrical Desalter using U-Channel Electrode Clamp in the area of Region 5.

17 Februari 2024
February 17, 2024

National Research Council of Thailand (NRCT)



***Green World Environment Awards* 2024**
Green World Environment Awards 2024

Regional Sumatra Subholding Upstream Pertamina melalui PT Pertamina Hulu Rokan (PHR), menorehkan prestasi gemilang dengan program Konservasi Gajah Sumatra yang meraih penghargaan *Green World Environment Awards* 2024 sebagai *Global Winner* untuk kategori *Fuel, Power & Energy/ Conservation & Wildlife Projects* di Brazil.
Sumatra Regional Subholding Upstream Pertamina through PT Pertamina Hulu Rokan (PHR), has made a brilliant achievement with the Sumatran Elephant Conservation program which won the Green World Environment Awards 2024 as the Global Winner for the Fuel, Power & Energy/Conservation & Wildlife Projects category in Brazil.

28 Maret 2024
March 28, 2024

The Green Organization



***The 16th Annual Global CSR & ESG Summit and Awards* 2024**

Subholding Upstream Pertamina melalui Regional dan anak perusahaannya, berhasil mendapatkan beberapa penghargaan di kancah internasional dalam ajang Global CSR & ESG *Summit Awards* ke-16 di Hanoi, Vietnam, antara lain:

- Kategori *Best Community Programme* (Platinum) untuk program Menara Marina Kota Bontang, PT Badak NGL
- Kategori *Best Environmental Excellence* (Gold) untuk program Jam Pasir (Jaga Alam Melalui Pemberdayaan Masyarakat Pesisir) di Karawang, PHE ONWJ
- Kategori Best Community Programme (Silver) untuk program "Program Mpok Tamara" (Pemberdayaan Kelompok Rentan Pemulung Jakarta Utara, PHE ONWJ
- Kategori *Excellent in Provision of Literacy Education* (Silver) untuk program Sekolah Negeri Terapung, PT Pertamina Hulu Mahakam
- Kategori *Best Community Programme* (Bronze) untuk Program Pertanian Organik Kelompok Antasena Tuban, PT Pertamina EP Cepu – Sukowati

25 April 2024

National Research Council of Thailand (NRCT)

The 16th Annual Global CSR & ESG Summit and Awards 2024

Subholding Upstream Pertamina through its Regional and subsidiaries, has successfully won several awards at the international level at the 16th Global CSR & ESG Summit Awards in Hanoi, Vietnam, including:

- Best Community Programme (Platinum) category for the Menara Marina Kota Bontang program, PT Badak NGL
- Best Environmental Excellence (Gold) category for the Jam Pasir (Jaga Alam Melalui Pemberdayaan Masyarakat Pesisir/Protecting Nature Through Coastal Community Empowerment) program in Karawang, PHE ONWJ
- Best Community Programme (Silver) category for the "Program Mpok Tamara" (Empowerment of Vulnerable Groups of Scavengers in North Jakarta, PHE ONWJ)
- Excellent in Provision of Literacy Education (Silver) category for the Sekolah Negeri Terapung/Floating State School program, PT Pertamina Hulu Mahakam
- Best Community Programme Category (Bronze) for the Program Pertanian Organik Kelompok Antasena Tuban/Organic Farming Program of the Antasena Tuban Group, PT Pertamina EP Cepu – Sukowati

April 25, 2024

National Research Council of Thailand (NRCT)

SDG Innovation Accelator for Young Professionals 2024
SDG Innovation Accelator for Young Professionals 2024

The Best 6th SDG's Innovation Accelerator for Young Professional United Nation Global Compact.

21 September 2024
September 21, 2024

Indonesia Global Compact Network (IGCN)





Taiwan Innotech Expo (TIE)
Taiwan Innotech Expo (TIE)

Taiwan Innotech Expo merupakan salah satu pameran inovasi terbesar di Taiwan dan Asia, yang dilaksanakan di Taiwan *World Trade Center*.
Taiwan Innotech Expo is one of the largest innovation exhibitions in Taiwan and Asia, held at the Taiwan World Trade Center.

1. Gold medal dan Special award dari *National Research Council of Thailand* (NRCT) untuk PT Pertamina Hulu Indonesia
   Gold medal and Special award from National Research Council of Thailand (NRCT) for PT Pertamina Hulu Indonesia
2. Gold Medal dan Special Award *Korea Invention Promotion Association* (KIPA) untuk PT Pertamina Hulu Rokan
   Gold Medal and Special Award from Korea Invention Promotion Association (KIPA) for PT Pertamina Hulu Rokan
3. Silver Medal dan Special Award *Taiwan Invention Association* (TIA) untuk PT Pertamina EP
   Silver Medal and Special Award from Taiwan Invention Association (TIA) for PT Pertamina EP
4. Bronze Medal dan Special Award dari *Chinese Innovation and Invention Society* (CIIS) untuk PT Pertamina EP
   Bronze Medal dan Special Award dari Chinese Innovation and Invention Society (CIIS) untuk PT Pertamina EP

17-19 Oktober 2024
October 17-19, 2024

Dewan Pengembangan Perdagangan Eksternal Taiwan (TAITRA) dan Institut Penelitian Teknologi Industri (ITRI)



International Convention Quality Control Circle (ICQCC)
International Convention Quality Control Circle (ICQCC)

International Convention Quality Control Circle (ICQCC) 2024 merupakan sebuah kompetisi internasional di Srilanka, yang mempertemukan berbagai perusahaaan dari seluruh dunia untuk berbagi pengalaman dan hasil inovasi dalam meningkatkan kualitas serta efisiensi di perusahaan. *Subholding Upstream* melalui Regional Sumatra (PT Pertamina Hulu Rokan), Regional 2 (PT Pertamina EP), dan Regional 3 (PT Pertamina Hulu Mahakam) berhasil meraih kategori Gold.
International Convention Quality Control Circle (ICQCC) 2024 is an international competition in Sri Lanka, which brings together companies from all over the world to share experiences and innovations in improving quality and efficiency in the company. Subholding Upstream through the Sumatra Region (PT Pertamina Hulu Rokan), Regional 2 (PT Pertamina EP), and Regional 3 (PT Pertamina Hulu Mahakam) won the Gold category.

11-14 November 2024
November 11-14, 2024

Dewan Pengembangan Perdagangan Eksternal Taiwan (TAITRA) dan Institut Penelitian Teknologi Industri (ITRI)

Penghargaan Skala Nasional
National Scale Award



The 9th PR Indonesia Award 2024

Program Tanggung Jawab Sosial dan Lingkungan 'ENTITY' (*Energizing Integrated Upstream Community*) berhasil meraih Penghargaan kategori *Bronze* pada PR Indonesia Award 2024.
'ENTITY' Social and Environmental Responsibility Program (Energizing Integrated Upstream Community) successfully won the Bronze category award at the 2024 PR Indonesia Awards.

7 Maret 2024
March 7, 2024

Warta Ekonomi



IDEAS Award: ESG, Subkategori Tata Kelola (*Governance*) - Anti Korupsi
IDEAS Award: ESG, Anti-Corruption Governance Subcategory

Menjadi Bronze Winner dalam Indonesia DEI & ESG (IDEAS) Award Kategori ESG, Subkategori Tata Kelola (*Governance*) Anti Korupsi melalui program yang diusung berjudul *Championing Ethics:* PHE's *Initiatives to Anti-Corruption Commitment, Showcasing* SMAP *and* SHU AKSIFEST *Initiatives*. Penghargaan IDEAS diberikan kepada perusahaan-perusahaan terkait kiprah terbaiknya dalam mengkomunikasikan ESG (*Environment, Social & Governance*) dan DEI (*Diversity, Equity and Inclusion*).
Becoming the Bronze Winner in the Indonesia DEI & ESG (IDEAS) Award in the ESG Category, Anti-Corruption Governance Subcategory through a program entitled Championing Ethics: PHE's Initiatives to Anti-Corruption Commitment, Showcasing SMAP and SHU AKSIFEST Initiatives. The IDEAS Award is given to companies for their best efforts in communicating ESG (Environment, Social & Governance) and DEI (Diversity, Equity and Inclusion).

26 Juni 2024
June 26, 2024

PR Indonesia



Indonesia's *Top Green Leaders Award* 2024
Indonesia's Top Green Leaders Award 2024

PT Pertamina Hulu Energi (PHE) sebagai *Subholding Upstream* Pertamina melalui komitmennya dalam mendukung pelestarian lingkungan yang berkelanjutan, mendapatkan apresiasi dari *stakeholder* dalam acara 'Indonesia's *Top Green Leaders Award* 2024.
PT Pertamina Hulu Energi (PHE), as Subholding Upstream Pertamina,, has received recognition from stakeholders at the 'Indonesia's Top Green Leaders Award 2024' event, in appreciation of its commitment to supporting sustainable environmental conservation.

30 Juli 2024
July 30, 2024

Warta Ekonomi



Anugerah Ekonomi Hijau 2024
Green Economy Award 2024

"Anugerah Ekonomi Hijau untuk perusahaan yang Memanfaatkan Energi Baru Terbarukan dalam menyejahterakan Rakyat"
"*Anugerah Ekonomi Hijau* for companies leveraging Renewable Energy to enhance societal welfare."

30 Juli 2024
July 30, 2024

Detikcom



Subroto *Awards* 2024

Penghargaan Subroto Awards diberikan sebagai bentuk apresiasi komitmen dan prestasi para pemangku kepentingan dalam memajukan sektor energi dan sumber daya mineral. *Subholding Upstream* melalui Regional dan Anak Perusahaannya berhasil meraih berbagai kategori:

The Subroto Awards were given as a form of appreciation for the commitment and achievements of stakeholders in advancing the energy and mineral resources sector. The Subholding Upstream through its Regions and Subsidiaries has successfully won various categories:

- Kategori Tanpa Kehilangan Jam Kerja Sebagai Akibat Kecelakaan, Subkategori Kegiatan Usaha Hulu Migas: PT Pertamina EP Cepu
  No Loss of Working Hours Due to Accidents Category, Upstream Oil and Gas Business Activities Subcategory: PT Pertamina EP
- Kategori Optimalisasi Pengelolaan Gas Suar pada Kegiatan Usaha Hulu Minyak dan Gas Bumi, Subkategori Lapangan Gas Bumi: Pertamina Hulu Mahakam
  Optimization of Flare Gas Management in Upstream Oil and Gas Business Activities Category, Natural Gas Field Subcategory: Pertamina Hulu Mahakam
- Kategori Optimalisasi Pengelolaan Gas Suar pada Kegiatan Usaha Hilir Minyak dan Gas Bumi: PT Badak NGL
  Optimization of Flare Gas Management in Downstream Oil and Gas Business Activities Category: PT Badak NGL
- Kategori Manajemen Energi pada Industri dan Bangunan Gedung, Subkategori Inovasi Khusus: PT Pertamina EP Limau Field
  Energy Management in Industry and Building Construction Category, Special Innovation Subcategory: PT Pertamina EP Limau Field

10 Oktober 2024
October 10, 2024

Warta Ekonomi



Indonesia Sustainability Development Goals Awards (ISDA) 2024

The Most Committed Corporate to SDGs on Economy Pillar, serta Kategori *Platinum* untuk program Desa Energi Berdikari *Subholding Upstream* dan *Energizing Integrated Upstream Community* (ENTITY).

The Most Committed Corporate to SDGs on Economy Pillar, and the Platinum Category for the Subholding Upstream Independent Energy Village and Energizing Integrated Upstream Community (ENTITY) programs.

28 November 2024
November 28, 2024

Warta Ekonomi



Dharma Karya 2024

Penghargaan Dharma Karya secara rutin diberikan setiap tahun kepada lembaga/perusahaan yang berjasa dalam pemikiran, kebijaksanaan, keputusan, pembangunan, dan penemuan baru di sektor ESDM. *Subholding Upstream* melalui Regional dan Anak Perusahaannya berhasil meraih berbagai kategori:

- PT Pertamina International EP meraih penghargaan tertinggi Dharma Karya kategori Utama
- PEP Papua Field meraih penghargaan Dharma Karya Tingkat Madya

The Dharma Karya Award is routinely given every year to institutions/companies that have contributed to new ideas, policies, decisions, development, and discoveries in the ESDM sector. The Subholding Upstream through its Regions and Subsidiaries has successfully won various categories:

- PT Pertamina International EP won the highest Dharma Karya award in the Main category
- PEP Papua Field wins the Middle Level Dharma Karya Award

10 Oktober 2024
October 10, 2024

Warta Ekonomi



Priority (Pertamina *Promoting Anti Bribery*) *Award*

PHE mendapatkan Penghargaan kategori *Innovation of Brivery Prevention Program Subholding* dan *Favorite Booth* dalam penghargaan yang diberikan kepada entitas di lingkungan Pertamina Grup, terkait usaha dalam mengkampanyekan kesadaran anti korupsi dan tindakan pencegahan anti korupsi serta diadakan sekaligus memperingati hari Anti Korupsi Sedunia.

PHE won an award in Innovation of Bribery Prevention Program Subholding and Favorite Booth category in the awards given to entities within the Pertamina Group, related to efforts in campaigning for anti-corruption awareness and anti-corruption prevention measures and held to commemorate World Anti-Corruption Day.

27 November 2024
November 27, 2024

PRIORITY Award



TOP DIGITAL AWARDS 2024

TOP DIGITAL Awards adalah kegiatan penghargaan tahunan di bidang TI, Telco, dan Teknologi Digital, yang diberikan kepada Perusahaan & Instansi Pemerintahan, sejak tahun 2016. Tema TOP Digital Awards tahun 2024 adalah "*Business Solutions, Generative AI & Cyber Security for Excellence Business and Services*". PHE berhasil mendapatkan penghargaan di bidang IT, Telco dan Teknologi Digital di beberapa kriteria yang diberikan yaitu:

- TOP DIGITAL *Implementation* 2024 # Stars 5 diberikan kepada PT Pertamina Hulu Energi
- TOP *Leader on Digital Implementation* 2024 diberikan kepada Whisnu Bahriansyah sebagai Direktur SDM & Penunjang Bisnis
- TOP CIO on Digital Implementation 2024, diberikan kepada Akbar Yudha Putera sebagai VP *Information Technology*

TOP DIGITAL Awards is an annual award event in the field of IT, Telco, and Digital Technology, which is given to Companies & Government Agencies, since 2016. The theme of TOP Digital Awards 2024 is "Business Solutions, Generative AI & Cyber Security for Excellence Business and Services". PHE successfully obtained awards in the field of IT, Telco and Digital Technology in several criteria given, namely:

- TOP DIGITAL Implementation 2024 # Stars 5 awarded to PT Pertamina Hulu Energi
- TOP Leader on Digital Implementation 2024 was awarded to Whisnu Bahriansyah as Director of HC & Corporate Services
- TOP CIO on Digital Implementation 2024, awarded to Akbar Yudha Putera as VP Information Technology

5 Desember 2024
December 5, 2024

TOP Digital Awards 2024



PENGHARGAAN EFISIENSI ENERGI NASIONAL (PEEN) 2024
NATIONAL ENERGY EFFICIENCY AWARD (PEEN) 2024

Penghargaan Efisiensi Energi Nasional (PEEN) merupakan penghargaan tertinggi sektor energi dan sumber daya mineral yang diberikan oleh Kementerian Energi dan Sumber Daya Mineral kepada para pemangku kepentingan yang telah melakukan kinerja yang sangat baik dalam memajukan sektor energi dan sumber daya mineral. PHE Subholding upstream berhasil meraih 29 penghargaan subkategori inovasi khusus pada management energi di industri, juara 2 subkategori manajemen energi di industri pertambangan dan energi yang dimenangkan oleh PT Pertamina Hulu Mahakam, dan juara Umum Penghargaan Kepatuhan Pelaksanaan Manajemen Energi kepada Badan Usaha yang dimenangkan oleh PHR WK Rokan.

The National Energy Efficiency Award (PEEN) is the highest recognition in the energy and mineral resources sector, presented by the Ministry of Energy and Mineral Resources to stakeholders who have demonstrated outstanding performance in advancing the sector. PHE Upstream Subholding achieved notable success by securing 29 awards in the special innovation subcategory for energy management in industry, 2nd place in the energy management in mining and energy industry subcategory awarded to PT Pertamina Hulu Mahakam, and the Overall Winner of the Energy Management Compliance Award for business entities awarded to PHR WK Rokan.

17 Desember 2024
December 17, 2024

Direktorat Jenderal Energi Baru Terbarukan dan Konservasi Energi (EBTKE) Kementerian Energi dan Sumber Daya Mineral (ESDM).

Directorate General of New, Renewable Energy and Energy Conservation (EBTKE), Ministry of Energy and Mineral Resources (ESDM).



PT Pertamina Hulu Energi



02

PENJELASAN DIREKSI
Message from the Board of Directors


PERTAMINA
IWAN-12265258

PERTAMINA
HULU ENERGI

SAMBUTAN PRESIDEN DIREKTUR
MESSAGE FROM THE PRESIDENT DIRECTOR [OJK D.1]



Kami percaya bahwa dengan kepemimpinan yang bertanggung jawab, inovasi yang berkelanjutan, serta komitmen terhadap keberlanjutan, PHE akan terus berkembang dan memberikan dampak positif bagi masyarakat, lingkungan, serta industri energi secara keseluruhan.

We believe that through responsible leadership, continuous innovation, and a strong commitment to sustainability, PHE will continue to grow and deliver positive impacts for society, the environment, and the energy industry as a whole.

CHALID SAID SALIM
Direktur Utama
Chief Executive Officer

Para pemangku kepentingan yang terhormat,

Dalam era transformasi energi global, PT Pertamina Hulu Energi Subholding Upstream (PHE) terus berupaya menjadi pelopor dalam industri hulu migas yang berkelanjutan. Dengan semangat "*Empowering Sustainability, Driving Future Energy*", kami menegaskan komitmen untuk menciptakan nilai jangka panjang melalui operasional yang ramah lingkungan, tanggung jawab sosial yang inklusif, serta tata kelola yang transparan dan akuntabel. Kami percaya bahwa keberlanjutan bukan sekadar tujuan, melainkan fondasi utama dalam setiap keputusan strategis perusahaan.

Laporan Keberlanjutan 2024 ini mencerminkan bagaimana kami menghadapi tantangan industri, memanfaatkan peluang baru, serta mengakselerasi transisi energi menuju masa depan yang lebih hijau. Melalui inovasi dan efisiensi, kami memastikan bahwa bisnis yang kami jalankan tidak hanya berkontribusi pada pertumbuhan ekonomi nasional, tetapi juga memberikan dampak positif bagi lingkungan dan masyarakat. Kami optimis bahwa sinergi antara berbagai pemangku kepentingan akan semakin memperkuat langkah PHE dalam perjalanan keberlanjutan.

Menjawab Tantangan Keberlanjutan dengan Inovasi [OJK D.1.a] [GRI 2-23]

Tahun 2024 merupakan periode yang penuh tantangan dan peluang bagi industri energi, khususnya di sektor hulu migas. Transisi energi global dan peningkatan regulasi lingkungan menuntut perusahaan untuk lebih adaptif dan inovatif dalam menjalankan bisnis. Kami terus berupaya mengurangi emisi karbon melalui efisiensi operasional dan pemanfaatan teknologi rendah karbon, sejalan dengan komitmen Indonesia menuju *Net Zero Emission* 2060.

Selain tantangan lingkungan, ketidakpastian ekonomi global, volatilitas harga minyak, serta perubahan kebutuhan tenaga kerja di industri energi menjadi faktor yang perlu diantisipasi. Kami merespons kondisi ini dengan strategi pengelolaan risiko yang lebih ketat, optimalisasi biaya operasional, serta peningkatan daya saing sumber daya manusia melalui investasi dalam pengembangan keterampilan dan digitalisasi proses bisnis.

Dalam aspek sosial, PHE Subholding Upstream tetap berkomitmen untuk memperkuat hubungan dengan masyarakat sekitar. Kami terus mengembangkan program pemberdayaan yang mendukung kemandirian ekonomi komunitas, serta memastikan implementasi praktik tata kelola perusahaan yang transparan dan akuntabel.

Our valued stakeholders,

In the era of global energy transformation, PT Pertamina Hulu Energi Subholding Upstream (PHE) continues to strive to be a pioneer in the sustainable upstream oil and gas industry. With the spirit of "Empowering Sustainability, Driving Future Energy", we affirm our commitment to creating long-term values through environmentally friendly operations, inclusive social responsibility, and transparent and accountable governance. We believe that sustainability is not just a goal, but the main foundation in every strategic decision of the company.

This Sustainability Report 2024 reflects how we address industrial challenges, seize new opportunities, and accelerate the energy transition towards a greener future. Through innovation and efficiency, we ensure that the business we run not only contributes to national economic growth, but also has a positive impact on the environment and the society. We are optimistic that the synergy between various stakeholders will further strengthen PHE's steps in the sustainability journey.

Answering Sustainability Challenges with Innovation [OJK D.1.a] [GRI 2-23]

2024 is a period full of challenges and opportunities for the energy industry, especially in the upstream oil and gas sector. The global energy transition and increasing environmental regulations demand the company to be more adaptive and innovative in running its businesses. We continue to strive to reduce carbon emissions through operational efficiency and the use of low-carbon technology, in line with the commitment of Indonesia to Net Zero Emission 2060.

In addition to environmental challenges, global economic uncertainty, oil price volatility, and changes in workforce needs in the energy industry are factors that need to be anticipated. We respond to these conditions with a tighter risk management strategy, optimization of operational costs, and increase of competitiveness of human resources through investment in skills development and digitalization of business processes.

In social aspects, PHE Subholding Upstream remains committed to strengthening relationships with the surrounding community. We continue to develop empowerment programs that support community economic independence, as well as ensuring the implementation of transparent and accountable corporate governance practices.

Strategi Keberlanjutan: Pilar Utama Menuju Masa Depan [OJK D.1.b, D.1.c]

Sebagai bagian dari transformasi berkelanjutan, kami mengembangkan strategi keberlanjutan yang berlandaskan tiga pilar utama: perusahaan ramah lingkungan, tanggung jawab sosial, dan tata kelola perusahaan yang baik. Untuk mewujudkan strategi ini, PHE Subholding Upstream telah menetapkan sebelas fokus keberlanjutan yang sejalan dengan komitmen perusahaan terhadap masa depan energi yang lebih hijau dan berkelanjutan.

Pada pilar lingkungan, PHE Subholding Upstream fokus pada 5 (lima) isu keberlanjutan yaitu menangani dampak perubahan iklim, mengurangi jejak lingkungan, melindungi kenaekaragaman hayati, pengelolaan air, dan pengelolaan limbah. Dalam upaya menghadapi tantangan perubahan iklim, PHE Subholding Upstream berkomitmen untuk mengurangi emisi gas rumah kaca dengan mengoptimalkan efisiensi energi serta menerapkan teknologi rendah karbon seperti *Carbon Capture Storage* (CCS) dan *Carbon Capture Utilization and Storage* (CCUS). Kami juga terus melakukan efisiensi energi dan meningkatkan penggunaan energi ramah lingkungan. Sejalan dengan itu, kami juga meningkatkan pengelolaan air dengan memastikan pemanfaatan air yang lebih efisien serta mengelola limbah cair secara bertanggung jawab guna mengurangi dampak lingkungan. Tidak hanya itu, pengelolaan limbah secara menyeluruh menjadi bagian penting dalam strategi kami dengan menerapkan prinsip ekonomi sirkular yang mendorong penggunaan kembali dan daur ulang limbah agar dapat memberikan nilai tambah bagi operasional perusahaan. PHE Subholding Upstream juga berkomitmen terhadap perlindungan keanekaragaman hayati dengan menjalankan program konservasi ekosistem di sekitar wilayah operasi. Upaya ini diwujudkan melalui penghijauan serta perlindungan habitat alami guna memastikan keberlanjutan ekosistem yang berdampingan dengan kegiatan operasional kami.

Pada pilar sosial, kami terus meningkatkan kesehatan dan keselamatan kerja dengan memastikan bahwa lingkungan kerja yang aman dan sehat menjadi prioritas utama. Implementasi standar HSSE yang ketat serta budaya keselamatan yang kuat menjadi bagian dari langkah kami dalam menjaga kesejahteraan tenaga kerja. Selain itu, PHE Subholding Upstream memandang pengembangan sumber daya manusia sebagai elemen penting dalam memastikan keberlanjutan jangka panjang. Oleh karena itu, kami terus berinvestasi dalam program pelatihan dan pengembangan karyawan guna meningkatkan kompetensi mereka di tengah dinamika industri energi yang terus berkembang. Sebagai bagian dari tanggung jawab sosial perusahaan, PHE Subholding Upstream juga memastikan penghormatan terhadap hak asasi manusia dalam seluruh aspek operasional. Kami menerapkan kebijakan keberagaman dan inklusivitas, serta terus memperkuat mekanisme perlindungan hak-hak pekerja dan komunitas yang terdampak oleh kegiatan usaha kami. Kami juga aktif dalam pemberdayaan

Sustainability Strategy: Key Pillars Towards the Future [OJK D.1.b, D.1.c]

As a part of our ongoing transformation, we have developed a sustainability strategy based on three main pillars: green business, social responsibility, and good corporate governance. To realize this strategy, PHE Subholding Upstream has established eleven sustainability focuses that align with the commitment of the company to a greener and more sustainable energy future.

On the environmental pillar, PHE Subholding Upstream focus on 5 (five) sustainability issues, namely addressing the impacts of climate change, reducing environmental footprints, protecting biodiversity, water management, and waste management. In an effort to face the challenges of climate change, PHE Subholding Upstream committed to reducing greenhouse gas emissions by optimizing energy efficiency and implementing low-carbon technologies such as Carbon Capture Storage (CCS) and Carbon Capture Utilization and Storage (CCUS). We also continue to carry out energy efficiency and increase the use of environmentally friendly energy. In line with that, we also improve water management by ensuring more efficient water use and managing liquid waste responsibly to reduce environmental impacts. In addition, comprehensive waste management is an important part of our strategy by implementing the principle of a circular economy that encourages the reuse and recycling of waste in order to provide added value for the company's operations. PHE Subholding Upstream is also committed to protecting biodiversity by implementing ecosystem conservation programs around the areas of operation. This effort is realized through reforestation and protection of natural habitats to ensure the sustainability of the ecosystem adjacent to our operational activities.

On the social pillar, we continue to improve occupational health and safety by ensuring that a safe and healthy working environment is a top priority. Implementing strict HSSE standards and a strong safety culture is a part of our steps in maintaining the welfare of our workforce. In addition, PHE Subholding Upstream views human resource development as a critical element in ensuring long-term sustainability. Therefore, we continue to invest in employee training and development programs to improve their competencies amidst the dynamics of the ever-evolving energy industry. As a part of our corporate social responsibility, PHE Subholding Upstream also ensures respect for human rights in all aspects of our operations. We implement a diversity and inclusiveness policy, and continue to strengthen mechanisms to protect the rights of workers and communities affected by our business activities. We are also active in community empowerment by supporting initiatives aimed at improving the economic welfare of the surrounding community. This commitment is realized through the

masyarakat dengan mendukung inisiatif yang bertujuan untuk meningkatkan kesejahteraan ekonomi masyarakat sekitar. Komitmen ini diwujudkan melalui program desa energi mandiri serta pengembangan usaha mikro, kecil, dan menengah (UMKM) yang membantu menciptakan peluang ekonomi baru bagi komunitas lokal.

Dalam pilar tata kelola, PHE Subholding Upstream menegaskan pentingnya etika dan kepatuhan sebagai landasan utama dalam operasional perusahaan. Kami memastikan bahwa setiap proses bisnis dijalankan dengan standar integritas tertinggi serta kepatuhan terhadap peraturan dan regulasi yang berlaku. Untuk memperkuat ketahanan bisnis, kami terus mengembangkan sistem manajemen risiko yang lebih baik guna mengantisipasi berbagai tantangan yang dapat memengaruhi keberlanjutan perusahaan. Digitalisasi dan teknologi juga menjadi faktor kunci dalam meningkatkan efisiensi dan transparansi operasional kami. Melalui penerapan solusi berbasis teknologi, PHE Subholding Upstream berupaya untuk meningkatkan daya saing sekaligus mendukung pencapaian target keberlanjutan perusahaan.

Mencapai Keberlanjutan Melalui Kinerja dan Inovasi

Sepanjang tahun 2024, PHE Subholding Upstream mencatat berbagai pencapaian dalam aspek ekonomi, lingkungan, dan sosial. Kami berhasil meningkatkan efisiensi energi dan mengurangi jejak karbon, sejalan dengan target keberlanjutan perusahaan. Program Desa Energi Berdikari (DEB) juga terus diperluas untuk mendukung transisi energi berbasis komunitas.

Secara operasional dan finansial PHE Subholding Upstream mencapai kinerja yang positif pada tahun 2024. Dari sisi produksi, realisasi produksi migas tahun 2024 mencapai 1.044,60 MBOEPD atau 94,55% dari RKAP sebesar 1.104,78 MBOEPD. Untuk realisasi *lifting migas*, realisasi pada tahun 2024 tercatat sebesar 900,45 MBOEPD, atau 96,31% dari RKAP yang mencapai 934,95 MBOEPD. Secara keuangan perolehan pendapatan usaha mencapai USD14.330,34 juta, sementara beban pokok penjualan mencapai USD9.330,71 juta. Laba bersih yang dihasilkan pada tahun 2024 adalah sebesar USD3.121,03 juta, meningkat 14,51% dibandingkan tahun sebelumnya. Secara ekonomi, nilai ekonomi yang dihasilkan Perseroan adalah sebesar USD14.892,86 juta dan nilai ekonomi yang didistribusikan adalah sebesar USD13.851,58 juta.

Dari aspek lingkungan, PHE Subholding Upstream terus menunjukkan komitmennya dalam mengurangi emisi karbon dengan implementasi teknologi CCS/CCUS yang semakin luas. Pada tahun 2024, emisi yang dihasilkan mencapai 14,94 juta TonCO_2eq, dengan intensitas emisi sebesar 0,047 TonCO_2eq/BOE. Emisi yang dihasilkan tersebut menurun 1,186 juta TonCO_2eq terhadap skenario *business as usual* (BAU). Adapun dalam penggunaan energi, kami menggunakan energi tidak

independent energy village program and the development of Micro, Small and Medium Enterprises (MSMEs) that help create new economic opportunities for local communities.

On the governance pillar, PHE Subholding Upstream emphasizes the importance of ethics and compliance as the main foundation in operations of the company. We ensure that every business process is carried out with the highest standards of integrity and compliance with applicable rules and regulations. To strengthen business resilience, we continue to develop a better risk management system to anticipate various challenges that can affect the company's sustainability. Digitalization and technology are also key factors in improving the efficiency and transparency of our operations. Through the implementation of technology-based solutions, PHE Subholding Upstream strives to increase its competitiveness while supporting the achievement of the company's sustainability targets.

Achieving Sustainability Through Performance and Innovation

Throughout 2024, PHE Subholding Upstream recorded various achievements in economic, environmental, and social aspects. We have succeeded in increasing energy efficiency and reducing carbon footprint, in line with the company's sustainability targets. The Independent Energy Village (DEB) program also continues to be expanded to support community-based energy transition.

Operationally and financially PHE Subholding Upstream achieved positive performance in 2024. From the aspect of production, the realization of oil and gas production in 2024 reached 1,044.60 MBOEPD or 94.55% of RKAP of 1,104.78 MBOEPD. For the realization of oil and gas lifting, the realization in 2024 was recorded at 900.45 MBOEPD, or 96.31% of RKAP achieving 934.95 MBOEPD. Financially, the business revenue reached USD14,330.34 million, while the cost of goods sold reached USD9,330.71 million. The net income generated in 2024 was USD3,121.03 million, increasing by 14.51% compared to the previous year. Economically, the economic value generated by the Company was USD14,892.86 million and the economic value distributed was USD13,851.58 million.

From the aspect of environment, PHE Subholding Upstream continues to demonstrate its commitment to reducing carbon emissions with the wider implementation of CCS/CCUS technology. In 2024, the emissions produced reached 14.94 million TonCO_2eq, with an emission intensity of 0.047 TonCO_2eq/BOE. The resulting emissions decreased by 1.186 million TonCO_2eq against the business as usual (BAU) scenario. As for energy use, we used 180.62 million GJ of non-

terbarukan sebanyak 180,62 juta GJ dan energi terbarukan sebanyak 12,42 juta GJ, dengan tingkat intensitas energi sebesar 0,53 GJ/BOE. Pemanfaatan energi terbarukan dalam operasional meningkat menjadi 6,43% dari total konsumsi energi, dengan penggunaan panel surya dan *biogas* yang lebih luas di fasilitas produksi dan komunitas sekitar.

Dalam aspek sosial, Perseroan terus memperkuat pengelolaan Sumber Daya Manusia serta menciptakan lingkungan kerja yang lebih inklusif, aman, dan berdaya saing, serta pemberdayaan masyarakat lokal. Sepanjang tahun 2024, PHE Subholding Upstream menegaskan komitmennya terhadap prinsip keberagaman, kesetaraan, dan penghormatan terhadap Hak Asasi Manusia (HAM) dalam pengelolaan tenaga kerja. Jumlah karyawan yang bergabung di PHE Subholding Upstream terus bertumbuh, dengan representasi karyawan wanita yang mencapai 13,56% dari total tenaga kerja sebanyak 14.008 orang. Kami juga terus berinvestasi dalam pengembangan kapasitas karyawan dengan meningkatkan jumlah jam pelatihan rata-rata per karyawan, menjadi sebesar 34,77 jam pelatihan per karyawan, untuk memastikan kesiapan tenaga kerja dalam menghadapi dinamika industri yang semakin kompleks.

Dalam upaya menjaga lingkungan kerja yang aman dan produktif, kami terus meningkatkan standar keselamatan dan kesehatan kerja melalui penerapan sistem HSSE yang lebih ketat. Sepanjang tahun 2024, jumlah jam kerja aman mencapai 43 juta jam, dengan jumlah insiden yang berhasil ditekan secara signifikan dibandingkan tahun sebelumnya. Kami juga terus memperkuat mitigasi risiko dalam keselamatan proses dengan melakukan langkah-langkah preventif terhadap insiden yang masuk dalam kategori Tier-1, Tier-2, dan Tier-3.

Selain memastikan kesejahteraan tenaga kerja, PHE Subholding Upstream juga berkomitmen untuk terus memberikan kontribusi nyata kepada masyarakat melalui berbagai program pemberdayaan. Pada tahun 2024, lebih dari 781 program pemberdayaan masyarakat berhasil dijalankan di berbagai wilayah operasi PHE, dan 12 program merupakan program unggulan. Program unggulan yang dijalankan menyasar lebih dari 400 orang penerima manfaat, telah mengurangi emisi karbon hingga 23.777 ribu TonCO_2eq per tahun dan Inisiatif ini juga berkontribusi pada ekonomi masyarakat dengan meningkatkan pendapatan kelompok lebih dari Rp920 juta/tahun dan total penghematan biaya kelompok lebih dari Rp74,59 juta/tahun. Sebagai bukti atas kinerja lingkungan dan sosial yang terus membaik, PHE berhasil meraih 12 penghargaan PROPER Emas pada tahun 2024, meningkat dibandingkan capaian tahun sebelumnya.

Dari sisi tata kelola, digitalisasi sistem manajemen risiko dan kepatuhan menjadi fokus utama kami di tahun ini. Kami berhasil meningkatkan efisiensi operasional dengan mengadopsi teknologi dan memperkuat transparansi melalui pelaporan ESG yang lebih terintegrasi dengan standar global.

renewable energy and 12.42 million GJ of renewable energy, with an energy intensity level of 0.53 GJ/BOE. The utilization of renewable energy in operations has increased to 6.43% of total energy consumption, with wider use of solar panels and biogas in production facilities and surrounding communities.

In the social aspect, the Company continues to strengthen the management of Human Resources and create a more inclusive, safe and competitive work environment, as well as empower local communities. Throughout 2024, PHE Subholding Upstream has affirmed its commitment to the principles of diversity, equality, and respect for Human Rights (HAM) in workforce management. The number of employees who joined PHE Subholding Upstream continues to grow, with female employee representation reaching 13.56% of the total workforce which is 14,008 people. We also continue to invest in employee capacity development by increasing the average number of training hours per employee to 34.77 training hours per employee, to ensure workforce readiness in facing increasingly complex industry dynamics.

In an effort to maintain a safe and productive work environment, we continue to improve occupational safety and health standards through the implementation of a stricter HSSE system. Throughout 2024, the number of safe working hours reach 43 million hours, with the number of incidents significantly reduced compared to the previous year. We also continue to strengthen risk mitigation in process safety by taking preventive measures against incidents that fall into the Tier-1, Tier-2, and Tier-3 categories.

Apart from ensuring the welfare of the workforce, PHE Subholding Upstream is also committed to continuously giving real contributions to the society through various empowerment programs. By 2024, more than 781 Community empowerment programs have been successfully implemented in various areas of operation of PHE, and 12 programs are flagship programs. The flagship programs implemented targeted more than 400 beneficiaries, has reduce carbon emissions by up to 23,777 thousand TonCO_2eq per year and this initiative has also contributed to the community's economy by increasing the group income by more than Rp920 million/year and total group cost savings by more than Rp74.59 million/year. As evidence of its continuously improving environmental and social performance, PHE has succeeded in achieving 12 Gold PROPER awards in 2024, an increase compared to the previous year's achievement.

From the aspect of governance, digitalization of risk management and compliance systems is our main focus this year. We have succeeded in increasing operational efficiency by adopting technology and strengthening transparency through ESG reporting that is more integrated with global standards.



Pada tahun 2024, kami telah mendapatkan rating ESG BBB dari lembaga pemeringkat internasional MSCI ESG Research UK Limited. Nilai rating BBB menunjukkan bahwa Perusahaan memiliki rekam jejak yang beragam atau baik dalam mengelola risiko dan peluang ESG.

Meningkatkan Kolaborasi untuk Keberlanjutan di Masa Mendatang

Maju ke depan, kami dihadapkan pada berbagai tantangan sekaligus peluang baru dalam menjalankan bisnis yang berkelanjutan. PHE tetap berkomitmen untuk terus meningkatkan kinerja keberlanjutan dengan mengedepankan inovasi dan efisiensi dalam setiap aspek operasional. Kami bertekad untuk memainkan peran utama dalam perjalanan transisi energi ini dengan terus berinvestasi dalam pengembangan energi terbarukan serta penerapan teknologi ramah lingkungan guna mewujudkan industri energi yang lebih berkelanjutan.

Kami memahami bahwa transisi menuju energi bersih adalah proses yang panjang dan kompleks, yang membutuhkan kolaborasi erat dengan seluruh pemangku kepentingan. Oleh karena itu, kami terus membuka ruang kolaborasi dengan mitra strategis, pemerintah, dan komunitas global untuk mempercepat pencapaian target keberlanjutan.

Kami percaya bahwa dengan kepemimpinan yang bertanggung jawab, inovasi yang berkelanjutan, serta komitmen terhadap keberlanjutan, PHE akan terus berkembang dan memberikan dampak positif bagi masyarakat, lingkungan, serta industri energi secara keseluruhan.

In 2024, we have obtained an ESG BBB rating from international rating agency MSCI ESG Research UK Limited. The BBB rating indicates that the Company has a mixed or good track record in managing ESG risks and opportunities.

Enhancing Collaboration for Future Sustainability

Moving forward, we are faced with various challenges as well as new opportunities in running a sustainable business. PHE remains committed to continuously improving sustainability performance by prioritizing innovation and efficiency in every aspect of operations. We are determined to play a leading role in this energy transition journey by continuing to invest in the development of renewable energy and the application of environmentally friendly technologies to realize a more sustainable energy industry.

We understand that the transition to clean energy is a long and complex process, requiring close collaboration with all stakeholders. Therefore, we continue to open up collaboration with strategic partners, governments, and the global community to accelerate the achievement of sustainability targets.

We believe that with responsible leadership, continuous innovation, and a commitment to sustainability, PHE will continue to grow and give positive impacts to the society, the environment, and the energy industry as a whole.

Apresiasi dan Harapan ke Depan

Atas pencapaian kinerja selama tahun 2024, kami menyampaikan rasa hormat dan terima kasih kepada segenap jajaran Dewan Komisaris dan pemegang saham yang telah memberikan kepercayaan kepada kami untuk menjalankan pengelolaan Perseroan. Kepada seluruh pelanggan, mitra, dan masyarakat sekitar wilayah operasi PHE, kami mengucapkan terima kasih pula atas kepercayaannya selama ini. Apresiasi secara khusus dan setinggi-tingginya kami sampaikan kepada seluruh insan PHE yang telah bekerja keras dan optimal dalam pencapaian kinerja ini, menunjukkan dedikasi dan loyalitas yang tinggi dalam pencapaian target dan implementasi strategi yang telah dicanangkan. Kami berharap pencapaian ini dapat menjadi pendorong untuk terus dilakukannya perbaikan-perbaikan dan pembenahan untuk mencapai keberlanjutan Perseroan. Kami berharap, dukungan dan kerjasama dari seluruh pemangku kepentingan tetap berlanjut pada tahun-tahun mendatang karena hal itu merupakan modal penting bagi Perseroan agar terus maju dan berkembang. Kami optimis bahwa dengan semangat inovasi dan kolaborasi, kita dapat terus melangkah maju menuju masa depan yang lebih berkelanjutan.

Appreciation and Hope for the Future

For the achievement of performance during 2024, we express our respect and gratitude to all members of the Board of Commissioners and the shareholders who have given us their trust to run the management of the Company. To all customers, partners, and communities around areas of operation of PHE, we also express our gratitude for their trust so far. Our special and highest appreciation goes to all employees of PHE who have worked hard and optimally in achieving this performance, demonstrating high dedication and loyalty in achieving targets and implementing the strategies that have been planned. We hope that this achievement be a driving force for continuous improvements and enhancements to achieve the sustainability of the Company. We hope that the support and cooperation of all stakeholders continue in the coming years because these constitute an important capital for the Company to continue to advance and develop. We are optimistic that with the spirit of innovation and collaboration, we can continue to move forward towards a more sustainable future.

Jakarta, 26 Mei 2025
Jakarta, May 26, 2025
Atas nama Direksi
On behalf of the Board of Directors

Chalid Said Salim
Direktur Utama
Chief Executive Officer



PT Pertamina Hulu Energi

FOTO DEWAN KOMISARIS
BOARD OF COMMISSIONERS PHOTOS



Nanang Untung
Komisaris
Commissioner

Paiman Raharjo
Komisaris
Commissioner

Rinaldi Firmansyah
Komisaris Utama/Komisaris Independen
President Commissioner/Independent Commissioner



Abdi Mustakim
Komisaris
Commissioner

Tumpak Simanjuntak
Komisaris Independen
Independent Commissioner

Tutuka Ariadji
Komisaris
Commissioner

PERTAMINA
HULU ENERGI

FOTO DIREKSI
BOARD OF DIRECTORS PHOTOS



Whisnu Bahriansyah
Direktur SDM & Penunjang Bisnis
Director of HC & Corporate Services

Mery Luciawaty
Direktur Management Risiko
Director of Risk Management

Dannif Danusaputro
Direktur Keuangan & Investasi
Director of Finance & Investment

Chalid Said Salim
Direktur Utama
Chief Executive Officer



Muharram J. Panguriseng
Direktur Eksplorasi
Director of Exploration

Rachmat Hidajat
Direktur Perencanaan Strategis & Pengembangan Bisnis
Director of Strategic Planning & Business Development

Awang Lazuardi
Direktur Pengembangan & Produksi
Director of Development & Production

PERNYATAAN DEWAN KOMISARIS TENTANG TANGGUNG JAWAB ATAS LAPORAN KEBERLANJUTAN 2024 PT PERTAMINA HULU ENERGI

STATEMENT OF THE BOARD OF COMMISSIONERS ON ACCOUNTABILITY OF PT PERTAMINA HULU ENERGI 2024 SUSTAINABILITY REPORT

Kami yang bertanda tangan di bawah ini, menyatakan bahwa kami telah melakukan tugas pengawasan dan memberikan nasihat sesuai ketentuan perundang-undangan kepada Direksi sesuai tugas kami, dengan tujuan agar semua informasi dalam Laporan Keberlanjutan PT Pertamina Hulu Energi telah disampaikan secara lengkap. Dengan demikian, isi Laporan Keberlanjutan dapat dipertanggungjawabkan.

Demikian pernyataan ini dibuat dengan sebenarnya.

Jakarta, 26 Mei 2025

We, the undersigned, hereby certify that we have diligently carried out our supervisory duties and provided advice to the Board of Directors in accordance with the statutory provisions governing our duties. Our aim is to ensure that all information in the Sustainability Report of PT Pertamina Hulu Energi has been conveyed in its entirety. Consequently, the contents of the Sustainability Report can be accounted for.

This statement has been made truthfully.

Jakarta, May 26, 2025

Rinaldi Firmansyah
Komisaris Utama/Komisaris Independen
President Commissioner/Independent Commissioner
15 Mei 2023 - 15 Mei 2026
May 15, 2023 - May 15, 2026

Tumpak Simanjuntak
Komisaris Independen
Independent Commissioner
15 Mei 2023 - 15 Mei 2026
May 15, 2023 - May 15, 2026

Tutuka Ariadji
Komisaris
Commissioner
15 Februari 2024 - 15 Februari 2027
February 15, 2024 - February 15, 2027

Nanang Untung
Komisaris
Commissioner
15 Mei 2023 - 15 Mei 2026
May 15, 2023 - May 15, 2026

Abdi Mustakim
Komisaris
Commissioner
19 September 2023 - 19 September 2026
September 19, 2023 - September 19, 2026

Paiman Raharjo
Komisaris
Commissioner
14 November 2023 - 14 November 2026
November 14, 2023 - November 14, 2026

PERNYATAAN DIREKSI TENTANG TANGGUNG JAWAB ATAS LAPORAN KEBERLANJUTAN 2024 PT PERTAMINA HULU ENERGI

STATEMENT OF THE BOARD OF DIRECTORS ON ACCOUNTABILITY OF PT PERTAMINA HULU ENERGI 2024 SUSTAINABILITY REPORT

Sesuai prinsip tata kelola perusahaan yang baik dan Peraturan yang berlaku di Indonesia, PT Pertamina Hulu Energi menerbitkan Laporan Keberlanjutan 2024. Laporan menyajikan informasi Perusahaan mengenai kinerja keberlanjutan, penerapan tata kelola, pelaksanaan tanggung jawab sosial serta informasi lain yang relevan dan signifikan bagi pemangku kepentingan. Kami, segenap Direksi PT Pertamina Hulu Energi yang bertanda tangan di bawah ini menyatakan bertanggung jawab penuh atas kebenaran isi Laporan Keberlanjutan 2024 PT Pertamina Hulu Energi.

Demikian pernyataan ini dibuat dengan sebenarnya.

Jakarta, 26 Mei 2025

In accordance with good corporate governance principles and applicable regulations in Indonesia, PT Pertamina Hulu Energi publishes the 2024 Sustainability Report. The report presents the Company's information on its sustainability performance, the implementation of good corporate governance, corporate social responsibility, as well as other relevant and significant information to our stakeholders. We, the entire Board of Directors of PT Pertamina Hulu Energi who have signed below, hereby state our full responsibility for the validity of the content of PT Pertamina Hulu Energi 2024 Sustainability Report.

This statement has been made truthfully.

Jakarta, May 26, 2025

Chalid Said Salim
Direktur Utama
Chief Executive Officer
20 Februari 2024 - 20 Februari 2027
February 20, 2024 - February 20, 2027

Awang Lazuardi
Direktur Pengembangan & Produksi
Director of Development & Production
27 September 2022 - 27 September 2025
September 27, 2022 - September 27, 2025

Muharram J. Panguriseng
Direktur Eksplorasi
Director of Exploration
27 September 2022 - 27 September 2025
September 27, 2022 - September 27, 2025

Whisnu Bahriansyah
Direktur SDM & Penunjang Bisnis
Director of HC & Corporate Services
20 Februari 2024 - 20 Februari 2027
February 20, 2024 - February 20, 2027

Dannif Danusaputro
Direktur Keuangan & Investasi
Director of Finance & Investment
20 Februari 2024 - 20 Februari 2027
February 20, 2024 - February 20, 2027

Rachmat Hidajat
Direktur Perencanaan Strategis & Pengembangan Bisnis
Director of Strategic Planning & Business Development
15 Mei 2024 - 15 Mei 2027
May 15, 2024 - May 15, 2027

Mery Luciawaty
Direktur Management Risiko
Director of Risk Management
15 Mei 2024 - 15 Mei 2027
May 15, 2024 - May 15, 2027



03

TENTANG LAPORAN
About This Report



Laporan Keberlanjutan ini menyajikan kinerja Perusahaan dalam aspek ekonomi, sosial, dan lingkungan. Melalui laporan ini, Perusahaan memfokuskan pada pengungkapan dampak dari seluruh aktivitas yang dijalankan, sehingga para pemangku kepentingan dapat memahami kebijakan dan pendekatan yang diterapkan untuk mengelola dampak tersebut. Selain itu, laporan ini memungkinkan pemangku kepentingan untuk mengevaluasi sejauh mana Perusahaan berhasil mengintegrasikan prinsip pembangunan berkelanjutan dalam mendukung kesuksesan jangka panjangnya.

This Sustainability Report presents the Company's performance in economic, social and environmental aspects. Through this report, the Company focuses on disclosing the impacts of all activities performed, so that stakeholders can understand the policies and approaches implemented to manage these impacts. In addition, this report allows stakeholders to evaluate the extent to which the Company has succeeded in integrating sustainable development principles in supporting its long-term success.

ACUAN PENYUSUNAN LAPORAN
REFERENCES FOR REPORT PREPARATION

Laporan Keberlanjutan ini mengacu pada beberapa aturan, standard, dan panduan untuk memberikan kerangka kerja sistematis dalam menyampaikan kinerja keberlanjutan PHE, termasuk aspek ekonomi, lingkungan, dan sosial dan memastikan bahwa informasi yang disampaikan relevan bagi pemangku kepentingan serta mencakup elemen-elemen kritis bagi industri minyak dan gas. Acuan penyusunan Laporan Keberlanjutan tahun 2024 adalah sebagai berikut:

This Sustainability Report refers to several rules, standards, and guidelines to provide a systematic framework in delivering PHE's sustainability performance, including economic, environmental, and social aspects and ensuring that the information presented is relevant to the stakeholders and covers critical elements for the oil and gas industry. The references for preparing the Sustainability Report 2024 are as follows:

1. Peraturan Otoritas Jasa Keuangan Nomor 51/POJK.03/2017 tentang Penerapan Keuangan Berkelanjutan bagi Lembaga Jasa Keuangan, Emiten, dan Perusahaan Publik dan Pedoman Teknis Penyusunan Laporan Keberlanjutan bagi Emitan dan Perusahaan Publik yang dituangkan dalam Surat Edaran Otoritas Jasa Keuangan (SEOJK) No.16/SEOJK.04/2021 tentang Bentuk dan Isi Laporan Tahunan Emiten Atau Perusahaan Publik.

   Financial Services Authority Regulation Number 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies, and the Technical Guidelines for the Preparation of Sustainability Reports for Issuers and Public Companies as stipulated in the Financial Services Authority Circular Letter (SEOJK) Number 16/SEOJK.04/2021 concerning the Form and Content of the Annual Report of Issuers or Public Companies.

2. Standart Global Reporting Initiative (GRI) 2021: **'In Accordance to'**
   In accordance to the 2021 Global Reporting Initiative (GRI) Standards

3. Oil and Gas Sector Specific Disclosure (OGSS) (2021)

4. Sustainability Accounting Standard Board (SASB) Oil & Gas (Exploration & Production) Standard

5. The Oil and Gas Industry Guidance on Voluntary Sustainability Reporting 4th edition 2020-International Petroleum Industry Environmental Conservation Association (IPIECA), American Petroleum Institute (API), and the International Association of Oil & Gas Producers (IOGP)

6. Panduan *Task Force on Climate-related Financial Disclosures* (TCFD)
   The Task Force on Climate-related Financial Disclosures (TCFD) guidelines

Untuk memberikan kemudahan pembaca dalam menemukan informasi yang sesuai dengan kedua pedoman, kami mencantumkan nomor atau angka pengungkapan pedoman di belakang kalimat atau alinea yang sesuai. Data lengkap kecocokan informasi Perseroan dengan SEOJK No.16/SEOJK.04/2021, Indeks Standar GRI, SDGs disajikan di bagian belakang laporan ini, dimulai pada halaman 336.

To make it easier for readers to find information that complies with both guidelines, we include guidelines disclosure numbers or figures behind the corresponding sentence or paragraph. Complete data on the Company's information compliance with SEOJK No.16/SEOJK.04/2021, GRI Standard Index, SDGs are presented at the back of this report, starting on page 336.

Kerangka *Task Force on Climate-related Financial Disclosures* (TCFD)

Perusahaan masih menggunakan kerangka pengungkapan TCFD dikarenakan kerangka ini kosisten dengan kerangka Pernyataan Standar Pelaporan Keberlanjutan (PSPK) yang belum berlaku efektif di Indonesia. Dewan Standar Keberlanjutan Indonesia telah mengeluarkan PSPK 1 dan PSPK 2 sebagai panduan dalam menyusun Laporan Keberlanjutan yang mengacu pada *International Financial Reporting Standard* (IFRS) *Sustainability* Disclosure S1 dan S2. Namun mengingat standar tersebut belum berlaku efektif di Indonesia, Perusahaan menggunakan kerangka TCFD yang memiliki kerangka yang sama dengan PSPK 1 dan 2 khususnya dalam melaporkan mengenai isu perubahan iklim. Kerangka TCFD terdiri dari empat pilar utama, yaitu:

The Task Force on Climate-related Financial Disclosures (TCFD) Framework

The Company continues to adopt the TCFD disclosure framework as it remains aligned with the structure of the Sustainability Reporting Standards (PSPK), which have not yet come into effect in Indonesia. The Indonesian Sustainability Standards Board has issued PSPK 1 and PSPK 2 as guidance for preparing Sustainability Reports, referring to the International Financial Reporting Standards (IFRS) Sustainability Disclosure Standards S1 and S2. However, given that these standards are not yet effective in Indonesia, the Company applies the TCFD framework, which shares a consistent structure with PSPK 1 and 2, particularly in disclosing climate-related issues. The TCFD framework consists of four key pillars, namely:



1 GOVERNANCE:
TATA KELOLA:

mengungkap bagaimana Perusahaan mengelola tanggung jawab atas risiko dan peluang terkait keberlanjutan dan perubahan iklim, termasuk peran direksi dan manajemen dalam proses pengambilan keputusan.
discloses how the Company manages its responsibilities for risks and opportunities related to sustainability and climate change, including the role of the board of directors and the management in the decision-making process.

2 STRATEGY:
STRATEGI:

menyampaikan bagaimana risiko dan peluang keberlanjutan dan perubahan iklim dapat memengaruhi strategi bisnis, rencana operasional, dan posisi keuangan perusahaan, baik dalam jangka pendek, menengah, maupun panjang.
conveys how sustainability and climate change risks and opportunities can impact the company's business strategy, operational plan and financial position, whether in the short, medium, or long term.

3 RISK MANAGEMENT:
MANAJEMEN RISIKO:

menjelaskan proses identifikasi, penilaian, dan mitigasi risiko terkait keberlanjutan dan perubahan iklim yang dapat memengaruhi operasional Perusahaan.
describes the process of identifying, assessing, and mitigating risks related to sustainability and climate change that may impact the Company's operations.

4 METRICS AND TARGETS:
METRIK DAN TARGET:

kuantitatif dan kualitatif terkait keberlanjutan dan dampak iklim, seperti emisi gas rumah kaca (GRK), serta target yang ditetapkan untuk mengelola risiko iklim dan mencapai tujuan keberlanjutan.
provides quantitative and qualitative information on sustainability and climate impacts, such as greenhouse gas (GHG) emissions, as well as targets set to manage climate risks and achieve sustainability goals.

PERIODE DAN SIKLUS LAPORAN [GRI 2-3]

Laporan Keberlanjutan ini mencakup periode pelaporan dari 1 Januari hingga 31 Desember 2024. Laporan periode sebelumnya diterbitkan pada Mei 2024. Penyusunan laporan dilakukan secara tahunan sebagai bagian dari komitmen Perusahaan untuk menyediakan informasi yang transparan dan akurat terkait kinerja keberlanjutan pada aspek ekonomi, sosial, dan lingkungan. Siklus pelaporan tahunan ini memungkinkan Perusahaan untuk mengevaluasi pencapaian, mengidentifikasi area perbaikan, serta menyusun strategi keberlanjutan yang lebih efektif dalam mendukung visi jangka panjang.

Dalam laporan ini, data dan informasi yang disajikan mencerminkan kegiatan operasional dan inisiatif keberlanjutan yang dilaksanakan di seluruh wilayah operasional Perusahaan. Perusahaan memastikan bahwa setiap pembaruan dan pengungkapan informasi telah sesuai dengan standar pelaporan yang diacu, sehingga para pemangku kepentingan dapat memahami perkembangan dan kontribusi Perusahaan dalam mendukung pembangunan berkelanjutan.

Entitas yang Dicakup dalam Laporan Keberlanjutan [GRI 2-2]

Informasi dalam Laporan Keberlanjutan ini mengungkap kegiatan tanggung jawab sosial dan lingkungan serta dampak ekonomi Perseroan yang mencakup informasi kinerja keberlanjutan dari semua wilayah kerja dan Anak Perusahaan, kecuali disebutkan berbeda. Hingga tahun 2024 PHE memiliki 3 (tiga) Anak Perusahaan yaitu PT Elnusa Tbk., PT Pertamina Drilling and Services, dan PT Badak NGL.

Pernyataan Kembali [GRI 2-4]

Terdapat penyajian ulang informasi dari Laporan Keberlanjutan tahun sebelumnya sebagai berikut:

1. Informasi jumlah konsumsi energi tak terbarukan pada tahun 2022 dari sejumlah 167.742,51 TJ menjadi 197.333,07 TJ dikarenakan perbaikan metodologi perhitungan mengacu pada pedoman IPIECA CCE-6 yaitu berdasarkan volume bahan bakar dan *heating value*.
2. Informasi jumlah konsumsi energi tak terbarukan pada tahun 2023 dari sejumlah 157.355,15 TJ menjadi 189.216,17 TJ dikarenakan perbaikan metodologi perhitungan mengacu pada pedoman IPIECA CCE-6 yaitu berdasarkan volume bahan bakar dan *heating value*.
3. Informasi jumlah konsumsi energi terbarukan pada tahun 2022 dari sejumlah 4.590,12 TJ menjadi 9.215,75 GJ dikarenakan perbaikan metodologi perhitungan mengacu pada pedoman IPIECA CCE-6 yaitu berdasarkan volume bahan bakar dan *heating value*.
4. Informasi jumlah konsumsi energi terbarukan pada tahun 2023 dari sejumlah 6.393,70 TJ menjadi 10.620,31 GJ dikarenakan perbaikan metodologi perhitungan mengacu pada pedoman IPIECA CCE-6 yaitu berdasarkan volume bahan bakar dan *heating value*.
5. Informasi jumlah air yang diambil, dilepaskan, dan dikonsumsi pada tahun 2022 dari sejumlah 25.929 mega liter; 8.283 mega liter; 17.645 mega liter menjadi 24.585 mega liter; 12.293 mega liter; 12,293 mega liter dikarenakan perbaikan pencatatan dan penyesuaian metode estimasi sesuai standar GRI 303.

REPORT PERIOD AND CYCLE [GRI 2-3]

This Sustainability Report covers the reporting period from January 1 to December 31, 2024. The report of the previous period was published in May 2024. The report is prepared annually as a part of the Company's commitment to providing transparent and accurate information related to sustainability performance in economic, social, and environmental aspects. This annual reporting cycle allows the Company to evaluate achievements, identify areas for improvement, and develop more effective sustainability strategies to support its long-term vision.

In this report, the data and information presented reflect operational activities and sustainability initiatives implemented throughout the Company's operational areas. The Company ensures that every update and disclosure of information is in accordance with the reporting standards referred to, so that stakeholders can understand the Company's development and contribution to supporting sustainable development.

Entities Covered in Sustainability Report [GRI 2-2]

The information in this Sustainability Report discloses the Company's social and environmental responsibility activities and economic impacts, including sustainability performance information from all work areas and Subsidiaries, unless stated otherwise. Until 2024 PHE has 3 (three) Subsidiaries, namely PT Elnusa Tbk., PT Pertamina Drilling and Services, and PT Badak NGL.

Restatement [GRI 2-4]

There is a restatement of information from the Sustainability Report of the previous year as follows:

1. Information on non-renewable energy consumption in 2022 was restated from 167,742.51 TJ to 197,333.07 TJ due to improvements in the calculation methodology in accordance with IPIECA CCE-6 guidelines, which are based on fuel volume and heating value.
2. Information on non-renewable energy consumption in 2023 was restated from 157,355.15 TJ to 189,216.17 TJ due to improvements in the calculation methodology in accordance with IPIECA CCE-6 guidelines, which are based on fuel volume and heating value.
3. Information on renewable energy consumption in 2022 was restated from 4,590.12 TJ to 9,215.75 GJ due to improvements in the calculation methodology in accordance with IPIECA CCE-6 guidelines, which are based on fuel volume and heating value.
4. Information on renewable energy consumption in 2023 was restated from 6,393.70 TJ to 10,620.31 GJ due to improvements in the calculation methodology in accordance with IPIECA CCE-6 guidelines, which are based on fuel volume and heating value.
5. Information on water withdrawal, discharge, and consumption in 2022 was restated from 25,929 megaliters; 8,283 megaliters; and 17,645 megaliters to 24,585 megaliters; 12,293 megaliters; and 12,293 megaliters due to improvements in record-keeping and estimation methods in conformity with GRI 303 standards.

6. Informasi jumlah air yang diambil, dilepaskan, dan dikonsumsi pada tahun 2023 dari sejumlah 25.116 mega liter; 10.563 mega liter; 14.553 mega liter menjadi 25.307 mega liter; 13.394 mega liter; 11.913 mega liter dikarenakan perbaikan pencatatan dan penyesuaian metode estimasi sesuai standar GRI 30.
7. Informasi jumlah air terproduksi pada tahun 2023 dari sejumlah 666.685.314,68 m^3 menjadi 665.242.084,28 m^3 dikarenakan adanya perubahan lingkup kategori pelaporan merujuk kepada IOGP *Report Environmental Data Collection User Guide*.
8. Informasi jumlah limbah yang dihasilkan, limbah yang digunakan kembali dan didaur ulang, dan limbah dikelola oleh pihak ketiga pada tahun 2022 dari sejumlah 81.890,93 ton; 2.334,17 ton; 68.806,87 ton menjadi 156.296,82 ton; 2.294,49 ton; 76.732,96 ton dikarenakan adanya perubahan lingkup kategori pelaporan dengan penambahan kategori limbah dikelola sendiri (Limbah dikelola di perusahaan dan tidak kelola oleh pihak ketiga).
9. Informasi jumlah limbah yang dihasilkan, limbah yang digunakan kembali dan didaur ulang, dan limbah dikelola oleh pihak ketiga pada tahun 2023 dari sejumlah 172.479,03 ton; 3.532,68 ton; 141.176,26 ton menjadi 223.510,27 ton; 3.977,33 ton; 145.945,99 ton dikarenakan adanya perubahan lingkup kategori pelaporan dengan penambahan kategori limbah dikelola sendiri (Limbah dikelola di perusahaan dan tidak kelola oleh pihak ketiga).

6. Information on water withdrawal, discharge, and consumption in 2023 was restated from 25,116 megaliters; 10,563 megaliters; and 14,553 megaliters to 25,307 megaliters; 13,394 megaliters; and 11,913 megaliters due to improvements in record-keeping and estimation methods in conformity with GRI 303 standards.
7. Information on the amount of produced water in 2023 from 666,685,314.68 m^3 to 665,242,084.28 m^3 due to changes in the scope of reporting categories referring to the IOGP Report Environmental Data Collection User Guide.
8. Information on the amount of waste generated, reused and recycled waste, and waste managed by third parties in 2022 from 81,890.93 tons; 2,334.17 tons; 68,806.87 tons to 156,296.82 tons; 2,294.49 tons; 76,732.96 tons due to changes in the scope of reporting categories with the addition of the waste managed by itself (Waste managed in the company and not managed by third parties)
9. Information on the amount of waste generated, reused and recycled waste, and waste managed by third parties in 2023 from 172,479.03 tons; 3,532.68 tons; 141,176.26 tons to 223,510.27 tons; 3,977.33 tons; 145,945.99 tons due to changes in the scope of reporting categories with the addition of the waste managed by itself (Waste managed in the company and not managed by third parties)

Penyajian ulang tersebut diharapkan dapat memberikan informasi yang lebih relevan dan akurat kepada pemangku kepentingan terkait pencapaian kinerja keberlanjutan PHE.

The restatement is expected to provide more relevant and accurate information to stakeholders regarding PHE's sustainability performance achievements.

Identifikasi Topik Material

PHE menerapkan prinsip dalam menentukan isi laporan keberlanjutan. Penerapan keempat prinsip ini akan sangat menentukan kualitas dari Laporan Keberlanjutan. Empat prinsip tersebut antara lain:

- Pelibatan pemangku kepentingan, yaitu melibatkan pemangku kepentingan dalam penentuan aspek material yang diungkapkan dalam laporan ini.
- Konteks keberlanjutan, yaitu mengintegrasikan keberlanjutan dalam strategi dan aktivitas Perseroan. yang bertujuan untuk menyajikan kinerja organisasi dalam kaitannya dengan konsep keberlanjutan yang lebih luas.
- Materialitas, yaitu isi laporan harus menyajikan dampak ekonomi, sosial, dan lingkungan yang signifikan/material yang dapat mempengaruhi penilaian dan keputusan para pemangku kepentingan.
- Kelengkapan, yaitu laporan ini disusun dengan ruang lingkup yang jelas untuk periode laporan 2024 serta didukung dengan data yang lengkap dan signifikan.

Perusahaan mengidentifikasi topik material untuk Laporan Keberlanjutan melalui proses sistematis yang melibatkan pemetaan isu-isu signifikan yang relevan dengan kegiatan operasional perusahaan, baik dari aspek ekonomi, lingkungan, maupun sosial. Proses ini dilakukan dengan merujuk pada standar pelaporan *Global Reporting Initiative* (GRI) 2021, yang menekankan pentingnya pengungkapan dampak yang signifikan bagi pemangku kepentingan dan keberlanjutan perusahaan. Dalam tahap awal, PHE mengumpulkan berbagai isu yang relevan berdasarkan analisis tren global, regulasi yang berlaku, masukan dari pemangku kepentingan, serta hasil evaluasi kinerja keberlanjutan sebelumnya.

Material Topic Identification

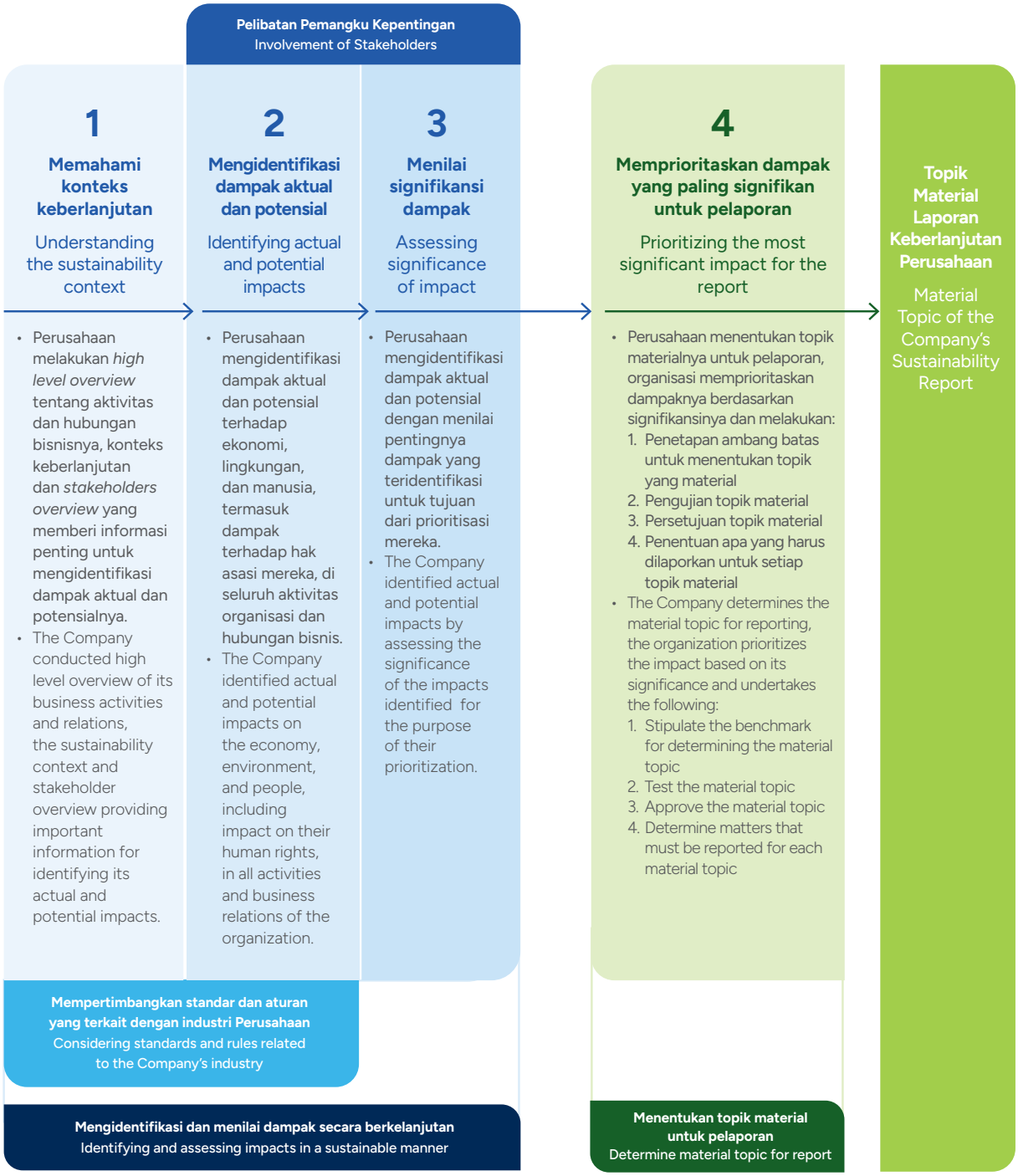
PHE applies principles in determining the content of the sustainability report. The application of these four principles will greatly determine the quality of the Sustainability Report. The four principles include:

- Stakeholder engagement, means involving stakeholders in determining the material aspects disclosed in this report.
- Sustainability context, means integrating sustainability into the Company's strategy and activities, which aims to present the organization's performance in relation to the broader concept of sustainability.
- Materiality, means the contents of the report must present significant/material economic, social and environmental impacts that can influence the assessments and decisions of stakeholders.
- Completeness, means this report is prepared with a clear scope for the reporting period 2024 and is supported by complete and significant data.

The company identifies material topics for the Sustainability Report through a systematic process that involves mapping significant issues relevant to the company's operational activities, from an economic, environmental, and social perspective. This process is carried out by referring to the Global Reporting Initiative (GRI) 2021 reporting standards, which emphasize the importance of disclosing significant impacts on stakeholders and the company's sustainability. At the initial stage, PHE collected various relevant issues based on global trend analysis, applicable regulations, input from stakeholders, and the results of previous sustainability performance evaluations.

Setelah isu-isu tersebut terkumpul, PHE melakukan penilaian untuk menentukan prioritas topik berdasarkan dua kriteria utama: signifikansi dampak terhadap keberlanjutan perusahaan dan kepentingannya bagi para pemangku kepentingan. Proses ini mencakup keterlibatan aktif pemangku kepentingan melalui diskusi, wawancara, dan survei, untuk memastikan bahwa topik yang dipilih mencerminkan harapan mereka. Hasil dari identifikasi dan prioritas topik ini dituangkan dalam matriks materialitas, yang menjadi acuan utama dalam penyusunan Laporan Keberlanjutan PHE. Dengan pendekatan ini, PHE memastikan bahwa laporan yang disajikan relevan, transparan, dan mencerminkan upaya nyata perusahaan dalam mendukung pembangunan berkelanjutan. [GRI 3-1]

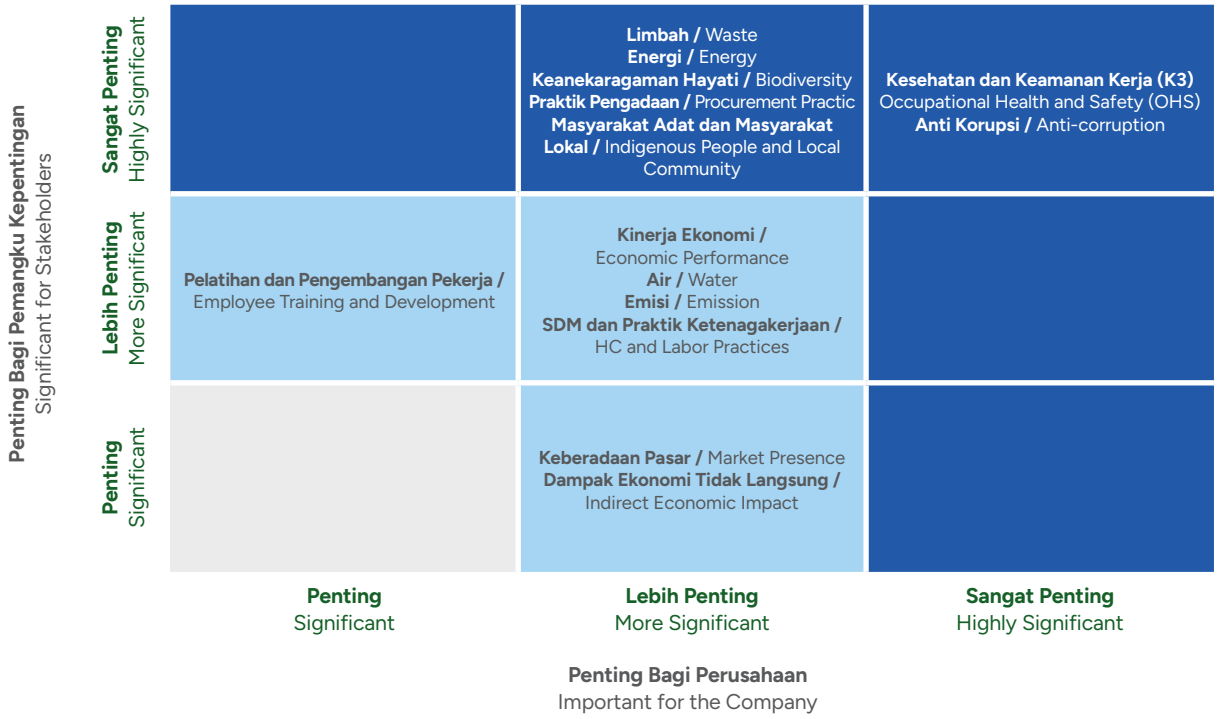
Once the issues are collected, PHE conducts an assessment to determine the priority of the topics based on two main criteria: the significance of the impact on the company's sustainability and its importance to stakeholders. This process includes active stakeholder engagement through discussions, interviews, and surveys, to ensure that the selected topics reflect their expectations. The results of the identification and prioritization of these topics are outlined in a materiality matrix, which is the main reference in preparing the Sustainability Report of PHE. With this approach, PHE ensures that the reports presented are relevant, transparent, and reflect the company's real efforts in supporting sustainable development. [GRI 3-1]



Berikut adalah matriks yang mendeskripsikan topik-topik material berdasarkan tingkat pentingnya bagi pemangku kepentingan dan bagi Perseroan yang telah ditetapkan berdasarkan Memorandum No. 121/PHE43000/2024-S4:

The following is a matrix that describes material topics based on their level of importance to stakeholders and to the Company which have been determined based on Memorandum No. 121/PHE43000/2024-S4:

Matriks Topik Material
Matrix of Material Topics



» Daftar topik material dan batasannya [GRI 3-2]
List of material topics and its boundaries

Topik Material Material Topics	Kenapa Topik Ini Material Why the Topic is Material	Nomor Pengungkapan GRI Standards GRI Standard Disclosure Number	TPB SDGs	Batasan Topik Topic Boundaries	
				Di dalam/ Inside PHE	Di luar/ Outside PHE
Topik Ekonomi / Economic Topics					
Kinerja Ekonomi Economic Performance	Menggambarkan pencapaian dan kinerja ekonomi Perusahaan selama tahun pelaporan dan bagaimana Perusahaan mendistribusikan nilai ekonominya Describes the Company's economic achievements and performance during the reporting year and how the Company distributes its economic value	201	TPB 1 Tanpa Kemiskinan TPB 2 Tanpa Kelaparan TPB 8 Pekerjaan Layak dan Pertumbuhan Ekonomi TPB 9 Industri, Innovasi, dan Infrastruktur TPB 12 Konsumsi dan Produksi yang Bertanggung Jawab SDG 1 No Poverty SDG 2 Zero Hunger SDG 8 Decent Work and Economic Growth SDG 9 Industry, Innovation and Infrastructure SDG 12 Responsible Consumption and Production		

Topik Material Material Topics	Kenapa Topik Ini Material Why the Topic is Material	Nomor Pengungkapan GRI Standards GRI Standard Disclosure Number	TPB SDGs	Batasan Topik Topic Boundaries	
				Di dalam/ Inside PHE	Di luar/ Outside PHE
Keberadaan Pasar Market Existence	Menggambarkan dampak ekonomi dari keberadaan Perusahaan Describes the economic impact of the Company's existence	202	TPB 1 Tanpa Kemiskinan TPB 8 Pekerjaan Layak dan Pertumbuhan Ekonomi TPB 10 Berkurangnya Kesenjangan SDG 1 No Poverty SDG 8 Decent Work and Economic Growth SDG 10 Reduced Inequalities		
Dampak Ekonomi Tidak Langsung Indirect Economic Impact	Menggambarkan manfaat atas keberadaan Perusahaan bagi masyarakat baik dalam hal pembangunan infrastruktur dan jasa yang disediakan atau dampak ekonomi tidak langsung yang signifikan Describes the benefits of the Company's existence for the community, either in terms of infrastructure development and services provided or significant indirect economic impacts.	203	TPB 1 Tanpa Kemiskinan TPB 2 Tanpa Kelaparan TPB 3 Kehidupan Sehat dan Sejahtera TPB 7 Energi Bersih dan Terjangkau TPB 9 Industri, Innovasi, dan Infrastruktur TPB 10 Berkurangnya Kesenjangan SDG 1 No Poverty SDG 2 Zero Hunger SDG 3 Good Health and Well-Being SDG 7 Affordable and Clean Energy SDG 9 Industry, Innovation and Infrastructure SDG 10 Reduced Inequalities		
Praktik Pengadaan Procurement Practices	Menggambarkan komitmen Perusahaan untuk mengedepankan penggunaan barang dan jasa dari pemasok lokal Describes the Company's commitment to prioritizing the use of goods and services from local suppliers	204	TPB 10 Berkurangnya Kesenjangan TPB 12 Konsumsi dan Produksi yang Bertanggung Jawab TPB 17 Kemitraan untuk Tujuan SDG 10 Reduced Inequalities SDG 12 Responsible Consumption and Production SDG 17 Partnerships for the Goals		
Anti Korupsi Anti-Corruption	Menggambarkan komitmen Perusahaan untuk menyelenggarakan operasional Perusahaan secara bersih, jujur dan transparan Describes the Company's commitment to conducting Company operations in a clean, honest and transparent manner	205	TPB 16 Perdamaian, Keadilan, Kelembagaan yang Tangguh SDG 16 Peace, Justice, Strong Institutions		
Topik Lingkungan / Environmental Topics					
Penggunaan Energi dan Peningkatan Bauran Energi Terbarukan Energy Use and Increase of Renewable Energy Mix	Menggambarkan kepedulian Perusahaan terhadap pengelolaan energi dan penggunaan energi yang ramah lingkungan Describes the Company's care for environmentally friendly energy management and energy use	302	TPB 7 Energi bersih dan Terjangkau TPB 12 Konsumsi dan Produksi yang Bertanggung Jawab TPB 13 Penanganan Perubahan Iklim SDG 7 Affordable and Clean Energy SDG 12 Responsible Consumption and Production SDG 13 Climate Action		

Topik Material Material Topics	Kenapa Topik Ini Material Why the Topic is Material	Nomor Pengungkapan GRI Standards GRI Standard Disclosure Number	TPB SDGs	Batasan Topik Topic Boundaries	
				Di dalam/ Inside PHE	Di luar/ Outside PHE
Efisiensi Penggunaan Air dan Pengelolaan Limbah Air Water Use Efficiency and Wastewater Treatment	Menggambarkan kepedulian Perusahaan terhadap pengelolaan sumber daya air yang ketersediaannya kian terbatas dan bagaimana pengelolaan limbah air Describes the Company's care for management of water resource the availability of which is increasingly limited and how to treat wastewater	303	TPB 3 Kehidupan Sehat dan Sejahtera TPB 6 Air Bersih dan Sanitasi Layak TPB 12 Konsumsi dan Produksi yang Bertanggung Jawab SDG 3 Good Health and Well-Being SDG 6 Clean Water and Sanitation SDG 12 Responsible Consumption and Production		
Kelestarian Lingkungan melalui Perlindungan Keanekaragaman Hayati Environmental Sustainability through Biodiversity Protection	Menggambarkan kepedulian Perusahaan terhadap kelestarian lingkungan, khususnya terkait keberagaman flora dan fauna Describes the Company's care for environmental sustainability, especially related to diversity of flora and fauna	304	TPB 14 Ekosistem Lautan TPB 15 Ekosistem Daratan SDG 14 Life Below Water SDG 15 Life on Land		
Penurunan Emisi menuju Net Zero Emission Emission Reduction Towards Net Zero Emission	Menggambarkan upaya PHE untuk mengurangi emisi dan efek Gas Rumah Kaca (GRK) dan strategi Perusahaan untuk mencapai target Net Zero Emission Describes PHE's effort to reduce emissions and effects of Greenhouse Gases (GHG) and the Company's strategy to achieve the Net Zero Emission target	305	TPB 3 Kehidupan Sehat dan Sejahtera TPB 7 Energi bersih dan Terjangkau TPB 12 Konsumsi dan Produksi yang Bertanggung Jawab TPB 13 Penanganan Perubahan Iklim SDG 3 Good Health and Well-Being SDG 7 Affordable and Clean Energy SDG 12 Responsible Consumption and Production SDG 13 Climate Action		
Pengelolaan Limbah Waste Treatment	Menggambarkan kepedulian Perusahaan dalam mengelola limbah sehingga tidak mencemari lingkungan Describes the Company's care for waste treatment so as not to pollute the environment	306	TPB 3 Kehidupan Sehat dan Sejahtera TPB 6 Air Bersih dan Sanitasi Layak TPB 12 Konsumsi dan Produksi yang Bertanggung Jawab SDG 3 Good Health and Well-Being SDG 6 Clean Water and Sanitation SDG 12 Responsible Consumption and Production		
Topik Sosial / Social Topics					
Sumber Daya Manusia (SDM) dan Praktik Ketenagakerjaan Human Resources (HR) and Employment Practices	Menggambarkan komitmen Perusahaan tentang pentingnya pengelolaan pekerja /SDM, termasuk memastikan keberagaman, kesempatan yang setara dan tanpa diskriminasi Describes the Company's commitment to the importance of management of workers/ HR, including ensuring diversity, equal opportunity and non-discrimination	401 405 406	TPB 1 Tanpa Kemiskinan TPB 5 Kesetaraan Gender TPB 8 Pekerjaan Layak dan Pertumbuhan Ekonomi TPB 10 Berkurangnya Kesenjangan SDG 1 No Poverty SDG 5 Gender Equality SDG 8 Decent Work and Economic Growth SDG 10 Reduced Inequalities		

Topik Material Material Topics	Kenapa Topik Ini Material Why the Topic is Material	Nomor Pengungkapan GRI Standards GRI Standard Disclosure Number	TPB SDGs	Batasan Topik Topic Boundaries	
				Di dalam/ Inside PHE	Di luar/ Outside PHE
Kesehatan dan Keselamatan Kerja Occupational Health and Safety	Menggambarkan komitmen Perusahaan dalam menyediakan tempat kerja yang aman dan nyaman Describes the Company's commitment to providing a safe and comfortable workplace	403	TPB 3 Kehidupan Sehat dan Sejahtera TPB 8 Pekerjaan Layak dan Pertumbuhan Ekonomi SDG 3 Good Health and Well-Being SDG 8 Decent Work and Economic Growth		
Pelatihan dan Pengembangan Karyawan Employee Training and Development	Menggambarkan komitmen Perusahaan dalam upaya meningkatkan kompetensi pekerja Describes the Company's commitment to improving employee competency	404	TPB 4 Pendidikan Berkualitas SDG 4 Quality Education		
Masyarakat Lokal dan Masyarakat Adat Local Communities and Indigenous Peoples	Menggambarkan komitmen Perusahaan terhadap keterlibatan masyarakat di sekitarnya dalam berbagai program/kegiatan dan penghormatan terhadap hak-hak masyarakat adat Describes the Company's commitment to involving the surrounding community in various programs/activities and respecting the rights of indigenous peoples	411 413	TPB 2 Tanpa Kelaparan TPB 3 Kehidupan Sehat dan Sejahtera TPB 4 Pendidikan Berkualitas TPB 17 Kemitraan untuk Tujuan SDG 2 Zero Hunger SDG 3 Good Health and Well-Being SDG 4 Quality Education SDG 17 Partnerships for the Goals		

Topik-topik material tersebut di atas mendukung TPB berikut ini:

The material topics mentioned above support the following SDGs:



Verifikasi Laporan dan Penjaminan Eksternal

Assurance Eksternal [OJK G.1] [GRI 2-5]

Untuk memastikan bahwa Laporan Keberlanjutan ini disusun sesuai dengan prinsip-prinsip pelaporan yang berlaku, Perusahaan menggunakan jasa *assurance* eksternal dari PT Sucofindo. *Assurance* eksternal ini memberikan keyakinan tambahan kepada pemangku kepentingan mengenai kredibilitas dan keandalan informasi yang disampaikan dalam laporan.

Report Verification and External Assurance

External Assurance [OJK G.1] [GRI 2-5]

To ensure that this Sustainability Report is prepared in accordance with the applicable reporting principles, the Company uses external assurance services from PT Sucofindo. This external assurance provides additional assurance to stakeholders regarding the credibility and reliability of the information presented in the report.

Proses pemilihan *assurer* dilakukan secara transparan melalui mekanisme tender yang melibatkan persetujuan Direksi dan diwakili oleh Komite Keberlanjutan. Dalam memilih assurer, Perusahaan mempertimbangkan kualitas dan kompetensi penyedia jasa, seperti pengalaman kerja, kapabilitas, dan sertifikasi dalam bidang *Sustainability Report Assurance*. Perusahaan juga memastikan tidak ada hubungan kerja lain dengan *assurance* eksternal untuk menjaga independensi dan objektivitas *assurance* yang diberikan.

Laporan dari *assurer* independen untuk tahun buku 2024 dapat ditemukan pada halaman 334 pada laporan ini. Adanya *assurance* eksternal mencerminkan komitmen Perusahaan dalam menjaga akuntabilitas dan transparansi dalam menyampaikan kinerja keberlanjutan.

AKSESIBILITAS DAN UMPAN BALIK [GRI 2-3]

Untuk mendukung terwujudnya komunikasi yang efektif dan memungkinkan Perusahaan melakukan evaluasi guna meningkatkan kualitas Laporan di masa mendatang, kami menyertakan Lembar Umpan Balik di bagian akhir dokumen ini. Melalui lembar tersebut, pembaca dan pengguna laporan dapat menyampaikan saran, masukan, opini, serta umpan balik lainnya yang akan sangat membantu dalam upaya peningkatan kualitas pelaporan di masa depan.

Perusahaan juga menyediakan akses informasi yang luas kepada seluruh pemangku kepentingan, termasuk investor dan pihak lainnya, terkait laporan keberlanjutan ini. Untuk informasi lebih lanjut, Anda dapat menghubungi:

The assurer selection process is carried out transparently through a tender mechanism involving approval from the Board of Directors and represented by the Sustainability Committee. In selecting an assurer, the Company considers the quality and competence of the service provider, such as work experience, capabilities, and certification in the field of Sustainability Report Assurance. The Company also ensures that there is no other working relationship with external assurance to maintain the independence and objectivity of the assurance provided.

The report from the independent assurer for financial year 2024 can be found on page 334 of this report. The existence of external assurance reflects the Company's commitment to maintaining accountability and transparency in delivering sustainability performance.

ACCESSIBILITY AND FEEDBACK [GRI 2-3]

To support effective communication and enable the Company to conduct evaluations to improve the quality of Reports in the future, we include a Feedback Form at the end of this document. Using this form, readers and users of the report can submit suggestions, input, opinions, and other feedback that will be very helpful in improving the quality of reporting in the future.

The Company also provides all stakeholders, including investors and other parties, with broad access to information about this sustainability report. For further information, you can contact:

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04

AMBISI KEBERLANJUTAN PHE DAN KONTRIBUSI KAMI DALAM TUJUAN PEMBANGUNAN BERKELANJUTAN

PHE's Sustainability Ambition and Our Contribution to Sustainable Development Goals







PT Pertamina Hulu Energi Subholding Upstream (PHE) telah menjadikan keberlanjutan sebagai fondasi utama dalam operasional dan pertumbuhan bisnis perusahaan. Komitmen PHE dalam menjalankan bisnis sesuai dengan prinsip-prinsip keberlanjutan tidak hanya diwujudkan melalui penerapan standar operasional yang tinggi, tetapi juga terintegrasi dalam setiap aspek strategis perusahaan. Berdasarkan Kebijakan Keberlanjutan PT Pertamina (Persero) sebagai perusahaan *holding*, PHE telah menyusun strategi keberlanjutan menggunakan metode 4P, yaitu penyusunan kebijakan, pelaksanaan program, pengukuran dan *monitoring* kinerja, serta publikasi kinerja dan *rating*. Pendekatan ini memastikan bahwa setiap langkah yang diambil tidak hanya mendukung pertumbuhan ekonomi, tetapi juga berkontribusi pada pelestarian lingkungan dan peningkatan kesejahteraan sosial, sehingga tercipta keseimbangan yang harmonis antara ketiga pilar tersebut.

PT Pertamina Hulu Energy Subholding Upstream (PHE) has made sustainability the main foundation in the company's operations and business growth. PHE's commitment to running a business in accordance with sustainability principles is not only realized through the implementation of high operational standards, but also integrated into every strategic aspect of the company. Based on the Sustainability Policy of PT Pertamina (Persero) as the holding company, PHE has developed a sustainability strategy using the 4P method, namely policy formulation, program implementation, performance measurement and monitoring, and performance publication and rating. This approach ensures that every step taken not only supports economic growth, but also contributes to environmental preservation and improving social welfare, so that a harmonious balance is created among the three pillars.

MEMPERKUAT BUDAYA KEBERLANJUTAN [OJK F.1]

Dalam rangka mewujudkan visi keberlanjutan, PHE secara konsisten membangun budaya keberlanjutan di seluruh lini organisasi. Budaya ini ditanamkan melalui internalisasi Nilai Nilai Inti AKHLAK-Amanah, Kompeten, Harmonis, Loyal, Adaptif, dan Kolaboratif yang menjadi pedoman dalam setiap aktivitas operasional. Nilai-nilai tersebut menjadi pondasi dalam setiap aktivitas operasional dan manajerial, yang mendorong seluruh karyawan untuk mengintegrasikan prinsip keberlanjutan dalam pekerjaan sehari-hari.

Untuk memperkuat budaya keberlanjutan, PHE menginternalisasikan fokus keberlanjutannya dengan proses operasionalnya dan dalam menjalankan inisiatif-inisiatif keberlanjutan. PHE juga secara rutin menjalankan program-program yang mendorong setiap individu dalam PHE untuk mengadopsi perilaku dan kebiasaan yang mendukung pencapaian tujuan pembangunan berkelanjutan, menciptakan lingkungan kerja yang tidak hanya produktif tetapi juga bertanggung jawab terhadap lingkungan dan masyarakat.

Lebih jauh, PHE memperkuat budaya keberlanjutan melalui kolaborasi yang intensif dengan pemangku kepentingan eksternal, termasuk kontraktor, vendor, dan pemasok, untuk memastikan bahwa prinsip-prinsip ESG (*Environmental, Social, and Governance*) diterapkan secara menyeluruh di seluruh rantai pasok. Melalui sosialisasi dan penguatan kemitraan, perusahaan mendorong adopsi standar keberlanjutan yang tinggi serta inovasi dalam pengelolaan operasional. Pendekatan holistik ini tidak hanya meningkatkan kesadaran internal terhadap pentingnya keberlanjutan, tetapi juga berkontribusi menciptakan ekosistem bisnis yang tangguh, inovatif, dan responsif terhadap tantangan lingkungan di masa depan.

STRATEGI KEBERLANJUTAN PHE [OJK A.1]

Strategi keberlanjutan PHE disusun untuk mendukung tujuan Perseroan untuk mencapai ambisi *Subholding Upstream* Pertamina menjadi perusahaan minyak dan gas bumi kelas dunia. Strategi keberlanjutan PHE dijalankan untuk menjamin keamanan pasokan dan akses energi di seluruh negeri dengan memperhatikan kesejahteraan para pemangku kepentingan dan keseimbangan aspek lingkungan, sosial, dan tata kelola yang berkelanjutan.

Strategi keberlanjutan PHE dibangun berdasarkan tiga pilar utama, yaitu Lingkungan, Sosial, dan Tata Kelola (ESG). Pilar lingkungan menekankan pada pengelolaan sumber daya alam secara efisien, pengurangan emisi, serta pelestarian ekosistem dan keanekaragaman hayati. Di sisi sosial, PHE berfokus pada peningkatan kesejahteraan masyarakat melalui penciptaan lapangan kerja, pemberdayaan komunitas lokal, dan program-program tanggung jawab sosial yang berkelanjutan. Sementara itu, pilar tata kelola memastikan bahwa setiap aktivitas perusahaan dilaksanakan dengan prinsip transparansi, akuntabilitas, dan integritas, sehingga mendukung reputasi PHE sebagai perusahaan migas kelas dunia.

STRENGTHENING SUSTAINABILITY CULTURE [OJK F.1]

In order to realize the vision of sustainability, PHE consistently builds a sustainability culture across all lines of the organization. This culture is instilled through the internalization of the Core Values of AKHLAK-Trustworthy, Competent, Harmonious, Loyal, Adaptive, and Collaborative which serve as guidelines in every operational activity. These values serve as the foundation for every operational and managerial activity, encouraging all employees to integrate sustainability principles into their daily work.

To strengthen the culture of sustainability, PHE internalizes its sustainability focus into its operational processes and in implementing sustainability initiatives. PHE also regularly runs programs that encourage every individual in PHE to adopt behaviours and habits that support the achievement of sustainable development goals, creating a work environment that is not only productive but also responsible to the environment and society.

Furthermore, PHE strengthens its sustainability culture through intensive collaboration with external stakeholders, including contractors, vendors, and suppliers, to ensure that ESG (Environmental, Social, and Governance) principles are implemented comprehensively throughout the supply chain. Through dissemination and reinforcement of partnerships, the company encourages the adoption of high sustainability standards and innovation in operational management. This holistic approach not only increases internal awareness of the importance of sustainability, but also contributes to creating a business ecosystem that is resilient, innovative, and responsive to future environmental challenges.

PHE'S SUSTAINABILITY STRATEGY [OJK A.1]

PHE's sustainability strategy is designed to support the Company's goal of achieving Subholding Upstream Pertamina ambition to become a world-class oil and gas company. PHE's sustainability strategy is implemented to ensure the security of energy supply and access throughout the country by considering the welfare of stakeholders and the balance of environmental, social, and sustainable governance aspects.

PHE's sustainability strategy is built on three main pillars, namely Environment, Social, and Governance (ESG). The environmental pillar emphasizes efficient management of natural resources, emission reduction, and preservation of ecosystems and biodiversity. From the social aspect, PHE focuses on improving community welfare through job creation, local community empowerment, and sustainable social responsibility programs. Meanwhile, the governance pillars ensure that every activity of the company is carried out with the principles of transparency, accountability, and integrity, thus supporting PHE's reputation as a world-class oil and gas company.

PHE bercita-cita menjadi Perusahaan Energi terkemuka dan bereputasi baik secara global, dan dikenal sebagai:

PHE aspires to be a globally leading and reputable Energy Company, and to be known as:

Perusahaan yang Ramah Lingkungan Environmentally Friendly Company	Perusahaan yang Bertanggung Jawab Sosial Socially Responsible Company	Perusahaan dengan Tata Kelola yang Baik A Company with Good Corporate Governance
Perusahaan yang menyediakan dan mempromosikan akses terhadap energi dan mendukung energi hijau untuk mendukung agenda transisi iklim nasional, bertanggung jawab dalam mengatasi isu perubahan iklim dan menjadi teladan dalam menjalankan sistem manajemen lingkungan yang terkait dengan kegiatannya.	**Perusahaan yang berkomitmen untuk menerapkan standar tertinggi untuk praktik Kesehatan dan Keselamatan, terus menghormati dan melibatkan masyarakat sekitar untuk merangsang pembangunan sosial dan ekonomi yang berkelanjutan, mempromosikan dan menjunjung tinggi pengembangan karyawan yang berkelanjutan, keberagaman, dan prinsip-prinsip Hak Asasi Manusia.**	**Perusahaan yang memastikan kepatuhan terhadap semua persyaratan hukum yang ditetapkan di area operasinya dan menegakkan standar tertinggi praktik Tata Kelola Perusahaan yang baik dan menegakkan praktik antikorupsi dan anti-penipuan untuk semua pemangku kepentingan dalam operasi perusahaan.**
A company that provides and promotes access to energy and supports green energy to support the national climate transition agenda, responsible for addressing climate change issues and becomes a role model in implementing environmental management systems related to its activities.	A company committed to implementing the highest standards for Health and Safety practices, continuously respecting and involving the surrounding community to stimulate sustainable social and economic development, promoting and upholding sustainable employee development, diversity and Human Rights principles.	A company that ensures compliance with all legal requirements set in its area of operation and upholds the highest standards of good Corporate Governance practices and enforces anti-corruption and anti-fraud practices for all stakeholders in the company's operations.



Strategi Keberlanjutan PHE disusun untuk tujuan jangka Panjang yang diturunkan dalam tiga fase yaitu fase penguatan fondasi keberlanjutan (dijalankan dari tahun 2022 hingga 2023), fase konsolidasi (dari tahun 2023 sampai dengan 2025), dan fase akselerasi (dari tahun 2025 sampai dengan 2030). Saat ini PHE memasuki fase konsolidasi yang menekankan pada penguatan inisiatif keberlanjutan dan strategi LST.

PHE's Sustainability Strategy is designed for long-term goals that are divided into three phases, namely the sustainability foundation strengthening phase (running from 2022 to 2023), the consolidation phase (from 2023 to 2025), and the acceleration phase (from 2025 to 2030). PHE is currently entering the consolidation phase that emphasizes the reinforcement of sustainability initiatives and ESG strategies.

Strategi dan Peta Jalan Keberlanjutan
PHE's Sustainability Strategy and Roadmap

Fase Fondasi
Foundation Phase
2020-2023

Mengembangkan model LST, meningkatkan kapasitas fungsi keberlanjutan.
Develop ESG model, increase the capacity of sustainability function.

Strategi Keberlanjutan
Sustainability Strategy

I. **Pilar Lingkungan/** Environmental Pillar
Mengembangkan peta jalan *net-zero*, melindungi keanekaragaman hayati, meningkatkan efisiensi energi, dan pengelolaan limbah.
Develop a net zero roadmap, protect biodiversity, improve energy efficiency, and waste management.

II. **Pilar Sosial/** Social Pillar
Mencegah kecelakaan *major*, meningkatkan pemberdayaan masyarakat dan dampaknya, melakukan rekrutmen, pengembangan, dan retensi pekerja.
Preventing major accidents, increasing community empowerment and its impact, recruiting, developing, and retention employees.

III. **Pilar Tata Kelola/** Governance Pillar
Memperkuat landasan tata kelola.
Strengthening the governance foundation.

Fase Konsolidasi
Consolidation Phase
2023-2025

Meneruskan dan memperkuat inisiatif keberlanjutan dan strategi LST.
Continue and strengthen sustainability initiatives and ESG strategy.

Strategi Keberlanjutan
Sustainability Strategy

I. **Pilar Lingkungan/** Environmental Pillar
Meningkatkan inisiatif pengelolaan air dan limbah, mengurangi emisi non-GRK, dan melaksanakan program keanekaragaman hayati.
Improve water and waste management initiatives, reduce non-GHG emissions, and systematize biodiversity programs.

II. **Pilar Sosial/** Social Pillar
Meningkatkan K3, memperluas akses energi ke komunitas, manajemen keselamatan proses, Program DEB, retensi tenaga kerja.
Improve OHS, expand energy access to communities, process safety management, DEB Programs, workforce retention.

III. **Pilar Tata Kelola/** Governance Pillar
Meningkatkan keamanan data, keamanan siber, etika Perusahaan.
Improve data security, cyber security, Corporate ethics.

Fase Akselerasi
Acceleration Phase
2025-2030

Melanjutkan inisiatif dengan memperkuat 3 Pilar LST.
Continue the initiative by strengthening the 3 Pillars of ESG.

Strategi Keberlanjutan
Sustainability Strategy

I. **Pilar Lingkungan/** Environmental Pillar
Melanjutkan inisiasi-inisiasi lingkungan menuju target *net zero emission* 2060.
Continue environmental initiatives towards the 2060 net zero emission target.

II. **Pilar Sosial/** Social Pillar
Melanjutkan inisiasi-inisiasi sosial khususnya pemberdayaan masyarakat dan ketenagakerjaan.
Continue social initiatives, especially community empowerment and employment.

III. **Pilar Tata Kelola/** Governance Pillar
Melanjutkan inisiasi-inisiasi dalam memperkuat Tata Kelola Perusahaan.
Continue initiatives in strengthening Corporate Governance.

Dalam rangka mencapai ambisinya dan menjalankan strategi keberlanjutan, PHE telah menetapkan 11 aspek fokus keberlanjutan yang kemudian diterjemahkan ke dalam inisiatif dan target terukur, salah satunya adalah pencapaian *Net Zero Emission* pada tahun 2060. Berikut adalah 11 fokus PHE dan inisiatif yang dijalankan:

In order to achieve its ambitions and implement sustainability strategies, PHE has set 11 aspects of sustainability focus which are then translated into measurable initiatives and targets, one of which is achieving Net Zero Emissions by 2060. The following are PHE's 11 focuses and initiatives implemented:

Tujuan PHE PHE's objectives	Fokus Focus	Isu Keberlanjutan Sustainability Issues	Inisiatif Initiative	Kontribusi Terhadap SDGs Contribution to SDGs
Perusahaan yang Ramah Lingkungan Environmentally Friendly Company	Mengatasi Perubahan Iklim Addressing Climate Change	**Emisi** Mengatasi emisi GRK dari stasioner dan sumber energi bergerak, pembangkitan Listrik yang dibeli yang dikonsumsi, dan emisi tidak langsung lainnya, termasuk polusi udara (non-GRK), pengukuran dan pengurangan emisi metana. **Emission** Addressing GHG emissions from stationary and mobile energy sources, generation of electricity purchased and consumed, and other indirect emissions, including air pollution (non-GHG), measurement and reduction of methane emissions.	Dekarbonisasi Decarbonization	
	Mengurangi Jejak Lingkungan Reducing Environmental Footprint	**Energi** Mengatasi dampak lingkungan yang terkait dengan konsumsi energi seperti intensitas energi atau campuran energi (menggabungkan bahan baku fosil dan sumber energi terbarukan). Seperti total penggunaan energi, total energi terbarukan, inisiatif untuk memulihkan lingkungan. **Energy** Addressing environmental impacts related to energy consumption such as energy intensity or energy mix (combining fossil fuels and renewable energy sources). Such as total energy use, total renewable energy, initiatives to restore the environment.	Meningkatkan efisiensi energi dan konservasi, komitmen pada EBT Improving energy efficiency and conservation, commitment to NRE	
	Melindungi Keanekaragaman Hayati Protecting Biodiversity	**Keanekaragaman Hayati** Pengelolaan dampak Perusahaan terhadap ekosistem dan keanekaragaman hayati, seperti penggunaan lahan untuk eksplorasi, ekstraksi, dan budidaya sumber daya alam, pengembangan proyek, konstruksi dan pendangkalan, upaya pencegahan dan remediasi setelah *decommissioning*. **Biodiversity** Management of the Company's impacts on ecosystems and biodiversity, such as land use for exploration, extraction and cultivation of natural resources, project development, construction and silting, prevention and remediation efforts after decommissioning.	Program konservasi dan rehabilitasi Conservation and rehabilitation programs	
	Pengelolaan Air Water Management	**Air dan Effluen** Upaya Perseroan dalam mengatasi transparansi penggunaan air, mengurangi konsumsi air, meningkatkan kualitas air, efisiensi air, kekurangan air, pengelolaan air, dan kelangkaan air. **Water and Effluent** The Company's efforts to address transparency in water use, reduce water consumption, improve water quality, water efficiency, water shortages, water management, and water scarcity.	Pengurangan konsumsi dan buangan air Reduction of water consumption and waste	

Tujuan PHE PHE's objectives	Fokus Focus	Isu Keberlanjutan Sustainability Issues	Inisiatif Initiative	Kontribusi Terhadap SDGs Contribution to SDGs
	Pengelolaan limbah Waste treatment	**Limbah** Upaya Perseroan mengenai pembuangan limbah yang berkelanjutan dalam bentuk material yang tidak diinginkan dan limbah operasional, pengurangan dan pengelolaan limbah, daur ulang, ekonomi sirkuler, efisiensi sumber daya, tidak terdapat limbah hingga ke tempat pembuangan akhir. **Waste** The Company's efforts regarding sustainable waste disposal in the form of unwanted materials and operational waste, waste reduction and treatment, recycling, circular economy, resource efficiency, zero waste to a landfill.	Pengurangan intensitas pembuangan limbah Reduction in waste disposal intensity	
Perusahaan yang Bertanggung Jawab Sosial Socially Responsible Company	Kesehatan dan Keamanan Health and Safety	**Keselamatan dan Kesehatan Kerja (K3)** Kemampuan untuk menciptakan dan memelihara lingkungan tempat kerja yang aman dan sehat yang bebas dari cedera, kematian akibat kerja, dan penyakit, seperti rencana manajemen keselamatan, system dan kebijakan, persyaratan pelatihan, audit berkala. **Occupational Health and Safety (OHS)** The ability to create and maintain a safe and healthy workplace environment that is free of injuries, work-related fatalities, and illnesses, such as safety management plans, systems and policies, training requirements, regular audits.	Peningkatan aspek keselamatan dan kesehatan Improvement of safety and health aspects	
	Pencegahan Kecelakaan Besar Major Accident Prevention	**Keselamatan dan Kesehatan Kerja (K3)** Penggunaan sistem manajemen dan perencanaan untuk mengidentifikasi dan meminimalisir terjadinya kemungkinan rendah, kecelakaan berdampak tinggi dan keadaan darurat dengan potensi eksternalitas lingkungan dan sosial yang signifikan, seperti tumpahan minyak, manajemen risiko keamanan. **Occupational Health and Safety (OHS)** The use of management and planning systems to identify and minimize the occurrence of low probability, high impact accidents and emergencies with potential significant environmental and social externalities, such as oil spills, security risk management.	Pengelolaan proses keamanan, pemantauan dan pelaporan peristiwa keselamatan proses Management of safety process, monitoring and reporting of process safety events	
	Perekrutan, Pengembangan, & Retensi Pekerja Employee Recruitment, Development & Retention	**Pelatihan dan Pendidikan** Rekrutmen dan pengembangan pekerja serta manajemen bakat dan *employer branding*, seperti promosi internal, pelatihan dan pengembangan, *non-retaliation* dan mekanisme pengaduan, kepuasan pekerja, dan kesetaraan gender. **Training and Education** Employee recruitment and development as well as talent management and employer branding, such as internal promotions, training and development, non-retaliation and grievance mechanisms, employee satisfaction, and gender equality.	Hak asasi Manusia, Pengembangan, retensi Human Rights, Development, retention	

Tujuan PHE PHE's objectives	Fokus Focus	Isu Keberlanjutan Sustainability Issues	Inisiatif Initiative	Kontribusi Terhadap SDGs Contribution to SDGs
	Keterlibatan & Dampak Komunitas Community Engagement & Impact	**Masyarakat Lokal** Upaya Perseroan dalam mengatasi keterlibatan dengan komunitas tempat Perseroan beroperasi, seperti dampak langsung dan tidak langsung pada hak asasi manusia, perlakuan terhadap Masyarakat ke energi berkelanjutan, kebijakan kewarganegaraan Perusahaan yang baik, kesetaraan gender, sumbangan. Local Community The Company's efforts in addressing engagement with the communities in which the Company operates, such as direct and indirect impacts on human rights, treatment of Communities to sustainable energy, good Corporate citizenship policies, gender equality, donations.	Meningkatkan akses energi untuk Masyarakat, investasi sosial Increasing energy access for communities, social investment	
Perusahaan dengan Tata Kelola yang Baik Companies with Good Governance	Keamanan Siber Cyber Security	**Privasi Pelanggan** Manajemen risiko yang terkait dengan pengumpulan, penyimpanan, dan penggunaan data pelanggan atau pengguna yang sensitive, rahasia dan/ atau kepemilikan, seperti masalah sosial yang mungkin timbul dari insiden seperti pelanggaran data informasi pribadi. Customer Privacy Risk management associated with the collection, storage and use of sensitive, confidential and/or proprietary customer or user data, such as social issues that may arise from incidents such as breaches of personal information and data.	Asesmen risiko keamanan siber, telaah kebijakan dan evaluasi Cybersecurity risk assessment, policy review and evaluation	
	Etika Perusahaan Corporate Ethics	**Anti Korupsi** Pendekatan Perseroan untuk mengelola risiko dan peluang perilaku bisnis yang etis, seperti penipuan, korupsi, penyuapan, tanggung jawab fidusia, konflik kepentingan, keragaman, kesetaraan, penegakan hak asasi manusia, Tingkat tanggung jawab eksekutif. Anti-Corruption The Company's approach to managing the risks and opportunities of ethical business conduct, such as fraud, corruption, bribery, fiduciary responsibility, conflicts of interest, diversity, equality, human rights enforcement, Executive level of responsibility.	Meningkatkan sistem manajemen tata Kelola yang baik Improving good governance management system	

Penjelasan detail mengenai Sustainability Focus PHE dapat dilihat pada link berikut ini:
https://phe.pertamina.com/en/sustainability/focus

A detailed explanation of PHE's Sustainability Focus can be seen at the following link:
https://phe.pertamina.com/en/sustainability/focus

PHE DAN KONTRIBUSINYA TERHADAP TUJUAN PEMBANGUNAN BERKELANJUTAN

PHE AND ITS CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS



Kontribusi PHE terhadap Tujuan Pembangunan Berkelanjutan [GRI 2-22]

Fokus dan inisiatif keberlanjutan PHE tidak hanya menciptakan nilai jangka panjang bagi perusahaan, tetapi juga memberikan kontribusi signifikan terhadap agenda pembangunan berkelanjutan global, termasuk pencapaian Tujuan Pembangunan Berkelanjutan (TPB). Berikut adalah jabaran dari kontribusi PHE terhadap pencapaian TPB.

PHE's Contribution to Sustainable Development Goals [GRI 2-22]

PHE's sustainability focus and initiatives not only create long-term value for the company, but also make significant contributions to the global sustainable development agenda, including the achievement of Sustainable Development Goals (SDGs). The following is a breakdown of PHE's contributions to the achievement of SDGs.

Pilar LST dan Strategi Keberlanjutan ESG's Pillar and Sustainability Strategy		**Inisiasi Keberlanjutan dan Kontribusi PHE terhadap Tujuan Pembangunan Berkelanjutan (TPB)** Sustainability Initiation and PHE's Contribution to the Sustainable Development Goals (SDGs)
I. Pilar Lingkungan/ Environmental Pillar		
Menangani perubahan iklim Addressing climate changes		**Meningkatkan Efisiensi Energi dan Penggunaan Sumber Energi Terbarukan** Melakukan efisiensi energi di cakupan Wilayah Kerja *Subholding Upstream* Pertamina **Menurunkan Tingkat Emisi menuju *Net Zero Emission*** • Mengembangkan dan menyelesaikan peta jalan *net zero emission* • Melakukan aktivitas program dekarbonisasi • Melaksanakan program jangka pendek pengurangan gas rumah kaca (GRK). Melaksanakan studi *Carbon Capture, Utilization, and Storage* (CCUS) dan *Carbon Capture, and Storage* (CCS) • Menjalankan program pengurangan gas rumah kaca (GRK) jangka pendek • Penurunan emisi karbon telah mencapai 1.186,87 kTonCO_2eq per tahun Improving Energy Efficiency and Use of Renewable Energy Sources Performing energy efficiency in the Working Areas of Subholding Upstream Pertamina Reducing Emission Levels towards Net Zero Emissions • Developing and finalizing a roadmap for net zero emissions • Performing decarbonization program activities • Implementing short-term greenhouse gas (GHG) reduction programs. Conducting studies on Carbon Capture, Utilization, and Storage (CCUS) and Carbon Capture, and Storage (CCS) • Implementing short-term greenhouse gas (GHG) reduction programs • Carbon emission reduction has reached 1,186.87 kTonCO_2eq per year

Pilar LST dan Strategi Keberlanjutan ESG's Pillar and Sustainability Strategy	Inisiasi Keberlanjutan dan Kontribusi PHE terhadap Tujuan Pembangunan Berkelanjutan (TPB) Sustainability Initiation and PHE's Contribution to the Sustainable Development Goals (SDGs)
Mengurangi jejak lingkungan Reduce environmental footprint	**Melakukan Pengelolaan Air dan Air Limbah** • Menjalankan prinsip konservasi dalam penggunaan air bersih • Meningkatkan penghematan pemakaian air • Mendukung peningkatan akses air bersih melalui pembangunan jaringan pipanisasi air bersih bagi masyarakat sekitar • Mendukung peningkatan akses sanitasi layak dengan membangun unit MCK untuk penerima manfaat • Penerima manfaat dari program air bersih, sanitasi, dan pipanisasi mencapai 17.881 orang dengan sebanyak 8.541 orang sebagai penerima manfaat langsung **Melakukan Pengelolaan dan Menjalankan Proses Produksi yang Bertanggung Jawab** • 100% bahan berbahaya telah dikelola dengan baik • Pengelolaan volume timbulan limbah B3 sehingga persentase timbulan limbah B3 terkelola mencapai sebesar 100% • Penurunan volume sampah, dan peningkatan volume sampah yang dikelola • Total pengolahan limbah cair yang telah dimanfaatkan kembali lebih dari 87.531 m^3/tahun • Sertifikasi ISO 14001:2015 terhadap Anak Perusahaan dan Wilayah Kerja • Implementasi *Business Continuity Management System* (BCMS) berdasarkan ISO 22301:2019 Conducting Water and Wastewater Management • Implementing conservation principles in the use of clean water • Increasing water savings • Supporting increase of access to clean water through the construction of clean water pipe networks for surrounding communities • Supporting increase of access to proper sanitation by building MCK (sanitary facilities) units for beneficiaries • The beneficiaries of the clean water, sanitation and piping program reached 17,881 people, with 8,541 people as direct beneficiaries Performing Management and Implementing Production Processes Responsibly • 100% of hazardous materials were properly managed • Management of the volume of B3 waste generation so that the percentage of managed B3 waste generation reached 100% • Reducing the volume of waste, and increasing the volume of waste managed • Total recycled liquid waste processing is more than 87,531 m^3/year • ISO 14001:2015 Certification for Subsidiaries and Working Areas • Implementation of Business Continuity Management System (BCMS) based on ISO 22301:2019
Melindungi keanekaragaman hayati Protecting biodiversity	**Melakukan Penghijauan dan Konservasi** • Melakukan penanaman kembali di area yang diidentifikasi dengan menanam pohon mangrove. • Melakukan konservasi 1.195 ekor penyu sisik di area Kepulauan Seribu • Konservasi multispesies di wilayah kerja rokan untuk melindungi 77 ekor Gajah Sumatra, 3 ekor Harimau Sumatra dan 95 ekor Lutung Kokah dari kepunahan • Melakukan pembangunan *greenhouse* yang bertujuan untuk konservasi Anggrek sehingga lebih banyak flora langka selain Anggrek yang dapat dikonservasi • Melakukan konservasi satwa endemik mahakam (Pesut Mahakam, *Orcaella brevirostis*) sebanyak 62 ekor pesut mahakam • Terbentuknya Kelompok Masyarakat Pengawas "Terumbu Karang Lestari" di Pulau Soop, Distrik Sorong Kepualuan, Kota Sorong, Provinsi Papua Barat Daya • Penanaman 192.656 bibit tanaman darat dan 129.573 bibit tanaman air Performing Reforestation and Conservation • Replanting in identified areas by planting mangrove trees • Conducting conservation of 1,195 hawksbill turtles in the area of Seribu Islands • Multispecies conservation in Rokan working area to protect 77 Sumatran elephants, 3 Sumatran tigers and 95 banded langurs from extinction • Constructing a greenhouse aimed at orchid conservation so that more rare flora other than orchids can be conserved • Conducting conservation of Mahakam endemic animals (Mahakam dolphin, *Orcaella brevirostis*) totaling 62 Mahakam dolphins • Formation of "Terumbu Karang Lestari" Community Monitoring Group on Soop Island, Sorong Islands District, Sorong City, Southwest Papua Province • Planting 192,656 terrestrial plant seedlings and 129,573 aquatic plant seedlings

II. Pilar Sosial/ Social Pillar

Meningkatkan Kesehatan dan Keselamatan Kerja (K3) Improving Occupational Health and Safety (OHS)		**Menjalankan Kegiatan Operasional dengan Aman** • Implementasi berbagai standar HSSE *Excellence* • Penerapan *Contractor Safety Management System* (CSMS) • Upaya pencapaian TRIR (*Total Recordable Incident Rate*) dibawah target yang ditetapkan • Tingkat peristiwa keselamatan proses *Tier* 1 dan *Tier* 2 (*Process Safety Event Rate* (PSE *Rate*) di bawah Asosiasi International *Oil and Gas Producers* (IOGP) rata-rata tahunan produsen • Penyakit Akibat Kerja: 0 • Melakukan pengukuran Survei Budaya HSSE • Memastikan kemudahan pekerja *Subholding Upstream* Pertamina dalam mengakses layanan kesehatan melalui asuransi Medika Plaza • Realisasi kepesertaan BPJS Kesehatan untuk pekerja *Subholding Upstream* Pertamina mencapai 100% • Realisasi kepesertaan BPJS Kesehatan untuk pekerja kontraktor/vendor mencapai 100% • Menerapkan Sertifikasi ISO 45001:2018 Sistem Manajemen Kesehatan dan Keselamatan Kerja (K3) untuk Anak Perusahaan Performing Operational Activities Safely • Implementation of various HSSE Excellence standards • Implementation of a contractor safety management system (CSMS). • Efforts to achieve TRIR (Total Recordable Incident Rate) below the set target • Tier 1 and Tier 2 process safety event rates (PSE Rate) below the annual average for producers of the International Oil and Gas Producers Association (IOGP) • Occupational Diseases: 0 • Conducting HSSE Culture Survey measurements • Ensuring ease of access for workers of Subholding Upstream Pertamina to health services through Medika Plaza insurance • Realization of membership of BPJS for Health for workers of Subholding Upstream Pertamina reached 100% • Realization of membership of BPJS for Health for workers of contractors/vendors reached 100%. • Implementing ISO 45001:2018 Occupational Health and Safety Management System (K3) Certification for Subsidiaries
Menghormati Hak dan Melakukan Pemberdayaan Karyawan Respecting Rights and Empowering Employees		**Pemastian HAM bagi Karyawan dalam Proses Rekrutmen, Pengembangan, dan Retensi** • Memastikan diversifikasi dan kesetaraan *gender* dalam pengelolaan karyawan yang dicerminkan dari jumlah karyawan perempuan di posisi manajerial, keterwakilan Perempuan dalam *nominated talent*, dan persentase karyawan perempuan • Memenuhi Hak Asasi Manusia untuk seluruh karyawan Perseroan, termasuk tidak ada diskriminasi. • Memberikan pelatihan dan pendidikan untuk pemberdayaan kepada 100% karyawan • Memastikan kenyamanan dan retensi karyawan dengan menjaga Tingkat perputaran karyawan di bawah 5% • Memastikan tidak adanya pekerja paksa dan pekerja di bawah umur baik secara internal maupun eksternal penyediaan tenaga kerja dari vendor • Melakukan uji tuntas HAM melalui pendekatan Penilaian Risiko Bisnis dan HAM (PRISMA) Ensuring Human Rights for Employees in Recruitment, Development and Retention Process • Ensuring gender diversification and equality in employee management as reflected in the number of female employees in managerial positions, female representation in nominated talents, and the percentage of female employees • Fulfilling Human Rights for all employees of the Company, including no discrimination • Giving trainings and education for empowerment to 100% of employees • Ensuring employee comfort and retention by keeping employee turnover rate below 5% • Ensuring that there is no forced labor or underage labor, both internally and externally, through the provision of labor from vendors • Conducting human rights due diligence using the Business and Human Rights Risk Assessment (PRISMA) approach

Pilar LST dan Strategi Keberlanjutan ESG's Pillar and Sustainability Strategy	Inisiasi Keberlanjutan dan Kontribusi PHE terhadap Tujuan Pembangunan Berkelanjutan (TPB) Sustainability Initiation and PHE's Contribution to the Sustainable Development Goals (SDGs)
Memperluas Keterlibatan dan Dampak Komunitas Expanding Engagement and Community Impact	**Pelibatan Komunitas melalui Pemberdayaan Masyarakat, Penghormatan pada Hak Asasi Manusia (HAM), Penyediaan Akses Energi Bersih, dan Pemberian Bantuan** • Implementasi EBT *solar cell* melalui Program Desa Energi Berdikari (DEB) pada tahun 2024 yang telah terlaksana di 20 lokasi DEB dengan total kapasitas panel surya terpasang sebesar 115,26 kWp • Mendukung reduksi emisi karbondioksida mencapai 320.814 TonCO_2eq/tahun melalui realisasi 781 Program Pengembangan Masyarakat • Memberikan beasiswa termasuk kepada masyarakat adat Suku Anak Dalam, Suku Sakai, Suku Dayak, Suku Kutai dan suku lainnya yang masuk ke dalam lingkup wilayah kerja perusahaan • Hingga akhir tahun 2024 tercatat lebih dari 370 UMKM termasuk di dalamnya terdapat kelompok perempuan sebagai pengelola kelompok dan 560 Mitra Binaan yang diberdayakan serta produktif agar bisa menambah penghasilan rumah tangga dan menjadi lebih mandiri yang tersebar di WK PHE Subholding Upstream • Pemberdayaan masyarakat difabel di Rantau Aceh Tamiang. Pada tahun 2024, melalui pengembangan masyarakat inklusif yang berfokus pada penanganan kebencanaan di Aceh Tamiang Community Engagement through Community Empowerment, Respect for Human Rights (HAM), Provision of Access to Clean Energy, and Provision of Assistance • Implementation of EBT solar cells through the Independent Energy Village (DEB) Program in 2024 which was implemented in 20 DEB locations with a total installed solar panel capacity of 115.26 kWp • Supporting carbon dioxide emission reduction reaching 320,814 TonCO_2eq/year through the realization of 781 Community Development Programs • Awarding scholarships including to the indigenous communities of Anak Dalam Tribe, Sakai Tribe, Dayak Tribe, Kutai Tribe and other tribes within the working areas of the company • By the end of 2024, more than 370 MSMEs have been recorded, including women's groups as group managers and 560 Assisted Partners who were empowered and productive so that they could increase household income and become more independent, spread across the WA of PHE Subholding Upstream • Empowerment of communities of people with disabilities in Rantau Aceh Tamiang. In 2024, through the development of an inclusive community that focused on disaster management in Aceh Tamiang
III. Pilar Tata Kelola/ Governance Pillar	
Peningkatan Kualitas Tata Kelola Perusahaan Improving Quality of Corporate Governance	**Memperkuat Keamanan Digital dan Meningkatkan etika Perusahaan** • Melakukan asesmen risiko secara berkala dan pembaruan kebijakan keamanan informasi sesuai ISO 27001 • PHE menerbitkan Pedoman Keamanan Informasi yang berbasis pada standar internasional ISO 27001:2022 Sistem Manajemen Keamanan Informasi • Tidak adanya kasus peretasan maupun kebocoran data perusahaan • Melakukan sertifikasi ISO 37001:2016 SMAP untuk anak dan cucu Perusahaan • Menjaga agar tidak terdapat kasus suap dan/atau korupsi • Sosialisasi dan pelatihan antikorupsi kepada pekerja melalui kegiatan Upstream Stakeholder Forum • Melakukan tindak lanjut atas laporan yang masuk dalam WBS • Memastikan pelaporan LHKPN mencapai target KPI 94,5% dari wajib lapor dengan pengusahaan maksimal hinggal 100% Strengthening Digital Security and Improving Corporate Ethics • Conducting periodic risk assessments and updating information security policies in accordance with ISO 27001 • PHE publishes Information Security Guidelines based on the international standard ISO 27001:2022 Information Security Management System • No cases of hacking or company data leaks • Conducting ISO 37001:2016 SMAP certification for subsidiaries and sub-subsidiaries of the Company • Ensuring that there are no cases of bribery and/or corruption • Anti-corruption dissemination and training for workers through Upstream Stakeholder Forum activities • Following up on reports included in the WBS • Ensuring that LHKPN reporting reaches the KPI target of 94.5% of mandatory reporting with a maximum utilization of up to 100%

PENCAPAIAN KINERJA KEBERLANJUTAN

Sebagai bagian dari komitmen terhadap keberlanjutan, PHE telah terdaftar sebagai anggota *United Nations Global Compact* (UNGC) sejak Juni 2022. Dalam operasionalnya, PHE berkomitmen untuk menerapkan Sepuluh Prinsip Universal (*Ten Principles*) UNGC, yang mencakup aspek *Environment, Social, and Governance* (ESG). Pada tahun buku 2024,

SUSTAINABILITY PERFORMANCE ACHIEVEMENTS

As a part of its commitment to sustainability, PHE has been registered as a member of the United Nations Global Compact (UNGC) since June 2022. In its operations, PHE is committed to implementing the Ten Universal Principles of UNGC, which cover the aspects of Environment, Social, and Governance (ESG). In financial year 2024, PT Pertamina

PT Pertamina Hulu Energi Subholding Upstream (PHE) berhasil mencatat kinerja keberlanjutan yang positif. Hal ini dapat dilihat dari pencapaian rating ESG dari lembaga pemeringkat internasional, yang mencerminkan integrasi praktik pengelolaan lingkungan, tanggung jawab sosial, dan tata kelola perusahaan yang transparan. Perusahaan memperoleh rating BBB dari lembaga pemeringkat internasional MSCI ESG Research UK Limited atas komitmennya menerapkan prinsip *Environmental, Social and Governance* (ESG) dalam kegiatan operasional. MSCI ESG *Research* UK *Limited* membagi nilai ESG ke dalam tiga kategori berdasarkan kinerja perusahaan dalam mengelola risiko ESG dan risiko bisnis, yakni kategori *Leader, Average dan Laggard*. Untuk kategori *Leader*, MSCI membagi nilai ESG menjadi dua kelompok skor *rating*, yakni AAA dan AA. Sementara untuk kategori *Average*, penilaian skor *rating* ESG dibagi menjadi tiga kelompok, yaitu A, BBB dan BB. Sedangkan untuk kategori *Laggard*, penilaian skor rating ESG dibagi menjadi dua kelompok, yaitu B dan CCC. Perolehan *rating* Perusahaan menunjukkan bahwa PHE masuk dalam kategori *Average* yang merupakan perusahaan dengan rekam jejak yang beragam atau baik dalam mengelola risiko dan peluang ESG.

Selain itu, PHE juga telah menerima berbagai penghargaan bergengsi di bidang keberlanjutan. Hal tersebut menjadi bukti pengakuan atas inovasi dan komitmen berkelanjutan yang telah diterapkan dalam operasionalnya. Prestasi tersebut tidak hanya menunjukkan posisi PHE sebagai pionir dalam industri migas yang bertanggung jawab, tetapi juga menggarisbawahi kontribusi signifikan perusahaan dalam mendukung transisi energi dan agenda pembangunan berkelanjutan di tingkat nasional dan global, serta menciptakan nilai tambah bagi seluruh pemangku kepentingan.

Hulu Energy Subholding Upstream (PHE) managed to record positive sustainability performance. This can be seen from the achievement of ESG ratings from international rating agencies, which reflect the integration of environmental management practices, social responsibility, and transparent corporate governance. The company received a BBB rating from the international rating agency MSCI ESG Research UK Limited for its commitment to implementing Environmental, Social and Governance (ESG) principles in its operational activities. MSCI ESG Research UK Limited divides ESG values into three categories based on performance of the company in managing ESG risks and business risks, namely Leader, Average and Laggard categories. For the Leader category, MSCI divides ESG values into two rating score groups, namely AAA and AA. Meanwhile, for the Average category, the ESG rating score assessment is divided into three groups, namely A, BBB and BB. Meanwhile, for the Laggard category, the ESG rating score assessment is divided into two groups, namely B and CCC. The Company's rating achievement shows that PHE is included in the Average category, which is a company with a diverse or good track records in managing ESG risks and opportunities.

In addition, PHE has also received various prestigious awards in the field of sustainability. This is proof of recognition of sustainable innovations and commitment that has been implemented in its operations. These achievements not only demonstrate PHE's position as a pioneer in the responsible oil and gas industry, but also underline the company's significant contribution to supporting the energy transition and sustainable development agenda at the national and global levels, as well as creating added values for all stakeholders.

Perolehan PROPER PHE Subholding Upstream
PHE Subholding Upstream's PROPER Achievements



PROPER Emas
Gold PROPER
2024
12
2023 | 12
2022 | 7



PROPER Hijau
Green PROPER
2024
19
2023 | 19
2022 | 21

PROPER Biru
Blue PROPER
2024
4
2023 | 6
2022 | 6

Daftar Anak Perusahaan PHE Subholding Upstream Penerima PROPER Emas Tahun 2024
List of PHE Subholding Upstream's Subsidiaries Receiving Gold PROPER 2024

1. PT Badak NGL
2. PT Pertamina EP Asset 1 Field Rantau
3. PT Pertamina EP Asset 2 Field Limau
4. PT Pertamina EP Asset 2 Field Prabumulih
5. PT PHE Offshore North West Java (PHE ONWJ)
6. PT Pertamina EP Asset 3 Field Subang
7. PT Pertamina EP Asset 5 Field Sanga Sanga
8. PT Pertamina EP Asset 5 Field Sangata
9. PT Pertamina EP Asset 4 Field Sukowati
10. PT PHE West Madura Offshore (PHE WMO)
11. PT Pertamina EP Asset 4 Field Donggi Matindok
12. JOB Pertamina Medco Tomori



05

TENTANG PHE
About PHE



INFORMASI UMUM DAN IDENTITAS PERUSAHAAN
GENERAL INFORMATION AND COMPANY IDENTITY

Nama Perusahaan
Company Name

PT Pertamina Hulu Energi (PHE)

Tanggal Didirikan
Date of Establishment

17 November 1989
November 17, 1989

Status Perusahaan
Company Status

Perseroan Terbatas
Limited Liability Company

Dasar Hukum Pendirian
Legal Basis for Establishment

Akta No. 245 tanggal 17 November 1989
Deed No. 245 dated November 17, 1989

Jumlah Pekerja
Number of Employees

14.008 orang
14,008 people

Alamat Kantor Pusat
Address [OJK C.2]

PHE Tower, Jl.
TB. Simatupang
Kav. 99 Jakarta Selatan 12520, Indonesia

Skala Organisasi
Organization Scale

Total Aset USD30.888,92 Juta
Total Assets USD30,888.92 Million

Kepemilikan Saham
Shares Ownership

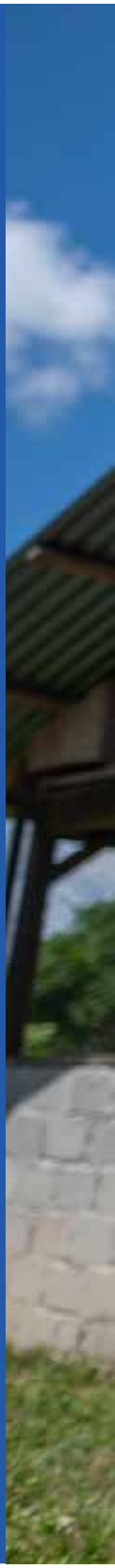


Wilayah Operasi
Area of Operation

- Negara/Countries :
  - Indonesia, Irak, Algeria, Malaysia
- Lima Regional Wilayah Kerja:
  Five Regional Working Areas:
  - WK domestik 40, terdiri dari 21 blok operator dan 19 blok non-operator
    40 Domestic WAs, consisting of 21 operator blocks and 19 non-operator blocks
  - WK internasional 25 terdiri dari:
    25 International WAs consisting of:
    - 25 Wilayah Kerja Internasional yang dikelola di 12 negara, meliputi Asia Tenggara, Amerika Selatan, Afrika, Eropa dan *Middle East* yang terdiri dari 1 blok operator dan 7 blok non operator, serta 17 WK lainnya, dimana PHE sebagai salah satu pemegang saham.
      25 International Working Areas managed in 12 countries, covering Southeast Asia, South America, Africa, Europe and the Middle East consisting of 1 operator block and 7 non-operator blocks, as well as 17 Others WA, where PHE is one of the shareholders.

Kontak
Contacts

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  - Instagram @phe.pertamina
  - Youtube @phe.pertamina




PRIAWANSYAH
PERTAMINA

SEKILAS PERUSAHAAN
COMPANY OVERVIEW [OJK C.6] [GRI 2-1]

Berdasarkan Undang-Undang No. 22 Tahun 2001, minyak dan gas bumi termasuk dalam sumber daya alam strategis tidak terbarukan yang dikuasai oleh negara, serta merupakan komoditas vital yang menguasai hajat hidup orang banyak. Sumber daya alam ini memiliki peranan penting dalam perekonomian nasional, sehingga pengelolaannya harus dilakukan dengan optimal dan mampu memberikan kemakmuran dan kesejahteraan pada rakyat. Undang-Undang tersebut kemudian menjadi latar belakang perubahan PT Aroma Operations Servcie (AOS) di tahun 2002 menjadi PT Pertahulu Energy, yang selanjutnya berubah nama menjadi PT Pertamina Hulu Energi (PHE) di tahun 2007 hingga kini. PT Pertamina Hulu Energi (PHE) berfokus mengelola Wilayah Kerja Hulu Migas, yaitu eksplorasi dan produksi minyak dan gas bumi. Pada tanggal 16 Juni 2020, berdasarkan Surat Keputusan Direksi PT Pertamina (Persero) No. Kpts-19/C00000/2020-S0, PHE resmi ditetapkan sebagai *Subholding Upstream*.

Subholding Pertamina memiliki peran dalam mendorong *operational excellence*, melalui pengembangan skala dan sinergi di setiap bisnisnya. Posisi *subholding* ini berada di bawah level perusahaan induk. PHE sebagai *subholding upstream*, memiliki *power* yang kuat untuk menjadikan perusahaan mampu mengatur bisnis ke dalam kelompok yang berbeda berdasarkan; sektor, geografi, dan jenis usahanya. Di akhir tahun 2024, perusahaan mengelola sebanyak 40 wilayah kerja domestik dan 25 wilayah kerja internasional yang tersebar di negara Kawasan Asia Tenggara, Afrika, Eropa, dan Timur Tengah. Pengelolaan ini berkaitan langsung dengan Entitas Anak Perusahaan Hulu (APH) yang bekerja sama dengannya.

PT Pertamina Hulu Energi mengelola wilayah kerja tersebut secara regional dengan mempertimbangkan faktor-faktor seperti; geografi wilayah, kompleksitas operasional, dan *volume* produksinya. *Subholding Upstream* juga berfungsi sebagai perencana, pembuat aturan, dan *validator*. Selain itu, *Subholding Upstream* juga bertanggung jawab mengoptimalkan kinerja tiap perusahaan dengan meningkatkan keselamatan, serta produksi cadangan minyak dan gas.

Selama tahun pelaporan, tidak ada perubahan signifikan terkait struktur organisasi, operasional, struktur pemegang saham, ataupun rantai pasokan PHE Subholding Upstream. [OJK C.6]

Pursuant to Law No. 22 of 2001, oil and natural gas are included in strategic non-renewable natural resources controlled by the country, and are vital commodities that control the livelihoods of many people. These natural resources play an important role in the national economy, so their management must be performed optimally and be able to provide prosperity and welfare for the people. The law then became the background for the change of PT Aroma Operations Service (AOS) in 2002 to PT Pertahulu Energy, which then changed its name to PT Pertamina Hulu Energi (PHE) in 2007 until now. PT Pertamina Hulu Energi (PHE) focuses on managing the Upstream Oil and Gas Working Area, namely the exploration and production of oil and natural gas. On June 16, 2020, based on Resolution of Board of Directors of PT Pertamina (Persero) No. Kpts-19/C00000/2020-S0, PHE was officially designated as the Subholding Upstream.

Pertamina Subholding has a role in driving operational excellence, through the development of scale and synergy in each of its businesses. The position of this subholding is below the parent company level. PT Pertamina Hulu Energi as the Subholding Upstream, has strong power to make the company able to organize businesses into different groups based on; sector, geography, and type of business. By the end of 2024, the company managed 40 domestic Work Areas and international Work Areas spread across Southeast Asia, Africa, Europe and the Middle East. This management is directly related to Upstream Subsidiary Entities (APH) that collaborates with it.

PT Pertamina Hulu Energi manages the work areas regionally by considering factors such as; geography of the region, operational complexity, and production volume. The Subholding Upstream also functions as a planner, rule maker, and validator. In addition, the Subholding Upstream is also responsible for optimizing the performance of each company by improving safety, as well as the production of oil and gas reserves.

During the reporting year, there were no significant changes related to the organizational structure, operations, shareholder structure, or supply chain of PHE Subholding Upstream. [OJK C.6]



PT Pertamina Hulu Energi

VISI, MISI, DAN TATA NILAI PERUSAHAAN
VISION, MISSION, AND CORPORATE VALUES [OJK C.1]



VISI
Vision

Menjadi perusahaan minyak dan gas bumi kelas dunia.

To become a world-class oil and gas company.

MISI
Mission

Melaksanakan pengelolaan operasi dan portofolio usaha sektor hulu minyak dan gas bumi secara profesional, dan berdaya laba tinggi, serta memberikan nilai tambah bagi *stakeholders*.

To manage operations and business portfolios of the upstream oil and gas sector in a professional and high-profit manner and to provide added value to stakeholders.

TATA NILAI PERUSAHAAN
Corporate Values

PHE memiliki budaya yang menjadi budaya seluruh perusahaan BUMN sesuai dengan Surat Edaran Menteri Badan Usaha Milik Negara Republik Indonesia No. SE-7/MBU/07/2020 tentang Nilai-Nilai Utama Sumber Daya Manusia Badan Usaha Milik Negara.

PHE has a culture that becomes the culture of all SOE companies in accordance with Circular of Minister of State-Owned Enterprises of the Republic of Indonesia No. SE-7/MBU/07/2020 concerning Core Values of Human Resources of State-Owned Enterprises.



A **AMANAH** TRUST

Memegang teguh kepercayaan yang diberikan
To Uphold the trust given

K **KOMPETEN** COMPETENT

Terus belajar dan mengembangkan kapabilitas
Continuously to learn and develop capabilities

H **HARMONIS** HARMONIOUS

Saling peduli dan menghargai perbedaan
Care and respect for the differences

L **LOYAL**

Berdedikasi dan mengutamakan kepentingan bangsa dan negara
Dedicated and prioritize the interest of nation and state

A **ADAPTIF** ADAPTIVE

Terus berinovasi dan antusias dalam menggerakkan ataupun menghadapi perubahan
Continuously to innovate and be enthusiastic in movement or facing the change

K **KOLABORATIF** COLLABORATIVE

Membangun kerjasama yang sinergis
Build synergistic cooperation

JEJAK LANGKAH [GRI 2-1]
MILESTONES



1989

Pendirian PT Aroma Operations Services (AOS) selaku anak perusahaan PT Pertamina (Persero).

Establishment of PT Aroma Operations Services (AOS) as a subsidiary of PT Pertamina (Persero).

2001

Pemberlakuan Undang-Undang No. 22 Tahun 2001 tentang Minyak dan Gas Bumi.

Enforcement of Law No. 22 of 2001 on Oil and Natural Gas.

2002

AOS mengalami perubahan nama menjadi PT Pertahulu Energy.

AOS underwent a name change to PT Pertahulu Energy.

2007

PT Pertahulu Energy mengalami perubahan nama menjadi PT Pertamina Hulu Energi.

PT Pertahulu Energy underwent a name change to PT Pertamina Hulu Energi.

2017

PHE efektif beroperasi di bidang usaha hulu minyak dan gas di dalam negeri dan luar negeri.

PHE effectively began operations in the upstream oil and gas sector domestically and abroad.

2022

- Penandatanganan Asset Sales Agreement Proyek Tambourine oleh PIREP dan EMIL pada tanggal 31 Desember 2022. Proyek Tambourine merupakan pembelian PI ExxonMobil Iraq Limited pada lapangan eksisting milik PT Pertamina Irak Eksplorasi Produksi ("PIREP") yaitu Lapangan West Qurna-1 sehingga kepemilikan PI PIREP menjadi 20% dari sebelumnya 10%.

  Signing of the Tambourine Project Asset Sales Agreement by PIREP and EMIL on December 31, 2022. The Tambourine project is a purchase of PI ExxonMobil Iraq Limited in the existing field owned by PT Pertamina Iraq Eksplorasi Ekspor ("PIREP"), namely the West Qurna-1, thereby increasing PI PIREP's ownership from 10% to 20%.

- Pada tanggal 10 Juni 2022, dilakukan penandatanganan "*Corporate Loan Syndication Facility Agreement*" antara PHE, PEP, PHI, dengan konsorsium perbankan nasional dan internasional untuk pembiayaan *General Corporate Purposes* senilai USD2,5 miliar. *Corporate Loan* ini menjadi yang terbesar secara nilai fasilitas pinjaman sepanjang sejarah *Corporate Loan* di Indonesia.

  On June 10, 2022, a Corporate Loan Syndication Facility Agreement was signed between PHE, PEP, PHI and a consortium of national and international banks for General Corporate Purposes financing worth USD2.5 billion. This Corporate Loan is the largest in terms of facility amount in the history of Corporate Loans in Indonesia.

2021

- Alih kelola WK Rokan tanggal 9 Agustus 2021 dari PT Chevron Pacific Indonesia (CPI) kepada PT Pertamina Hulu Rokan (PHR).

  Transfer of the Rokan WK on August 9, 2021 from PT Chevron Pacific Indonesia (CPI) to PT Pertamina Hulu Rokan (PHR).

- Tanggal 1 September 2021, PHE melakukan implementasi pembentukan (*Legal End-State*) *Subholding Upstream* dan pengambilalihan seluruh saham 11 Anak Perusahaan PT Pertamina (Persero).

  On September 1, 2021, PHE implemented the Legal End-State for Subholding Upstream and acquisition of all shares of 11 Subsidiaries of PT Pertamina (Persero).

2020

PHE melakukan tahapan penetapan bilahan Struktur Organisasi Dasar dan proses persiapan menuju PHE Subholding Upstream.

PHE performed the stages of determining the Basic Organizational Structure and the preparation process to become PHE Subholding Upstream.

2019

PHE ditunjuk menjadi operator WK Jambi Merang (9 Februari 2019), WK Maratua (28 Februari 2019), dan WK Raja/Pendopo (5 Juli 2019).

PHE was appointed as the operator of the Jambi Merang Block (February 9, 2019), Maratua Block (February 28, 2019), and Raja/ Pendopo Block (July 5, 2019).

2018

PHE ditunjuk menjadi operator WK Tuban, WK Ogan Komering, WK Southeast Sumatra (SES), dan WK North Sumatra Offshore (NSO).

PHE was appointed as the operator of the Tuban Block, Ogan Komering Block, Southeast Sumatra (SES) Block, and North Sumatra Offshore (NSO) Block.

2023

- Peresmian Proyek Lapangan Gas Jambaran Tiung Biru (JTB) oleh Wakil Presiden Republik Indonesia (Februari 2023).

  The inauguration of the Jambaran Tiung Biru (JTB) Gas Field Project by the Vice President of the Republic of Indonesia (February 2023).

- PT Pertamina Algeria EP (PAEP) menandatangani kontrak baru perpanjangan hidrokarbon di Menzel Lejmat Nord (MLN) Blok 405. Kerjasama tersebut meliputi Lapangan MLN dan 9 Lapangan lain yang mencakup unitisasi Ourhoud dan El Merk. Jumlah total investasi diperkirakan lebih dari USD800 juta dan jumlah Sumber Daya mencapai 150 juta barel setara minyak (Juni 2023).

  PT Pertamina Algeria EP (PAEP) has signed a new hydrocarbon contract extension in the Menzel Lejmat Nord (MLN) Block 405. The collaboration includes the MLN field and 9 other fields covering the unitization of Ourhoud and El Merk. The total investment is estimated to exceed USD800 million, with total resources reaching 150 million barrels of oil equivalent (June 2023).

- PHE menandatangani perjanjian akuisisi kepemilikan *Shell Upstream Overseas Services* (I) *Limited* (SUOS) di Blok Masela. PHE bekerjasama dengan Petronas melalui Petronas Masela Sdn. Bhd. (PETRONAS Masela) mengambil alih 35% kepemilikan SUOS. PHE mengelola *Participating Interest* (PI) sebesar 20% dan PETRONAS Masela mengelola PI sebesar 15% (Juli 2023).

  PHE has signed an agreement to acquire ownership of Shell Upstream Overseas Services (I) Limited (SUOS) in the Masela Block. PHE, in collaboration with Petronas through Petronas Masela Sdn. Bhd. (PETRONAS Masela), has acquired a 35% ownership of SUOS. PHE manages a Participating Interest (PI) of 20%, while PETRONAS Masela manages a PI of 15% (July 2023).

- Sebagai bentuk implementasi CCUS, telah dilaksanakan Injeksi Perdana CO_2 di Lapangan Sukowati (Desember 2023).

  As part of the CCUS implementation, the inaugural CO_2 injection has been carried out at the Sukowati Field (December 2023).

- PT Pertamina International EP (PIEP) Berhasil menambahkan Participating Interest 10% di Irak.

  PT Pertamina International EP (PIEP) has successfully added a 10% Participating Interest in Iraq.

- Penandatanganan Kontrak Kerja Sama PT Pertamina Hulu Energi North East Java (PHE NEJ) Bersama PT POSCO INTERNATIONAL ENP Indonesia (POSCO ENP) Dalam Rangka Pengelolaan WK Bunga Selama 30 Tahun.

  The signing of a Cooperation Contract between PT Pertamina Hulu Energi North East Java and PT POSCO INTERNATIONAL ENP Indonesia (POSCO ENP) for the Management of the Bunga Working Area for 30 Years.

- Penandatanganan *Confidentiality Agreement* antara PT Pertamina Hulu Kalimantan Timur (PHKT), PT Pertamina Hulu Mahakam (PHM), PT Pertamina Hulu Sanga-Sanga, dan Chevron terkait Pengembangan CCS/CCUS.

  The signing of a Confidentiality Agreement between PT Pertamina Hulu Kalimantan Timur (PHKT), PT Pertamina Hulu Mahakam (PHM), PT Pertamina Hulu Sanga-Sanga, and Chevron regarding the Development of CCS/CCUS.

- PT Pertamina Hulu Energi mendapatkan *credit rating* internasional perdana Baa2 dari Moody's dan BBB dari *Fitch Ratings*. Pencapaian ini menyamai *credit rating* untuk PT Pertamina (Persero) dan Indonesia's *Sovereign*, serta menjadi salah satu yang tertinggi di lingkungan BUMN di Indonesia. Selain itu, anak perusahaan PHE Subholding Upstream yaitu PT Pertamina EP mendapatkan *credit rating* perdana AAA(idn) dan PT Pertamina Hulu Indonesia medapatkan *credit rating* Perdana AA+(idn) yang keduanya diberikan oleh Lembaga Pemeringkat *Fitch Rating* Indonesia.

  PT Pertamina Hulu Energi has achieved its inaugural international credit rating of Baa2 from Moody's and BBB from Fitch Ratings. This accomplishment matches the credit ratings of PT Pertamina (Persero) and Indonesia's Sovereign, positioning it among the highest-rated entities within the state-owned enterprises (SOEs) sector in Indonesia. Furthermore, its subsidiary, PHE Subholding Upstream, specifically PT Pertamina EP, has received an inaugural credit rating of AAA(idn), while PT Pertamina Hulu Indonesia has received an inaugural credit rating of AA+(idn), both bestowed by the rating agency Fitch Rating Indonesia.

- Pada tanggal 9 Mei 2023, dilakukan penandatanganan *Corporate Loan Syndication Facility Agreement* antara PHE dengan konsorsium perbankan nasional dan internasional untuk pembiayaan *General Corporate Purposes* senilai USD1,5 miliar.

  On May 9, 2023, a Corporate Loan Syndication Facility Agreement was signed between PHE and a consortium of national and international banks for General Corporate Purposes financing worth USD1.5 billion.

2024

- Regional Internasional *Subholding Upstream* melalui PT Pertamina Malaysia Eksplorasi Produksi (PMEP) melaksanakan penandatanganan PSC Blok Eksplorasi SK510 di Malaysia. PSC Blok Eksplorasi SK510 merupakan kerja sama antara PMEP (25%) dengan Petronas Carigali Sdn. Bhd. (PI 40%), INPEX Malaysia E&P SK510 Sdn. Bhd (25%), dan Petroleum Sarawak Exploration & Production Sdn. Bhd (10%).

  International Region Subholding Upstream through PT Pertamina Malaysia Eksplorasi Produksi (PMEP) executed SK510 Exploration Block PSC in Malaysia. The SK510 Exploration Block PSC is a partnership among PMEP (25%) and Petronas Carigali Sdn. Bhd. (PI 40%), INPEX Malaysia E&P SK510 Sdn. Bhd (25%), and Petroleum Sarawak Exploration & Production Sdn. Bhd (10%).

- Regional 4 Indonesia Timur Subholding Upstream Pertamina melalui JOB Pertamina – Medco E&P Tomori, meresmikan pengoperasian Stasiun Pengukuran Gas PLN - JOB Pertamina - Medco E&P Tomori, untuk PKTMG Luwuk 40 MW. Pasokan gas dari J JOB Pertamina – Medco E&P Tomori sebesar 5 BBUTD diperkirakan mampu mengalirkan listrik untuk 30.000 rumah di Kabupaten Banggai.

  Subholding Upstream Pertamina of Region 4 Eastern Indonesia through JOB Pertamina – Medco E&P Tomori launched the official operation of Gas Measurement Station of PLN - JOB Pertamina - Medco E&P Tomori, for PKTMG Luwuk 40 MW. Gas supplies from J JOB Pertamina – Medco E&P Tomori amounting to 5 BBUTD are expected to be capable of distributing electricity to 30,000 houses in Banggai Regency.

- PT Pertamina Hulu Energi Sulawesi Melati bersama mitra konsorsium, Sinopec *International Energy Investment* (SIEI) Melati Limited dan KUFPEC Indonesia (Melati) B.V, melakukan penandatanganan Kontrak Kerja Sama (KKS) dengan SKK Migas.

  PT Pertamina Hulu Energi Sulawesi Melati with consortium partners, Sinopec International Energy Investment (SIEI) Melati Limited and KUFPEC Indonesia (Melati) B.V executed Partnership Agreement with the Special Task Force for Upstream Oil and Gas Business Activities.

- *Kick Off Field Trial Interwell* CO_2 *Injection,* yang merupakan kerja sama antara Pertamina dengan JOGMEC dan JAPEX telah berhasil dilaksanakan di Field Sukowati, PT Pertamina EP Cepu.

  Field Trial Kickoff with Interwell CO_2 Injection, a partnership between Pertamina and JOGMEC and JAPEX, have been sucessfully held in Sukowati Field, PT Pertamina EP Cepu.

BIDANG USAHA [OJK C.4] [GRI 2-6]

PT Pertamina Hulu Energi (PHE) adalah anak perusahaan dari PT Pertamina (Persero) yang bergerak di bidang pertambangan, perdagangan besar, dan aktivitas profesional, ilmiah dan teknis. Menjadi *Subholding Upstream* yang berarti membawahi banyak anak perusahaan migas menjadikan Perseroan bergerak di bidang usaha berikut ini:

1. Pertambangan minyak bumi;
2. Pertambangan gas alam;
3. Aktivitas penunjang pertambangan minyak bumi dan gas alam;
4. Aktivitas penunjang pertambangan dan penggalian lainnya
5. Perdagangan besar bahan bakar padat, cair dan gas dan produk jadi;
6. Aktivitas perusahaan holding;
7. Perdagangan dan penyimpanan karbon;
8. Pengusahaan pengurangan emisi karbon dan emisi gas lainnya melalui penanaman pohon dan tumbuhan.

BUSINESS FIELDS [OJK C.4] [GRI 2-6]

PT Pertamina Hulu Energi (PHE) is a subsidiary of PT Pertamina (Persero) engaged in the field of mining, large trade, and professional, scientific and technical activities. Being the Subholding Upstream which means overseeing many oil and gas subsidiaries makes the Company engaged in the following business fields:

1. Petroleum mining;
2. Natural gas mining;
3. Supporting activities for oil and natural gas mining;
4. Other mining and excavation supporting activities;
5. Large trade of solid, liquid and gas fuels and finished products;
6. Holding company activities;
7. Carbon trading and storage;
8. Undertaking to reduce carbon emissions and other gas emissions through planting trees and plants.

Untuk mencapai maksud dan tujuan serta untuk menunjang kegiatan usaha utama Perseroan tersebut di atas, Perseroan dapat melaksanakan kegiatan usaha penunjang antara lain:
To achieve the aims and objectives and to support the Company's main business activities mentioned above, the Company can carry out supporting business activities including the following:

1. **Aktivitas Konsultasi Manajemen**
   Management Consulting Activities
2. **Aktivitas Pengolahan Data**
   Data Processing Activities
3. **Aktivitas Keinsinyuran dan Konsultasi Teknis**
   Engineering and technical consulting activities
4. **Aktivitas Teknologi Informasi dan Jasa Komputer Lainnya**
   Information technology activities and other computer services
5. **Kegiatan-kegiatan usaha lainnya yang dapat menunjang kegiatan usaha utama, dan kegiatan usaha lainnya dalam rangka optimalisasi sumber daya yang dimiliki.**
   Other business activities that can support the main business activities, and other business activities in order to optimize the resources owned.

Produk dan Layanan Jasa Perusahaan [OJK C.4]

Produk dan layanan jasa PHE mencakup tanggung jawab dan perannya sebagai *Subholding Upstream*. Informasi bidang usaha, produk, dan jasa selama periode pelaporan ini mencakup Anak Perusahaan non-eksplorasi dan produksi, yakni Elnusa, PDSI, dan Badak LNG.

Hingga akhir tahun 2024, pencapaian kinerja produksi minyak dan gas (konsolidasi) terhadap RKAP sebesar 94,55% (1.044,60 MBOEPD vs 1.104,78 MBOEPD), yang terdiri dari pencapaian produksi minyak 88,65% (555,69 MBOPD vs 626,81 MBOPD) dan produksi gas 102,29% (2.832,61 MMSCFD vs 2.769,23 MMSCFD). Untuk pencapaian kinerja *lifting* minyak dan gas (konsolidasi) termasuk PPL terhadap RKAP sebesar 96,31% (900,45 MBOEPD vs 934,95 MBOEPD), yang terdiri dari pencapaian *lifting* minyak termasuk PPL 94,05% (555,49 MBOPD vs 590,63 MBOPD) dan realisasi *lifting* gas adalah 100,19% (1.998,60 MMSCFD vs 1.994,90 MMSCFD)

Company's Products and Services [OJK C.4]

PHE's products and services cover its responsibilities and roles as the Subholding Upstream. Information on business areas, products, and services during this reporting period includes non-exploration and production Subsidiaries, namely; Elnusa, PDSI, and Badak NGL.

Until the end of 2024, achievement of oil and gas production performance (consolidation) against the RKAP amounted to 94.55% (1,044.60 MBOEPD vs 1,104.78 MBOEPD), which consists of oil production achievements 88.65% (555.65 MBOPD vs 626.81 MBOPD) and gas production of 102.29% (2,832.61 MMSCFD vs 2,769.23 MMSCFD). As for the achievement of oil and gas lifting performance (consolidation) including PPL against the RKAP of 96.31% (900.45 MBOEPD vs 934.95 MBOEPD), which consists of oil lifting achievements including PPL 94.05% (555.49 MBOPD vs 590.63 MBOPD) and the realization of gas lifting was 100.19% (1,998.60 MMSCFD vs 1,994.90 MMSCFD).



KEGIATAN USAHA
BUSINESS ACTIVITIES

- Eksplorasi
  Exploration
- Produksi
  Production
- Pengembangan
  Exploration
- Manajemen Portofolio
  Portfolio Management
- Jasa Hulu Migas
  Upstream Oil and Gas Services
- Jasa Penunjang Migas
  Oil and Gas Support Services
- Energi
  Energy
- *Holding*



PRODUK
PRODUCTS

- Minyak Mentah
  Crude Oil
- Gas Bumi
  Natural Gas
- LNG
- LPG
- Kondensat
  Condensate

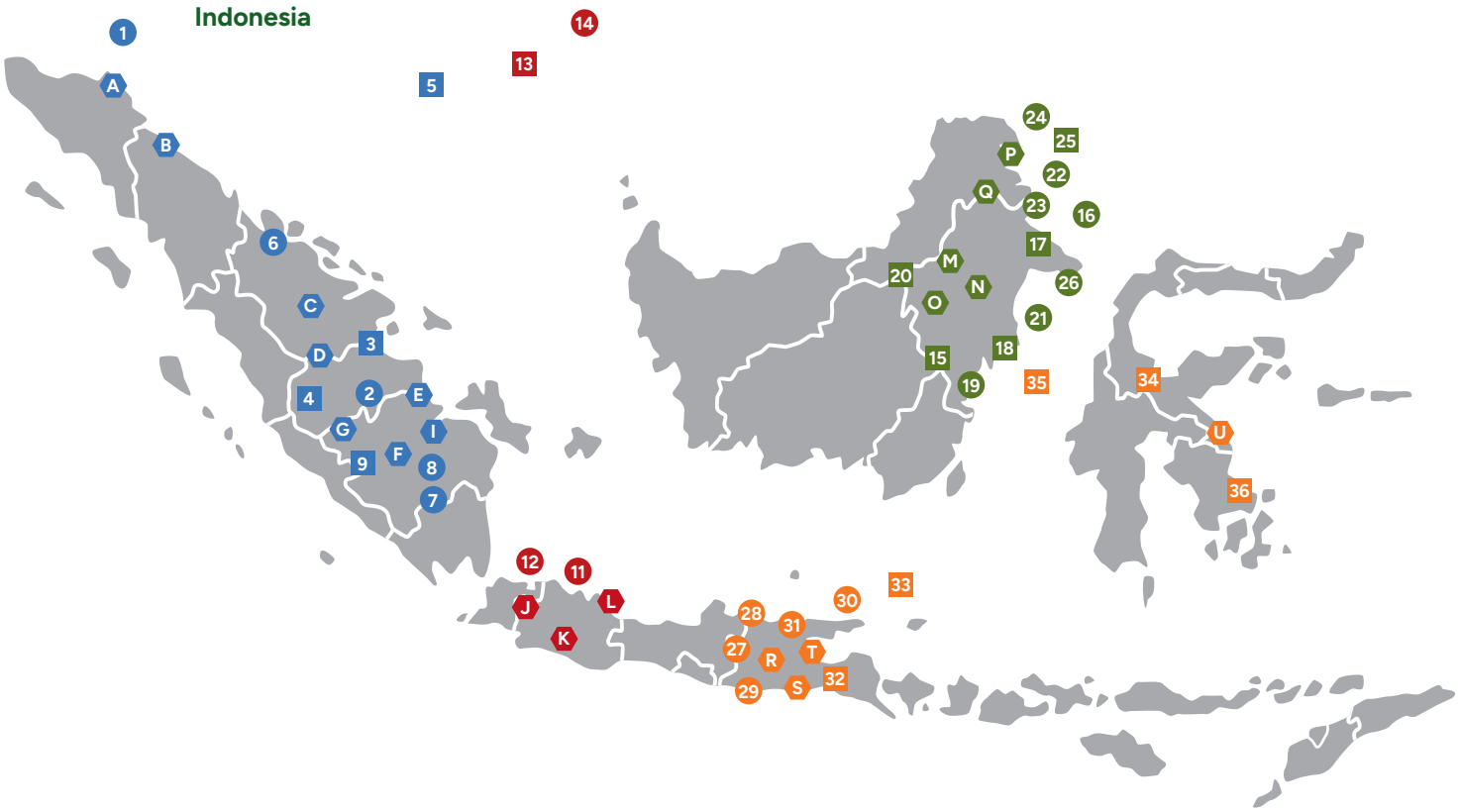


JASA
SERVICE

- Jasa Hulu Migas
  Upstream Oil and Gas Services
- Logistik
  Logistics
- Distribusi
  Distribution

WILAYAH OPERASI DAN PASAR YANG DILAYANI

OPERATIONAL AREAS AND MARKETS SERVED [OJK C.3.D, C.4] [GRI 2-6]



Sumatra

Area 71.590 km²
Regional Lead:
PT Pertamina Hulu Rokan

Regional Region 1

ZONA 1 | ZONE 1

A	Rantau
B	Pangkalan Susu
C	Lirik
D	Jambi
1	NSO
2	Jambi Merang
3	Jabung
4	South East Jambi
5	Kakap

ZONA 2-3 | ZONE 2-3

6	Rokan

ZONA 4 | ZONE 4

E	Ramba
F	Prabumulih
G	Pendopo
H	Limau
I	Adera
7	Ogan Komering
8	Raja Tempirai
9	Corridor
10	GMB Tanjung Enim

JAWA

Area 39.613 km²
Regional Lead:
PT Pertamina EP

Regional Region 2

Zona 5 | Zone 5

11	ONWJ

Zona 6 | Zone 6

12	OSES

Zona 7 | Zone 7

J	Tambun
K	Subang
L	Jatibarang
13	Blok Natuna (Natuna Sea)
14	East Natuna

KALIMANTAN

Area 57.225 km²
Regional Lead:
PT Pertamina Hulu Indonesia

Regional Region 3

Zona 8 | Zone 8

15	Peri Mahakam
16	Mahakam
17	West Ganal
18	East Sepinggan

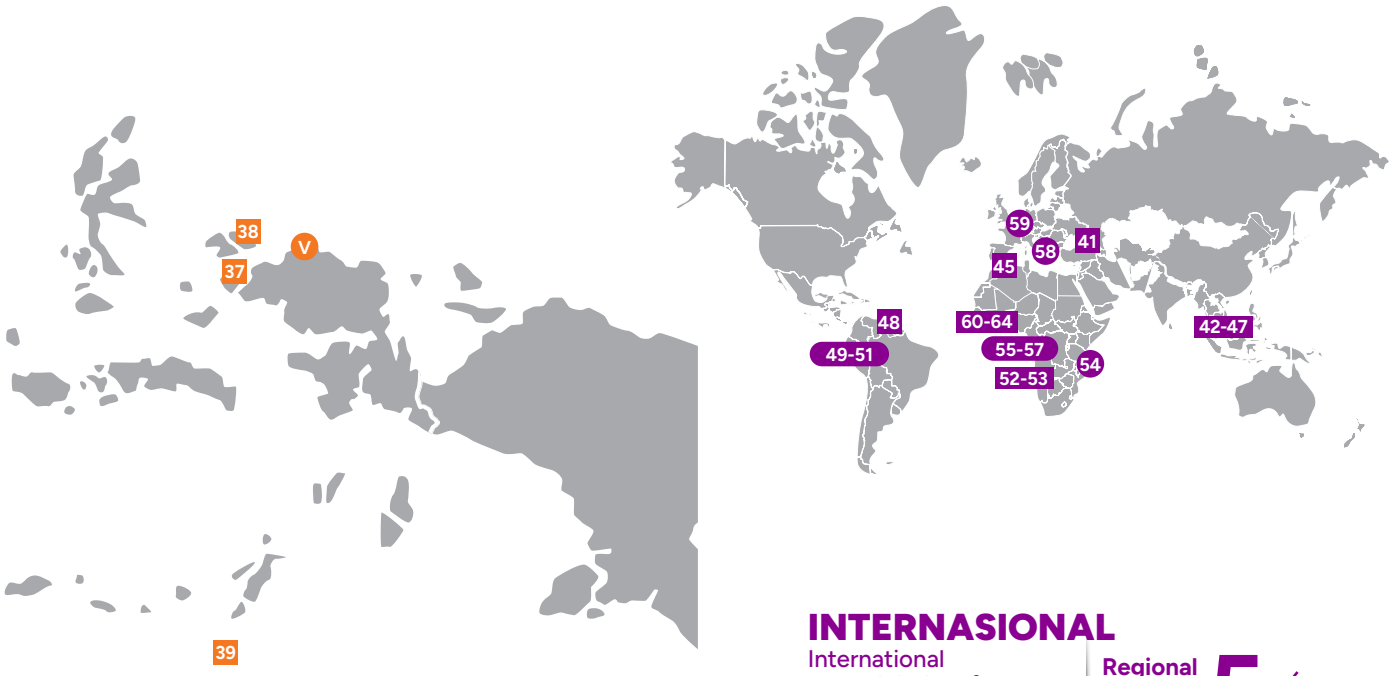
Zona 9 | Zone 9

19	Sanga Sanga
M	Sanga Sanga (PEP)
N	Sangatta
O	Tanjung
20	GMT Sangatta

Zona 10 | Zone 10

21	East Kalimantan & Attaka
P	Bunyu
Q	Tarakan
22	Nunukan
23	Simenggaris
24	East Ambalat
25	Ambalat
26	Maratua

International



INTERNASIONAL

International
Area 12.243 km²
Regional Lead:
PT Pertamina International EP

Regional Region 5

Zona 15 | Zone 15

40	Algeria : Block 405A

Zona 16 | Zone 16

41	Iraq : West Qurna-1

Zona 17 | Zone 17

42-47	Malaysia Blok K, Block H, SK309, SK313, SK314A, SK510		
48-64	Maurel et Prom		
48	Venezuela	55-57	Gabon
49-51	Colombia	58	Italy
52-53	Angola	59	France
54	Tanzania	60-64	Nigeria

INDONESIA TIMUR

Eastern Indonesia
Area 62.942 km²
Regional Lead:
PT Pertamina EP Cepu

Regional Region 4

Zona 11 | Zone 11

R	Cepu
S	Sukowati
T	Poleng
27	ADK
28	Randugunting
29	Tuban East Java
30	WMO

Zona 12 | Zone 12

31	Jambaran Tiung Biru
32	Banyu Urip
33	Bunga

Zona 13 | Zone 13

U	Donggi Matindok
34	Senoro Tolli
35	Makassar Strait
36	Melati

Zona 14 | Zone 14

V	Papua
37	Salawati
38	Kepala Burung
39	Masela

Wilayah Kerja Domestik:
Domestic Work Area:

39 A-V: WK PT Pertamina EP

Operator Non-Operator

Wilayah Kerja Internasional:
International Work Area:

Operator

Non-Operator

Wilayah Kerja (WK) PHE 2024 meliputi 40 WK Domestik dengan 21 Operator dan 19 Non-Operator, Wilayah Kerja Internasional dengan 1 Operator dan 7 Non-Operator, serta 17 WK Others di mana PHE merupakan salah satu Pemegang Saham. Tahun 2024 WK Algeria masih dalam proses persetujuan perubahan Participating Interest dari 65% menjadi 45%, sehingga status WK Algeria akan berubah dari Operator menjadi Non Operator.
The Working Areas (WA) of PHE in 2024 includes 40 Domestic WA with 21 Operators and 19 Non-Operators, International Working Areas with 1 Operator and 7 Non-Operators, and 17 Others WA where PHE is one of the Shareholders. In 2024, Algeria WA remained in the process of approving changes in Participating Interest from 65% to 45%, so that the status of Algeria WA would change from Operator to Non-Operator.

Pasar yang Dilayani

Secara garis besar, PHE Subholding Upstream melayani dua pangsa pasar dari bisnis yang dikelola, yaitu:

1. Penjualan migas, yang dijalankan sesuai prinsip-prinsip dasar kontrak kerja sama di sektor hulu migas berdasarkan kesepakatan Anak Perusahaan (AP) sebagai kontraktor kontrak kerja sama (KKKS) dengan SKK Migas;

2. Jasa hulu migas, logistik, dan distribusi dijalankan oleh AP Services, yaitu PT Pertamina Drilling Services Indonesia (PDSI) dan PT Elnusa Tbk. Penjualan dilaksanakan masing-masing AP kepada pelanggan berdasarkan kesepakatan dengan tetap mengacu pada regulasi yang berlaku.

Markets Served

In general, PHE Subholding Upstream serves two market shares from the managed business, namely:

1. Oil and gas sales, which are performed in accordance with the basic principles of cooperation contracts in the upstream oil and gas sector based on the agreement of the Subsidiary (AP) as the contractor of the cooperation contract (KKKS) with SKK Migas;
2. Upstream oil and gas services, logistics, and distribution are run by AP Services, namely PT Pertamina Drilling Services Indonesia (PDSI) and PT Elnusa Tbk. Sales are performed by each AP to customers based on an agreement while referring to applicable regulations.

STRUKTUR KEPEMILIKAN [OJK C.3.C]

PT Pertamina (Persero) merupakan pemegang saham utama perusahaan yang memiliki kepemilikan saham langsung sebesar 99,9968%. Hal ini mengingat PHE sebagai *Subholding Upstream* mengelola sumber daya alam minyak dan gas bumi yang dikuasai langsung oleh Negara berdasarkan Undang-Undang yang berlaku. Sementara itu sisanya sebesar 0,0032% merupakan kepemilikan tidak langsung oleh PT Pertamina Pedeve Indonesia. Dengan demikian, PT Pertamina (Persero) merupakan entitas induk sekaligus entitas pemilik akhir Perusahaan.

OWNERSHIP STRUCTURE [OJK C.3.C]

PT Pertamina (Persero) is the company's majority shareholder with direct share ownership of 99.9968%. This is because PHE as the Subholding Upstream manages natural resources of oil and gas that are directly controlled by the Country pursuant to applicable laws. Meanwhile, the remaining 0.0032% is indirect ownership by PT Pertamina Pedeve Indonesia. Thus, PT Pertamina (Persero) is the parent entity as well as the ultimate owner of the Company.

Struktur Kepemilikan [OJK C.3.c]
Ownership Structure





PT Pertamina Hulu Energi

STRUKTUR ORGANISASI [GRI 2-6]
ORGANIZATIONAL STRUCTURE

Struktur organisasi Perusahaan disahkan berdasarkan Surat Keputusan Direktur Utama PT Pertamina (Persero) No. Kpts-19/C00000/2020-S0 tanggal 16 Juni 2020 tentang Struktur Organisasi Dasar *Subholding Upstream*, dan Surat Keputusan Direktur Utama PT Pertamina Hulu Energi No. Kpts-052/PHE00000/2022/S0 tanggal 15 Juli 2022 tentang Penyempurnaan Organisasi *Subholding Upstream* PT Pertamina Hulu Energi.

The Company's organizational structure was confirmed by virtue of Decision Letter of the Chief Executive Officer of PT Pertamina (Persero) No. Kpts-19/C00000/2020-S0 dated June 16, 2020 concerning The Basic Organizational Structure of Subholding Upstream, and Decision Letter of the Chief Executive Officer PT Pertamina Hulu Energi No. Kpts-052/PHE00000/2022/S0 dated July 15, 2024 concerning Supplementing the Organization of PT Pertamina Hulu Energi Subholding Upstream.



Rapat Umum Pemegang Saham
General Meeting of Shareholders

Dewan Komisaris
Board of Commissioners

Komisaris Utama/Komisaris Independen
President Commissioner/Independent Commissioner
- **Rinaldi Firmansyah**

Komisaris Independen
Independent Commissioner
- **Tumpak Simanjuntak**

Komisaris
Commissioners
- **Tutuka Ariadji**
- **Abdi Mustakim**
- **Nanang Untung**
- **Paiman Raharjo**

Komite Tata Kelola Terintegrasi
Integrated Governance Committee

Ketua Chairman	**Rinaldi Firmansyah**
Wakil Ketua 1 Vice Chairman 1	**Tumpak Simanjuntak**
Wakil Ketua 2 Vice Chairman 2	**Nanang Untung**
Sekretaris Secretary	**Mery Luciawaty**
Anggota Members	• **Virano Gazi Nasution** • **Oto Gurnita** • **Meidawati** • **Taufan Hunneman** • **Dharmawan H. Samsu** • **Gema Iriandus Pahalawan** • **Eko Ariantoro** • **Daniel Syahputra Purba**

Komite Audit
Audit Committee

Ketua Chairman	**Tumpak Simanjuntak**
Anggota Members	• **Rinaldi Firmansyah** • **Tjatur Purwadi** • **Kurnia Sari Dewi**

Komite Nominasi dan Remunerasi
Nomination and Remuneration Committee

Ketua Chairman	**Rinaldi Firmansyah**
Anggota Members	• **Tumpak Simanjuntak** • **Tutuka Ariadji**

Komite Investasi dan Manajemen Risiko
Investment and Risk Management Committee

Ketua Chairman	**Nanang Untung**
Anggota Members	• **Tutuka Ariadji** • **Sigit Rahardjo** • **Paiman Raharjo** • **Agus Joko Pramono** • **Rizal Djunaedy Nasution** • **Dwi Adi Nugroho** • **Areiyando Makmun**

Direktur Manajemen Risiko
Director of Risk Management
Mery Luciawaty

- VP Risk Strategy & Governance — **Asep Chaerudin**
- VP Operational Risk Management — **Darmapala**
- VP Project Risk Management — **Edim Toto Sinulingga**

Direktur Keuangan & Investasi
Director of Finance & Investment
Dannif Utojo Danusaputro

- VP Financing & Treasury — **Sim Villia**
- VP Controller — **Caesarian**
- Sr. Manager Tax — **Arif Syamsul Hadi**

Direktur SDM & Penunjang Bisinis
Director of HC & Corporate Services
Whisnu Bahriansyah

- VP Human Capital — **Dewi Kurnia Salwa**
- VP Supply Chain Management — **Bongbongan Tampubolon**
- VP Information Technology — **Akbar Yudha Putera**

SKALA USAHA [OJK C.3, C.3.A]

Sampai dengan tahun 2024, Perusahaan telah mengelola 65 wilayah kerja yang terbagi menjadi 5 regional. Sejak pembentukan *Subholding Upstream* di tahun 2021, skala usaha perusahaan semakin meningkat. Skala perusahaan, yang dilihat dari total aset, menunjukkan bahwa perusahaan memiliki aset sebesar USD30,43 miliar per 31 Desember 2024. Sementara itu, dalam menjalankan operasional Perusahaan sehari-hari, Perusahaan didukung oleh 14.008 orang total pekerja pada tahun 2024. Skala perusahaan per tahun 2024, baik dari segi operasional maupun finansial dapat dilihat pada tabel berikut ini:

BUSINESS SCALE [OJK C.3, C.3.A]

Up to 2024, the Company has managed 65 work areas divided into 5 regions. Since the establishment of the Subholding Upstream in 2021, the company's business scale has increased. The company's scale, as seen from total assets, shows that the company has assets of USD30.43 billion as of December 31, 2024. Meanwhile, in conducting the Company's daily operations, the Company was supported by a total number of 14,008 workers in 2024. The Company's scale as per 2024, both in terms of operations and finances, can be seen in the following table:

Deskripsi Description	Satuan Unit	2024	2023	2022
Jumlah Pekerja Number of Workers	Orang Person	14.008,00	14.154,00	14.137,00
Jumlah Produksi Production Quantity	MBOEPD	1.044,60	1.043,73	967,37
Liabilitas Liabilities	Juta USD Million USD	15.327,60	16.710,36	16.323,51
Ekuitas Equity	Juta USD Million USD	15.107,35	14.178,56	15.158,28
Aset Assets	Juta USD Million USD	30.434,96	30.888,92	31.481,79
Pendapatan Income	Juta USD Million USD	14.330,34	14.568,38	16.183,40
Beban Usaha Operating Expenses	Juta USD Million USD	9.330,71	8.917,87	8.510,59
Laba Bersih Net Income	Juta USD Million USD	3.121,03	2.725,54	4.674,16

DEMOGRAFI PEKERJA [OJK C.3.B] [GRI 2-7, 2-8]

Komitmen Perusahaan dalam pengembangan kompetensi pekerja adalah suatu pendekatan strategis yang menunjukkan keseriusan perusahaan untuk meningkatkan keterampilan, pengetahuan, dan kemampuan dari pekerja. Hal ini mencakup berbagai inisiatif dan kebijakan strategis yang dirancang untuk memastikan bahwa pekerja memiliki kemampuan yang diperlukan untuk mendukung Visi dan Misi perusahaan, juga tetap relevan di lingkungan bisnis yang dinamis. Komitmen Perusahaan dalam pengembangan kompetensi pekerja tidak hanya bermanfaat bagi individu, tetapi juga mendukung pertumbuhan dan keberlanjutan perusahaan dalam jangka panjang demi mewujudkan Visi perusahaan yakni menjadi perusahaan minyak dan gas bumi kelas dunia. Pada tahun 2024, Perusahaan mempekerjakan total 14.008 orang karyawan, 12.810 orang dengan status Pekerja Waktu Tidak Tertentu (PWTT) dan 1.198 orang dengan status Pekerja Waktu Tertentu (PWT). PWTT merupakan pekerja tetap dan penuh waktu atau biasa disebut sebagai karyawan tetap, sedangkan PWT adalah pekerja tidak tetap atau pekerja paruh waktu. Saat ini Perusahaan tidak memiliki pekerja dengan jam kerja tidak pasti.

WORKER DEMOGRAPHICS [OJK C.3.B] [GRI 2-7, 2-8]

The Company's commitment to developing employee competency is a strategic approach that shows the company's seriousness in improving the skills, knowledge, and abilities of employees. This includes various strategic initiatives and policies designed to ensure that employees have the skills needed to support the Company's Vision and Missions, and remain relevant in a dynamic business environment. The Company's commitment to developing employee competency is not only beneficial for individuals, but also supports the company's long-term growth and sustainability in order to realize the Company's Vision, namely to become a world-class oil and gas company. In 2024, the Company employed a total of 14,008 employees, 12,810 people with Indefinite-Term Worker (PWTT) status and 1,198 people with Fixed-Term Worker (PWT) status. PWTT are permanent and full-time workers or commonly referred to as permanent employees, while PWT are non-permanent workers or part-time workers. Currently the Company does not have any workers with uncertain working hours.

Dalam mengelola sumber daya manusianya Perusahaan selalu berpegang pada prinsip anti diskriminasi dan memastikan keberagaman *gender*. Kebutuhan karyawan dinilai berdasarkan kebutuhan dari aspek operasional dan bisnis, tanpa adanya diskriminasi *gender*. Dikarenakan PHE merupakan subholding upstream minyak dan gas yang tenaga kerjanya masih didominasi oleh laki-laki, apabila dilihat dari komposisi tenaga kerja secara gender, jumlah tenaga kerja wanita PHE pada tahun 2024 adalah sebanyak 1.900 orang atau 13,6% dibandingkan total tenaga kerja. Persentase tersebut mengalami peningkatan dibandingkan tahun sebelumnya yang sebesar 13,4%.

In managing its human resources, the Company always adheres to the principle of anti-discrimination and ensures gender diversity. Employee needs are assessed based on operational and business needs, without any gender discrimination. Because PHE is an upstream oil and gas subholding whose workforce is still dominated by men, when viewed from the composition of the workforce by gender, the number of PHE's female workers in 2024 was 1,900 people or 13.6% compared to the total workforce. This percentage has increased compared to the previous year which was 13.4%.

Di bawah ini disajikan jumlah dan komposisi pekerja berdasarkan jenis kelamin, status kepegawaian, level organisasi/jabatan, tingkat pendidikan, dan usia.

The number and composition of workers based on gender, employment status, organizational/position level, education level, and age are presented below.

» Jumlah dan Komposisi Pekerja Berdasarkan Jenis Kelamin
Number and Composition of Workers by Gender

Jenis Kelamin Gender	2024		2023		2022	
	Jumlah (orang) Total (person)	Komposisi Composition (%)	Jumlah (orang) Total (person)	Komposisi Composition (%)	Jumlah (orang) Total (person)	Komposisi Composition (%)
Laki-laki Man	12.108	86,44	12.234	86,61	12.270	86,87
Perempuan Woman	1.900	13,56	1.892	13,39	1.855	13,13
Jumlah Total	**14.008**	**100,00**	14.126	100,00	14.125	100,00

» Jumlah dan Komposisi Pekerja Berdasarkan Status Kepegawaian dan Jenis Kelamin
Number and Composition of Workers Based on Employment Status and Gender

Status Kepegawaian Employment Status	2024				2023				2022			
	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)
Pekerja Waktu Tidak Tertentu (PKWTT) (Tetap) Indefinite-Term Workers (PKWTT)	11.125	1.685	12.810	91	11.283	1.678	12.961	92	11.345	1.673	13.018	92
Pekerja Waktu Tertentu (PKWT) (Kontrak) Fixed-Term Workers (PWT)	983	215	1.198	9	951	214	1.165	8	925	182	1.107	8
Jumlah Total	**12.108**	**1.900**	**14.008**	**100**	12.234	1.892	14.126	100	12.270	1.855	14.125	100

L = Laki-laki | Male
P = Perempuan | Female

Jumlah dan Komposisi Pekerja Berdasarkan Lokasi dan Status Kepegawaian
Number and Composition of Employees by Location and Employment Status

Tahun Year	Lokasi Location	Status Kepegawaian Employment Status		Jumlah Total
		Pekerja Waktu Tidak Tertentu (PKWTT) (Tetap) Unspecified Time Employment	Pekerja Waktu Tertentu (PKWT) (Kontrak) Fixed Time Employment	
2024	Sumatra	3.171	244	3.415
	Jawa	6.563	914	7.477
	Kalimantan	2.187	34	2.851
	Indonesia Timur | Eastern Indonesia	210	5	215
	Internasional	49	1	50
	Jumlah	**12.180**	**1.198**	**14.008**
2023	Sumatra	3.301	246	3.547
	Jawa	6.589	888	7.477
	Kalimantan	2.689	28	2.717
	Indonesia Timur | Eastern Indonesia	210	4	214
	Internasional	45	2	47
	Jumlah	**12.961**	**1.165**	**14.126**
2022	Sumatra	3.447	245	3.692
	Jawa	6.279	835	7115
	Kalimantan	3.033	19	3.052
	Indonesia Timur | Eastern Indonesia	217	5	222
	Internasional	42	2	44
	Jumlah	**13.018**	**1.107**	**14.125**

Jumlah dan Komposisi Pekerja Berdasarkan Level Jabatan dan Jenis Kelamin
Number and Composition of Workers Based on Position Level and Gender

Level Jabatan Job Level	2024				2023				2022			
	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)
Komisaris Board of Commissioners	33	1	34	0	31	1	32	0	30	3	33	0
Direktur Board of Directors	28	3	31	0	27	4	31	0	25	5	30	0
General Manager	56	7	63	0	60	5	65	0	76	4	80	0,01
Vice President	75	15	90	0,01	67	14	81	0,01	70	14	84	0,01
Manager/Setara Manager/Equal	757	111	868	0,06	816	109	925	0,07	776	99	875	0,06
Assistant Manager/ Setara Assistant Manager/ Equal	1.013	145	1.158	0,08	987	132	1.119	0,08	971	132	1.103	0,08
Senior Staff	2.189	409	2.598	0,19	1.849	338	2.187	0,15	1.742	291	2.033	0,14
Staff	7.957	1.209	9.166	0,65	8.398	1.288	9.686	0,69	8.581	1.306	9.887	0,7
Jumlah Total	**12.108**	**1.900**	**14.008**	**1**	**12.235**	**1.891**	**14.126**	**1**	**12.271**	**1.854**	**14.125**	**1**

L = Laki-laki | Male
P = Perempuan | Female

Jumlah dan Komposisi Pekerja Berdasarkan Latar Belakang Pendidikan dan Jenis Kelamin
Number and Composition of Workers by Educational Background and Gender

dalam (orang)
in (person)

Latar Belakang Pendidikan Educational background	2024				2023				2022			
	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)
Doktor (S3) Doctor (S3)	32	7	39	0,00	34	7	41	0,00	35	3	38	0,00
Pascasarjana (S2) Postgraduate (S2)	2.200	428	2.628	0,19	2.149	421	2.570	0,18	2.037	409	2.446	0,17
Sarjana (S1) Bachelor's degree (S1)	5.989	1.252	7.241	0,52	5.988	1.233	7.221	0,51	5.992	1.206	7.198	0,51
Diploma IV	147	14	161	0,01	142	14	156	0,01	141	14	155	0,01
Diploma III	1.319	141	1.460	0,10	1.351	149	1.500	0,11	1.394	148	1.542	0,11
Diploma I & II	192	21	213	0,02	199	23	222	0,02	115	7	122	0,01
SMA Sederajat Senior High School	2.229	37	2.266	0,16	2.373	43	2.416	0,17	2.557	67	2.624	0,19
Jumlah Total	**12.108**	**1.900**	**14.008**	**1,00**	**12.236**	**1.890**	**14.126**	**1,00**	**12.271**	**1.854**	**14.125**	**1,00**

L = Laki-laki | Male
P = Perempuan | Female

Jumlah dan Komposisi Pekerja Berdasarkan Kelompok Usia dan Jenis Kelamin
Number and Composition of Workers by Age Group and Gender

Kelompok Usia Age Group	2024				2023				2022			
	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)	L (orang) (person)	P (orang) (person)	Jumlah (orang) Total (person)	Komposisi Composition (%)
≥ 51 tahun ≥ 51 years	1.075	248	1.323	0,09	1.057	227	1.284	0,09	1.091	236	1.327	0,09
41-50 tahun 41-50 years	4.032	787	4.819	0,34	4.356	847	5.203	0,37	4.684	872	5.556	0,39
31-40 tahun 31-40 years	4.967	643	5.610	0,40	4.838	593	5.431	0,38	4.589	524	5.113	0,36
≤ 30 tahun ≤ 30 years	2.034	222	2.256	0,16	1.985	223	2.208	0,16	1.907	222	2.129	0,15
Jumlah Total	**12.108**	**1.900**	**14.008**	**1,00**	**12.236**	**1.890**	**14.126**	**1,00**	**12.271**	**1.854**	**14.125**	**1,00**

L = Laki-laki | Male
P = Perempuan | Female

Selain pekerja, dalam menjalankan proses bisnisnya Perusahaan dibantu oleh pekerja yang bukan merupakan karyawan yang tidak tercakup dalam perjanjian kerja waktu tertentu. Berikut adalah tipe pekerjaan, jumlah, dan hubungan kontraktual dari pekerja yang bukan karyawan tersebut.

Selain karyawan tetap, kami juga menggunakan sekitar 11.600 pekerja *outsourcing*, sebagian besar tenaga kerja *outsourcing* kami terdiri dari pekerja yang bekerja pada aktivitas tingkat rendah dan siap sedia seperti administrasi, analis, *engineer*, dan sebagainya. Tenaga kerja *outsourcing* yang digunakan berdasarkan kontrak kerjasama antara Perseroan dengan perusahaan penyedia layanan tenaga kerja. Upah dan tunjangan, ketentuan ketenagakerjaan, dan mekanisme penyelesaian sengketa untuk karyawan *outsourcing* ditentukan oleh kesepakatan antara karyawan dan perusahaan penyedia tenaga kerjanya, sesuai dengan peraturan ketenagakerjaan.

RANTAI PASOKAN [GRI 2-6, 3-3, 204]

Pemasok Lokal

Pengadaan pemasok lokal tidak hanya memberikan manfaat ekonomi bagi komunitas lokal, tetapi juga dapat meningkatkan resiliensi rantai pasok dan membangun kemitraan yang berkelanjutan dalam jangka panjang. Hal ini sejalan dengan prinsip-prinsip pembangunan berkelanjutan dan tanggung jawab sosial Perusahaan. Pengelolaan rantai pasok di PHE Subholding Upstream berfokus pada program kerja utama, yaitu Pencapaian *Procurement List*, Optimalisasi Material Ex-terminasi, Pencapaian Tingkat Komponen Dalam Negeri, termasuk pemberdayaan UMKM melalui penggunaan PaDi, *Cost Saving* di mana termasuk di dalamnya kegiatan Agregasi *Demand* dan penerapan *Digital Procurement*.

Ketentuan yang diacu dalam pengelolaan rantai pasok, yaitu:
1. Kontraktor Kontrak Kerja Sama (KKKS) *Cost Recovery*
   - Pedoman Tata Kerja SKK Migas No. PTK007/SKKIA0000/2023/S9 (Revisi 05) beserta perubahannya.
   - Petunjuk Pelaksanaan Tender SKK Migas No. EDR-0143/SKKIH0000/2023/S0 beserta perubahannya.
2. KKKS *Gross Spli*t dan Non KKKS (kecuali ELNUSA, PDSI, BADAK LNG)
   - Pedoman Pengadaan Barang/Jasa No. A7-001/PHE52000/2021-S9 (Revisi-01)

Selama tahun 2024, Perusahaan melibatkan 3.567 mitra kerja, menurun 11,86% dibandingkan tahun sebelumnya. Mitra kerja tersebut terdiri dari 93,80% pemasok lokal yang merupakan Perusahaan Dalam Negeri (PDN), 6,06% pemasok lokal yang merupakan Perusahaan Nasional (PN) dan 0,14% pemasok Perusahaan Luar Negeri. Total nilai kontrak pengadaan bagi vendor/pemasok lokal (PDN dan PN) tahun 2024 mencapai USD7.051,69 juta atau 99,94% dari total nilai kontrak pengadaan, dan bertambah USD738,73 juta, atau 10,05% dari tahun 2023 sebesar USD6.312,96 juta. [GRI 204-1]

In addition to workers, in conducting its business processes the Company is assisted by workers who are not employees who are not covered by a fixed-term work agreement. The following are the types of work, numbers, and contractual relationships of these non-employee workers.

In addition to permanent employees, we also employ around 11,600 outsourced workers, most of our outsourced workforce consists of workers who work at low-level and ready-to-use activities such as administration, analysts, engineers, and so on. The outsourced workforce employed is based on a cooperation contract between the Company and a labor service provider company. Wages and benefits, terms of employment, and dispute resolution mechanisms for outsourced employees are determined by an agreement between the employees and their respective labor provider companies, in accordance with labor regulations.

SUPPLY CHAIN [GRI 2-6, 3-3, 204]

Local Suppliers

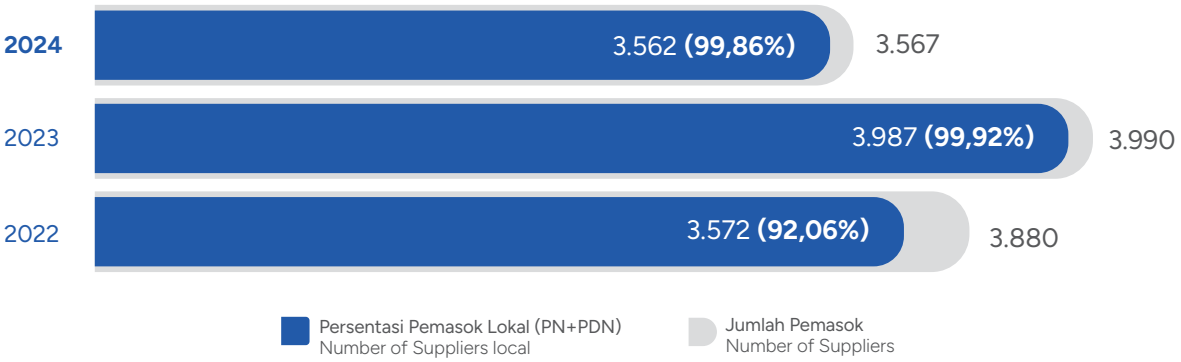
Local supplier procurement not only gives economic benefits to local communities, but can also increase supply chain resilience and build long-term sustainable partnerships. This is in line with the principles of sustainable development and corporate social responsibility. Supply chain management at PHE Subholding Upstream focuses on the main work programs, namely Procurement List Achievement, Optimization of Ex-termination Material, Achievement of Domestic Component Level, including empowering MSMEs through the use of PaDi, Cost Saving which includes Demand Aggregation activities and the implementation of Digital Procurement.

The provisions referred to in supply chain management are:
1. Production Sharing Contract for Cost Recovery
   - Work Procedure Guidelines of SKK Migas No. PTK007/SKKIA0000/2023/S9 (Revision 05) and its amendments.
   - Tender Implementation Instructions of SKK Migas No. EDR-0143/SKKIH0000/2023/S0 and its amendments.
2. KKKS Gross Split dan Non KKKS (except ELNUSA, PDSI, BADAK LNG)
   - Goods/Services Procurement Guidelines No. A7-001/PHE52000/2021-S9 (Revision-01)

During 2024, the Company has involved 3,567 work partners, decreased by 11.86% compared to the previous year. The work partners consist of 93.80% of local suppliers which are Domestic Companies (PDN), 6.06% of local suppliers which are National Companies (PN) and 0.14% of suppliers which are Foreign Companies. The total value of procurement contracts for local vendors/suppliers (PDN and PN) in 2024 reached USD7,051.69 million or 99.94% of the total procurement contract value, and increased by USD738.73 million, or 10.05% of 2023 which was USD6,312.96 million. [GRI 204-1]

Jumlah Pemasok Barang dan Jasa
Number of Suppliers of Goods and Services

Jumlah Pemasok Number of Suppliers	2024	2023	2022
Perusahaan Dalam Negeri (PDN) Local Company	3.346	3.717	3.572
Perusahaan Nasional National Company	216	270	308
Perusahaan Luar Negeri Foreign Company	5	3	0
Jumlah Total	**3.567**	3.990	3.880



PHE Subholding Upstream berkomitmen menaikkan tingkat kandungan dalam negeri (TKDN), dengan menerapkan TKDN dari tahapan perencanaan, proses pengadaan, hingga kontrak berakhir. Pada tahun 2024, realisasi TKDN PHE Subholding Upstream mencapai 61,06% terdiri dari TKDN barang dan jasa; lebih tinggi dari target pemerintah sebesar 57%. PHE Subholding Upstream telah berkontribusi dalam pemenuhan capaian TKDN yang ditargetkan oleh pemerintah dan hal ini memberikan dampak positif terhadap peningkatan kapasitas nasional dan *multiplier effect* bagi pemberdayaan produksi barang dan jasa dalam negeri.

PHE Subholding Upstream is committed to increasing the level of domestic content (TKDN), by implementing TKDN from the planning stage, procurement process, until the expiry of contract. In 2024, the realization of PHE Subholding Upstream's TKDN reached 61.06% consisting of TKDN for goods and services; higher than the government's target of 57%. PHE Subholding Upstream has contributed to the fulfillment of the TKDN targeted by the government and this has had a positive impact on increasing the national capacity and a multiplier effect on empowering domestic production of goods and services.

Asesmen Lingkungan dan Sosial untuk Pemasok

Fungsi rantai pasok bersama dengan fungsi HSSE PHE Subholding Upstream melaksanakan implementasi dan *monitoring* Tahapan Penilaian Kualifikasi *Contractor Safety Management System* (CSMS) yang merupakan tahapan untuk menentukan kualifikasi Mitra Kerja terhadap pengelolaan aspek HSSE. Mitra Kerja yang akan mengikuti proses tender harus memiliki kemampuan/sistem untuk mengelola risiko pekerjaan yang akan dikontrakkan. Sistem manajemen yang diatur dalam CSMS meliputi; keamanan dan keselamatan personil, pencegahan pencemaran lingkungan hidup, pemahaman lingkungan berisiko tinggi, *integrity*, keselamatan pengoperasian alat, manajemen insiden, dan termasuk dampak sosial/citra perusahaan. Dengan demikian, kriteria CSMS yang telah diterapkan oleh perusahaan telah mencakup kriteria dari aspek lingkungan dan sosial.

Environmental and Social Assessment for Suppliers

The supply chain function together with the HSSE function of PHE Subholding Upstream implements and monitors the Contractor Safety Management System (CSMS) Qualification Assessment Stages which are the stages to determine the qualifications of Work Partners in managing HSSE aspects. Work Partners who will participate in the tender process must have the ability/system to manage the risks of the work to be contracted. The management system regulated in the CSMS includes; personnel safety and security, prevention of environmental pollution, understanding of high-risk environments, asset integrity, safety of equipment operation, incident management, and including social impact/company image. Thus, the CSMS criteria that have been implemented by the company have included criteria from the environmental and social aspects.

Pada tahun 2024, telah dilakukan pengembangan aplikasi CSMS *Online* sehingga dapat menambahkan hasil Penilaian Kualifikasi CSMS. Tercatat 1.160 penyedia barang/jasa dengan 56% penyedia barang/ jasa yang lulus kualifikasi CSMS. Tingkat ketidaklulusan kualifikasi CSMS penyedia barang/jasa menurun 3% dari tahun 2023. Pada tahun 2024 terdapat 648 penyedia barang/jasa baru yang dilakukan penilaian kualifikasi CSMS.

Dukungan lain pada antikorupsi dengan telah diterapkannya ketentuan dalam ISO 37001:2016 SMAP pada semua kegiatan *Supply Chain Management* (SCM). Bahkan untuk tahun 2024, dalam proses audit sertifikat *surveillance* ISO 37001:2016 dengan hasil tidak ada temuan dan berhasil mendapatkan penghargaan SCM sebagai fungsi terbaik dari Fungsi *Compliance*/Sekretariat Fungsi Kepatuhan Anti Penyuapan (FKAP).

PHE Subholding Upstream melakukan beberapa upaya mitigasi, di antaranya:

1. Penerapan *Due Diligence* SMAP dalam proses pengadaan, seperti pengisian pakta integritas agar menanamkan sikap antikorupsi. Pakta integritas dapat diisikan oleh mitra kerja melalui sistem yang disediakan oleh SCM;
2. Sosialisasi SMAP kepada Mitra Kerja dilakukan secara berkala melalui kegiatan penyampaian dalam *pre-bid meeting*, *Vendor Day*;
3. Kegiatan *Vendor Day* dilaksanakan setiap tahun, pada tahun 2024 dihadiri oleh 1.345 peserta, 600 perusahaan;
4. Mengadakan kegiatan pelatihan/*coaching clinic* yang dilaksanakan setiap tahun kepada Mitra Kerja. Pada tahun 2023 kegiatan pelatihan dilaksanakan secara tatap muka meliputi:
   - Pelatihan proses verifikasi TKDN;
   - Pelatihan CSMS terkait proses Seleksi melalui sistem CSMS *Online;*
   - Pelatihan registrasi melalui sistem CIVD dan IOG *E-Commerce;*
   - Pelatihan proses pengadaan melalui aplikasi GEP *Smart;*
   - Pelatihan *Networked Collaboration for New Potential* (NCNP);
   - Sosialisasi panduan pengadaan, *Service Performance Review*, *Close Out Contract;*
   - Sosialisasi SMAP *Awareness* dengan penadatanganan deklarasi SMAP.

In 2024, the CSMS Online application has been developed so as to improve the results of the CSMS Qualification Assessment. 1,160 goods/service providers were recorded with 56% of goods/service providers passing the CSMS qualification. The failure rate of CSMS qualification of goods/service providers decreased by 3% from 2023. In 2024, there were 648 new goods/service providers who underwent the CSMS qualification assessment.

Another support for anti-corruption is the implementation of the provisions in ISO 37001:2016 ABMS in all Supply Chain Management (SCM) activities. Even for 2024, in the ISO 37001:2016 surveillance certificate audit process, the results showed no findings and successfully received the SCM award as the best function of the Compliance Function/ Secretariat of Anti-Bribery Compliance Function (FKAP).

PHE Subholding Upstream has undertaken several mitigation efforts, including:

1. Implementation of ABMS Due Diligence in the procurement process, such as filling out an integrity pact to instill an anti-corruption attitude. The integrity pact can be filled out by partners through a system provided by SCM;
2. Dissemination of ABMS to Business Partners is performed regularly through delivery activities at pre-bid meetings, Vendor Day or other events involving Work Partners;
3. Vendor Day activities are held every year, in 2024 attended by 1,345 participants, 600 companies;
4. Holding training/coaching clinic activities which are performed annually for Work Partners. In 2024, face-to-face training activities included:
   - TKDN verification process training;
   - CSMS training related to the Selection process through the CSMS Online system;
   - Registration training through the CIVD and IOG E-Commerce systems;
   - Procurement process training through the GEP Smart application;
   - Networked Collaboration for New Potential (NCNP) Training;
   - Dissemination of procurement guidelines, Service Performance Review, Close Out Contract;
   - Dissemination of SMAP Awareness by signing the SMAP declaration.

PERJANJIAN PERUNDINGAN KOLEKTIF

[GRI 2-30]

Hingga akhir periode pelaporan, tidak ada hal-hal yang dapat dikategorikan sebagai bentuk pelanggaran kebebasan berserikat bagi pekerja PHE Subholding Upstream. Perusahaan memberikan kebebasan pada pekerja untuk mendirikan serikat pekerja, dan kebebasan memilih keanggotaan pada serikat pekerja. Saat ini, terdapat 16 serikat pekerja di lingkungan PHE Subholding Upstream. Melalui perwakilan di serikat pekerja, pekerja menyusun dan menyepakati Perjanjian Kerja Bersama (PKB) dengan Manajemen. Segala bentuk pengaduan terkait serikat pekerja dapat disampaikan melalui situs *web whistleblowing system* akan ditindaklanjuti oleh Perusahaan.

COLLECTIVE BARGAINING AGREEMENT

[GRI 2-30]

Until the end of the reporting period, there were no cases that could be categorized as violations of freedom of association for workers of PHE Subholding Upstream. The company provides workers with the freedom to establish a labor union, and the freedom to choose membership of a labor union. Currently, there are 16 labor unions within PHE Subholding Upstream. Through representatives in the labor unions, workers draft and agree to a Collective Bargaining Agreement (CBA) with the Management. Any form of complaint related to a labor union can be submitted through the whistleblowing system website and will be followed up by the Company.

» Sertifikasi dan Keanggotaan Asosiasi
Certifications and Association Memberships [OJK C.5][GRI 2-28]

No.	Nama Name	Keanggotaan Membership	Nasional / Internasional National / International
1	Society of Petroleum Engineers (SPE)	Anggota Member	Internasional International
2	UN Global Compact (UNGC)	Anggota Member	Internasional International
3	Indonesian Petroleum Assosiation	Anggota Member	Internasional International
4	Ikatan Ahli Teknik Perminyakan Indonesia (IATMI)	Anggota Member	Internasional International
5	Ikatan Ahli Geologi Indonesia (IAGI)	Anggota Member	Internasional International
6	Himpunan Ahli Geofisika Indonesia (HAGI)	Anggota Member	Internasional International
7	Ikatan Ahli Fasilitas Produksi Minyak dan Gas Bumi Indonesia (IAFMI)	Anggota Member	Internasional International
8	Asosiasi Pengusaha Indonesia (APINDO)	Anggota Member	Internasional International
9	Indonesia Petroleum Association	Anggota Member	Internasional International

SERTIFIKASI
CERTIFICATION



ISO/IEC 270001:2022
***Information Security Management System* (ISMS)**

Lingkup / Scope:
PT Pertamina Hulu Energi

Penerbit / Publisher:
British Standard Institution

Masa Berlaku / Validity Period:
3 Tahun / Year



ISO 9001:2015
Sistem Manajemen Kualitas
Quality Management System

Lingkup / Scope:
Entitas: PHE Jambi Merang, PEP Field Cepu, PEP Field Poleng, PEP Field Sukowati, PHE WMO, PHE TEJR, PEP Field Donggi Matindok, JOB P-Medco E&P Tomori Sulawesi, PDSI, PDC, PT Elnusa Tbk

Penerbit / Publisher:
British Standard Institution, Sucofindo, SGS, AQC, PSC

Masa Berlaku / Validity Period:
3 Tahun / Year

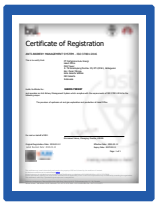


PAS 99:2012
Integrated Management Registration

Lingkup / Scope:
Pertamina Upstream Data Center – PT PHE

Penerbit / Publisher:
TUV SUD Indonesia

Masa Berlaku / Validity Period:
3 Tahun / Year



ISO 37001:2016
Sistem Manajemen Anti Penyuapan (SMAP)
Anti-Bribery Management System (ABMS)

Lingkup / Scope:
Seluruh fungsi untuk entitas
All functions for the entity

PHE, PHR, PEP, PHI, PHM, PEP Cepu, PIEP, ELNUSA Tbk, Badak NGL, PDSI

Penerbit / Publisher:
TÜV NORD, MUTU International, SGS, The British Standards Institution (BSI)

Masa Berlaku / Validity Period:
3 Tahun / Year



ISO 27001:2013
Sistem Manajemen Keamanan Informasi
Information Security Management System

Lingkup / Scope:
JOB P-Medco E&P Tomori Sulawesi

Penerbit / Publisher:
British Standard Institution

Masa Berlaku / Validity Period:
3 Tahun / Year



ISO 50001:2018
Sistem Manajemen Energi
Energy Management System

Lingkup / Scope:
Entitas/Entity:

PHE ONWJ, PHM, PEP Dongi Matindok Field, JOB Medco E&P Tomori Sulawesi, PT Badak NGL

Penerbit / Publisher:
Intertek, Sucofindo

Masa Berlaku / Validity Period:
3 Tahun / Year



ISO 55001:2014
Sistem Manajemen Aset
Asset Management System

Lingkup / Scope:
Elnusa

Penerbit / Publisher:
SGS Indonesia

Masa Berlaku / Validity Period:
3 Tahun / Year



ISO 45001:2018
Sistem Manajemen Keselamatan dan Kesehatan Kerja (K3)
Occupational Health and Safety (OHS) Management System

Lingkup / Scope:
Zona 1, Zona 5, Zona 6, Zona 7, Zona 11, JOB P-Medco E&P Tomori Sulawesi, PDSI, PDC, Elnusa, PT Badak NGL, Regional 5

Penerbit / Publisher:
British Standard Institution, Sucofindo, SGS, AQC, PSC, TUV Rheinland, Bureau Veritas (BV)

Masa Berlaku / Validity Period:
3 Tahun / Year



ISO 14001:2015
Sistem Manajemen Lingkungan
Environmental Management System

Lingkup:
Scope:

PEP Pangkalan Susu Field, PHE NSO, PEP Jambi Field, PEP Lirik Field, PEP Rantau Field, PHE Jambi Merang, Pertamina Hulu Rokan (Zona Rokan), PHE Ogan Komering, PHE Raja Tempirai, PEP Ramba Field, PEP Prabumulih Field, PEP Pendopo Field, PEP Limau Field, PEP Adera Field, PHE ONWJ, PHE OSES, PEP Subang Field, PEP Jatibarang Field, PEP Tambun, PEP Asset 3 OGT, PHM, PHSS, PEP Sangata Field, PEP Sanga-Sanga Field, PEP Tanjung Field, PEP Bunyu Field, PEP Tarakan Field, PHKT, JOB Simengaris, PEP Cepu Field, PEP Sukowati Field, PEP Poleng Field, PHE Tuban East Java, Randu Gunting, PHE WMO, PEPC JTB, PEP Dongi Matindok Field, JOB Medco E&P Tomori Sulawesi, PEP Papua Field, PIEP HO, PDSI, PT Elnusa Tbk, PT Badak NGL

100% Wilayah Kerja Operasional telah tersertifikasi ISO 14001:2015
100% of Operational Work Areas have been certified ISO 14001:2015

Penerbit / Publisher:
SGS, BSI, ACS Indonesia, Sucofindo, Alcumus ISOQAR, TUV Nord

Masa Berlaku / Validity Period:
3 Tahun / Year



PT Pertamina Hulu Energi



06

PENGUATAN FONDASI TATA KELOLA KEBERLANJUTAN

Strengthening the Foundation of Sustainability Governance



DASAR TATA KELOLA KEBERLANJUTAN
BASES FOR SUSTAINABLE GOVERNANCE

Pembentukan Subholding Upstream Pertamina bertujuan untuk meningkatkan nilai tambah dengan memperkuat fokus bisnis Pertamina di sektor hulu migas. Sebagai bagian integral dari upaya ini, PT Pertamina Hulu Energi (PHE) tampil sebagai pusat keunggulan (*center of excellence*) yang mengedepankan efisiensi, fleksibilitas, dan responsivitas dalam struktur organisasinya dengan mennrapkan prinsip-prinsip seperti *lean* dan *agile*. Pendekatan ini diharapkan dapat menjadikan PHE salah satu pemimpin utama di industri hulu migas nasional. PHE juga berkomitmen membangun landasan operasional yang kokoh, dengan menjunjung aturan yang jelas dan penerapan praktik bisnis yang beretika serta sehat. Langkah ini memastikan perusahaan mampu beroperasi secara berkelanjutan dan berkontribusi positif bagi ekosistem industri migas di Indonesia.

Sebagai pengelola sumber daya energi strategis bagi negara, PHE memikul tanggung jawab besar untuk memastikan bahwa kegiatan operasionalnya tidak memberikan dampak negatif terhadap lingkungan maupun masyarakat sekitar. Dengan visi untuk menyediakan energi yang aman dan terjangkau bagi seluruh wilayah Indonesia, PHE tetap menjaga keseimbangan antara aspek sosial, lingkungan, dan tata kelola perusahaan yang berkelanjutan. Komitmen ini mencakup pengembangan kebijakan keberlanjutan yang menjadi panduan dalam seluruh aspek operasional perusahaan, pembentukan komite keberlanjutan untuk memantau, mengarahkan, dan mengintegrasikan inisiatif keberlanjutan di seluruh lini operasional, serta partisipasi dalam inisiatif global seperti United Nations Global Compact (UNGC) sejak tahun 2022.

The establishment of Subholding Upstream Pertamina aims to increase added values by strengthening Pertamina's business focus in the upstream oil and gas sector. As an integral part of this effort, PT Pertamina Hulu Energi (PHE) appears to be a center of excellence that prioritizes efficiency, flexibility, and responsiveness in its organizational structure by implementing principles such as lean and agile. This approach is expected to make PHE one of the main leaders in the national upstream oil and gas industry. PHE is also committed to building a solid operational foundation, by upholding clear regulations and implementing ethical and healthy business practices. This step ensures that the company is able to operate sustainably and contribute positively to the oil and gas industry ecosystem in Indonesia.

As the manager of strategic energy resources for the country, PHE bears a great responsibility to ensure that its operational activities do not have any negative impact on the environment or the surrounding community. With a vision to provide safe and affordable energy for all regions of Indonesia, PHE continues to maintain balance among social, environmental, and sustainable corporate governance aspects. This commitment includes the development of a sustainability policy that serves as a guide in all aspects of the company's operations, the establishment of a sustainability committee to monitor, direct, and integrate sustainability initiatives across all operational lines, and participation in global initiatives such as the United Nations Global Compact (UNGC) since 2022.

STRUKTUR TATA KELOLA KEBERLANJUTAN
[GRI 2-9]

PHE membangun struktur organisasi yang mengikuti prinsip tata kelola korporasi berdasarkan Undang-Undang No. 40 Tahun 2007 tentang Perseroan Terbatas. Struktur ini terdiri dari Rapat Umum Pemegang Saham (RUPS), Dewan Komisaris, dan Direksi, dengan sistem tata kelola dua badan (*two-tier system*) yang memastikan pemisahan wewenang serta tanggung jawab secara jelas sesuai dengan fungsinya. Selain organ utama tersebut, struktur tata kelola perusahaan juga mencakup organ pendukung, seperti komite-komite khusus, Sekretaris Perusahaan, dan Satuan Pengawas Internal (SPI), yang semuanya berperan dalam mendukung operasional perusahaan secara efisien. Informasi lengkap terkait peran, tanggung jawab, dan profil masing-masing organ tersedia dalam Laporan Tahunan 2024.

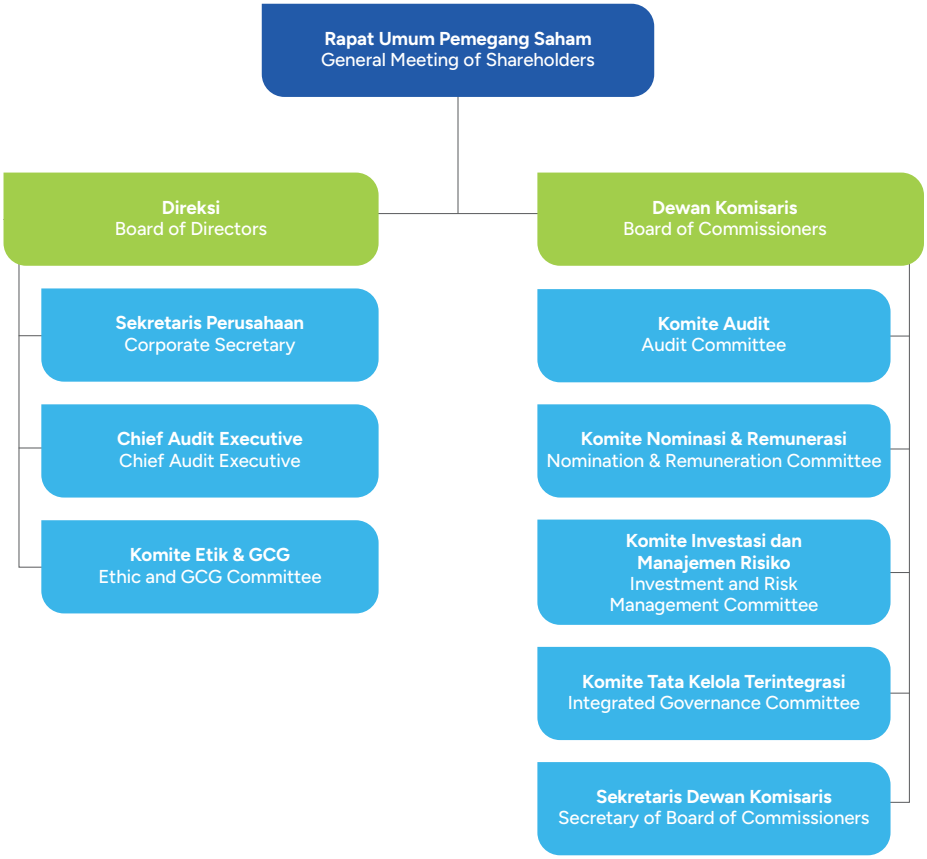
SUSTAINABILITY GOVERNANCE STRUCTURE
[GRI 2-9]

PHE has built an organizational structure that follows the principles of corporate governance pursuant to Law No. 40 of 2007 concerning Limited Liability Companies. This structure consists of General Meeting of Shareholders (GMS), Board of Commissioners, and Board of Directors, with a two-tier system of governance that ensures a clear separation of authority and responsibility according to their functions. In addition to these main organs, the corporate governance structure also includes supporting organs, such as special committees, Corporate Secretary, and Internal Supervisory Unit (SPI), all of which play a role in supporting the company's operations efficiently. Complete information regarding the roles, responsibilities, and profiles of each organ is available in Annual Report 2024.

Berikut adalah struktur tata Kelola Perusahaan:

The following is the Corporate Governance structure:

» Struktur Tata Kelola PHE
PHE Governance Structure



Adapun komposisi badan tata kelola tertinggi PHE per 31 Desember 2024 adalah sebagai berikut:

The composition of PHE's highest governance body as of December 31, 2024 is as follows:

» Komposisi Dewan Komisaris
Composition of Board of Commissioners

Nama Name	Jabatan Position	Dasar Pengangkatan Basis for Appointment	Masa Jabatan Term of Office	Periode Jabatan Period of Office
Rindaldi Firmansyah	Komisaris Utama/ Komisaris Independen President Comissioner/ Independent Commissioner	Akta Keputusan RUPS No. 79 tanggal 15 Mei 2023 tanggal yang dibuat di hadapan Notaris Marianne Vincentia Hamdani, SH di Jakarta. Deed of Shareholders' Resolution No. 79 dated May 15, 2023, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	15 Mei 2023 s.d 15 Mei 2026 May 15, 2023 to May 15, 2026	Ke-2 2nd
Tumpak Simanjuntak	Komisaris Independen Independent Commissioner	Akta Keputusan RUPS No. 79 tanggal 15 Mei 2023 yang dibuat di hadapan Notaris Marianne Vincentia Hamdani, SH di Jakarta. Deed of Shareholders' Resolution No. 79 dated May 15, 2023, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	15 Mei 2023 s.d 15 Mei 2026 May 15, 2023 to May 15, 2026	Ke-2 2nd

Nama Name	Jabatan Position	Dasar Pengangkatan Basis for Appointment	Masa Jabatan Term of Office	Periode Jabatan Period of Office
Tutuka Ariadji	Komisaris Commissioner	Akta Keputusan RUPS No. 52 tanggal 15 Februari 2024 yang dibuat di hadapan Notaris Marianne Vincentia Hamdani, SH di Jakarta. Deed of Shareholders' Resolution No. 52 dated February 15, 2024, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	15 Februari 2024 s.d 15 Februari 2027 February 15, 2024 to February 15, 2027	Ke-2 2nd
Nanang Untung	Komisaris Commissioner	Akta Keputusan RUPS No. 79 tanggal 15 Mei 2023 yang dibuat di hadapan Notaris Marianne Vincentia Hamdani, SH di Jakarta. Deed of Shareholders' Resolution No. 79 dated May 15, 2023, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	15 Mei 2023 s.d 15 Mei 2026 May 15, 2023 to May 15, 2026	Ke-2 2nd
Abdi Mustakim	Komisaris Commissioner	Akta Keputusan RUPS No. 07 tanggal 19 September 2023 yang dibuat di hadapan Notaris Marianne Vincentia Hamdani, SH di Jakarta. Deed of Shareholders' Resolution No. 07 dated September 19, 2023, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	19 September 2023 s.d 19 September 2026 September 19, 2023 to September 19, 2026	Ke-1 1st
Paiman Raharjo	Komisaris Commissioner	Akta Keputusan RUPS No. 16 tanggal 14 Desember 2023 yang dibuat di hadapan Notaris Marianne Vincentia Hamdani, SH di Jakarta. Deed of Shareholders' Resolution No. 16 dated December 14, 2023, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	14 November 2023 s.d 14 November 2026 November 14, 2023 to November 14, 2026	Ke-1 1st

» Komposisi Direksi
Composition of Board of Directors

Nama Name	Jabatan Position	Dasar Pengangkatan Basis for Appointment	Masa Jabatan Term of Office	Periode Jabatan Period of Office
Chalid Said Salim	Direktur Utama President director	Akta Keputusan RUPS No. 52 tanggal 27 Februari 2024 yang dibuat di hadapan Notaris Marianne Vincentia, S.H., di Jakarta Deed of Shareholders' Resolution No. 52 dated February 27, 2024, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	20 Februari 2024 s.d 20 Februari 2027 February 20, 2024 to February 20, 2027	Ke-1 1st
Awang Lazuardi	Direktur Pengembangan & Produksi Director of Development & Production	Akta Keputusan RUPS No. 01 tanggal 3 Oktober 2022 yang dibuat di hadapan Notaris Marianne Vincentia, S.H., di Jakarta Deed of Shareholders' Resolution No. 01 dated October 3, 2022, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	27 September 2022 s.d 27 September 2025 September 27, 2022 to September 27, 2025	Ke-1 1st

Nama Name	Jabatan Position	Dasar Pengangkatan Basis for Appointment	Masa Jabatan Term of Office	Periode Jabatan Period of Office
Muharram J. Panguriseng	Direktur Eksplorasi Director of Exploration	Akta Keputusan RUPS No. 01 tanggal 3 Oktober 2022 yang dibuat di hadapan Notaris Marianne Vincentia, S.H., di Jakarta Deed of Shareholders' Resolution No. 01 dated October 3, 2022, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	27 September 2022 s.d 27 September 2025 September 27, 2022 to September 27, 2025	Ke-1 1st
Whisnu Bahriansyah	Direktur SDM & Penunjang Bisnis Director of HC & Corporate Services	Akta Keputusan RUPS No. 52 tanggal 27 Februari 2024 yang dibuat di hadapan Notaris Marianne Vincentia, S.H., di Jakarta Deed of Shareholders' Resolution No. 52 dated February 27, 2024, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	20 Februari 2024 s.d 20 Februari 2027 February 20, 2024 to February 20, 2027	Ke-1 1st
Dannif Danusaputro	Direktur Keuangan & Investasi Director of Finance & Investment	Akta Keputusan RUPS No. 52 tanggal 27 Februari 2024 yang dibuat di hadapan Notaris Marianne Vincentia, S.H., di Jakarta Deed of Shareholders' Resolution No. 52 dated February 27, 2024, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	20 Februari 2024 s.d 20 Februari 2027 February 20, 2024 to February 20, 2027	Ke-1 1st
Rachmat Hidajat	Direktur Perencanaan Strategis & Pengembangan Bisnis Director of Strategic Planning & Business Development	Akta Keputusan RUPS No. 27 tanggal 22 Mei 2024 yang dibuat di hadapan Notaris Marianne Vincentia Hamdani, S.H., di Jakarta Deed of Shareholders' Resolution No. 27 dated May 22, 2024, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	15 Mei 2024 s.d 15 Mei 2027 May 15, 2024 to May 15, 2027	Ke-1 1st
Mery Luciawaty	Direktur Manajemen Risiko Director of Risk Management	Akta Keputusan RUPS No. 27 tanggal 22 Mei 2024 yang dibuat di hadapan Notaris Marianne Vincentia Hamdani, S.H., di Jakarta Deed of Shareholders' Resolution No. 27 dated May 22, 2024, drawn up before Notary Marianne Vincentia Hamdani, SH, in Jakarta.	15 Mei 2024 s.d 15 Mei 2027 May 15, 2024 to May 15, 2027	Ke-1 1st

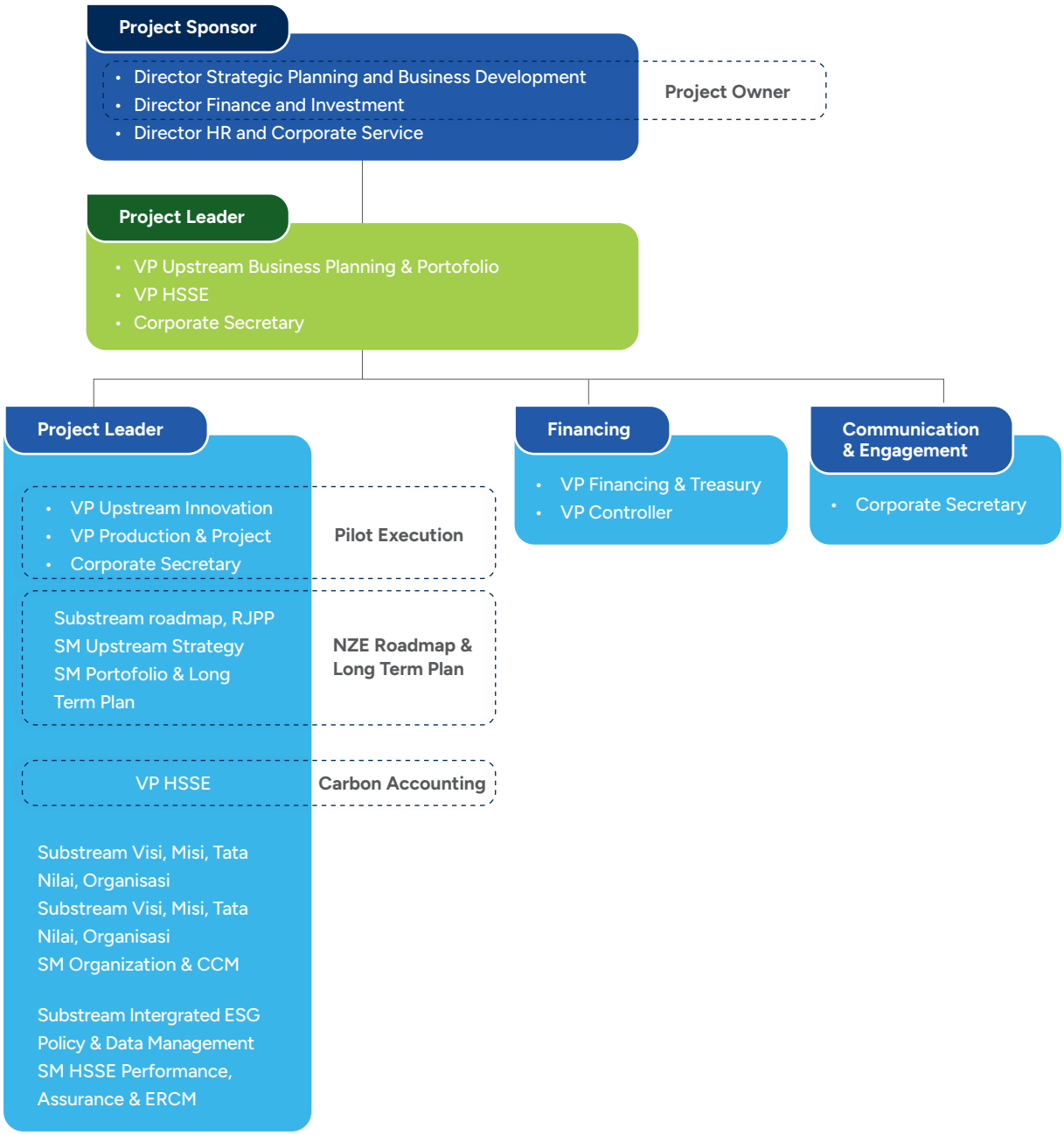
Sebagai bagian dari inisiatif tata kelola keberlanjutan, perusahaan telah menerbitkan Kebijakan Keberlanjutan pada 1 Oktober 2022 sebagai panduan untuk mematuhi peraturan perundang-undangan dan menciptakan nilai jangka panjang bagi para pemangku kepentingan. Perusahaan telah membentuk komite khusus pada tingkat dewan yang berperan untuk mengawasi strategi dan kinerja Lingkungan, Sosial, dan Tata Kelola (LST), yaitu Komite Keberlanjutan. Komite ini terdiri dari direktur independen yang memiliki keahlian di bidang LST, memastikan bahwa isu keberlanjutan mendapatkan perhatian dan pengawasan yang optimal. Komite ini bertugas mendukung Direksi dalam memantau kinerja dan strategi keberlanjutan.

As a part of its sustainability governance initiative, the company issued a Sustainability Policy on October 1, 2022, as a guide to comply with laws and regulations and create long-term values for stakeholders. The company has formed a special committee at the board level that is responsible for overseeing the Environmental, Social, and Governance (ESG) strategy and performance, namely the Sustainability Committee. This committee consists of independent directors who have expertise in the ESG field, ensuring that sustainability issues receive optimal attention and supervision. This committee is tasked with supporting the Board of Directors in monitoring sustainability performance and strategy.

Komite ini dibentuk berdasarkan Keputusan Direksi No. Kpts-076/PHE00000/2022-S0 dan terdiri dari perwakilan berbagai fungsi yang bekerja di bawah kepemimpinan Direktur Utama sebagai pejabat tertinggi dalam badan tata kelola. Untuk melibatkan berbagai fungsi agar memastikan integrasi prinsip keberlanjutan ke dalam seluruh aspek operasional, anggota dari Komite Keberlanjutan terdiri dari Direktur Perencanaan Strategis & Pengembangan Usaha, Direktur Pengembangan & Produksi, Direktur Eksplorasi, Direktur Keuangan & Investasi, Direktur Sumber Daya Manusia & Penunjang Bisnis, dan Direktur Utama Regional. Gambaran struktur tata kelola keberlanjutan yang dimiliki PHE adalah sebagai berikut: [GRI 2-11] [SASB EM-EP-530a.1] [OJK E.1]

This committee was established based on Resolution of Board of Directors No. Kpts-076/PHE00000/2022-S0 and consists of representatives from various functions working under the leadership of the President Director as the highest official in the governance body. To involve various functions to ensure the integration of sustainability principles into all operational aspects, members of the Sustainability Committee consist of Director of Strategic Planning & Business Development, Director of Development & Production, Director of Exploration, Director of Finance & Investment, Director of Human Resources & Business Support, and Regional President Director. The overview of PHE's sustainability governance structure is as follows: [GRI 2-11] [SASB EM-EP-530a.1] [OJK E.1]

» Struktur Tata Kelola Keberlanjutan dan Komite Keberlanjutan
Sustainability Governance Structure and Sustainability Committee



PENGAWASAN DAMPAK DAN PENDELEGASIAN TANGGUNG JAWAB

Sebagai pihak yang bertanggung jawab tertinggi atas tata kelola keberlanjutan, kinerja Direksi dalam mengelola dampak perusahaan dinilai secara berkala oleh Dewan Komisaris. Penilaian ini dilakukan berdasarkan laporan kinerja yang disusun secara individu maupun kolektif. Hasil evaluasi tersebut kemudian disampaikan oleh Dewan Komisaris kepada Pemegang Saham melalui Rapat Umum Pemegang Saham (RUPS). [GRI 2-12]

Untuk terus melakukan pengawasan terhadap tata kelola keberlanjutan, manajemen keberlanjutan di PHE melibatkan mekanisme pertemuan rutin antara Direksi dan Komite Keberlanjutan untuk membahas berbagai isu terkait Lingkungan, Sosial, dan Tata Kelola (LST). Sepanjang tahun 2023, Direksi secara aktif mengadakan pertemuan dengan Komite Keberlanjutan, yang berfungsi sebagai wadah untuk mengevaluasi dan merumuskan langkah-langkah strategis dalam pengelolaan dampak LST. Dalam pelaksanaannya, Direksi dapat mendelegasikan tanggung jawab pengelolaan aspek keberlanjutan kepada Komite Keberlanjutan atau pejabat perusahaan tertentu yang diberi kewenangan. Direksi juga memainkan peran penting dalam proses penyusunan Laporan Keberlanjutan, mulai dari menyetujui standar dan acuan pelaporan hingga menetapkan topik material dan menyetujui laporan final. [GRI 2-13, 2-14]

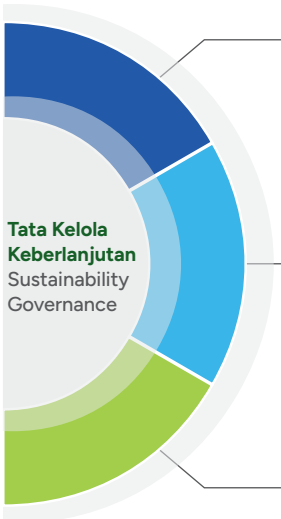
Dengan pendekatan tata kelola keberlanjutan yang kuat, perusahaan berhasil membangun pondasi kokoh untuk mengintegrasikan prinsip-prinsip keberlanjutan ke dalam seluruh aspek operasional bisnis. Hal ini tidak hanya mendorong pertumbuhan ekonomi yang berimbang tetapi juga berkontribusi pada kesejahteraan sosial dan pelestarian lingkungan demi generasi mendatang.

IMPACT MONITORING AND DELEGATION OF RESPONSIBILITY

As the party with the highest responsibility for sustainability governance, the Board of Directors' performance in managing the company's impact is regularly assessed by the Board of Commissioners. This assessment is conducted based on performance reports prepared individually or collectively. The results of the evaluation are then submitted by the Board of Commissioners to the Shareholders through a General Meeting of Shareholders (GMS). [GRI 2-12]

To continue to monitor the sustainability governance, the sustainability management at PHE involves a regular meeting mechanism between the Board of Directors and the Sustainability Committee to discuss various issues related to Environment, Social, and Governance (ESG). Throughout 2023, the Board of Directors actively held meetings with the Sustainability Committee, which serves as a forum to evaluate and formulate strategic steps in managing ESG impacts. In its implementation, the Board of Directors can delegate the responsibility for managing sustainability aspects to the Sustainability Committee or certain authorized company officials. The Board of Directors also plays an important role in the process of preparing the Sustainability Report, from approving reporting standards and references to determining material topics and approving the final report. [GRI 2-13, 2-14]

With a strong sustainability governance approach, the company has successfully built a solid foundation to integrate sustainability principles into all aspects of business operations. This not only drives balanced economic growth but also contributes to social welfare and environmental preservation for future generations.



PT Pertamina Hulu Energi erupakan anggota United Nations Global Compact (UNGC) yang berkomitmen Melaksanakan sepuluh prinsip universal UNGC dalam Strategi dan Operasionalnya.

PT Pertamina Hulu Energi is a member of the United Nations Global Compact (UNGC) and is committed to implementing the UNGC's ten universal principles in its strategy and operations.

Komitmen Terhadap Pengelolaan risiko dan peluang aspek lingkungan, sosial dan tata kelola (LST) Mengantar PHE menempati *ranking* 25 dari 277 (Per-September 2022) perusahaan hulu migas global dengan peringkat risiko LST sebesar 30,5.

The commitment to managing environmental, social, and governance (ESG) risks and opportunities has positioned PHE at rank 25 out of 277 global upstream oil and gas companies (as of September 2022), with an ESG risk rating of 30.5.

PHE Subholding Upstream berhasil mempertahankan sertifikasi Sistem Manajemen dan anti Penyuapan (SMAP) SNI ISO 37001:2016 berdasarkan hasil Audit *Surveillance* oleh badan sertifikasi mutu internasional.

PHE Subholding Upstream successfully maintained its Anti-Bribery Management System (ABMS) certification under SNI ISO 37001:2016, based on the results of a surveillance audit conducted by an international quality certification body.

MEKANISME NOMINASI DEWAN KOMISARIS DAN DIREKSI [GRI 2-10]

Mekanisme nominasi untuk Dewan Komisaris dan Direksi memainkan peran strategis dalam memastikan tata kelola perusahaan yang baik. Hal ini dilakukan untuk menjamin bahwa setiap kandidat memiliki kapasitas, pengalaman, dan integritas yang diperlukan untuk memimpin perusahaan secara efektif. Dengan struktur nominasi yang tepat, perusahaan dapat membangun dewan yang kompeten dan beragam, sekaligus memperkuat kepercayaan dari berbagai pihak, termasuk pemangku kepentingan internal dan eksternal.

Dalam menjalankan mekanisme nominasi, PHE mengacu pada Peraturan Menteri BUMN Nomor PER-03/MBU/03/2023 yang menggabungkan beberapa regulasi tentang organ dan sumber daya manusia BUMN dalam upaya menciptakan tata kelola yang lebih terintegrasi. Peraturan ini mencakup, antara lain, pedoman pengangkatan anggota direksi dan dewan komisaris anak perusahaan BUMN, pedoman penetapan penghasilan organ BUMN, tata cara kontrak manajemen tahunan Direksi, hingga ketentuan terkait syarat dan tata cara pengangkatan serta pemberhentian anggota organ perusahaan.

Sebagai bagian dari BUMN, PHE wajib menerapkan mekanisme nominasi yang transparan dan sistematis untuk Dewan Komisaris dan Direksi. Proses ini berada di bawah tanggung jawab Komite Nominasi dan Remunerasi, yang bertugas memastikan kelayakan kandidat sebelum pengesahannya dilakukan melalui Rapat Umum Pemegang Saham (RUPS), sebagai otoritas tertinggi dalam struktur tata kelola perusahaan.

Pemilihan anggota Dewan Komisaris, Direksi, dan komite pendukung dilakukan dengan mempertimbangkan berbagai kepentingan dari para pemangku kepentingan. Dalam proses ini, PHE menjunjung tinggi prinsip kesetaraan dan keberagaman, serta menolak segala bentuk diskriminasi berdasarkan suku, ras, agama, *gender*, atau usia. Perusahaan juga memastikan bahwa hak asasi manusia dihormati dalam seluruh proses seleksi. Semua kandidat yang terpilih dipastikan telah memenuhi kualifikasi formal dan substantif, serta memiliki kompetensi yang sesuai dengan kebutuhan perusahaan, sehingga dapat mendukung terciptanya tata kelola yang profesional dan berintegritas. [GRI 405-1]

NOMINATION MECHANISM FOR BOARD OF COMMISSIONERS AND BOARD OF DIRECTORS [GRI 2-10]

The nomination mechanism for the Board of Commissioners and the Board of Directors plays a strategic role in ensuring good corporate governance. This is done to ensure that each candidate has the capacity, experience, and integrity needed to lead the company effectively. With the right nomination structure, companies can build a competent and diverse board, while strengthening trust from various parties, including internal and external stakeholders.

In implementing the nomination mechanism, PHE refers to Regulation of Minister of SOEs Number PER-03/MBU/03/2023 which combines several regulations on SOE organs and human resources in an effort to create more integrated governance. This regulation includes, among others, guidelines for appointing members of the Board of Directors and the Board of Commissioners of SOE subsidiaries, guidelines for determining the income of SOE organs, procedures for annual management contracts for the Board of Directors, and provisions related to the requirements and procedures for appointing and dismissing members of company organs.

As a part of SOEs, PHE is required to implement a transparent and systematic nomination mechanism for the Board of Commissioners and the Board of Directors. This process is under the responsibility of the Nomination and Remuneration Committee, which is tasked with ensuring the eligibility of candidates before they are legally appointed by a General Meeting of Shareholders (GMS), as the highest authority in the corporate governance structure.

The selection of members of the Board of Commissioners, the Board of Directors, and the supporting committees is conducted by considering various interests of stakeholders. In this process, PHE upholds the principles of equality and diversity, and rejects all forms of discrimination based on ethnicity, race, religion, gender, or age. The company also ensures that human rights are respected in the entire selection process. All selected candidates are ensured to have met formal and substantive qualifications, and have competencies that are in accordance with the company's needs so as to support the creation of professional and integrity-based governance. [GRI 405-1]

PENGEMBANGAN KOMPETENSI DIREKSI, DEWAN KOMISARIS, DAN KOMITE DIBAWAH DEWAN KOMISARIS

[OJK E.2] [GRI 2-17]

PHE menegaskan komitmennya terhadap pengembangan kompetensi anggota Dewan Komisaris dan Direksi melalui rencana karier yang terstruktur, program suksesi yang berkelanjutan, serta peningkatan tanggung jawab yang relevan. Pengembangan kompetensi tidak hanya bertujuan untuk memperkuat kemampuan individu, tetapi juga untuk meningkatkan kinerja kolektif perusahaan secara menyeluruh, sehingga dapat menghadapi tantangan kompleks di lingkungan bisnis yang dinamis.

Pendekatan komprehensif yang diterapkan oleh PHE dalam pengembangan kompetensi mencakup berbagai kegiatan, seperti pelatihan eksekutif, program pendidikan formal, seminar, hingga partisipasi dalam konferensi berskala nasional maupun internasional. Melalui inisiatif ini, anggota Dewan Komisaris dan Direksi diperkuat dalam kapasitas kepemimpinan mereka, memungkinkan mereka untuk lebih efektif dalam merumuskan strategi, mengambil keputusan, serta memandu perusahaan menuju pertumbuhan yang berkelanjutan.

Sepanjang tahun 2024, PHE telah berhasil merealisasikan berbagai program pengembangan kompetensi yang dirancang khusus untuk anggota Dewan Komisaris, Direksi, serta Komite Pendukung. Kegiatan ini dirancang untuk memastikan bahwa setiap anggota memiliki akses terhadap wawasan terkini, keahlian yang relevan, dan kemampuan manajerial yang diperlukan untuk menghadapi dinamika industri energi. Informasi detail mengenai pelaksanaan dan capaian dari program-program pengembangan kompetensi adalah sebagai berikut:

COMPETENCY DEVELOPMENT OF BOARD OF DIRECTORS, BOARD OF COMMISSIONERS, AND COMMITTEES UNDER BOARD OF COMMISSIONERS

[OJK E.2] [GRI 2-17]

PHE affirms its commitment to developing the competencies of members of the Board of Commissioners and the Board of Directors through a structured career plan, a sustainable succession program, and increasing relevant responsibilities. Competency development is not only aimed at strengthening individual capabilities, but also at improving the collective performance of the company as a whole so as to face complex challenges in a dynamic business environment.

The comprehensive approach implemented by PHE in developing competencies includes various activities, such as executive training, formal education programs, seminars, and participation in national and international conferences. Through these initiatives, members of the Board of Commissioners and the Board of Directors are strengthened in their leadership capacity, enabling them to be more effective in formulating strategies, making decisions, and guiding the company toward sustainable growth.

Throughout 2024, PHE has successfully implemented various competency development programs specifically designed for members of the Board of Commissioners, the Board of Directors, and the Supporting Committees. These activities are designed to ensure that each member has access to the latest insights, relevant expertise, and managerial skills needed to face the dynamics of the energy industry. Detailed information on the implementation and achievements of the competency development programs are as follows:

Jenis dan Tema Pelatihan **Type & Theme of Training**	**Tempat dan Tanggal** **Place and Date**	**Penyelenggara** **Organizer**
Dewan Komisaris / Board of Commissioners		
Rinaldi Firmansyah (Komisaris Utama/Komisaris Independen | President Commissioner/Independent Commissioner)		
Certified Risk Professional (CRP)	Jakarta, 17 Mei 2024 Jakarta, May 17, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Sistem Manajemen Anti Penyuapan (SMAP)	*Online*, 16 Agustus 2024 Online, August 16, 2024	Internal PHE
Information Security Easy Course (ISEC)	*Online*, 11 November 2024 Online, November 11, 2024	Internal PHE
Tumpak Simanjuntak (Komisaris Independen | Independent Commissioner)		
Certified Risk Professional (CRP)	Jakarta, 17 Mei 2024 Jakarta, May 17, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Sistem Manajemen Anti Penyuapan (SMAP)	*Online*, 16 Agustus 2024 Online, August 16, 2024	Internal PHE
Information Security Easy Course (ISEC)	*Online*, 11 November 2024 Online, November 11, 2024	Internal PHE

Jenis dan Tema Pelatihan Type & Theme of Training	Tempat dan Tanggal Place and Date	Penyelenggara Organizer
Tutuka Ariadji (Komisaris | Commissioner)		
Certified Risk Professional (CRP)	Jakarta, 17 Mei 2024 Jakarta, May 17, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Sistem Manajemen Anti Penyuapan (SMAP)	*Online*, 16 Agustus 2024 Online, August 16, 2024	Internal PHE
Information Security Easy Course (ISEC)	*Online*, 11 November 2024 Online, November 11, 2024	Internal PHE
Nanang Untung (Komisaris | Commissioner)		
Certified Risk Professional (CRP)	Jakarta, 17 Mei 2024 Jakarta, May 17, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Sistem Manajemen Anti Penyuapan (SMAP)	*Online*, 16 Agustus 2024 Online, August 16, 2024	Internal PHE
Information Security Easy Course (ISEC)	*Online*, 11 November 2024 Online, November 11, 2024	Internal PHE
Abdi Mustakim (Komisaris | Commissioner)		
Certified Risk Professional (CRP)	Jakarta, 17 Mei 2024 Jakarta, May 17, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Sistem Manajemen Anti Penyuapan (SMAP)	*Online*, 16 Agustus 2024 Online, August 16, 2024	Internal PHE
Information Security Easy Course (ISEC)	*Online*, 11 November 2024 Online, November 11, 2024	Internal PHE
Agus Joko Pramono (Komisaris Independent | Independent Commissioner)		
Certified Risk Professional (CRP)	Jakarta,17 Mei 2024 Jakarta, May 17, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Sistem Manajemen Anti Penyuapan (SMAP)	*Online*, 16 Agustus 2024 Online, August 16, 2024	Internal PHE
Information Security Easy Course (ISEC)	*Online*, 11 November 2024 Online, November 11, 2024	Internal PHE
Understanding and Diagnosing the Need for Change	*Offline*, 9 Desember 2024 Offline, December 9, 2024	London Business Training & Consulting (LBTC)
Paiman Raharjo (Komisaris | Commissioner)		
Certified Risk Professional (CRP)	Jakarta, 17 Mei 2024 Jakarta, May 17, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Sistem Manajemen Anti Penyuapan (SMAP)	*Online*, 16 Agustus 2024 Online, August 16, 2024	Internal PHE
Information Security Easy Course (ISEC)	*Online*, 11 November 2024 Online, November 11, 2024	Internal PHE
Direksi / Board of Directors		
Chalid Said Salim (Direktur Utama | President Director)		
Certified Risk Professional	Jakarta, 1 Agustus 2024 Jakarta, August 1, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Pemantapan Nilai-Nilai Kebangsaan bagi PERTAMINA GROUP Angkatan IV	Jakarta, 27 Oktober 2024 Jakarta, October 27, 2024	LEMHANAS RI & Pertamina *Training & Consulting*
Awang Lazuardi (Direktur Pengembangan dan Produksi | Director of Development & Production)		
Certified Risk Professional (CRP)	Jakarta, 5 Juli 2024 Jakarta, July 5, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Fundamental Behaviour Based Safety	*Online*, 22 November 2024 Online, November 22, 2024	Pertamina
Muharram J. Panguriseng (Direktur Eksplorasi | Director of Exploration)		
Certified Risk Professional (CRP)	Jakarta, 5 Juli 2024 Jakarta, July 5, 2024	Badan Nasional Sertifikasi Profesi (BNSP)

Jenis dan Tema Pelatihan Type & Theme of Training	Tempat dan Tanggal Place and Date	Penyelenggara Organizer
Whisnu Bahriansyah (Direktur SDM & Penunjang Bisnis | Director of HC & Corporate Services)		
Certified Risk Professional	Jakarta, 1 Agustus 2024 Jakarta, August 1, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Dannif Danusaputro (Direktur Keuangan & Investasi | Director of Finance & Investment)		
Certified Risk Professional	Jakarta, 1 Maret 2024 Jakarta, March 1, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Pemantapan Nilai-Nilai Kebangsaan bagi PERTAMINA GROUP Angkatan IV	Jakarta, 27 Oktober 2024 Jakarta, October 27, 2024	LEMHANAS RI & Pertamina *Training & Consulting*
Rachmat Hidajat (Direktur Perencanaan Strategis dan Pengembangan Bisnis | Director of Strategic Planning & Business Development)		
Certified Risk Professional	Jakarta, 5 Juli 2024 Jakarta, July 5, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Mery Luciawaty (Direktur Manajemen Risiko | Director of Risk Management)		
Certified Risk Professional	Jakarta, 22 Mei 2024 Jakarta, May 22, 2024	Badan Nasional Sertifikasi Profesi (BNSP)
Certified Risk Governance Specialist	Jakarta, 31 Desember 2024 Jakarta, December 31, 2024	Badan Nasional Sertifikasi Profesi (BNSP)

EVALUASI KINERJA DEWAN KOMISARIS DAN DIREKSI [GRI 2-18]

PHE melaksanakan evaluasi kinerja Dewan Komisaris dan Direksi dengan mengacu pada Keputusan Sekretaris Kementerian Badan Usaha Milik Negara Nomor SK-16/S.MBU/2012 tentang Indikator dan Parameter Penilaian serta Evaluasi atas Penerapan Tata Kelola Perusahaan yang Baik (*Good Corporate Governance*) pada Badan Usaha Milik Negara. Evaluasi ini dilaksanakan untuk mengukur sejauh mana Dewan Komisaris dan Direksi berhasil mencapai *Key Performance Indicators* (KPI) yang telah ditetapkan, mengimplementasikan program dan inisiatif yang mendukung pencapaian visi, misi, strategi, serta nilai-nilai perusahaan sebagaimana tertuang dalam rencana bisnis. Evaluasi kinerja menjadi landasan penting dalam menjaga akuntabilitas, meningkatkan efisiensi, dan memastikan keberlanjutan perusahaan dalam menghadapi dinamika industri energi.

Evaluasi terhadap kinerja Dewan Komisaris dilakukan secara berkala setiap kuartal, dengan evaluasi tambahan di akhir tahun. Selain itu, setiap bulan Pemegang Saham melakukan penilaian kinerja Dewan Komisaris melalui Rapat Umum Pemegang Saham (RUPS). Penilaian ini juga menjadi bagian dari kerangka *Excellent Quality Management Assessment* PERTAMINA, yang bertujuan untuk menjaga kualitas tata kelola dan kinerja strategis perusahaan. Metode evaluasi kinerja Dewan Komisaris dapat mencakup *self-assessment* (penilaian mandiri) di mana setiap anggota Dewan Komisaris menilai kinerja mereka sendiri, *peer evaluation* yang merupakan penilaian yang dilakukan oleh sesama anggota Dewan Komisaris dan metode lain yang ditentukan dalam rapat Dewan Komisaris, sesuai dengan kebutuhan dan kesepakatan kolektif.

PERFORMANCE EVALUATION OF BOARD OF COMMISSIONERS AND BOARD OF DIRECTORS [GRI 2-18]

PHE conducts performance evaluation of the Board of Commissioners and the Board of Directors by referring to Decision of Secretary of Ministry of State-Owned Enterprises Number SK-16/S.MBU/2012 concerning Indicators and Parameters for Assessment and Evaluation of Implementation of Good Corporate Governance in State-Owned Enterprises. This evaluation is conducted to measure the extent to which the Board of Commissioners and the Board of Directors have succeeded in achieving the Key Performance Indicators (KPI) that have been set, implementing programs and initiatives that support the achievement of the company's vision, missions, strategies, and values as stated in the business plan. Performance evaluation is an important foundation in maintaining accountability, increasing efficiency, and ensuring the company's sustainability in facing the dynamics of the energy industry.

Evaluation of the performance of the Board of Commissioners is conducted regularly every quarter, with an additional evaluation at the end of each year. In addition, every month the Shareholders assess the performance of the Board of Commissioners through a General Meeting of Shareholders (GMS). This assessment is also a part of PERTAMINA's Excellent Quality Management Assessment framework, which aims to maintain the quality of governance and strategic performance of the company. The method of evaluating the performance of the Board of Commissioners can include self-assessment where each member of the Board of Commissioners assesses their own performance, peer evaluation which is an assessment conducted by fellow members of the Board of Commissioners and other methods determined in a Board of Commissioners' meeting, according to needs and collective agreements.

Evaluasi kinerja Direksi juga dilakukan setiap kuartal dan pada akhir tahun, dengan mengacu pada Board Manual Perusahaan Nomor A-005/PHE040/2018-S9. Manual ini mengatur kriteria evaluasi yang harus diselaraskan dengan *Key Performance Indicators* (KPI) yang ditetapkan dalam RUPS. Metode evaluasi kinerja Direksi sendiri dapat dilakukan secara individu maupun kolektif. Penilaian individu merupakan penilaian yang diajukan oleh Komite Nominasi dan Remunerasi atau oleh Dewan Komisaris. Kemudian, evaluasi ini disampaikan untuk ditetapkan dalam RUPS, yang menjadi forum pengesahan hasil penilaian kinerja Direksi.

REMUNERASI DEWAN KOMISARIS DAN DIREKSI [GRI 2-19, 2-20]

Kebijakan remunerasi bagi Dewan Komisaris dan Direksi di lingkungan PHE ditetapkan oleh Pemegang Saham melalui mekanisme Rapat Umum Pemegang Saham (RUPS) atau Keputusan Pemegang Saham Secara Sirkuler (KPSSS). Kebijakan ini mengacu pada Peraturan Menteri BUMN RI dan saat ini didasarkan pada Keputusan Pemegang Saham Secara Sirkuler PT Pertamina Hulu Energi tentang Penetapan Penghargaan atas Kinerja Tahunan Tahun Buku 2023 dan Remunerasi 2024 Anggota Direksi dan Dewan Komisaris Perusahaan, yang diterbitkan pada 27 September 2024.

Remunerasi bagi Dewan Komisaris dan Direksi terdiri dari beberapa komponen utama, yaitu gaji atau honorarium, tunjangan, dan fasilitas jabatan. Penetapan nilai remunerasi dilakukan melalui kajian yang mempertimbangkan berbagai faktor yang meliputi skala usaha dan kompleksitas bisnis perusahaan, tingkat inflasi sebagai indikator ekonomi makro, serta hasil kinerja keuangan seperti pencapaian laba dan tingkat kesehatan perusahaan. Selain itu, kondisi dan kemampuan keuangan perusahaan juga menjadi dasar penting untuk memastikan remunerasi sesuai dengan kapasitas finansial. Kajian ini juga turut mempertimbangkan faktor lain yang relevan seperti perbandingan pasar (*benchmarking*) guna memastikan kesesuaian dengan standar umum di industri sejenis, serta memperhatikan kewajaran, sasaran jangka pendek, dan strategi jangka panjang yang sesuai dengan peraturan perundang-undangan.

Sebagai bentuk apresiasi terhadap kinerja tahunan, PHE juga memberikan penghasilan variabel berupa Tantiem kepada Dewan Komisaris dan Direksi. Penetapan Tantiem didasarkan pada sejumlah indikator, termasuk opini auditor sebagai ukuran kepatuhan dan keandalan laporan keuangan, pencapaian kinerja/*Key Performance Indicator* (KPI) yang mencerminkan keberhasilan strategi operasional, dan tingkat kesehatan perusahaan yang mencakup stabilitas serta keberlanjutan operasional. Indikator lainnya adalah pencapaian dan pertumbuhan laba perusahaan, dengan ketentuan bahwa jika perusahaan mengalami kerugian, kerugian tersebut tidak

The performance evaluation of the Board of Directors is also conducted every quarter and at the end of each year, with reference to the Company's Board Manual Number A-005/PHE040/2018-S9. This manual governs the evaluation criteria that must be aligned with the Key Performance Indicators (KPI) set out in a GMS. The method of evaluating the performance of the Board of Directors itself can be conducted individually or collectively. Individual assessment is an assessment submitted by the Nomination and Remuneration Committee or by the Board of Commissioners. This evaluation is then submitted to be determined in a GMS, which is the forum for certifying the results of the Board of Directors' performance assessment.

REMUNERATION OF BOARD OF COMMISSIONERS AND BOARD OF DIRECTORS [GRI 2-19, 2-20]

The remuneration policy for the Board of Commissioners and the Board of Directors within PHE is determined by the Shareholders through a General Meeting of Shareholders (GMS) or a Circular Resolution of Shareholders (KPSSS). This policy refers to the Regulation of the Minister of SOEs of the Republic of Indonesia and is currently based on the Circular Resolution of Shareholders of PT Pertamina Hulu Energi concerning Determination of Awards for Annual Performance for Financial Year 2023 and Remuneration 2024 for Members of Company's Board of Directors and Board of Commissioners, which was issued on September 27, 2024.

Remuneration for the Board of Commissioners and the Board of Directors consists of several main components, namely salary or honorarium, allowances, and job facilities. Determination of the remuneration value is conducted through a study that considers various factors including the scale and complexity of the company's business, the inflation rate as a macroeconomic indicator, and financial performance results such as profits earned and the company's health level. In addition, the company's financial condition and capability are also important bases for ensuring that remuneration is in accordance with its financial capacity. This study also considers other relevant factors such as market comparison (benchmarking) to ensure compliance with general standards in similar industries, as well as considering fairness, short-term targets, and long-term strategies in accordance with laws and regulations.

As a form of appreciation for annual performance, PHE also gives variable income in the form of Incentive to the Board of Commissioners and the Board of Directors. The determination of Incentive is based on a number of indicators, including the auditor's opinion as a measurement of compliance and reliability of financial statements, performance achievement/Key Performance Indicators (KPI) which reflect the success of operational strategies, and the company's health level which includes stability and sustainability of operations. Other indicators are the achievement and growth of the company's profits, provided that if the company suffers from a loss, the

semakin memburuk, atau jika perusahaan dalam kondisi laba, perusahaan tidak berubah menjadi merugi. Sama seperti penetapan remunerasi, analisa pasar (*benchmarking*) juga digunakan untuk memastikan nilai Tantiem kompetitif di industri.

loss does not get worse, or if the company is in a profitable condition, the company does not turn into suffering from a loss. Similar to the determination of remuneration, market analysis (benchmarking) is also used to ensure that the value of Incentive is competitive in the industry.

Dalam kebijakan remunerasi, indikator kinerja keberlanjutan menjadi salah satu faktor utama yang memengaruhi besaran bonus variabel. Beberapa pencapaian keberlanjutan yang dipertimbangkan mencakup pengurangan emisi perusahaan sebesar 30%, total tingkat insiden yang tercatat (*Total Recordable Incident Rate*/TRIR), jumlah kecelakaan (*Number of Accidents*/NOA), serta keberagaman *gender* dan generasi, khususnya peningkatan keterlibatan perempuan dan milenial dalam organisasi. Indikator lain yang relevan meliputi penerapan kode etik (*Code of Conduct*/CoC), pencegahan konflik kepentingan (*Conflict of Interest*/CoI), pelaporan kekayaan pejabat negara (LHKPN), dan efektivitas manajemen risiko.

In the remuneration policy, sustainability performance indicators are one of the main factors that influence the total of variable bonuses. Some sustainability achievements that are considered include reducing the company's emissions by 30%, Total Recordable Incident Rate (TRIR), Number of Accidents (NOA), and gender and generational diversity, especially increasing the involvement of women and millennials in the organization. Other relevant indicators include the implementation of the Code of Conduct (CoC), prevention of Conflicts of Interest (CoI), state official wealth reporting (LHKPN), and the effectiveness of risk management.

Struktur dan besaran Remunerasi Dewan Komisaris dan Direksi adalah sebagai berikut:

The structure and amount of remuneration for the Board of Commissioners and the Board of Directors are as follows:

Komponen Remunerasi **Remuneration Components**	**Bentuk dan Struktur** **Form and Structure**	
	Dewan Komisaris **Board of Commissioners**	**Direksi** **Board of Directors**
Gaji/Honorarium Salary/Honorarium	Komisaris Utama : 45% x Gaji Direktur Utama President Commissioner : 45% x President Director's Salary Komisaris : 90% x Honorarium Komisaris Utama Commissioner : 90% x President Commissioner's Honorarium	Direktur Utama : 100% President Director : 100% Direktur : 85% x Gaji Direktur Utama Director : 85% x President Director's Salary
Tunjangan Allowance	Tunjangan Hari Raya Keagamaan | Religious Holiday Allowance	
	Tunjangan Transportasi Transportation Allowance	Tunjangan Perumahan Housing Allowance
	Asuransi Purna Jabatan | Pension Fund Insurance	
Fasilitas Facilities	Fasilitas Kesehatan | Health Facilities	
	Fasilitas Bantuan Hukum | Legal Assistance Facilities	
	Fasilitas Kerja Lainnya | Other Work Facilities: Fasilitas Komunikasi dan Sarana Teknologi Informasi Communication and Information Technology Facilities Fasilitas Pakaian Seragam/Jas | Uniform/Suit Facilities	
	Fasilitas Keanggotaan Perkumpulan Profesi Professional Membership Facilities	
	-	Fasilitas Keanggotaan Klub/ Korporasi Club/Corporate Membership Facilities
	-	Fasilitas Kendaraan Dinas Official Vehicle Facilities
Pajak atas Gaji/Honorarium dan Tunjangan Tax on Salary/Honorarium and Allowance	Ditanggung Perusahaan | Paid by Company	
Tantiem Tantiem	Sesuai Ketetapan RUPS/KPSSS Diberikan dalam Gross – Pajak ditanggung masing-masing Dewan Komisaris In accordance with the GMS/CSD Decree. Paid in Gross – Taxes are borne by each of Board of Commissioners	Sesuai Ketetapan RUPS/KPSSS Diberikan dalam Gross – Pajak ditanggung masing-masing Direksi In accordance with the GMS/CSD Decree. Paid in Gross – Taxes are borne by each of Board of Directors

RASIO TOTAL KOMPENSASI [GRI 2-21, 405-2]

Perusahaan senantiasa memastikan bahwa komposisi kompensasi yang diberikan ideal untuk setiap jenjang jabatan. Tidak terdapat perbedaan antara kompensasi yang diberikan kepada pekerja pria dan wanita diluar dari pertimbangan jenjang jabatan, masa kerja, dan kinerja pekerja, sehingga rasio total kompensasi antara pekerja pria dan wanita pada jabatan, masa kerja, dan kinerja yang sama adalah 1:1.

Selama periode pelaporan, tingkat remunerasi *entry level* di PHE Subholding Upstream masih lebih tinggi dibandingkan dengan upah minimum tahun 2024 yang ditetapkan oleh pemerintah daerah di masing-masing Wilayah Kerja. Kebijakan ini mencerminkan komitmen perusahaan dalam menjaga kesejahteraan pekerja sambil tetap mematuhi peraturan ketenagakerjaan yang berlaku. [GRI 202-1]

PELIBATAN PEMANGKU KEPENTINGAN [OJK E.4] [GRI 2-29]

Perusahaan mengedepankan pendekatan kolaboratif dalam menjalin hubungan dengan pemangku kepentingan, termasuk melalui perjanjian kerja bersama sebagai bentuk pengambilan keputusan kolektif. Untuk pemangku kepentingan internal, seperti pekerja, perusahaan menjalin perjanjian kerja bersama dengan perwakilan serikat pekerja. Perjanjian ini mencakup berbagai aspek penting, termasuk kondisi kerja, peraturan perusahaan, tunjangan, dan hak-hak pekerja lainnya. Hal ini mencerminkan komitmen perusahaan untuk menciptakan hubungan yang transparan dan partisipatif, di mana pengambilan keputusan terkait operasional dilakukan secara bersama-sama dengan mempertimbangkan kebutuhan semua pihak.

Pendekatan ini terintegrasi dengan mekanisme pelibatan pemangku kepentingan yang lebih luas, yang dirancang untuk menciptakan akuntabilitas dalam mengidentifikasi, memahami, dan menangani isu-isu keberlanjutan yang berdampak pada ekonomi, sosial, dan lingkungan. Dengan mengacu pada standar internasional seperti AA1000 *Stakeholder Engagement Standard* (AA1000SES) 2015 dan ISO 26000, perusahaan memastikan prinsip inklusivitas, materialitas, dan responsivitas diterapkan dalam setiap interaksi dengan pemangku kepentingan. Identifikasi dan pelibatan pemangku kepentingan tidak hanya mencakup pihak eksternal tetapi juga melibatkan karyawan secara internal melalui perjanjian kerja bersama ini, yang memperkuat hubungan antara perusahaan dan tenaga kerjanya.

TOTAL COMPENSATION RATIO [GRI 2-21, 405-2]

The company always ensures that the composition of compensation provided is ideal for each level of position. There is no difference between the compensation given to male and female workers beyond the consideration of position level, length of service, and employee performance, therefore, the total compensation ratio between male and female workers in the same position, length of service, and performance is 1:1.

During the reporting period, the entry-level remuneration level at PHE Subholding Upstream was still higher than the minimum wage 2024 set by the local government in each Work Area. This policy reflects the company's commitment to maintaining worker welfare while complying with applicable employment regulations. [GRI 202-1]

STAKEHOLDER ENGAGEMENT [OJK E.4] [GRI 2-29]

The company prioritizes a collaborative approach in establishing relationships with stakeholders, including through collective bargaining agreements as a form of collective decision-making. For internal stakeholders, such as workers, the company establishes collective bargaining agreements with representatives of a labor union. These agreements cover various important aspects, including working conditions, company regulations, benefits, and other workers' rights. This reflects the company's commitment to creating transparent and participatory relationships, where operational decisions are made jointly by considering the needs of all parties.

This approach is integrated with a broader stakeholder engagement mechanism, designed to create accountability in identifying, understanding, and addressing sustainability issues that have economic, social, and the environmental impacts. By referring to international standards such as AA1000 Stakeholder Engagement Standard (AA1000SES) 2015 and ISO 26000, the company ensures that the principles of inclusivity, materiality, and responsiveness are applied in every interaction with stakeholders. Stakeholder identification and engagement not only includes external parties but also involves employees internally through these collective bargaining agreements, which strengthen the relationship between the company and its workforce.

Melalui analisis pola interaksi dan hubungan yang terkait dengan kegiatan operasional, PHE Subholding Upstream telah mengidentifikasi sembilan kelompok pemangku kepentingan utama yang saling memengaruhi proses bisnis perusahaan. Setiap kelompok dilibatkan secara rutin melalui komunikasi berkelanjutan, perjanjian kolektif, serta berbagai metode lainnya untuk memastikan hubungan yang harmonis, produktif, dan berkelanjutan. Pendekatan ini memungkinkan perusahaan untuk merespons kebutuhan pemangku kepentingan secara strategis sambil tetap menjaga keberlanjutan dalam seluruh aspek bisnisnya.

Through analysis of interaction patterns and relationships related to operational activities, PHE Subholding Upstream has identified nine main stakeholder groups that mutually influence the company's business processes. Each group is regularly engaged through ongoing communication, collective agreements, and various other methods to ensure harmonious, productive, and sustainable relationships. This approach allows the company to respond strategically to stakeholder needs while maintaining sustainability in all aspects of its business.

Pemangku Kepentingan Stakeholders	Topik Utama Main Topics	Pendekatan Approach	
		Metode Pelibatan Engagement Methods	Frekuensi Frequency
Pemegang Saham Shareholders	Pemenuhan target operasional dan lifting migas Fulfillment of operational targets and oil and gas lifting	Penyusunan dan pengesahan RKAP Preparation and approval of RKAP	Satu tahun sekali Once a year
	Pelaporan kinerja Performance reporting	Rapat Umum Pemegang Saham General Meeting of Shareholders	Minimal satu tahun sekali, atau jika diperlukan At least once a year, or if necessary
		Laporan kinerja berkala Regular performance report	Triwulan Quarterly
		Laporan Keuangan Tahunan Annual Financial Statements	Satu tahun sekali Once a year
Pekerja Worker	Pemenuhan hak-hak normatif dan jaminan keselamatan dan kesehatan kerja (K3) Fulfillment of normative rights and guarantees of occupational health and safety (OHS)	Penyusunan Perjanjian Kerja Bersama (PKB) melalui perwakilan dalam serikat pekerja Preparation of Collective Bargaining Agreements (CBA) through representatives in labor unions	Jika diperlukan If necessary
	Kebebasan berserikat Freedom of association	Pembentukan dan dukungan terhadap serikat pekerja Formation and support of labor unions	Sesuai kebutuhan If necessary
	Penyampaian pendapat pada sosialisasi peraturan Submission of opinions in dissemination of regulations	Town Hall Meeting	Minimal satu tahun sekali At least once a year
		Management Walkthrough	Secara berkala Regularly
	Peningkatan kompetensi Competency improvement	Pendidikan dan pelatihan kerja serta pengembangan karir (penilaian berkala) Education and job training and career development (regular assessment)	Secara berkala Regularly
	Komunikasi yang jelas dan efektif Clear and effective communication	Meningkatkan saluran komunikasi seperti broadcast, contact center, media internal, dan kotak saran Improvement of communication channels such as broadcast, contact center, internal media, and suggestion boxes	Secara berkala Regularly

Pemangku Kepentingan Stakeholders	Topik Utama Main Topics	Pendekatan Approach	
		Metode Pelibatan Engagement Methods	Frekuensi Frequency
Lembaga legislatif Legislative body	Pemenuhan kebutuhan legal perusahaan Fulfillment of the company's legal needs	Rapat tahunan dan koordinasi terkait formalitas Annual meeting and coordination regarding formalities	Sekurang-kurangnya sebulan sekali At least once a month
Pemerintah Pusat dan Regulator Central Government and Regulators	Pemenuhan PNBP dan kewajiban lain Fulfillment of PNBP and other obligations	Setoran PNBP dan kewajiban lainnya PNBP deposits and other obligations	Satu tahun sekali Once a year
Pelanggan Customer	Kepastian hukum Legal certainty	Perumusan dan pengesahan kontrak jual beli migas Formulation and ratification of oil and gas sales and purchase contracts	Sesuai kebutuhan According to needs
	Pelayanan dan jaminan pasokan migas Oil and gas supply services and guarantees	Mekanisme pengaduan Complaint mechanism	Saran dapat disampaikan melalui media komunikasi yang tersedia Suggestions can be submitted through available communication media
		Rapat koordinasi *lifting* migas Oil and gas lifting coordination meeting	Secara berkala sesuai kebutuhan dan sesuai kontrak Regularly as necessary and according to contract
	Survei kepuasan pelanggan Customer satisfaction survey	Survei kepuasan pelanggan Customer satisfaction survey	Tahunan Annual
Masyarakat Society	Manfaat kepada masyarakat Benefits for society	Pelaksanaan program CID di seluruh wilayah operasi Perusahaan Implementation of CID program throughout the Company's areas of operation	Sesuai kebutuhan According to needs
		Perhitungan dampak melalui pengukuran SROI Impact calculation through SROI measurement	Satu tahun sekali Once a year
	Komunikasi yang efektif dan transparan Effective and transparent communication	Konsultasi publik dan Musrenbang Public consultation and Musrenbang	Sesuai kebutuhan According to needs
Mitra Usaha/Bisnis Business Partners	Kepastian hukum Legal certainty	Perumusan dan pengesahan kontrak kerja Formulation and ratification of employment contracts	Jika diperlukan If necessary
	Laporan kinerja dan operasional Performance and operational reports	Pertemuan koordinasi berkala Regular coordination meeting	Secara berkala Regularly
	Berdampak signifikan kepada keberlanjutan Significant impact on sustainability	Assessment dan evaluasi berkala Regular assessment and evaluation	Secara berkala Regularly
Media	Informasi kinerja dan informasi lain terkait Perusahaan Performance information and other information related to the Company	Penyampaian berkala materi kepada media Regular submission of materials to media	Setiap hari untuk diseminasi Every day for dissemination



MANAJEMEN RISIKO [OJK E.3]

PHE mengintegrasikan pendekatan Manajemen Risiko berbasis ISO 31000:2018 ke dalam seluruh operasionalnya, memastikan setiap proses bisnis berjalan selaras dengan prinsip Tata Kelola Perusahaan yang Baik (*Good Corporate Governance*). Sistem ini dirancang untuk membantu perusahaan secara proaktif mengidentifikasi, mengevaluasi, dan menangani risiko yang dapat memengaruhi pencapaian tujuan strategis. Dengan penerapan ISO 31000:2018, PHE berkomitmen untuk menjaga nilai perusahaan melalui pengelolaan risiko yang terencana dan terukur.

Pada tahun 2024, PHE dihadapkan pada berbagai risiko utama yang mencakup aspek operasional, keuangan, strategi bisnis, hukum, tata kelola, kepatuhan, citra perusahaan, serta dinamika lingkungan bisnis. Untuk mengelola risiko-risiko tersebut, perusahaan telah mengembangkan langkah-langkah mitigasi yang bertujuan meminimalkan potensi dampak negatif terhadap operasional. Pendekatan ini memungkinkan PHE untuk mempertahankan kinerja bisnis yang stabil dan berkelanjutan di tengah berbagai tantangan yang dihadapi.

RISK MANAGEMENT [OJK E.3]

PHE integrates the ISO 31000:2018-based Risk Management approach into all its operations, ensuring that every business process is aligned with the principles of Good Corporate Governance. This system is designed to help companies proactively identify, evaluate, and address risks that may affect the achievement of strategic objectives. With the implementation of ISO 31000:2018, PHE is committed to maintaining the company's value through planned and measurable risk management.

In 2024, PHE was faced with various major risks covering operational, financial, business strategy, legal, governance, compliance, corporate image, and business environment dynamics. To manage these risks, the company has developed mitigation measures aimed at minimizing potential negative impacts on operations. This approach allows PHE to maintain stable and sustainable business performance amidst the various challenges faced.

Penjabaran lebih rinci mengenai risiko-risiko tersebut, termasuk langkah mitigasi yang telah diambil, dapat ditemukan dalam Laporan Tahunan Perusahaan tahun 2024. Dengan pendekatan ini, PHE berkomitmen untuk mengelola risiko secara proaktif guna mendukung stabilitas dan pertumbuhan jangka panjang perusahaan.

Sepanjang tahun 2024, perusahaan berhasil melaksanakan total 418 *risk treatment* yang dirancang untuk mengurangi dampak dan kemungkinan terjadinya risiko dalam *Subholding Upstream*. Pencapaian ini sepenuhnya sesuai dengan target strategis yang telah ditetapkan, yaitu sebanyak 418 aktivitas. Berdasarkan evaluasi yang dilakukan secara berkala, hasil pemantauan menunjukkan bahwa realisasi *Key Performance Indicator* (KPI) Pengelolaan Risiko untuk Triwulan ke-4 tahun 2024 telah mencapai tingkat optimal, yaitu 100%. Hal ini mencerminkan efektivitas strategi manajemen risiko yang telah diterapkan oleh perusahaan sepanjang tahun.

Sebagai bagian dari pengelolaan risiko secara berkelanjutan, perusahaan telah menetapkan serangkaian aturan, antara lain:

1. Pedoman Manajemen Risiko
2. TKO Pengelolaan Manajemen Risiko *Ongoing Business*
3. TKO Pengelolaan Manajemen Risiko Proyek
4. TKI Monitoring dan Reporting Risiko *Ongoing Business*
5. TKI Penyusunan *All Risk* dan *Top Risk*
6. TKI Penyusunan Kajian Risiko Usulan Investasi BD Organik dan Non BD
7. TKI Update Status *Risk Register* Usulan Investasi Tahap Eksekusi
8. TKI Monitoring dan Reporting Risiko Investasi Tahap Eksekusi
9. TKI Penyusunan Kajian Risiko Usulan Investasi *Business Development* (BD) Anorganik
10. TKI Peninjauan-Reviu Kajian Risiko Usulan Investasi *Business Development* (BD) Anorganik
11. Pedoman Pengelolaan Sistem Manajemen Kelangsungan Bisnis
12. TKO Penyusunan dan Perbaikan Berkelanjutan Dokumen Sistem Manajemen Kelangsungan Bisnis (SMKB)
13. TKI Penyusunan Dokumen Sistem Manajemen Kelangsungan Bisnis (SMKB)
14. TKI Peninjauan-Reviu Kajian Risiko Usulan Investasi *Business Development* (BD) Organik dan *Non Business Development* (Non-BD)

Selain itu, Perusahaan juga telah melakukan implementasi program sebagai berikut untuk memastikan keberlangsungan bisnis:

1. Dalam rangka pemenuhan Peraturan Menteri BUMN RI No. PER-2/MBU/03/2023 tentang Pedoman Tata Kelola dan Kegiatan Korporasi Signifikan Badan Usaha Milik Negara; khususnya pada pengelolaan manajemen risiko di PT PHE, telah dibentuk:

A more detailed description of these risks, including the mitigation steps that have been taken, can be found in the Company's Annual Report 2024. With this approach, PHE is committed to proactively managing risks to support the company's long-term stability and growth.

Throughout 2024, the company has successfully implemented a total of 418 risk treatment actions designed to reduce the impact and likelihood of occurrence of risks in the Subholding Upstream. This achievement fully meets the strategic target that has been set, namely 418 activities. Based on the evaluation conducted regularly, the monitoring results show that the realization of the Risk Management Key Performance Indicator (KPI) for the 4th Quarter of 2024 has reached the optimal level, namely 100%. This reflects the effectiveness of the risk management strategy that has been implemented by the company throughout the year.

As a part of ongoing risk management, the company has established a series of rules, including:

1. Risk Management Guidelines
2. TKO Ongoing Business Risk Management
3. TKO Project Risk Management
4. TKI Monitoring and Reporting of Ongoing Business Risks
5. TKI Preparation of All Risk and Top Risk
6. TKI Preparation of Risk Study of Investment Proposals for Organic BD and Non-BD
7. TKI Risk Register Status Updates for Investment Proposals at Execution Stage
8. TKI Monitoring and Reporting of Investment Risks at Execution Stage
9. TKI Preparation of Risk Study for Inorganic Business Development (BD) Investment Proposals
10. TKI Review of Risk Assessment of Inorganic Business Development (BD) Investment Proposals
11. Business Continuity Management System Management Guidelines
12. TKO Preparation and Continuous Improvement of Business Continuity Management System (BMS) Documents
13. TKI Preparation of Business Continuity Management System (SMKB) Documents
14. TKI Review of Risk Assessment of Investment Proposals for Organic Business Development (BD) and Non-Business Development (Non-BD)

In addition, the Company has also implemented the following programs to ensure business continuity:

1. In order to fulfill Regulation of Minister of State-Owned Enterprises of the Republic of Indonesia No. PER-2/MBU/03/2023 concerning Guidelines for Governance and Significant Corporate Activities of State-Owned Enterprises; especially in the management of risk management at PT PHE, have been formed:

- Organisasi direktorat Manajemen Risiko melalui penyempurnaan organisasi Manajemen Risiko PHE Subholding Upstream berdasarkan Surat Keputusan No.019/PHE00000/2024-S0 tentang Penyempurnaan Organisasi Subholding Upstream Tahun 2024 tanggal 30 Agustus 2024, dengan Direktur Manajemen Risiko Mery Luciawaty menjabat dalam jajaran Direksi berdasarkan Keputusan Pemegang Saham Secara Sirkuler (KPSSS) tanggal 15 Mei 2024.
- Komite Investasi & Manajemen Risiko melalui Surat Keputusan Dewan Komisaris No Kpts-002/DK-PHE/2024-S0 tanggal 31 Januari 2024 Tentang Piagam Komite Investasi & Manajemen Risiko.

- Komite Tata Kelola Terintegrasi dibentuk mengacu pada Surat Keputusan Dewan Komisaris No. Kpts-006/ DKPHE/ 2024-S0 tanggal 25 Maret 2024 tentang Pembentukan dan Pengangkatan Anggota-Anggota Komite Tata Kelola Terintegrasi PT Pertamina Hulu Energi. Komite Tata Kelola Terintegrasi dibentuk untuk membantu dan bertanggung jawab kepada Komisaris Utama PHE dalam rangka memperkuat pengawasan tata kelola Perusahaan serta memastikan penerapan dan pelaksanaan Tata Kelola Terintegrasi di lingkup *Subholding Upstream*.

2. Peningkatan *Risk Awareness* dan *Risk Culture* melalui program *risk campaign*, *training*, *knowledge sharing*, *broadcast* dan *cascading* KPI Pengelolaan Risiko serta peningkatan peran *Person in Charge* (PIC).
3. Pembaharuan Sistem Tata Kerja (STK).
4. Implementasi dan *monitoring Key Risk Indicator* (KRI) sebagai metode analisis lebih awal untuk mengetahui *early warning status*.
5. Penilaian tingkat maturitas manajemen risiko yang diinisiasi oleh Pertamina Persero.
6. Komitmen dalam penerapan Sistem Manajemen Kelangsungan Bisnis (SMKB) di PT. Pertamina Hulu Energi dengan diperolehnya sertifikat ISO22301:2019 *Business Continuity Management System* (BCSM) pada 30 Oktober 2024 dan diterbitkannya 3 (tiga) Sistem Tata Kerja (STK) Sistem Manajemen Kelangsungan Bisnis (SMKB) PT PHE:
   - A12-001/PHE62000/2024-S9 tentang Pedoman Pengelolaan Sistem Manajemen Kelangsungan Bisnis (SMKB)
   - B12-001/PHE62000/2024-S9 tentang TKO Penyusunan dan Perbaikan Berkelanjutan Dokumen Sistem Manajemen Kelangsungan Bisnis (SMKB)
   - C12-001/PHE62000/2024-S9 tentang TKI Penyusunan Dokumen Sistem Manajemen Kelangsungan Bisnis (SMKB)

- Directorate of Risk Management through the organizational improvement of Risk Management of PHE Subholding Upstream pursuant to Decision No. 019/PHE00000/2024-S0 concerning Organizational Improvement of Subholding Upstream of 2024 dated August 30, 2024, with Director of Risk Management Mery Luciawaty serving in the Board of Directors based on Circular Resolution of Shareholders dated May 15, 2024.
- Investment & Risk Management Committee by Resolution of Board of Commissioners No. Kpts-002/ DKPHE/2024-S0 dated January 31, 2024 concerning Charter of Investment & Risk Management Committee.

- Integrated Governance Committee was formed referring to the Decree of the Board of Commissioners No. Kpts-006/ DK-PHE/2024-S0 dated March 25, 2024 concerning the Establishment and Appointment of Members of the Integrated Governance Committee of PT Pertamina Hulu Energi. The Integrated Governance Committee was formed to assist and be responsible to the President Commissioner of PHE in order to strengthen the supervision of the Company's governance and ensure the implementation and implementation of Integrated Governance within the Upstream Subholding.

2. Increasing Risk Awareness and Risk Culture through risk campaign programs, training, knowledge sharing, broadcast and cascading of Risk Management KPI as well as increasing the role of Person in Charge (PIC).
3. Work System Update (STK).
4. Implementation and monitoring of Key Risk Indicators (KRI) as an early analysis method to determine early warning status.
5. Assessment of risk management maturity level initiated by Pertamina Persero.
6. Commitment to implementing the Business Continuity Management System (BCSM) at PT Pertamina Hulu Energi by obtaining the ISO22301:2019 Business Continuity Management System (BCSM) certificate on October 30, 2024 and the issuance of 3 (three) Work Procedure Systems of Business Continuity Management System (BCSM) of PT PHE:
   - A12-001/PHE62000/2024-S9 concerning Guidelines for Managing Business Continuity Management System (BCSM)
   - B12-001/PHE62000/2024-S9 concerning TKO on Preparation and Continuous Improvement of Business Continuity Management System (BCSM) Documents
   - C12-001/PHE62000/2024-S9 concerning TKI on Preparation of Business Continuity Management System (BCSM) Documents

7. Inovasi Pengembangan Manajemen Strategi Penilaian Risiko Proyek Organik Pengembangan melalui penyusunan metode *Project Risk Rating* Subholding Upstream *Economic & Reserve Rating* (SERR) untuk memitigasi *On Return Project* dengan memprediksi NPV Proyek pada Fase Eksekusi yang tertuang pada Revisi Tata Kerja Individu Peninjauan/Reviu Kajian Risiko Usulan Investasi *Business Development* (BD) Organik dan *Non-Business Development* (*Non*-BD) No. C12-001/PHE63000/2024-S9 tanggal 1 November 2024 dan telah dilakukan sosialisasi kepada Dewan Direksi serta fungsi terkait di lingkungan PT Pertamina Hulu Energi.

Sebagai upaya mewujudkan keberlanjutan perusahaan, PT Pertamina Hulu Energi melalui Direktorat Risk Management juga melakukan pengelolaan di lingkup *Project Risk Management* dengan 2 (dua) *major activities* yaitu Pengelolaan *Project Risk* dan Pengelolaan Portfolio serta *Contractual & Counterparty Risk* dan *Emerging Risk* dengan penjelasan sebagai berikut:

1. Pengelolaan *Project Risk*
   PT Pertamina Hulu Energi selain melakukan pengelolaan terhadap *on-going business risk* juga melakukan pengelolaan terhadap *project risk*. Hal tersebut dilakukan sesuai proses bisnis mulai dari tahapan usulan investasi sampai dengan melakukan *monitoring* atas project tahap eksekusi.

   Kegiatan pengelolaan *project risk* melalui evaluasi kajian risiko atas usulan investasi Organik, Anorganik & Divestasi termasuk didalamnya upaya-upaya pengelolaan *asset integrity* sehingga tidak terdapat unidentified risk terkait investasi usulan proyek yang bertujuan agar investasi berjalan sesuai program karena seluruh risiko telah disiapkan mitigasinya.

   Selama periode tahun 2024, *Project Risk Management* telah mengikuti Forum *Gate Review* yang dilaksanakan masing masing Koordinator Investasi PT Pertamina Hulu Energi dengan kajian risiko proyek yang telah diselesaikan sejumlah 79 kajian risiko Investasi Organik dan 9 kajian risiko investasi Anorganik & Divestasi.

   Selain memberikan reviu aspek risiko dari usulan investasi proyek, mengacu pada penetapan proyek prioritas *Holding* dan *Subholding Upstream*, pada tahun 2024 *Project Risk Management* telah melakukan pengawasan dan evaluasi secara rutin terhadap 10 (sepuluh) proyek prioritas holding dan 40 (empat puluh) proyek prioritas *Subholding Upstream*.

   Pengawasan dan evaluasi bertahap sesuai *milestone* pelaksanaan proyek dimaksudkan untuk implementasi kajian risiko, mitigasi yang disiapkan dan realisasi pengelolaan risiko proyek yang dilaksanakan sehingga

7. Innovation in Development of Organic Project Risk Assessment Strategy Management Development through the preparation of the Project Risk Rating Subholding Upstream Economic & Reserve Rating (SERR) method to mitigate On Return Project by predicting the Project NPV in the Execution Phase as stated in the Revision of Individual Work Procedures for Reviewing Risk Assessment of Organic Business Development (BD) and Non-Business Development (Non-BD) Investment Proposals No. C12-001/PHE63000/2024-S9 dated November 1, 2024 and has been socialized to the Board of Directors and related functions within PT Pertamina Hulu Energi.

As an effort to realize the sustainability of the company, PT Pertamina Hulu Energi through the Directorate of Risk Management also performs management in the scope of Project Risk Management with 2 (two) major activities, namely Project Risk Management and Portfolio Management as well as Contractual & Counterparty Risk and Emerging Risk with the following explanation:

1. Project Risk Management
   Project Risk Management of PT Pertamina Hulu Energi in addition to managing on-going business risks also manages project risks. This is done according to the business process starting from the investment proposal stage to monitoring the project execution stage.

   Project risk management activities through risk studies evaluations of proposed investments of Organic, Inorganic & Divestment include efforts to manage asset integrity so that there are no unidentified risks related to proposed project investments, which aim to ensure that investments run according to the program because the mitigation of all risks has been prepared.

   During the period of 2024, Project Risk Management has participated in the Gate Review Forum performed by each Investment Coordinator of PT Pertamina Hulu Energi with project risk studies that have been completed consisting of 79 Organic Investment risk studies and 9 Inorganic investment & Divestment risk studies.

   In addition to providing a review of the risk aspects of the proposed project investment, referring to the determination of priority projects for the Holding and the Subholding Upstream, in 2024 the Project Risk Management has performed routine supervision and evaluation of 10 (ten) priority projects of the holding and 40 (forty) priority projects of the Subholding Upstream.

   Gradual supervision and evaluation according to project implementation milestones are intended for the implementation of risk assessments, prepared mitigation, and realization of project risk management implemented

menjamin terlaksananya terselesaikannya proyek sesuai program kerja guna mendukung keberlanjutan perusahaan.

2. Pengelolaan Portfolio *Risk*, *Contractual* & *Counterparty* Risk dan *Emerging Risk*
   Sebagai dukungan keberlanjutan perusahaan manajemen risiko PT Pertamina Hulu Energi juga telah mengembangkan pengelolaan portofolio *Risk*, *emerging risk*, *contractual risk* dan *counterparty risk* dengan penjelasan sebagai berikut:

   a. Portofolio Risk
      Secara definisi risiko portofolio dimaksudkan untuk pengelolaan risiko proyek, program kerja, serta portofolio anak perusahaan dan operasional yang dikelola di lingkungan PHE SHU untuk mencapai target strategis (*strategic obective*) yaitu mendapatkan Return dengan pengelolaan portofolio pada level yang optimal. Pengelolaan resiko portofolio yang baik dan terukur dapat memberikan rekomendasi langkah strategis yang dapat mengoptimalkan pencapaian dan penciptaan nilai tambah dari masing-masing *asset* guna mendukung keberlanjutan bisnis perusahaan.

      Berdasarkan kajian portofolio *asset* dan portofolio proyek tahun 2024, selama periode tahun 2024 terkait asset, portofolio *risk* telah melakukan penyusunan strategi optimisasi *asset* diantaranya melalui efisiensi, *operational excellence*, perbaikan *fiscal terms*, *partnership*, proses divestasi, investasi anorganik, penambahan PI dan terkait proyek telah dilakukan proses evaluasi *risk treatment* dalam setiap proyek terutama untuk proyek yang masuk dalam kategori *high risk*.

   b. *Contractual & Counterparty Risk*
      Contractual Risk merupakan pengelolaan risiko dengan fokus evaluasi pada potensi risiko yang muncul dari pelaksanaan kontrak kerja yang berdampak negatif bagi operasi dan sasaran kerja perusahaan sedangkan *Counterparty risk* merupakan pengelolaan risiko yang terkait dengan para pihak sebagai mitra dalam pelaksanaan pekerjaan maupun proses yang terkait investasi dan divestasi di lingkungan PHE SHU dengan potensi *default* atau tidak melaksanakan pekerjaan sesuai kontrak kerja.

      Dengan adanya kajian risiko terkait *contractual* dan *counterparty risk* maka mitigasi dapat disiapkan terutama untuk kontrak-kontrak berisiko serta memberikan langkah pencegahan bagi perusahaan sehingga tidak menimbulkan kerugian ataupun dispute saat pelaksanaan proyek dan setelah diselesaikannya program kerja sesuai lingkup kontrak.

so as to ensure the completion of the project according to the work program to support the sustainability of the company.

2. Management of Portfolio Risk, Contractual & Counterparty Risk and Emerging Risk
   As a support for the sustainability of the company, the risk management of PT Pertamina Hulu Energi has also developed the management of portfolio risk, emerging risk, contractual risk and counterparty risk with the following explanation:

   a. Portofolio Risk
      By definition, portfolio risk is intended for managing project risks, work programs, and subsidiary and operational portfolios managed within PHE SHU to achieve strategic objectives, namely obtaining Returns with portfolio management at an optimal level. Good and measurable portfolio risk management can provide recommendations for strategic steps that can optimize the achievement and creation of added value from each asset to support the sustainability of the company's business.

      Based on the study of the asset portfolio and project portfolio in 2024, during the period of 2024 related to assets, the risk portfolio has prepared an asset optimization strategy including through efficiency, operational excellence, improving fiscal terms, partnerships, divestment processes, inorganic investments, additional PI and related to projects, a risk treatment evaluation process has been performed in each project, especially for projects that fall into the high risk category.

   b. Contractual & Counterparty Risk
      Contractual Risk is a risk management with a focus on evaluating potential risks arising from the implementation of work contracts that have a negative impact on the company's operations and work targets, while Counterparty risk is a risk management related to the parties as partners in the implementation of work or processes related to investment and divestment within PHE SHU with potential defaults or non-performance of work according to the work contract.

      With the existence of risk studies related to contractual and counterparty risk, mitigation measures can be prepared, especially for high-risk contracts, and preventive measures can be given to the company to avoid losses or disputes during the project implementation and after the completion of the work program according to the scope of the contract.

Terkait Contractual *Risk Review*, selama periode 2024 telah dilakukan proses *advisory* sebanyak 6 (enam) isu diantaranya terkait *Standard* kontrak *drilling services*, *Days Payable Outstanding Buyer*, JOA & LDA Proyek LNG dan beberapa kajian risiko spesifik untuk aktivitas terkait *contractual* dan terkait *counterparty risk*, selama periode 2024 telah dilaksanakan 4 (empat) isu pendampingan terhadap *counterpart* baik pihak internal maupun eksternal diantaranya adalah melakukan kajian atas aspek risiko terhadap *Supplier Management Evaluation* dengan berkoordinasi dengan fungsi *Supply Change Management* , proses evaluasi optimalisasi dari bisnis Anak Perusahaan *Services* dan perubahan bentuk kerjasama (*Fiscal Term*).

c. *Emerging Risk*

Emerging Risk adalah pengelolaan risiko baru yang mungkin muncul diluar daftar risiko tahun berjalan telah ditetapkan dalam pelaksanaan pengelolaan perusahaan. Kategori risiko ini berkembang dari risiko usaha yang belum sepenuhnya terdaftar atau teridentifikasi sebelumya. Secara umum jenis risiko ini akan berdampak pada Perusahaan baik secara operasional, reputasi maupun keuangan. Karakter dari risiko ini merupakan risiko baru yang belum pernah terjadi sebelumnya, berasal dari informasi dan pemahaman yang tidak cukup, risiko sistemik yang mengancam sistem Perusahaan secara mendasar serta muncul secara signifikan.

Pengelolaan *emerging risk* yang telah berjalan berfokus pada dilakukannya asesmen atas risiko-risiko baru atau risiko yang belum teridentifikasi dalam *ongoing business* dan proyek sehingga perusahaan dapat melakukan mitigasi lebih awal untuk menunjang keberlanjutan bisnis perusahaan sesuai dengan program kerja perusahaan.

Pada tahun 2024 telah diselesaikan penyusunan *Framework* Pengelolaan *Emerging Risk* di *Subholding Upstream* yang mengklasifikasikan risiko pada *cluster* lingkungan/ESG, sosial-politik-ekonomi, teknologi serta kebijakan atau hukum dibandingkan dengan *time horizon* kemungkinan terjadinya *risk event*.

Concerning Contractual Risk Review, during the period of 2024, an advisory process has been performed on 6 (six) issues, including those related to Standard drilling services contracts, Days Payable Outstanding Buyer, JOA & LDA of LNG Projects and several specific risk studies for contractual activities and related to counterparty risk, during the period of 2024, 4 (four) issues of assistance have been performed for counterparts, both internal and external, including conducting a study on risk aspects of Supplier Management Evaluation by coordinating with the Supply Change Management function, the optimization evaluation process of the Subsidiary Services business and changes in the form of cooperation (Fiscal Term).

c. Emerging Risk

Emerging Risk is the management of new risks that may arise outside the list of current year risks that have been determined in the implementation of company management. This risk category develops from business risks that have not been fully registered or identified previously. In general, this type of risk will have an impact on the Company whether operationally, reputationally or financially. The character of this risk is a new risk that has never occurred before, comes from insufficient information and understanding, systemic risks that fundamentally threaten the Company's system and emerges significantly.

The ongoing management of emerging risks focuses on conducting assessments of new risks or risks that have not been identified in ongoing business and projects so that the company can conduct early mitigation to support the sustainability of the company's business in accordance with the company's work program.

In 2024, the preparation of the Emerging Risk Management Framework in the Upstream Subholding was completed, which classifies risks into environmental/ESG, socio-political-economic, technological, and policy or legal clusters compared to the time horizon of the possibility of occurrence of a risk event.



Impact Assessment:

- Risk Category: High
- Risk Category: Medium
- Risk Category: Small

Time Horizon:

- Short Term: Significant impacts already seen (<2 Years)
- Medium Term: Significant impact expected within 2-5 Years
- Short Term: Significant impacts expexted within >5 Years

Pengelolaan risiko dan krisis yang terencana dengan baik memungkinkan perusahaan untuk membangun ketahanan yang solid, baik untuk saat ini maupun di masa mendatang. Perusahaan menerapkan pendekatan bertahap untuk memastikan semua risiko yang berkaitan dengan operasional, termasuk risiko keberlanjutan, dapat dikenali, dipahami, dan ditangani secara efektif. Selain itu, pendekatan ini juga mencakup eksplorasi potensi peluang bisnis yang dapat timbul dari perubahan kondisi, sehingga memberikan keuntungan strategis dan nilai tambah bagi perusahaan. Selama periode pelaporan, tidak ada pelanggaran yang dijalani Perusahaan terkait hukum dan peraturan. [GRI 2-27]

Well-planned risk and crisis management enables companies to build solid resilience, both for now and in the future. The Company implements a phased approach to ensure that all operational risks, including sustainability risks, are identified, understood and effectively managed. In addition, this approach also includes exploring potential business opportunities that may arise from changing conditions, thereby giving strategic advantages and added values to the company. During the reporting period, the Company did not incur any violations related to laws and regulations. [GRI 2-27]

KODE ETIK [GRI 2-23, 2-24]

Perusahaan menjadikan kepatuhan terhadap hukum dan regulasi sebagai landasan utama dalam seluruh operasinya. Kepatuhan ini mencakup berbagai aspek hukum, seperti hukum lingkungan, ketenagakerjaan, serta peraturan bisnis lainnya yang berlaku. Untuk menjamin integritas operasional, Perusahaan menegaskan komitmen melalui penerapan nilai-nilai inti dan prinsip etika yang wajib dijalankan oleh seluruh Insan PHE. Nilai-nilai tersebut meliputi integritas, kejujuran, tanggung jawab, transparansi, dan rasa hormat, yang menjadi dasar dari budaya kerja perusahaan. Sebagai bentuk konkret dari komitmen tersebut, Perusahaan telah menerbitkan Pedoman Etika Usaha dan Etika Kerja (*Code of Conduct*) dengan nomor A13-005/PHE01000/2023-S9, yang merupakan pembaruan dari pedoman sebelumnya, yaitu Pedoman Perilaku dan Etika Bisnis (COC) PT PHE No. A-003/PHE040/2018-S9 Revisi Ke-0. [GRI 2-23]

Pedoman tersebut bertujuan menginternalisasi nilai-nilai utama BUMN yaitu AKHLAK, yang terdiri dari enam nilai dan 18 perilaku kerja, yaitu Amanah (bertanggung jawab dan dapat dipercaya), Kompeten (memiliki keahlian yang unggul), Harmonis (menciptakan lingkungan kerja yang inklusif dan saling menghormati), Loyal (mengutamakan kepentingan perusahaan), Adaptif (fleksibel dalam menghadapi perubahan), dan Kolaboratif (bekerja sama untuk mencapai tujuan bersama). Pedoman ini disusun sebagai panduan perilaku bagi seluruh Insan PHE dalam mengelola perusahaan, sekaligus mendukung pencapaian visi, misi, dan tujuan strategis Perusahaan. Selain memberikan arahan perilaku, pedoman ini juga memperkuat komitmen PHE terhadap tata kelola yang bertanggung jawab dan berkelanjutan.

Untuk memastikan penerapannya, pedoman tersebut disosialisasikan secara luas kepada pekerja melalui berbagai media, baik secara daring maupun luring. Sosialisasi ini diperkuat dengan pemantauan pelaksanaan pedoman secara berkala dan penerapan sanksi yang sesuai bagi setiap pelanggaran. Dengan langkah-langkah ini, diharapkan bahwa pedoman tersebut tidak hanya dipahami, tetapi juga diimplementasikan secara efektif di seluruh lini organisasi.

Selama periode pelaporan, tidak ada pelanggaran kode etik yang dilakukan oleh Insan PHE. Hal ini menunjukkan keberhasilan perusahaan dalam membangun budaya kerja yang menjunjung tinggi integritas dan etika. Dengan implementasi yang konsisten, Perusahaan terus memperkuat tata kelola yang baik dan mempertahankan reputasinya sebagai entitas yang bertanggung jawab di mata semua pemangku kepentingan. [GRI 2-24]

KONFLIK KEPENTINGAN [GRI 2-15]

Perusahaan mendefinisikan konflik kepentingan sebagai situasi di mana Insan PHE, yang memiliki kekuasaan atau wewenang tertentu, secara langsung atau diduga memiliki kepentingan pribadi yang dapat memengaruhi objektivitas, kualitas, dan kinerja keputusan yang diambil. Untuk mencegah terjadinya

CODE OF CONDUCT [GRI 2-23, 2-24]

The Company makes compliance with laws and regulations the main foundation in all its operations. This compliance covers various legal aspects, such as environmental law, employment law, and other applicable business regulations. To ensure operational integrity, the Company affirms its commitment through the implementation of core values and ethical principles that must be conducted by all Personnel of PHE. These values include integrity, honesty, responsibility, transparency, and respect, which are the bases for the company's work culture. As a concrete form of this commitment, the Company has issued a Code of Conduct number A13-005/PHE01000/2023-S9, which is an update of the previous guideline, namely Code of Conduct and Business Ethics (COC) of PT PHE No. A-003/PHE040/2018-S9 Revision 0. [GRI 2-23]

The guidelines aim to internalize the core values of SOE, namely AKHLAK, which consists of six values and 18 work behaviors, namely Amanah (responsible and trustworthy), Competent (having superior expertise), Harmonious (creating an inclusive and respectful work environment), Loyal (prioritizing the interests of the company), Adaptive (flexible in facing changes), and Collaborative (working together to achieve common goals). These guidelines are prepared as a code of conduct for all personnel of PHE in managing the company, while supporting the achievement of the Company's vision, missions, and strategic goals. In addition to providing behavioral direction, these guidelines also strengthen PHE's commitment to responsible and sustainable governance.

To ensure its implementation, the guidelines are widely disseminated to workers through various media, both online and offline. This dissemination is reinforced by regular monitoring of the implementation of the guidelines and the imposition of appropriate sanctions for each violation. With these steps, it is expected that the guidelines are not only understood, but also implemented effectively across all lines of the organization.

During the reporting period, there were no violations of the code of conduct committed by any personnel of PHE. This shows the company's success in building a work culture that upholds integrity and ethics. With consistent implementation, the Company continues to strengthen good governance and maintain its reputation as a responsible entity in the eyes of all stakeholders. [GRI 2-24]

CONFLICT OF INTEREST [GRI 2-15]

The Company defines a conflict of interest as a situation in which Personnel of PHE, who has certain power or authority, directly or allegedly has personal interests that can affect the objectivity, quality, and performance of decisions taken. To prevent such situations from occurring, the Company has

situasi tersebut, Perusahaan telah menetapkan Pedoman Konflik Kepentingan No. A-004/PHE040/2018-S9. Pedoman ini berfungsi sebagai panduan resmi bagi seluruh Insan PHE dalam mengelola potensi konflik kepentingan (*Conflict of Interest*/CoI) secara etis dan transparan.

Pedoman ini dirancang untuk memberikan arahan yang jelas terkait prinsip-prinsip etika dalam menangani konflik kepentingan dan menyediakan mekanisme pelaporan yang harus diikuti jika potensi konflik teridentifikasi. Tujuan dari pedoman ini adalah untuk mendorong penerapan prinsip *Good Corporate Governance* (GCG) di lingkungan perusahaan, meningkatkan standar etika bisnis agar mampu mencegah penipuan atau penyimpangan lainnya, serta membimbing Insan PHE dalam menjunjung profesionalisme, transparansi, dan akuntabilitas dalam hubungan bisnis dengan para pemangku kepentingan.

PHE secara aktif memastikan bahwa kebijakan pencegahan konflik kepentingan tersosialisasi dengan baik kepada seluruh pemangku kepentingan, khususnya pekerja. Program ini bertujuan membangun budaya kerja berbasis etika dan integritas, menciptakan lingkungan yang mendukung penerapan nilai-nilai profesionalisme, serta menjadi sarana pembelajaran bagi Insan PHE untuk memahami dan menghindari situasi yang berpotensi memunculkan konflik kepentingan. Melalui sosialisasi yang dilakukan secara kontinu, Perusahaan berupaya membentuk Insan PHE yang memiliki nilai, martabat, dan citra positif dalam setiap interaksi bisnis.

Langkah-langkah pencegahan konflik kepentingan dilakukan untuk memastikan bahwa seluruh pekerja memiliki pemahaman yang mendalam mengenai kebijakan tersebut, sehingga dapat mencegah pelanggaran secara efektif. Komitmen yang berkelanjutan terhadap pencegahan konflik kepentingan mencerminkan dedikasi Perusahaan dalam menjaga integritas, membangun kepercayaan, dan memastikan hubungan bisnis yang sehat serta berkelanjutan dengan semua pemangku kepentingan. Komitmen ini dibuktikan dengan tidak adanya terdapat pelanggaran terkait konflik kepentingan yang melibatkan Dewan Komisaris, Direksi, pemasok, pihak berelasi, maupun pihak ketiga lainnya pada tahun 2024.

KEBIJAKAN ANTI KORUPSI [GRI 205]
[SASB EM-EP-510a.2]

PHE memahami pentingnya menciptakan tata kelola organisasi yang bersih, transparan, dan berintegritas sebagai landasan utama untuk mendukung proses bisnis yang bebas dari korupsi, kolusi, dan nepotisme (KKN). Perusahaan juga memiliki komitmen kuat untuk mencegah kecurangan, gratifikasi, dan penyuapan. Sebagai bagian dari upaya ini, PHE menerapkan Sistem Manajemen Anti Penyuapan (SMAP) yang mengacu pada standar SNI ISO 37001:2016. Rincian dari mekanisme pelaksanaan SMAP diatur melalui Pedoman Pengelolaan Sistem Manajemen Anti Penyuapan (SMAP) No. A12-001/PHE01000/2022-S9, yang menjadi panduan bagi seluruh anak

established Guidelines for Conflict of Interest No. A-004/PHE040/2018-S9. These guidelines serve as an official guide for all Personnel of PHE in managing potential conflicts of interest (CoI) ethically and transparently.

This guideline is designed to provide clear guidance on ethical principles in dealing with conflicts of interest and provides a reporting mechanism to be followed if a potential conflict is identified. The purpose of this guideline is to encourage the implementation of Good Corporate Governance (GCG) principles within the company, improve business ethics standards so as to prevent fraud or other irregularities, and guide personnel of PHE in upholding professionalism, transparency, and accountability in business relationships with stakeholders.

PHE actively ensures that the conflict-of-interest prevention policy is well disseminated to all stakeholders, especially workers. This program aims to build a work culture based on ethics and integrity, create an environment that supports the implementation of professionalism values, and become a learning tool for personnel of PHE to understand and avoid situations that potentially give rise to conflicts of interest. Through continuous dissemination, the Company strives to shape personnel of PHE who have values, dignity, and a positive image in every business interaction.

Conflict-of-interest prevention measures are taken to ensure that all employees have a thorough understanding of the policy so as to prevent violations effectively. The ongoing commitment to conflict-of-interest prevention reflects the Company's dedication to maintaining integrity, building trust, and ensuring healthy and sustainable business relationships with all stakeholders. This commitment is evidenced by the absence of violations related to conflicts of interest involving the Board of Commissioners, the Board of Directors, suppliers, related parties, or other third parties in 2024.

ANTI-CORRUPTION POLICY [GRI 205]
[SASB EM-EP-510a.2]

PHE understands the importance of creating clean, transparent, and integrity-based organizational governance as the main foundation to support business processes that are free of corruption, collusion, and nepotism (KKN). The company also has a strong commitment to preventing fraud, gratuity, and bribery. As a part of this effort, PHE implements an Anti-Bribery Management System (ABMS) that refers to SNI ISO 37001:2016 standard. Details of the ABMS implementation mechanism are set out by Guidelines for Anti-Bribery Management System (ABMS) No. A12-001/PHE01000/2022-S9, which serves as a guide for all subsidiaries of PHE. These guidelines are designed

perusahaan PHE. Pedoman ini dirancang agar dapat diterapkan sesuai ketentuan dan proses bisnis masing-masing perusahaan tanpa mengurangi esensi sistem tersebut.

Sebagai langkah implementasi, PHE secara aktif mendorong anak perusahaan untuk mengadopsi dan menjalankan SMAP dengan baik. Hingga tahun 2023, delapan anak perusahaan telah memperoleh sertifikasi ISO 37001:2016 SMAP, dengan cakupan seluruh fungsi operasional. Perusahaan tersebut meliputi: [GRI 205-1]

1. PT Pertamina Hulu Rokan
2. PT Pertamina EP
3. PT Pertamina Hulu Indonesia
4. PT Pertamina EP Cepu
5. PT Pertamina Internasional EP
6. PT Pertamina Drilling Services Indonesia
7. PT Elnusa Tbk
8. PT Badak NGL

Selain menerapkan Sistem Manajemen Anti Penyuapan (SMAP), PHE juga telah menyusun Pedoman Pengendalian Gratifikasi, Dokumen Deklarasi Manajemen terkait Anti Penyuapan, Pakta Integritas, dan Pedoman Laporan Harta Kekayaan Penyelenggara Negara (LHKPN). Pedoman Pengendalian Gratifikasi ini menjelaskan jenis-jenis gratifikasi yang dapat diterima oleh perusahaan, seperti pemberian yang bersifat kekeluargaan, manfaat dari koperasi perusahaan, peralatan dari kegiatan kedinasan dengan nilai di bawah satu juta rupiah, serta penghargaan resmi dari pemerintah. Setiap gratifikasi yang diterima wajib dilaporkan melalui *Compliance Online System* (Compols). Sistem ini dirancang secara terpadu dan terintegrasi dengan *platform* daring lainnya yang ada di lingkungan perusahaan, sehingga memberikan kemudahan bagi Insan PHE untuk menyampaikan laporan terkait program pelaporan kepatuhan, khususnya laporan gratifikasi.

Dokumen Deklarasi Manajemen terkait Anti Penyuapan, termasuk Pakta Integritas, wajib ditandatangani oleh seluruh jajaran manajemen, pekerja, dan mitra kerja yang terlibat dalam kegiatan operasional perusahaan. Seiring dengan Dokumen Deklarasi tersebut, PHE juga menerbitkan Pedoman Laporan Harta Kekayaan Penyelenggara Negara (LHKPN) untuk memastikan transparansi dalam pelaporan kekayaan pejabat sesuai dengan ketentuan yang berlaku. Hal ini menunjukkan komitmen PHE untuk menjalankan proses bisnis yang etis, transparan, dan bebas dari praktik korupsi.

Seluruh operasi atau proses bisnis (100%) telah dinilai risikonya terhadap korupsi melalui *Bribery Risk Assessment*. Berikut adalah daftar operasi yang telah dinilai terkait risiko anti korupsi sampai dengan akhir tahun 2024: [GRI 205-1]

to be implemented in accordance with the provisions and business processes of each company without reducing the essence of the system.

As an implementation step, PHE actively encourages its subsidiaries to adopt and implement ABMS well. By 2023, eight subsidiaries have obtained ISO 37001:2016 ABMS certification, covering all operational functions. The companies include: [GRI 205-1]

1. PT Pertamina Hulu Rokan
2. PT Pertamina EP
3. PT Pertamina Hulu Indonesia
4. PT Pertamina EP Cepu
5. PT Pertamina International EP
6. PT Pertamina Drilling Services Indonesia
7. PT Elnusa Tbk
8. PT Badak NGL

In addition to implementing the Anti-Bribery Management System (SMAP), PHE has also prepared Gratuity Control Guidelines, Management Declaration Documents related to Anti-Bribery, Integrity Pacts, and Guidelines for State Official Wealth Reports (LHKPN). These Gratuity Control Guidelines explain the types of gratuities that can be received by the company, such as gifts of a familial nature, benefits from the company's cooperative, equipment from official activities with a value of less than one million rupiah, and official awards from the government. Every gratuity received must be reported through the Compliance Online System (Compols). This system is designed in an integrated manner and is integrated with other online platforms within the company, making it easy for personnel of PHE to submit reports related to the compliance reporting program, especially gratuity reports.

The Management Declaration Document related to Anti-Bribery, including the Integrity Pact, must be signed by all levels of management, workers, and work partners involved in the company's operational activities. Along with the Declaration Document, PHE also issued the Guidelines for State Official Wealth Report (LHKPN) to ensure transparency in reporting officials' wealth in accordance with applicable regulations. This demonstrates PHE's commitment to running an ethical, transparent, and corruption-free business process.

All operations or business processes (100%) have been assessed for corruption risk through Bribery Risk Assessment. The following is a list of operations that have been assessed for anti-corruption risk until the end of 2024: [GRI 205-1]

Risiko Risk	Fungsi Function	Temuan Findings	Mitigasi dan Program yang Dijalankan Mitigation and Implemented Programs
Adanya pemberian/permintaan/penerimaan (suap) dari pihak Ketiga kepada Pekerja terkait kegiatan pengadaan barang dan jasa, proses verifikasi TKDN, proses *vendor management*, manajemen logistik dan *general service*. There is a grant/request/receipt (of bribes) from a third party to workers related to procurement of goods and services, TKDN verification process, vendor management process, logistics management and general service.	Fungsi SCM dan Fungsi *User* sebagai pengusul pengadaan SCM Function and User Function as procurement proposer	Tidak terdapat kasus penyuapan pada 2024 There were no bribery cases in 2024	1. Sosialisasi dan internalisasi terkait penerapan GCG dan SMAP kepada seluruh pekerja dan/atau kepada pihak eksternal; dan memastikan pengisian laporan gratifikasi dan penyataan COC, COI serta LHKPN; Dissemination and internalization related to the implementation of GCG and ABMS to all workers and/or external parties; and ensuring the completion of gratuity reports and COC, COI and LHKPN statements; 2. Melaksanakan *training* kepada fungsi lain, terkait pengadaan barang dan jasa based on pedoman yang berlaku; Providing trainings for other functions related to procurement of goods and services based on applicable guidelines; 3. Melaksanakan *Vendor Day*; Organizing Vendor Day; 4. Digitalisasi proses pengadaan barang dan jasa; Digitalization of the procurement process for goods and services; 5. Standardisasi *form* pengadaan barang dan jasa; Standardization of goods and services procurement forms; 6. Identifikasi Hubungan Istimewa di pendaftaran SPDA; Identification of Special Relationships in SPDA registration; 7. Mewajibkan calon *vendor* terkait surat pernyataan memenuhi peraturan tentang FCPA, *anti bribery* dll, permintaan tentang *Ultimate Beneficial Owner* (UBO) dalam proses pengadaan; Requiring prospective vendors to provide a statement letter regarding compliance with regulations on FCPA, anti-bribery, etc., requests regarding the Ultimate Beneficial Owner (UBO) in the procurement process; 8. Mewajibkan pembuatan pakta integritas bagi *vendor*/kontraktor di proses pendaftaran di CIVD dan evaluasi tender; Requiring the creation of an integrity pact for vendors/contractors in the registration process at CIVD and tender evaluation; 9. Memasukkan klausul kontraktor patuh pada ketentuan FCPA, CoC dan CoI Perusahaan dalam *draft* Kontrak dan *final* Kontrak yang ditandatangani kedua belah pihak; Incorporating clauses that contractors comply with the provisions of FCPA, CoC and CoI of the Company in the draft Contract and the final Contract signed by both parties; 10. Mewajibkan pembuatan pakta integritas bagi pemegang Akun CIVD di Perusahaan. Requiring the creation of an integrity pact for CIVD Account holders in the Company.
Ada penyuapan dari Pihak Eksternal terhadap Pihak Internal terkait pemilihan perusahaan tertentu dalam metoda pengadaan di fungsi IT. There was a bribery from an External Party to an Internal Party regarding the selection of a particular company in the procurement method in the IT function.	Fungsi IT IT Function	Tidak terdapat kasus penyuapan pada 2024 There were no bribery cases in 2024	1. Melakukan reviu setiap usulan Tender dengan mekanisme Penunjukan Langsung. Apabila usulan pekerjaan dapat menggunakan metoda Pemilihan Langsung atau *Open*, maka akan dilakukan analisa lebih lanjut; Conducting a review of each Tender proposal with a Direct Appointment mechanism. If the work proposal can use the Direct Selection or Open method, further analysis will be conducted; 2. Internalisasi AKHLAK; Internalization of AKHLAK; 3. Internalisasi dan implementasi SMAP/ WBS; Internalization and implementation of ABMS/WBS; 4. Memastikan pekerja mengisi gratifikasi CoI dan CoC dan LHKPN. Ensuring that workers complete the CoI and CoC gratuity forms and LHKPN.
Ada penyuapan dari Pihak Eksternal terhadap Pihak Internal di fungsi IT untuk melakukan *trespassing* akses internal perusahaan. There was a bribery from an External Party to an Internal Party in the IT function to trespass the company's internal access.	Fungsi IT IT Function	Tidak terdapat kasus penyuapan pada 2024 There were no bribery cases in 2024	1. Memastikan proses pemberian akses sesuai dengan aturan dan prosedur yang berlaku; Ensure that the access granting process complies with applicable rules and procedures; 2. Internalisasi AKHLAK; Internalization of AKHLAK; 3. Internalisasi dan implementasi SMAP/ WBS; Internalization and implementation of ABMS/WBS; 4. Memastikan pekerja mengisi gratifikasi CoI dan CoC dan LHKPN. Ensuring that workers complete the CoI and CoC gratuity forms and LHKPN.

Risiko Risk	Fungsi Function	Temuan Findings	Mitigasi dan Program yang Dijalankan Mitigation and Implemented Programs
Adanya penerimaan/ pemberian/ permintaan (suap) dari pihak Ketiga kepada Pekerja maupun sebaliknya dalam kegiatan komersialisasi migas untuk memperoleh informasi *confidential* Perusahaan terkait komersialisasi. There is receipt/grant/request (bribes) from third parties to workers or vice versa in oil and gas commercialization activities to obtain confidential information of the Company related to commercialization.	Fungsi *Commercial & Monetization* Commercial & Monetization Function	Tidak terdapat kasus penyuapan pada 2024 There were no bribery cases in 2024	1. Melakukan Sosialisasi terkait penerapan GCG kepada seluruh pekerja dan/atau kepada pihak eksternal; Conducting dissemination regarding the implementation of GCG to all employees and/or external parties; 2. Memastikan pengisian laporan gratifikasi per semester, pernyataan COC, COI LHKPN tahunan untuk semua pekerja di fungsi *Commercial & Monetization*; Ensuring completion of semester gratuity reports, COC statements, annual LHKPN COI for all employees in the Commercial & Monetization function; 3. Internalisasi implementasi SMAP; Internalization of ABMS implementation;
Adanya penerimaan/ pemberian/ permintaan (suap) dari pihak Ketiga kepada pihak internal maupun sebaliknya untuk melakukan tindakan yang merugikan Perusahaan pada proses komersialisasi. There is receipt/grant/ requesting (bribes) from third parties to internal parties or vice versa to perform actions that are detrimental to the Company in the commercialization process.	Fungsi *Commercial & Monetization* Commercial & Monetization Function	Tidak terdapat kasus penyuapan pada 2024 There were no bribery cases in 2024	1. Melakukan Sosialisasi terkait penerapan GCG kepada seluruh pekerja dan/atau kepada pihak eksternal; Conducting dissemination regarding the implementation of GCG to all employees and/or external parties; 2. Memastikan pengisian laporan gratifikasi per semester, pernyataan COC, COI LHKPN tahunan untuk semua pekerja di fungsi *Commercial & Monetization*; Ensuring completion of semester gratuity reports, COC statements, annual LHKPN COI for all employees in the Commercial & Monetization function; 3. Internalisasi implementasi SMAP; Internalization of ABMS implementation;

Perusahaan secara aktif melakukan sosialisasi kepada seluruh Insan PHE untuk memperkuat budaya anti korupsi di lingkungan kerja. Sosialisasi ini bertujuan menginternalisasi nilai-nilai integritas sehingga sikap anti korupsi menjadi bagian dari budaya kerja yang berkelanjutan. Melalui program ini, diharapkan peningkatan kualitas individu pekerja dapat mendukung terciptanya operasi yang lebih berkualitas serta lingkungan kerja yang sepenuhnya bebas dari praktik KKN. Selama tahun 2024, PHE telah melakukan sosialisasi anti korupsi sebagai berikut: [GRI 205-2]

The company actively conducts dissemination to all personnel of PHE to strengthen the anti-corruption culture in the work environment. This dissemination aims to internalize integrity values so that anti-corruption attitudes become a part of a sustainable work culture. Through this program, it is expected that improvement of the quality of individual workers can support the creation of higher quality operations and a work environment that is completely free of KKN practices. During 2024, PHE has conducted anti-corruption dissemination as follows: [GRI 205-2]

Peserta Participant	Telah dikomunikasikan oleh organisasi mengenai kebijakan dan prosedur anti-korupsi Anti-corruption policies and procedures have been communicated by the organization		Telah mengikuti pelatihan anti-korupsi Have attended anti-corruption training	
	Jumlah Total	%	Jumlah Total	%
Dewan Komisaris Board of Commissioners	7	100	7	100
Direksi Board of Directors	7	100	7	100
Vice President	24	100	20	83,33%
Konsultan Consultant	tidak ada data no data			
Manager/Setara Manager/Equivalent	36	100	25	69,44%
Assistant Manager/ Setara Assistant Manager/ Equivalent	49	100	40	81,63%

Peserta Participant	Telah dikomunikasikan oleh organisasi mengenai kebijakan dan prosedur anti-korupsi Anti-corruption policies and procedures have been communicated by the organization		Telah mengikuti pelatihan anti-korupsi Have attended anti-corruption training	
	Jumlah Total	%	Jumlah Total	%
Senior Staff *Staff*	736	100	627	85,19%
Mitra Kerja Work Partners	190	100	-	N/A

Selama tahun 2024, PHE berhasil menjaga integritas perusahaan dengan tidak mencatat adanya pelanggaran terkait korupsi, gratifikasi, atau tindakan lain yang melanggar peraturan dan regulasi. Keberhasilan ini mencerminkan komitmen kuat PHE dalam menerapkan SMAP dan membangun budaya kerja yang bersih dan etis. Dengan langkah-langkah tersebut, PHE terus memperkuat tata kelola perusahaan yang terpercaya dan memastikan keberlanjutan bisnis yang kokoh, bertanggung jawab, dan beretika. [GRI 2-24, 205-3]

During 2024,PHE has succeeded in maintaining the company's integrity by recording no violations related to corruption, gratuity, or other actions that violate the rules and regulations. This success reflects PHE's strong commitment to implementing ABMS and building a clean and ethical work culture. With these steps, PHE continues to strengthen trusted corporate governance and ensure the sustainability of a solid, responsible and ethical business. [GRI 2-24, 205-3]

KOMUNIKASI ISU KRITIKAL DAN *WHISTLEBLOWING SYSTEM* [GRI 2-16, 2-25, 2-26]

Sistem Pelaporan Pelanggaran atau *Whistleblowing System* (WBS) merupakan mekanisme yang disediakan oleh Perusahaan untuk memfasilitasi pelaporan pelanggaran etika, hukum, atau kebijakan di lingkungan perusahaan. Termasuk dalam informasi yang dapat disampaikan melalui WBS ini adalah terkait dengan isu-isu kritikal yang menjadi perhatian pemangku kepentingan. Isu kritikal mencakup perhatian terhadap dampak negatif potensial dan aktual organisasi terhadap pemangku kepentingan yang disampaikan melalui mekanisme pengaduan dan proses lainnya.

Sistem WBS dirancang untuk menciptakan saluran komunikasi yang aman dan terpercaya, sehingga individu dapat melaporkan pelanggaran tanpa khawatir terhadap tindakan pembalasan atau represif. Dengan WBS, Perusahaan tidak hanya berkomitmen menangani pelanggaran secara efektif tetapi juga memperkuat budaya integritas dan etika, serta memastikan keberlanjutan tata kelola perusahaan yang baik. [GRI 2-16]

Berdasarkan Surat No. 257/J00000/2020-S0 tertanggal 17 Desember 2020, pengelolaan WBS dilakukan secara terpusat oleh *Unit* Internal Audit PT Pertamina (Persero). Sentralisasi ini diperkuat dengan penerbitan Pedoman Pengelolaan Pengaduan No. A9-001/J00000/2022-S9 tertanggal 19 Januari 2022. Sistem ini dapat diakses oleh

CRITICAL ISSUE COMMUNICATION AND WHISTLEBLOWING SYSTEM [GRI 2-16, 2-25, 2-26]

The Whistleblowing System (WBS) is a mechanism provided by the Company to facilitate reporting of violations of ethics, laws, or policies within the company. Information that can be submitted through this WBS includes information related to critical issues that are of concern to stakeholders. Critical issues include concerns about potential and actual negative impacts of the organization on stakeholders that are submitted through complaint mechanisms and other processes.

The WBS system is designed to create a safe and trusted communication channel, so that individuals can report violations without fear of retaliation or repressive action. With WBS, the Company is not only committed to handling violations effectively but also strengthening a culture of integrity and ethics, and ensuring the sustainability of good corporate governance. [GRI 2-16]

Pursuant to Letter No. 257/J00000/2020-S0 dated December 17, 2020, WBS management is conducted in a centralized manner by the Internal Audit Unit of PT Pertamina (Persero). This centralization is strengthened by the issuance of Complaint Management Guidelines No. A9-001/J00000/2022-S9 dated January 19, 2022. This system is accessible to various

berbagai pemangku kepentingan, termasuk karyawan, supplier, pelanggan, masyarakat, dan pihak ketiga lainnya. Saluran pelaporan tersedia dalam dua bahasa, yaitu Bahasa Indonesia dan Inggris. [GRI 2-26]

1. Telepon: +6221-3815909 / 5910 / 5911
2. SMS dan WhatsApp: +628118615000
3. Fax: +6221-3815912
4. *Email*: pertaminaclean@tipoffs.com.sg
5. *Mail Box*: Pertamina Clean PO Box 2600 JKP 10026
6. *Website*: www.pertaminaclean.tipoffs.info

WBS dikelola berdasarkan tiga prinsip utama yaitu *Trust* (Kepercayaan), *Impartiality* (Ketidakberpihakan), dan *Protection* (Perlindungan).

1. Kepercayaan berarti Perusahaan menjaga kerahasiaan identitas pelapor dan informasi yang disampaikan serta memastikan bahwa setiap laporan ditindaklanjuti secara profesional dan transparan.
2. Ketidakberpihakan berarti Perusahaan menjamin bahwa setiap laporan diproses secara objektif, independen, dan bebas dari konflik kepentingan untuk memastikan keadilan dalam setiap tahapan investigasi.
3. Perlindungan berarti Perusahaan memberikan perlindungan kepada pelapor dari segala bentuk ancaman, intimidasi, atau tindakan balasan, sehingga mereka merasa aman dalam melaporkan dugaan pelanggaran. [GRI 2-25]

Selama periode Januari 2024 sampai dengan Desember 2024, jumlah pengaduan pada *Subholding Upstream* adalah 92 laporan pengaduan yang diterima melalui Fungsi WBS - Internal Audit PT Pertamina (Persero). Sementara laporan yang masih *open* untuk periode pengaduan tahun 2020 - 2023 adalah 82 laporan pengaduan. Laporan tersebut ditindaklanjuti dengan rincian berikut: [OJK E.5]

- 40 laporan dalam tahap analisis awal.
- 67 laporan dalam tahap penanganan oleh fungsi pengawas.
- 25 laporan dalam tahap *resume* penanganan oleh WBS, dan
- 42 laporan telah selesai ditindaklanjuti (*closed*).

stakeholders, including employees, suppliers, customers, the public, and other third parties. The reporting channel is available in two languages, namely Indonesian and English. [GRI 2-26]

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4. Website: www.pertaminaclean.tipoffs.info

WBS is managed based on three main principles, namely Trust, Impartiality, and Protection.

1. Trust means that the Company maintains the confidentiality of the reporter's identity and the information submitted and ensures that each report is followed up professionally and transparently.
2. Impartiality means that the Company guarantees that every report is processed objectively, independently and free of conflict of interest to ensure fairness at every stage of investigation.
3. Protection means that the Company gives protection to the whistleblower from all forms of threats, intimidation, or retaliation, so that they feel safe in reporting alleged violations. [GRI 2-25]

During the period from January 2024 to December 2024, the number of complaints at the Subholding Upstream was 92 complaint reports received through the WBS Function - Internal Audit of PT Pertamina (Persero). Meanwhile, reports that remain open for the complaint period of 2020 - 2023 are 82 complaint reports. The reports were followed up with the following details: [OJK E.5]

- 40 reports are at the initial analysis stage.
- 67 reports are at the handling stage by the supervisory function.
- 25 reports are at the handling resume stage by WBS, and
- 42 reports have been completely followed up (closed).



PT Pertamina Hulu Energi



07

PERTUMBUHAN KINERJA EKONOMI DAN DAMPAK EKONOMI YANG DIHASILKAN PHE

Economic Performance Growth and Economic Impact Generated by PHE



PERTUMBUHAN EKONOMI DAN INDUSTRI MIGAS
ECONOMIC GROWTH AND OIL AND GAS INDUSTRY

Pada tahun 2024, perekonomian Indonesia menunjukkan pertumbuhan yang stabil dengan laju sekitar 5%. Industri minyak dan gas (migas) tetap menjadi sektor vital dalam perekonomian nasional. Di sisi lain, industri minyak dan gas (migas) Indonesia menghadapi tantangan signifikan, termasuk fluktuasi harga minyak global dan meningkatnya tekanan untuk beralih ke energi terbarukan. Meskipun demikian, sektor ini tetap menjadi kontributor utama bagi perekonomian nasional. Hingga 20 Mei 2024, realisasi Penerimaan Negara Bukan Pajak (PNBP) dari sektor migas mencapai Rp36,81 triliun, setara dengan 33,42% dari target APBN sebesar Rp110,15 triliun.

Tahun 2024 mencatat perubahan produktivitas dalam sektor hulu migas. Produksi minyak mencapai 555,69 MBOPD, yang merepresentasikan penurunan 1,88% dari realisasi produksi minyak pada tahun sebelumnya. Sementara itu, produksi gas tercatat sebesar 2.832,61 MMSCFD, atau peningkatan sebesar 2,41% dibandingkan tahun 2023. Salah satu faktor utama yang mendorong pencapaian ini adalah keberhasilan eksekusi program kerja yang masif, termasuk peningkatan jumlah pengeboran pengembangan yang mencapai 821 sumur pada tahun 2024, melampaui 22 sumur pada tahun sebelumnya.

PRODUKSI MIGAS

Pada tahun 2024, PHE melaksanakan berbagai strategi untuk meningkatkan produksi seperti:

1. Meningkatkan produksi dari lapangan *existing* serta mempercepat kegiatan eksplorasi dan pengembangan lapangan minyak dan gas baru di Indonesia melalui konsep *integrated depletion plan*.
2. Reaktivasi *Idle Well* dan *Idle Structure* serta percepatan *Put on Production Exploration* (POPE) *Well*.
3. Penerapan teknologi EOR pada lapangan mature secara selektif dengan penggunaan CO_2 *Injection*, *Alkaline Surfactant Polymer* (ASP), dan lain-lain tentunya dengan melalui tahapan "*Pilot Project*" supaya lebih komprehensif.
4. Pengoperasian lapangan dengan kandungan CO_2 dan H_2S tinggi maupun lapangan dengan karakteristik tekanan dan temperatur tinggi.
5. Program *Carbon Captured and Storage / Carbon Captured Utilization and Storage*.
6. Penerapan teknologi yang mendukung Migas non Konvensional (MNK).
7. Mengoptimalkan digitalisasi pada setiap proses bisnis Pertamina, baik proses utama maupun penunjang, antara lain dengan penerapan *advanced analytics, robotics & automation*, dan *business model innovations*.

In 2024, the Indonesian economy showed stable growth at a rate of around 5%. The oil and gas industry remains a vital sector in the national economy. On the other hand, the Indonesian oil and gas industry faces significant challenges, including fluctuations in global oil prices and increasing pressure to switch to renewable energy. Nevertheless, this sector remains a major contributor to the national economy. As of May 20, 2024, the realization of Non-Tax State Revenue (PNBP) from the oil and gas sector reached Rp36.81 trillion, equivalent to 33.42% of the APBN target which was Rp110.15 trillion.

Year 2024 recorded significant increase in productivity in the upstream oil and gas sector. Oil production reached 555.69 MBOPD, which represents 1.88% of the realization of oil production in the previous year. Meanwhile, gas production was recorded at 2,832.61 MMSCFD, or 2.41% compared to 2023. One of the main factors driving this achievement is the successful execution of a massive work program, including increasing the number of development drillings that reached 821 wells in 2024, surpassing 22 wells in the previous year.

OIL AND GAS PRODUCTION

In 2024, PHE implemented various strategies to increase production such as:

1. Increasing production from existing fields and accelerating exploration and development activities of new oil and gas fields in Indonesia through the integrated depletion plan concept.
2. Reactivation of Idle Well and Idle Structure and acceleration of Put On Production Exploration (POPE) Well.
3. Application of EOR technology in mature fields selectively with the use of CO_2 Injection, Alkaline Surfactant Polymer (ASP), etc., certainly by going through the "Pilot Project" stage to be more comprehensive.
4. Operation of fields with high CO_2 and H_2S content or fields with high pressure and temperature characteristics.
5. Carbon Captured and Storage Program / Carbon Captured Utilization and Storage.
6. Application of technology that supports non-conventional oil and gas (NCO).
7. Optimizing digitalization in every business process of Pertamina, both main and supporting processes, including by implementing advanced analytics, robotics & automation, and business model innovations.

8. Mempercepat penguasaan kemampuan teknologi dan digitalisasi, meliputi Eksplorasi dan Operasi Produksi di Lapangan *Offshore* dan *Deep Water*.

Semua langkah strategis diatas dilakukan untuk memperkuat posisi PHE dalam bisnis hulu migas, sekaligus mendukung target Pemerintah mencapai produksi minyak sebesar 1 juta BOPD dan gas 12 BCFD pada tahun 2030.

Pada tahun 2024, total produksi migas PHE mencapai 1.044,60 MBOEPD, meningkat 0.08% dibandingkan produksi tahun 2023 sebesar 1.043,73 MBOEPD, atau 94,55% dari target yang ditetapkan dalam Rencana Kerja dan Anggaran Perusahaan (RKAP) tahun 2024. Pencapaian ini dipengaruhi oleh beberapa faktor, termasuk penambahan Produksi wilayah kerja PEPC BUKK di Region 4 yang disebabkan oleh implementasi *low dosage acid* dalam pekerjaan *Well Work* dan percepatan *onstream* pengeboran 2 sumur BUCIC *Project*. Produksi gas pada tahun 2024 tercatat sebesar 2.832,61 MMSCFD, meningkat 2,41% dari tahun 2023, atau mencapai 102,29% dari target RKAP. Kenaikan ini didukung oleh penambahan Produksi dari Aset Algeria dan penambahan PI (*Participant Interest*) dari wilayah kerja PHE Corridor. [SASB EM-EP-000.a]

Produksi migas PHE dijual kepada PT Pertamina (Persero) dan afiliasinya, serta kepada pelanggan lain baik di dalam maupun luar negeri. Perusahaan telah mengidentifikasi cadangan terbukti dan belum terbukti menggunakan standar internasional *Petroleum Resources Management System* (PRMS). Namun, laporan ini tidak menyajikan informasi terkait lokasi cadangan, termasuk persentase cadangan terbukti dan terkira yang berada di area seperti hutan konservasi, hutan lindung, habitat spesies dilindungi, wilayah konflik, atau area masyarakat adat, karena informasi tersebut tidak diperuntukkan bagi publik. Hingga saat ini, PHE mengelola 65 wilayah kerja, dengan rincian realisasi produksi sebagai berikut:

8. Accelerating the mastery of technological and digitalization capabilities, including Exploration and Production Operations in Offshore and Deep-Water Fields.

All of the strategic steps above were taken to strengthen the position of PHE in the upstream oil and gas business, while supporting the Government's target of achieving oil production of 1 million BOPD and gas of 12 BCFD by 2030.

In 2024, total oil and gas production of PHE reached 1,044.60 MBOEPD, an increase of 0.08% compared to the production in 2023 of 1,043.73 MBOEPD, or 94.55% of the target set in the Company's Work Plan and Budget (RKAP) 2024. This achievement was affected by several factors, including the addition of Production in the working area of PEPC BUKK in Region 4 due to the implementation of low dosage acid in Well Work and the acceleration of onstream drilling of 2 BUCIC Project wells. Gas production in 2024 was recorded at 2,832.61 MMSCFD, increasing by 2.41% from 2023, or reaching 102.29% of the targets of the RKAP. This increase was supported by additional Production from the Assets of Algeria (Gazzetal project) and the addition of PI (Participant Interest) from the working area of PHE Corridor. [SASB EM-EP-000.a]

The oil and gas production of PHE is sold to PT Pertamina (Persero) and its affiliates, as well as to other customers both domestically and internationally. The company has identified proven and unproven reserves using the international standard Petroleum Resources Management System (PRMS). However, this report does not present information regarding the location of reserves, including the percentage of proven and probable reserves located in areas such as conservation forests, protected forests, protected species habitats, conflict areas, or indigenous peoples' areas, because such information is not intended for the public. To date, PHE has managed 65 working areas, with details of production realization as follows:

No	Wilayah Kerja Work Area	BOPD	MMSCFD	MBOEPD
1	Regional 1 Region 1	202,50	823,64	344,66
2	Regional 2 Region 2	54,24	356,11	115,71
3	Regional 3 Region 3	58,35	621,61	165,64
4	Regional 4 Region 4	84,90	653,37	197,67
5	Regional 5 Region 5	155,70	377,87	220,92
6	M & A	-	-	-
	Jumlah Total	**555,69**	**2.832,61**	**1.044,60**

No	Wilayah Kerja Work Area	BOPD	MMSCFD	MBOEPD
1	Domestik Domestic	399,99	2.454,74	823,68
2	Internasional International	155,70	377,87	220,92
	Jumlah Total	**555,69**	**2.832,61**	**1.044,60**

» Produksi Minyak dan Gas
Oil and Gas Production

Perihal Subject	Satuan Unit	2024	2023	2022
Minyak	MMBO	203,38	206,72	187,77
Gas	BSCF	1.036,74	1.009,53	957,82
Migas Oil and Gas	**MMBOE**	**382,32**	380,96	353,09

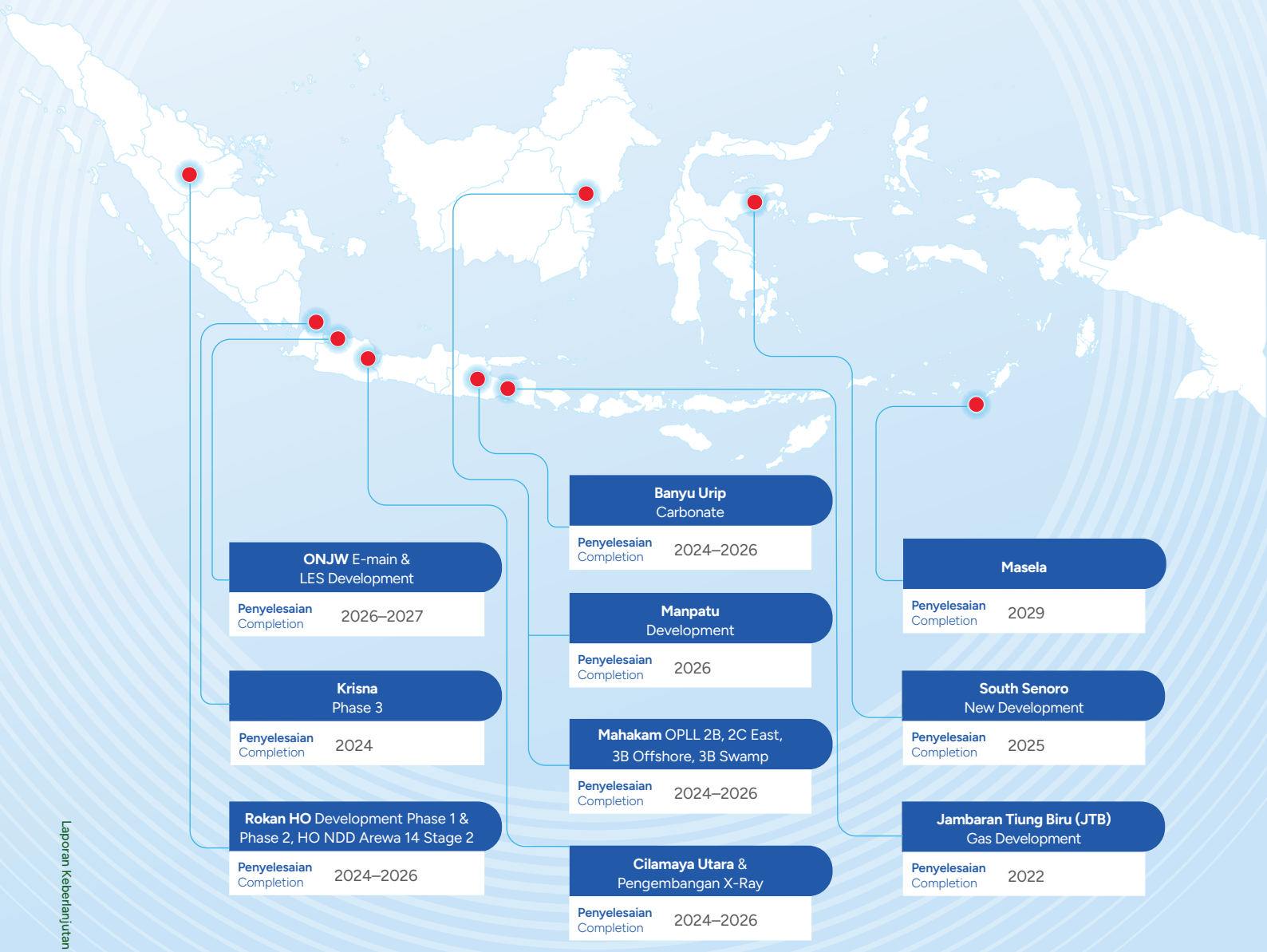
Selama tahun 2024, PHE telah menginvestasikan dana dalam berbagai proyek untuk meningkatkan profitabilitas perusahaan, kapasitas produksi migas, dan kualitas produk. Selain itu, investasi ini juga mencerminkan komitmen perusahaan dalam mendukung transisi energi melalui inovasi dan eksplorasi energi yang lebih ramah lingkungan. Dengan langkah-langkah strategis ini, PHE terus memperkuat kontribusinya dalam mendukung target pemerintah untuk mencapai transisi energi yang berkelanjutan, sekaligus mempertahankan pertumbuhan bisnis yang kompetitif dan ramah lingkungan.

Throughout 2024, PHE has invested funds in various projects to improve the company's profitability, oil and gas production capacity, and product quality. In addition, this investment also reflects the company's commitment to supporting the energy transition through innovation and exploration of more environmentally friendly energy. With these strategic steps, PHE continues to strengthen its contribution to supporting the government's target to achieve a sustainable energy transition, while maintaining competitive and environmentally friendly business growth.

PT Pertamina Hulu Energi

Berikut adalah ringkasan pengembangan proyek infrastruktur yang dilakukan sepanjang tahun:
The following is a summary of the development of infrastructure projects conducted throughout the year:

Ikhtisar Proyek-Proyek Penting PHE
PHE Key Projects Highlights



Eksplorasi dan Produksi Migas | Oil and Gas Exploration and Production



Operasi Pengembangan Lapangan-Lapangan Sanga Sanga Fase 2

- **Total Capex YTD Desember 2024: AS$324,51 juta.**
- Memproduksi potensi cadangan *reservoir* interval dalam untuk mendapatkan volume produksi 9.4 MMBBL minyak dan 157 BCF WH gas.

Development Operation of Sanga Sanga Fields Phase 2

- Total Capex YTD December 2024: US$324.51 million.
- Producing potential deep interval reservoir reserves to achieve production volumes of 9.4 MMBBL of oil and 157 BCF WH of gas.



Operasi Pengembangan Lapangan-Lapangan WK Mahakam

- **Total Capex YTD Desember 2023: AS$207,78 juta.**
- Melanjutkan pengembangan WK mahakam guna meningkatkan *recovery factor* masing-masing lapangan dengan kumulatif produksi gas sebesar 270 BSCF dan minyak + kondensat sebesar 9 MMBBL.

Development Operations of Fields of Mahakam WA

- Total Capex YTD December 2023: US$207.78 million.
- Continuing the development of Mahakam WA to increase the recovery factor of each field with cumulative gas production of 270 BSCF and oil + condensate of 9 MMBBL.

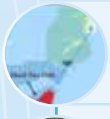


Rokan Well Development SLO Petani Fase 1

- **Total Capex YTD Desember 2023: AS$111,36 juta.**
- Tambahan produksi minyak dari 46 sumur dengan menambah cadangan 2P minyak sebesar 12,02 MMBO.

Rokan Well Development SLO Farmers Phase 1

- Total Capex YTD December 2023: US$111.36 million.
- Additional oil production from 46 wells by increasing 2P oil reserves by 12.02 MMBO.



Investasi Di Aset Lain (PIEP)

- **Total Capex YTD Desember 2023: AS$97.12 juta.**
- Pengelolaan kegiatan investasi di AP terbuka PIEP.

Investment in Other Assets (PIEP)

- Total Capex YTD December 2023: US$97.12 million.
- Management of investment activities in PIEP open AP.



West Qurna 1 Fasilitas Baru

- **Total Capex YTD Desember 2023: AS$66,77 juta.**
- Instalasi Fasilitas baru untuk meningkatkan kapasitas pemrosesan hingga 800 KBPD.

West Qurna 1 New Facilities

- Total Capex YTD December 2023: US$66.77 million.
- Installation of new facilities to increase processing capacity to 800 KBPD.



Pemeliharaan Fasilitas Rokan

- **Total Capex YTD Desember 2023: AS$33,72 juta.**
- Kegiatan pemeliharaan peralatan meliputi namun tidak terbatas pada penggantian pipa, penggantian peralatan *obsolete*, peningkatan kehandalan fasilitas dan pengadaan *unit ready line*.

Maintenance of Rokan Facility

- Total Capex YTD December 2023: US$33.72 million.
- Equipment maintenance activities including but not limited to pipe replacement, replacement of obsolete equipment, increase of facility reliability and procurement of ready line units.

Operasi Lainnya/Jasa dan Layanan Anak Perusahaan (AP) | Other Operations / Services and Subsidiary (AP) Offerings



Investasi *Cementing & Pumping Equipment*

- **Total Capex YTD Desember 2023: AS$7,90 juta.**
- Pengembangan bisnis pada *non rig services* untuk meningkatkan *market share* dalam kegiatan bisnis *drilling activity*.

Investment of Cementing & Pumping Equipment

- Total Capex YTD December 2023: US$7.90 million.
- Business development in non-rig services to increase market share in drilling activity business activities.



Pengadaan 2 Unit Rig 550 Hp *Workover*

- **Total Capex YTD Desember 2023: AS$7,22 juta.**
- Pengadaan 2 unit rig 550 HP untuk pekerjaan *Workover* dan *Wellservice* di WK PHE.

Procurement of 2 Units of 550 Hp Workover Rig

- Total Capex YTD December 2023: US$7.22 million.
- Procurement of 2 units of 550 HP rigs for Workover and Wellservice work at PHE WA.



BD *Segment Support Upstream*

- **Total Capex YTD Desember 2023: AS$5,81 juta**.
- Pemenuhan kebutuhan peralatan dan infrastruktur berdasarkan kepastian dan kebutuhan *market* serta program kerja klien guna mendukung kesiapan *project*.

BD Segment Support Upstream

- Total Capex YTD December 2023: US$5.81 million.
- Fulfillment of equipment and infrastructure needs based on market certainty and needs as well as the client's work programs to support project readiness.



NBD *Segment Upstream*

- **Total Capex sebenarnya pada tahun 2022: AS$8,93 juta.**
- Pemenuhan kebutuhan peralatan dan infrastruktur untuk investasi dengan kategori *Maintain capacity equipment*.

NBD Upstream Segment

- Total Capex real in 2022: US$8.93 million.
- Fulfillment of equipment and infrastructure needs for. investment in the Maintain capacity equipment category.

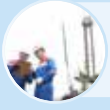


NBD *Segment Energy Logistic & Distribution*

- **Total Capex sebenarnya pada tahun 2022: AS$6,53 juta**
- Pemenuhan kebutuhan peralatan dan *asset* untuk investasi dengan kategori maintain *Capacity* dan *non project equipment*.

NBD Segment Energy Logistics & Distribution

- Total Capex real in 2022: US$6.53 million.
- Fulfillment of equipment and asset needs for investment in the maintain capacity and non-project equipment categories.



Pengadaan Tubular *Goods*

- **Total Capex sebenarnya pada tahun 2022: AS$4,99 juta**
- Pengadaan tubular *goods* untuk *project* PHE dan PEP.

Procurement of Tubular Goods

- Total Capex real in 2022: US$4.99 million.
- Procurement of tubular goods for projects of PHE and PEP.

Keterangan | Note: ☐ Business Development (BD) | Business Development (BD) ■ Non-Business Development (NBD) | Non-Business Development (NBD)

TARGET DAN REALISASI LABA BERSIH, PRODUKSI, *LIFTING*, DAN INVESTASI
[OJK F.2, F.3]

Selama tahun 2024, PHE berhasil menemukan sumber daya migas baru sebesar 652,19 MMBOE melalui pengeboran eksplorasi di berbagai wilayah kerja. Terdapat tambahan 2C dari sumur *discovery* sebesar 406,31 MMBOE yang diperoleh dari Sumur Padang Pancuran (PPC)-1, Sungai Rotan Downblock (SRD)-001, Pinang East (PNE)-1, Astrea (ATR)-1 Anggrek Violet (AVO)-001, Sidingin North (SDN)-1 (Regional 1); GQY-1, East Pasir Catang (EPC)-001 (Regional 2); Julang Emas (JLE)-001, Tedong (TDG)-001, Piarawi (PIA)-001 (Regional 4). Sementara tambahan 2C dari hasil studi dan *reassessment* sebesar 245,86 MMBOE diperoleh dari struktur Uno dan Melati (Regional 1), struktur RDO-RDN, BLT, dan Banuwati-Asti-Ratna (Regional 2), struktur Sadewa Deep dan East Manpatu (Regional 3), struktur Wolai dan Sumber (Regional 4). Terdapat 2 (dua) temuan *high impact* dengan tambahan 2C lebih dari 100 MMBOE dari pengeboran sumur eksplorasi yang dicatatkan di tahun 2024 yaitu dari sumur Padang Pancuran (PPC)-1, dan Tedong (TDG)-1.

Dari sisi keuangan, PHE mencatatkan pendapatan sebesar USD14.330,34 juta dengan laba bersih sebesar USD3.121,03 juta. Laba bersih ini mencapai 99,88% dari target Rencana Kerja dan Anggaran Perusahaan (RKAP) sebesar USD3.124,81 juta, serta mengalami peningkatan sebesar 14,51% dibandingkan laba tahun 2023 yang tercatat USD2.725,54 juta.

Seluruh kegiatan operasional, baik produksi maupun *lifting*, tetap berlangsung secara optimal selama periode pelaporan. Detail lengkap mengenai total produksi dan realisasi *lifting* migas dapat ditemukan pada Laporan Tahunan Perusahaan Tahun 2024 di halaman 202. Dengan pencapaian ini, PHE terus menunjukkan komitmennya dalam mendukung pencapaian target nasional melalui kinerja yang berkelanjutan dan pengelolaan yang profesional.

TARGET AND REALIZATION OF NET INCOME, PRODUCTION, LIFTING, AND INVESTMENT
[OJK F.2, F.3]

During 2024, PHE successfully discovered new oil and gas resources of 652.19 MMBOE through exploration drilling in various work areas. There was an additional 2C from discovery wells of 406.31 MMBOE obtained from Padang Pancuran wells (PPC)-1, Sungai Rotan Downblock (SRD)-001, Pinang East (PNE)-1, Astrea (ATR)-1 Anggrek Violet (AVO)-001, Sidingin North (SDN)-1 (Region 1); GQY-1, East Pasir Catang (EPC)-001 (Region 2); Julang Emas (JLE)-001, Tedong (TDG)-001, Piarawi (PIA)-001 (Region 4). Meanwhile, additional 2C from the study and reassessment results of 245.86 MMBOE was obtained from the Uno and Melati structures (Region 1), RDO-RDN, BLT, and Banuwati-Asti-Ratna structures (Region 2), Sadewa Deep and East Manpatu structures (Region 3), Wolai and Sumber structures (Region 4). There were 2 (two) high-impact findings with additional 2C of more than 100 MMBOE from exploration well drilling recorded in 2024, namely from Padang Pancuran (PPC)-1, and Tedong (TDG)-1 wells.

From a financial aspect, PHE recorded revenues of USD14,330.34 million with a net profit of USD3,121.03 million. This net profit achievement represents 99.88% of the Corporate Work Plan and Budget (RKAP) target of USD3,124.81 million and reflects a 14.51% increase compared to the 2023 net profit of USD2,725.54 million.

All operational activities, both production and lifting, continued to run optimally during the reporting period. Complete details regarding total production and realization of oil and gas lifting can be found in the Company's Annual Report 2024 on page 202. With this achievement, PHE continues to demonstrate its commitment to supporting the achievement of national targets through sustainable performance and professional management.

» Target dan Realisasi Produksi dan Lifting Migas, dan Laba Bersih PHE
Target and Realization of Oil and Gas Production and Lifting, and Net Income of PHE

Uraian Description	Satuan Units	RKAP	Realisasi Realization	Persentase Percentage
Produksi* Production*	MBOEPD	1.071,40	1.044,60	97,50%
Lifting Lifting	MBOEPD	933,21	900,45	96,49%
Laba Bersih Net Income	US$ Juta US$ Million	3.124,81	3.121,03	99,88%

Catatan / Notes:
*Tidak termasuk M&A / Excludes M&A



Peningkatan produksi migas pada tahun 2024 didukung oleh alokasi biaya investasi sebesar USD4.175,25 juta. Angka ini mengalami peningkatan sebesar USD214,09 juta atau 5,41% dibandingkan dengan tahun 2023 yang tercatat sebesar USD3.958,16 juta. Investasi ini sepenuhnya diarahkan pada kegiatan eksplorasi dan produksi migas, sesuai dengan bidang usaha PHE. Namun, pengembangan energi terbarukan dikelola oleh *Subholding* lain, sehingga laporan ini tidak mencakup alokasi biaya untuk investasi pada sektor tersebut.

The increase in oil and gas production in 2024 was supported by an investment cost allocation of USD4,175/25 million. This figure has increased by USD214.09 million or 5.41% compared to 2023 which was recorded at USD3,958.16 million. This investment is fully directed at oil and gas exploration and production activities, in accordance with PHE's business field. However, renewable energy development is managed by another Subholding, so this report does not include cost allocation for investment in this sector.

» Realisasi Biaya Investasi (Juta USD)
Investment Cost Realization (Million USD)

Kegiatan Description	2024	2023	2022
Eksplorasi Exploration	308,79	318,22	274,24
Pengembangan Development	3.771,33	3.378,27	2.887,77
Services	92,03	74,83	47,43
Akuisisi Acquisition	0,10	186,83	26,71
Jumlah Total	4.172,25	3.958,16	3.235,14

Dalam kaitannya dengan kebijakan publik, PHE senantiasa berpegang pada standar perilaku yang diatur dalam *Code of Conduct* (CoC). Perusahaan secara tegas melarang penggunaan dana perusahaan untuk kontribusi politik, baik oleh individu pekerja maupun oleh entitas perusahaan. Selain itu, segala bentuk hubungan atau pengaruh politik yang bertujuan memberikan keuntungan kepada partai politik atau kandidat tertentu juga tidak dibenarkan. Selama tahun pelaporan, PHE tidak pernah memberikan kontribusi politik dalam bentuk apa pun, baik uang maupun barang. [GRI 415-1]

In relation to public policy, PHE always adheres to the standards of behavior set out in the Code of Conduct (CoC). The company strictly prohibits the use of the company's funds for political contributions, either by an individual employee or by a corporate entity. In addition, any form of political relationship or influence aimed at providing benefits to certain political parties or candidates is not permitted either. During the reporting year, PHE never made any political contributions in any form, either in cash or in kind. [GRI 415-1]

PRODUK RAMAH LINGKUNGAN
ENVIRONMENTALLY FRIENDLY PRODUCTS [OJK B.1, B.1.D]

Berdasarkan data Rencana Umum Energi Nasional (RUEN), konsumsi minyak bumi di Indonesia di tahun 2050 diproyeksikan akan meningkat drastis sebesar 139%. Hal yang sama diproyeksikan akan terjadi pada konsumsi gas di Indonesia pada tahun 2050 dengan peningkatan yang lebih tinggi, yaitu 239%. SKK Migas juga telah menetapkan target produksi gas sebagai energi ramah lingkungan sebesar 12 miliar standar kaki kubik per hari (BSCFD) pada tahun 2030.

Untuk mencapai target tersebut, sepanjang tahun 2024, PHE Subholding Upstream terus mengupayakan transisi energi dari energi fosil ke energi baru dan terbarukan (EBT) melalui peningkatan cadangan dan produksi gas bumi. Hal tersebut selaras dengan dukungan PHE Subholding Upstream terhadap RUEN yang menargetkan proporsi pemakaian gas bumi hingga 24% dalam bauran energi nasional pada 2050. Total produksi gas pada tahun 2024 adalah sebesar 1.036,74 BSCF, meningkat 2,60% dari tahun sebelumnya yang memiliki total produksi gas 1.009,53 BSCF. Selain itu, jika mengacu pada Rencana Kerja dan Anggaran Perusahaan (RKAP) dengan target produksi gas sebanyak 2.518,26 BSCF, persentase produksi gas yang berhasil direalisasikan adalah sebanyak 41,17%.

Based on data from the National Energy General Plan (RUEN), oil consumption in Indonesia in 2050 is projected to increase drastically by 139%. The same thing is projected to happen to gas consumption in Indonesia in 2050 with a higher increase, namely 239%. SKK Migas has also set a target for gas production as an environmentally friendly energy of 12 billion standard cubic feet per day (BSCFD) in 2030.

To achieve this target, throughout 2024, PHE Subholding Upstream has continuously strived for an energy transition from fossil fuels to new and renewable energy (NRE) by increasing natural gas reserves and production. This is in line with the support of PHE Subholding Upstream for RUEN which targets a proportion of natural gas usage up to 24% in the national energy mix by 2050. Total gas production in 2024 was 1,036.74 BSCF, increasing by 2.60% from the previous year which had a total gas production of 1,009.53 BSCF. In addition, if referring to the Company's Work Plan and Budget (RKAP) with a gas production target of 2,518.26 BSCF, the percentage of gas production that was successfully realized was 41.17%.

» Target dan Realisasi Produksi dan Lifting Migas, dan Laba Bersih PHE
Oil and Gas Production and Lifting Targets and Realization, and Net Income of PHE

Perihal Regarding	Satuan Unit	2024	2023	2022
Jumlah Produksi Migas Oil and Gas Production Amount	MMBOE	382,32	380,96	353,09
Jumlah Produksi Gas Gas Production Amount	MMBOE	178,94	174,24	165,32
Persentase Produksi Gas terhadap Migas Percentage of Gas Production to Oil and Gas	%	46,80%	45,74%	46,82%

PHE mengupayakan produksi beserta keterjangkauan harga gas bumi melalui pengadaan proyek seperti Lapangan Gas Jambaran Tiung Biru (JTB) yang terletak di Kecamatan Ngasem, Kabupaten Bojonegoro, Jawa Timur. Lapangan ini memproduksi gas dan kondensat dengan produksi rata-rata gas mentah sebesar 315 MMSCFD dengan volume penjualan terkontrak sebesar 187 MMSCFD. Produksi dari Lapangan JTB akan dialirkan ke industri di Jawa Timur dan Jawa Tengah. Selain itu, PHE juga turut mengelola Proyek Kilang Gas Alam Cair (LNG) Blok Masela di Maluku dengan luas area sebesar

PHE strives for production and affordable natural gas prices through the procurement of projects such as the Jambaran Tiung Biru (JTB) Gas Field located in Ngasem District, Bojonegoro Regency, East Java. This field produces gas and condensate with an average production of raw gas of 315 MMSCFD with a contracted sales volume of 187 MMSCFD. Production from the JTB Field will be distributed to industries in East Java and Central Java. In addition, PHE also manages the Refinery Project of Liquefied Natural Gas (LNG) of Masela Block in Maluku with an area of 4,291.35 square kilometers.

4.291,35 kilometer persegi. Proyek ini berpotensi memproduksi gas sebanyak 1,600 MMSCFD dengan target operasional pada 2029. Per Desember 2024, Proyek Blok Masela berada pada penyelesaian tahap desain dan rekayasa (*front-end engineering design* atau FEED) dengan pekerjaan fisik 2G *onshore* survei telah selesai dilakukan.

Produk ramah lingkungan lainnya yang diupayakan oleh PHE Subholding Upstream adalah hidrogen alami atau *geologic hydrogen* yang merupakan sumber energi bersih bebas emisi karbon. Sumber hidrogen ini berasal dari bawah permukaan bumi dan tersimpan dalam bebatuan. Terdapat 4 jenis hidrogen alami, yaitu *white hydrogen*, *gold hydrogen*, *orange hydrogen*, dan *aqua hydrogen*. Studi Geologi & Geofisika (G&G) potensi hidrogen alami telah dilakukan di Sulawesi Timur dalam rentang waktu Mei - Desember 2024. Berdasarkan hasil pemetaan oleh Pusat Survei Geologi, terdapat singkapan batuan ultramafik seluas 2,7 juta hektare yang dapat menghasilkan hidrogen alami melalui proses serpentinisasi.

This project has the potential to produce 1,600 MMSCFD of gas with an operational target in 2029. As of December 2024, the Masela Block Project is at the design and engineering completion stage (front-end engineering design or FEED) with the physical work of the 2G onshore survey having been completed.

Another environmentally friendly product pursued by PHE Subholding Upstream is natural hydrogen or geological hydrogen, which is a clean energy source free of carbon emissions. This hydrogen source comes from beneath the earth's surface and is stored in rocks. There are 4 types of natural hydrogen, namely white hydrogen, gold hydrogen, orange hydrogen, and aqua hydrogen. A Geological & Geophysical (G&G) study of natural hydrogen potential has been conducted in East Sulawesi from May - December 2024. Based on the mapping results by the Geological Survey Center, there are ultramafic rock outcrops covering an area of 2.7 million hectares that can produce natural hydrogen through the serpentinization process.

KINERJA EKONOMI DAN NILAI EKONOMI YANG DIHASILKAN DAN DIDISTRIBUSIKAN

ECONOMIC PERFORMANCE AND ECONOMIC VALUE ACHIEVED AND DISTRIBUTED

[GRI 201-1]

Pada tahun 2023, nilai ekonomi yang diperoleh Perusahaan mencapai USD14.892,86 juta, mengalami peningkatan sebesar 2,17% dibandingkan dengan tahun sebelumnya. Sebagian besar dari nilai ekonomi tersebut, yaitu 96,22%, berasal dari bisnis utama perusahaan. Dari jumlah nilai ekonomi yang dihasilkan, Perusahaan mengalokasikan USD7.927,51 juta untuk biaya operasional, mendistribusikan USD1.596,97 juta kepada pekerja, USD2.533,66 juta kepada penyandang dana, USD1.771,54 juta kepada Pemerintah, dan USD23,16 juta kepada masyarakat melalui program Tanggung Jawab Sosial dan Lingkungan (TJSL). Total nilai ekonomi yang didistribusikan selama tahun 2024 adalah sebesar USD13.851,58 juta.

Distribusi nilai ekonomi pada tahun 2024 lebih tinggi dibandingkan nilai ekonomi langsung yang dihasilkan, mengakibatkan nilai ekonomi yang ditahan sebesar USD1.041,28 juta selama tahun berjalan. Perusahaan memastikan bahwa distribusi nilai ekonomi kepada para pemangku kepentingan dilakukan secara tepat sasaran dan berdasarkan asas manfaat untuk mendukung keberlanjutan operasional perusahaan dan memberikan dampak positif bagi seluruh pihak terkait. Berikut ini nilai ekonomi yang dihasilkan dan didistribusikan pada tahun 2024:

In 2023, the Company generated economic value amounting to USD14,892.86 million, representing an increase of 2.17% compared to the previous year. The majority of this economic value, namely 96.22%, was derived from the Company's core business. From the total economic value generated, the Company allocated USD7,927.51 million for operational expenses, distributed USD1,596.97 million to employees, USD2,533.66 million to financiers, USD1,771.54 million to the Government, and USD23.16 million to the community through Social and Environmental Responsibility programs (TJSL). The total economic value distributed during 2024 amounted to USD13,851.58 million.

The distribution of economic value in 2024 exceeded the direct economic value generated, resulting in retained economic value of USD1,041.28 million during the year. The Company ensures that the distribution of economic value to stakeholders is carried out precisely and based on the principle of benefit to support the sustainability of the Company's operations and to provide positive impacts to all related parties. Below are the details of economic value generated and distributed in 2024:

Nilai Ekonomi yang Dihasilkan dan Didistribusikan
Economic Value Earned and Distributed

Uraian Description	Nilai Ekonomi Economic Value		
	2024	2023	2022
Nilai Ekonomi Langsung Dihasilkan | Directly Earned Economic Value			
Pendapatan Usaha Operating Revenues	14.330,34	14.568,38	16.183,40
Pendapatan Minyak dan Gas Oil and Gas Revenue	13.725,39	13.974,86	15.583,86
Jasa Distribusi dan Logistik Energi Energy Distribution and Logistics Services	419,77	434,65	483,71
Pendapatan dari Jasa Pengeboran Revenue from Drilling Services	136,65	107,19	85,19
Jasa Penunjang Migas Oil and Gas Support Services	48,53	51,68	30,64
Penghasilan Keuangan Financial Income	251,56	140,41	48,99
Keuntungan selisih kurs, neto Net exchange gain	(4,48)	(19,77)	53,83
(Beban)/pendapatan lain-lain, neto Net (expenses)/income from other sources	315,44	(112,75)	(247,87)
Jumlah Penerimaan Nilai Ekonomi Langsung Total Directly Earned Economic Value	14.892,86	14.576,27	16.038,35
Nilai Ekonomi Yang Didistribusikan | Economic Value Distributed			
Biaya Operasi Operating Expenses	(7.926,25)	(8.223,75)	(7.183,14)
Beban Pokok Penjualan (Diluar beban tenaga kerja/gaji /upah pekerja, beban CSR) Cost of Goods Sold (Excluding labor costs/salaries/wages, CSR expenses)	(7.710,58)	(7.516,66)	(7.017,54)
Penyisihan penurunan nilai aset non-keuangan Provision for impairment of non-financial assets	(215,67)	(707,09)	(165,61)
Distribusi kepada Pekerja Distribution to Employees	(1.596,97)	(1.386,26)	(1.478,36)
Biaya Pekerja (termasuk dalam Beban Produksi) Labor Costs (included in Production Expenses)	(688,34)	(522,23)	(642,67)
Gaji dan Tunjangan Pekerja (termasuk dalam Beban Umum dan Administrasi) Wages and Allowances (included in General and Administrative Expenses)	(510,01)	(481,96)	(522,28)
Jasa Konsultan dan Profesional (termasuk dalam Beban Umum dan Administrasi) Consultant and Professional Fees (included in General and Administrative Expenses)	(143,63)	(135,45)	(110,93)
Biaya tenaga kerja (termasuk dalam Beban dari Aktivitas Operasi Lainnya) Labor Expenses (included in Other Operating Activities Expenses)	(254,99)	(246,62)	(202,48)
Distribusi Kepada Penyedia Dana Distribution to Providers of Funds	(2.533,66)	(4.123,59)	(3.132,01)
Beban Keuangan (kepada Kreditor) Financial Expenses (to Creditors)	(453,91)	(459,29)	(243,91)
Dividen (kepada Pemegang Saham) Dividends (to Shareholders)	(2.079,75)	(3.664,30)	(2.888,11)
Distribusi kepada Pemerintah Distribution to Government	(1.771,54)	(1.766,49)	(2.444,09)
Beban Pajak Penghasilan Neto Net Income Tax Expenses	(1.771,54)	(1.766,49)	(2.444,09)
Distribusi kepada masyarakat: Dana CSR Distribution to the community: CSR Funds	(23,16)	(14,94)	(14,69)
Jumlah Nilai Ekonomi Didistribusikan Total Economic Value Distributed	(13.851,58)	**(15.515,03)**	**(14.252,29)**
Nilai Ekonomi Ditahan Total Economic Value Retained	1.041,28	(938,76)	**1.786,06**

KONTRIBUSI PHE TERHADAP NEGARA

Kontribusi nilai ekonomi Perusahaan kepada negara terutama diwujudkan melalui pembayaran pajak dan Penerimaan Negara Bukan Pajak (PNBP), sesuai dengan regulasi perpajakan yang berlaku di negara-negara tempat anak perusahaan beroperasi. Strategi perpajakan Perusahaan didasarkan pada prinsip ketaatan terhadap peraturan perpajakan, dengan tujuan menjadi corporate citizen yang bertanggung jawab dan memberikan kontribusi sesuai aturan. Perusahaan meyakini bahwa strategi perpajakan yang dijalankan tidak hanya memenuhi kewajiban hukum tetapi juga berkontribusi langsung dalam distribusi nilai ekonomi kepada negara. Tata kelola perpajakan berada di bawah pengawasan Direktur Keuangan, dengan koordinasi erat bersama Direktorat Jenderal Pajak untuk memastikan ketaatan terhadap seluruh peraturan yang berlaku. [GRI 207-1, 207-2, 207-3]

Laporan ini hanya mencakup informasi pembayaran pajak dan PNBP untuk wilayah operasi di Indonesia. Pada tahun 2024, total pembayaran pajak dan PNBP mencapai USD6.762,28 juta, mengalami penurunan sebesar USD606,87 juta atau 7,94% dibandingkan dengan tahun 2023 yang mencatat total sebesar USD7.369,15 juta. Rincian lengkap mengenai kontribusi pajak Perusahaan dapat ditemukan dalam Laporan Keuangan Konsolidasian Perusahaan, yang telah diaudit oleh Kantor Akuntan Publik (KAP) independen untuk menjamin transparansi dan akurasi.

Pada tahun pelaporan ini, Perusahaan belum menyajikan laporan pajak berdasarkan negara (*country-by-country tax reporting*) karena seluruh data terkait keuangan, ekonomi, dan perpajakan dari wilayah kerja di luar negeri telah terkonsolidasi dalam Laporan Keuangan Perusahaan. Dengan pendekatan ini, Perusahaan memastikan pelaporan pajak dilakukan secara efisien dan sesuai dengan standar akuntansi yang berlaku. [GRI 207-2, 207-4, 415-1]

PHE'S CONTRIBUTION TO COUNTRY

The Company's economic value contribution to the country is mainly realized through payments of taxes and Non-Tax State Revenue (PNBP), in accordance with the tax regulations in force in the countries where the subsidiaries operate. The Company's tax strategy is based on the principle of compliance with tax regulations, with the aim of becoming a responsible corporate citizen and making contributions according to the rules. The Company believes that the tax strategy implemented not only fulfills legal obligations but also contributes directly to the distribution of economic value to the country. Tax governance is under the supervision of the Director of Finance, with close coordination with the Directorate General of Taxes to ensure compliance with all applicable regulations. [GRI 207-1, 207-2, 207-3]

This report only covers information on payments of taxes and PNBP for areas of operations in Indonesia. In 2024, total tax and Non-Tax State Revenue (PNBP) payments amounted to USD6,762.28 million, representing a decrease of USD606.87 million or 7.94% compared to 2023, which recorded a total of USD7,369.15 million. Complete details regarding the Company's tax contributions can be found in the Company's Consolidated Financial Statements, which have been audited by an independent Public Accounting Firm (KAP) to ensure transparency and accuracy.

In this reporting year, the Company has not presented country-by-country tax reporting because all financial, economic, and taxation data from overseas working areas have been consolidated in the Company's Financial Statements. With this approach, the Company ensures that tax reporting is conducted efficiently and in accordance with applicable accounting standards. [GRI 207-2, 207-4, 415-1]

» Kontribusi Kepada Negara
Contribution To the State

Uraian Description	2024	2023	2022
Penerimaan Negara Bukan Pajak | Non-Tax State Revenues			
PNBP Lainnya Other PNBP	4.217,86	4.244,05	5.602,85
Sub Total PNBP	4.217,86	4.244,05	5.602,85
Pembayaran Pajak | Tax Payment			
Pajak Pertambahan Nilai Value Added Tax	665,38	650,93	528,43
Pajak Bumi dan Bangunan Land and Building Tax	165,47	355,57	75,16
Pajak Penghasilan Karyawan Employee Income Tax	275,78	255,69	196,59
Pajak Penghasilan Badan Corporate Income Tax	1.291,59	1.718,21	2.256,87
BBN dan Pajak Kendaraan/Retribusi Daerah BBN and Vehicle Tax/Regional Levies	10,23	12,82	10,55
Pajak Lainnya Other Tax	135,97	131,88	77,17

Uraian Description	2024	2023	2022
Sub Total Pajak Sub Total Tax	2.544,42	3.125,10	3.144,77
Jumlah Kontribusi Kepada Negara | Total Contribution to the State			
Jumlah / Total	**6.762,28**	**7.369,15**	**8.747,62**

BANTUAN FINANSIAL YANG DITERIMA DARI PEMERINTAH [GRI 201-4]

Selama tahun 2023, Perseroan tidak menerima bantuan finansial langsung dari Pemerintah. Sebagai anak perusahaan PT Pertamina (Persero), Perseroan telah mandiri dalam mengelola dana pemegang saham tanpa dukungan finansial langsung dari Pemerintah. Meskipun Pemerintah Indonesia memberikan subsidi bahan bakar minyak (BBM) kepada PT Pertamina (Persero), subsidi tersebut tidak dialokasikan secara langsung kepada PT Pertamina Hulu Energi (PHE). Hal ini menunjukkan bahwa Perseroan sepenuhnya bergantung pada kemampuan pengelolaan internalnya untuk menjalankan operasional dan memenuhi tanggung jawabnya kepada para pemegang saham.

KEWAJIBAN PERUSAHAAN ATAS PROGRAM IMBALAN PASTI [GRI 201-3]

Salah satu bentuk kepatuhan Perusahaan terhadap kebijakan Pemerintah perihal sistem jaminan sosial nasional, Perusahaan menyediakan program pensiun baik yang bersifat wajib maupun sukarela. Program pensiun yang bersifat wajib diantaranya adalah BPJS Ketenagakerjaan (jaminan hari tua dan Jaminan Pensiun) dan Imbalan Pasca Kerja. Adapun program pensiun yang bersifat sukarela adalah Program Pensiun Iuran Pasti (PPIP).

1. Program Jaminan Sosial Nasional (BPJS Ketenagakerjaan)
   Perusahaan memastikan bahwa seluruh pekerja telah terdaftar dalam program BPJS Ketenagakerjaan yang mencakup Program Jaminan Hari Tua (JHT) dan Program Jaminan Pensiun (JP). Besaran iuran JHT 5,7% dari upah pokok dengan kontribusi pekerja 2% dan kontribusi Perusahaan 3,7%.

2. Imbalan Pasca Kerja
   Manfaat ini meliputi uang pesangon, uang penghargaan masa kerja, dan uang penggantian hak, yang manfaatnya muncul setelah Pekerja menyelesaikan masa kerjanya.

3. Program Pensiun Iuran Pasti (PPIP)
   Dalam program PPIP, selain terdapat kontribusi dari Pekerja sebesar 2% dari upah pokok, juga terdapat kontribusi dari Perusahaan sebesar 6% dari upah pokok, yang dananya dikelola oleh beberapa Dana Pensiun Lembaga Keuangan (DPLK) yang ditunjuk oleh Perusahaan.

FINANCIAL ASSISTANCE RECEIVED FROM GOVERNMENT [GRI 201-4]

During 2023, the Company did not receive direct financial assistance from the Government. As a subsidiary of PT Pertamina (Persero), the Company has been independent in managing shareholder funds without direct financial support from the Government. Although the Government of Indonesia provides fuel subsidies (BBM) to PT Pertamina (Persero), these subsidies are not allocated directly to PT Pertamina Hulu Energi (PHE). This shows that the Company is fully dependent on its internal management capabilities to run its operations and fulfill its responsibilities to shareholders.

COMPANY OBLIGATIONS UNDER DEFINED BENEFIT PLANS [GRI 201-3]

As part of the Company's compliance with the Government's policy on the national social security system, the Company provides both mandatory and voluntary pension programs. The mandatory pension programs include the Workers Social Security Program (BPJS Ketenagakerjaan), which covers Old Age Security (JHT) and Pension Security (JP), as well as Post-Employment Benefits. The voluntary pension program is the Defined Contribution Pension Plan (PPIP).

1. National Social Security Program (BPJS Ketenagakerjaan)
   The Company ensures that all employees are registered under BPJS Ketenagakerjaan, which includes the Old Age Security (JHT) and Pension Security (JP) programs. The JHT contribution is 5.7% of the basic salary, with 2% contributed by the employee and 3.7% by the Company.

2. Post-Employment Benefits
   These benefits include severance pay, long-service awards, and compensation for entitlements, which become payable once the employee completes their period of employment.

3. Defined Contribution Pension Plan (PPIP)
   Under the PPIP, in addition to a 2% contribution from the employee's basic salary, the Company contributes 6% of the basic salary. The funds are managed by selected Financial Institution Pension Funds (DPLK) appointed by the Company.

DAMPAK EKONOMI TIDAK LANGSUNG

PHE Subholding Upstream telah mengimplementasikan berbagai program sebagai bentuk komitmen untuk berkontribusi dalam pertumbuhan ekonomi nasional maupun masyarakat lokal. Berbagai program *Community Involvement and Development* (CID) telah diselenggarakan secara konsisten dari tahun ke tahun. Pada tahun 2024, terdapat 781 program pengembangan masyarakat yang terlaksana di PHE, 5 Regional, 2 anak perusahaan services dan PT Badak NGL.

Selain itu, PHE Subholding Upstream juga turut berkontribusi melalui melakukan investasi dalam bentuk pembangunan infrastruktur. Infrastruktur merupakan kunci pertumbuhan ekonomi bagi suatu daerah, sehingga keberadaan infrastruktur dinilai sangat penting dan perlu diprioritaskan karena memiliki pengaruh positif bagi masyarakat sekitarnya dalam meningkatkan perekonomian, pemberdayaan, dan kualitas hidup Masyarakat. Komitmen tersebut direalisasikan melalui investasi terhadap infrastruktur yang berdampak positif bagi masyarakat mencakup fasilitas ekonomi, Kesehatan, lingkungan, pendidikan, dan sosial. Hingga saat ini PHE Subholding Upstream tidak mengidentifikasi adanya dampak yang negatif dari fasilitas infrastruktur yang dibangun untuk Masyarakat tersebut.

Secara keseluruhan, PHE Subholding Upstream telah berkontribusi terhadap pembangunan infrastruktur pada aspek pendidikan, sosial, ekonomi, lingkungan maupun kesehatan dan merealisasikan anggaran lebih dari Rp21 miliar untuk investasi infrastruktur. Investasi tersebut dikeluarkan dalam bentuk *in-kind* dan pro bono tergantung dari kebutuhan Masyarakat. PHE Subholding Upstream tidak mengenakan biaya atau tarif kepada masyarakat dalam pembangunan infrastruktur tersebut. Adapun rincian dari infrastruktur tersebut adalah sebagai berikut. [GRI 203-1]

INDIRECT ECONOMIC IMPACT

PHE Subholding Upstream has implemented various programs as a form of commitment to contributing to national economic growth and local communities. Various Community Involvement and Development (CID) programs have been held consistently from year to year. In 2024, there were 781 community development programs implemented in PHE, 5 regions, 2 service subsidiaries and PT Badak NGL.

In addition, PHE Subholding Upstream also contributes by investing in the form of infrastructure development. Infrastructure is the key to economic growth for a region, therefore, the existence of infrastructure is considered crucial and needs to be prioritized because it has a positive influence on the surrounding community in improving the economy, empowerment, and quality of life of the community. This commitment is realized through investment in infrastructure that has a positive impact on the community including economic, health, environmental, educational, and social facilities. Until now, PHE Subholding Upstream has not identified any negative impacts from the infrastructure facilities built for the community.

Overall, PHE Subholding Upstream has contributed to infrastructure development in the education, social, economic, environmental and health aspects and realized a budget of more than Rp21 billion for infrastructure investment. The investment was issued in the form of in-kind and pro bono depending on the needs of the community. PHE Subholding Upstream does not charge fees or rates to the community in the development of the infrastructure. The details of the infrastructure are as follows. [GRI 203-1]

Pengadaan fasilitas ekonomi
Providing economic facilities

Rp6.026.347.897

Pengadaan fasilitas lingkungan
Providing environmental facilities

Rp1.329.991.232

Pengadaan fasilitas pendidikan
Providing educational facilities

Rp4.332.186.332

Pengadaan fasilitas kesehatan
Providing healthcare facilities

Rp1.684.560.507

Pengadaan fasilitas sosial
Providing social facilities

Rp8.046.699.640

Dari pengembangan infrastruktur tersebut, masyarakat memperoleh dampak ekonomi secara tidak langsung dari berbagai aspek sebagai berikut. [GRI 203-2]

From the development of this infrastructure, the community gains indirect economic impacts from various aspects as follows. [GRI 203-2]

Pengadaan Fasilitas Procurement of Facilities	Dampak Bagi Masyarakat Impact on Society
Ekonomi Economy	PHE Subholding Upstream telah merealisasikan pengadaan fasilitas ekonomi dengan melaksanakan beberapa program seperti Pembangunan kios UMKM beserta peralatan pendukung sebagai bagian dari pengembangan sentra UMKM di Kabupaten Kampar (WK Rokan). Peningkatan sarana produksi perikanan tangkap melalui pengadaan bantuan sarana alat tangkap dan *cool box* (PHE ONWJ & PHE OSES). Dukungan peningkatan kualitas sarana prasarana untuk menunjang pengembangan ekonomi masyarakat di bidang pertanian, peternakan, dan perikanan (PHM). Budidaya Perikanan Air Tawar & Pertanian dengan Sistem Hidroganik di Distrik Klasafet (PEP Papua Field). Program Gautama (Galeri Usaha Utama Masyarakat) (PT Badak NGL). Kasih Gerai UMKM (PT Elnusa Tbk). PHE Subholding Upstream has realized the procurement of economic facilities by implementing several programs such as the construction of MSME kiosks and supporting equipment as a part of the development of MSME centers in Kampar Regency (Rokan WA). Improvement of capture fisheries production facilities through the provision of assistance for fishing gear and cool boxes (PHE ONWJ & PHE OSES). Support for improving the quality of infrastructure to support the development of economy of the community in the fields of agriculture, livestock, and fisheries (PHM). Freshwater Fishery Cultivation & Agriculture with Hydroganic Systems in Klasafet District (PEP Papua Field). Gautama Program (Main Community Business Gallery) (PT Badak NGL). Grant of MSME Outlets (PT Elnusa Tbk).
Kesehatan Health	PHE Subholding Upstream telah merealisasikan pengadaan fasilitas kesehatan dengan melaksanakan program seperti Renovasi Sarana Kesehatan Di Sekitar Wilayah Operasi Perusahaan (PHE Jambi Merang). Peningkatan Sarana Kesehatan Desa seperti peningkatan fasilitas posyandu (PHE ONWJ). Dukungan peningkatan akses kesehatan dan fasilitas kesehatan untuk ibu dan balita (PHM). Program peningkatan kualitas fasilitas kesehatan masyarakat dan sumber daya air bersih (PHSS). PHE Subholding Upstream has realized the procurement of health facilities by implementing programs such as Renovation of Health Facilities Around Areas of Operation of the Company (PHE Jambi Merang). Improvement of Village Health Facilities such as improving integrated health service center (PHE ONWJ). Support for improving access to health and health facilities for mothers and toddlers (PHM). Programs to improve the quality of public health facilities and clean water resources (PHSS).
Lingkungan Environment	PHE Subholding Upstream telah merealisasikan pengadaan fasilitas Lingkungan dengan melaksanakan beberapa program seperti Program Pengembangan Ekoriparian Sungai Hitam Lestari (PEP Sangasanga Field). Program Penataan Lingkungan di wilayah Desa Binaan melalui Perbaikan lingkungan kawasan diwilayah Desa Binaan (PHE WMO). Program Community Based-Water Treatment (PT Badak NGL). PHE Subholding Upstream has realized the procurement of Environmental facilities by implementing several programs such as the Sungai Hitam Lestari Ecoriparian Development Program (PEP Sangasanga Field). Environmental Management Program in the area of Assisted Villages through Environmental Improvement in the area of Assisted Village (PHE WMO). Community Based-Water Treatment Program (PT Badak NGL).
Pendidikan Education	PHE Subholding Upstream telah merealisasikan pengadaan fasilitas pendidikan dengan melaksanakan beberapa program seperti Renovasi Fasilitas Pendidikan Di Sekitar Wilayah Operasi Perusahaan (PHE Jambi Merang). Bantuan sarpras perlengkapan sekolah bagi siswa/i SMP & SMA (PEP Prabumulih Field & PEP Limau Field). Pelatihan dan peningkatan prasarana belajar di Labuhan Maringgai (PHE OSES). Peningkatan sarana prasarana bagi sekolah setingkat PAUD/TK sampai sekolah menengah atas (PEP Tambun Field). Perbaikan sarana prasana pendidikan dan tempat ibadah (PEP Jatibarang Field). PHE Subholding Upstream has realized the provision of educational facilities by implementing several programs such as Renovation of Educational Facilities Around Areas of Operation of the Company (PHE Jambi Merang). Assistance in the form of school supplies and infrastructure for students of junior high school and senior high school (PEP Prabumulih Field & PEP Limau Field). Training and improvement of learning infrastructure in Labuhan Maringgai (PHE OSES). Improvement of facilities and infrastructure for schools at Early Childhood Education/Kindergarten to senior high school levels (PEP Tambun Field). Improvement of educational facilities and places of worship (PEP Jatibarang Field).

Pengadaan Fasilitas Procurement of Facilities	Dampak Bagi Masyarakat Impact on Society
Sosial Social	PHE Subholding Upstream telah merealisasikan pengadaan fasilitas sosial dengan melaksanakan beberapa program seperti perbaikan bangunan rumah yang layak huni (PEP Prabumulih Field, PEP Limau Field & PEP Adera Field). Program pengembangan infrastruktur dalam menunjang aksesibilitas masyarakat di Kabupaten Musi Rawas (PEP Pendopo Field). Program peningkatan fasilitas umum untuk pemukiman nelayan (PHE ONWJ). Perbaikan sarana & prasarana penunjang pariwisata (PHE OSES). Peningkatan kualitas sarana prasaran pendukung tanggap darurat (PT Pertamina Hulu Mahakam). Peningkatan Kualitas Infrastruktur Fasilitas Umum untuk Masyarakat terhadap Perbaikan jembatan kayu pendukung tempat wisata (PHE Nunukan Company). Peningkatan fasilitas umum bagi masyarakat di Kec. Penajam melalui peningkatan sarana fasilitas publik seperti jembatan untuk aktifitas nelayan, sarpras untuk olahraga yang diperuntukkan untuk masyarakat di sekitar wilayah operasi perusahaan, dan pengadaan material untuk perbaikan sarpras mitigasi pergerakan tanah (PHKT). Revitalisasi akses publik di distrik Salawati Tengah (PT Pertamina EP Papua Field). PHE Subholding Upstream has realized the provision of social facilities by implementing several programs such as repairing habitable housing buildings (PEP Prabumulih Field, PEP Limau Field & PEP Adera Field). Infrastructure development program to support community accessibility in Musi Rawas Regency (PEP Pendopo Field). Public facility improvement program for settlements of fishermen (PHE ONWJ). Improvement of tourism supporting facilities & infrastructure (PHE OSES). Improvement of the quality of emergency response support facilities and infrastructure (PT Pertamina Hulu Mahakam). Improvement of the Quality of Public Facility Infrastructure for the Community by Repairing wooden bridges supporting tourist attractions (PHE Nunukan Company). Improvement of public facilities for the community in Penajam District through improving public facilities such as bridges for activities of fishermen, sports facilities and infrastructure intended for the community around the areas of operation of the company, and procurement of materials for repairing land movement mitigation facilities and infrastructure (PHKT). Revitalization of public access in Salawati Tengah district (PT Pertamina EP Papua Field).

Selain itu, keberadaan PHE Subholding Upstream di berbagai wilayah operasionalnya memberikan dampak ekonomi tidak langsung yang signifikan bagi masyarakat setempat. Salah satu contoh dampak positif adalah peningkatan aktivitas ekonomi lokal melalui peluang kerja bagi masyarakat sekitar, baik secara langsung maupun tidak langsung, seperti pada sektor pendukung logistik, transportasi, dan pertumbuhan ekonomi regional. Selain itu, PHE juga mendorong pertumbuhan usaha mikro, kecil, dan menengah (UMKM) melalui program tanggung jawab sosial yang terintegrasi dengan kegiatan operasionalnya. Di sisi lain, keberadaan proyek migas dapat menimbulkan tantangan seperti tekanan terhadap infrastruktur lokal, peningkatan harga kebutuhan pokok, dan potensi ketimpangan sosial jika manfaat ekonomi tidak terdistribusi secara merata.

In addition, PHE Subholding Upstream's presence in various areas of operation has a significant indirect economic impact on local communities. One example of a positive impact is the increase in local economic activity through job opportunities for the surrounding community, both directly and indirectly, such as in the logistics, transportation, and regional economic growth supporting sectors. In addition, PHE also encourages the growth of micro, small, and medium enterprises (MSMEs) through social responsibility programs that are integrated with its operational activities. On the other hand, the presence of oil and gas projects can pose challenges such as pressure on local infrastructure, increasing prices of basic necessities, and potential social inequality if economic benefits are not evenly distributed.

Dampak ekonomi tidak langsung dari PHE Subholding Upstream dinilai signifikan dalam konteks prioritas pemangku kepentingan serta agenda kebijakan nasional dan internasional. Keberadaan PHE sejalan dengan tujuan pembangunan berkelanjutan, khususnya tujuan ke-8 tentang pekerjaan layak dan pertumbuhan ekonomi, serta tujuan ke-9 tentang industri, inovasi, dan infrastruktur. Selain itu, dampak ini juga berkontribusi pada agenda transisi energi Indonesia yang memerlukan partisipasi aktif sektor migas dalam menciptakan dampak ekonomi jangka panjang. [GRI 203-2]

The indirect economic impact of PHE Subholding Upstream is considered significant in the context of stakeholder priorities and national and international policy agendas. PHE's existence is in line with the sustainable development goals, especially goal 8 on decent work and economic growth, and goal 9 on industry, innovation, and infrastructure. In addition, this impact also contributes to Indonesia's energy transition agenda which requires active participation of the oil and gas sector in creating long-term economic impacts. [GRI 203-2]



08

KOMITMEN PHE DALAM MENJAGA LINGKUNGAN LESTARI

PHE's Commitment to Maintaining Sustainable Environment


PERTAMINA
HULU ROKAN

FOKUS PHE UNTUK MEMASTIKAN KELESTARIAN LINGKUNGAN

PHE'S FOCUS ON ENSURING ENVIRONMENTAL SUSTAINABILITY [OJK F.16] [GRI 2-23, 2-24]



Sebagai perusahaan energi yang memiliki visi menjadi perusahaan minyak dan gas bumi kelas dunia, PT Pertamina Hulu Energi (PHE) menegaskan komitmennya terhadap keberlanjutan melalui penerapan kebijakan yang berorientasi pada lingkungan, sosial, dan tata kelola yang baik (*Environmental*, *Social*, *and Governance*/ESG). PHE berambisi untuk menjadi perusahaan yang ramah lingkungan dengan menerapkan prinsip-prinsip keberlanjutan dalam seluruh operasionalnya. Hal ini mencerminkan tanggung jawab perusahaan dalam menjaga keseimbangan antara kebutuhan energi dan perlindungan lingkungan guna mendukung transisi energi yang berkelanjutan.

Sebagai bagian dari upaya pengurangan dampak lingkungan, PHE telah menetapkan target penurunan emisi karbon cakupan 1 dan 2 sebesar 32% hingga tahun 2030 atau lebih cepat, sesuai dengan target nasional dalam rangka mendukung target reduksi emisi *Enhanced Nationally Determined Contribution* (NDC) nasional dan interim target sektor energi sebesar 12,5% di tahun 2030. Perusahaan juga berkomitmen untuk mencapai

As an energy company with a vision to become a world-class oil and gas company, PT Pertamina Hulu Energi (PHE) affirms its commitment to sustainability through the implementation of policies that are oriented towards environment, social, and good governance (ESG). PHE has the ambition to become an environmentally friendly company by implementing sustainability principles in all its operations. This reflects the company's responsibility in maintaining a balance between energy needs and environmental protection to support a sustainable energy transition.

As a part of its environmental impact reduction efforts, PHE has set a target to reduce carbon emissions in scope 1 and 2 by 32% by 2030 or sooner, in line with the national target in order to support the national Enhanced Nationally Determined Contribution (NDC) emission reduction target and the interim energy sector target of 12.5% by 2030. The company is also committed to achieving net zero emissions by 2060. In

net zero emission pada tahun 2060. Pada tahun 2024, PHE terus menjalankan program-program dengan target dekarbonisasi yang lebih besar yakni peningkatan efisiensi energi, penggunaan sumber daya energi dan panas berkarbon rendah, pengurangan emisi rutin, serta implementasi teknologi *Carbon Capture Utilization & Storage* (CCUS) dan *Carbon Capture Storage* (CCS).

Dalam mencapai tujuan ini, PHE berpedoman pada standar internasional, termasuk ISO 14001:2015 untuk manajemen lingkungan, serta ISO 50001:2018 dalam pengelolaan energi yang efisien. Dengan menerapkan sistem manajemen yang sesuai dengan standar global, PHE memastikan bahwa setiap kegiatan operasionalnya mendukung efisiensi energi, pengurangan emisi, serta perlindungan lingkungan secara berkelanjutan.

2024, PHE continued to implement programs with higher decarbonization targets, namely increasing energy efficiency, using low-carbon energy and heat resources, reducing routine emissions, and implementing Carbon Capture Utilization & Storage (CCUS) and Carbon Capture Storage (CCS) technologies.

In achieving this goal, PHE is guided by international standards, including ISO 14001:2015 for environmental management, and ISO 50001:2018 for efficient energy management. By implementing a management system that complies with global standards, PHE ensures that all of its operational activities provide sustainable support to energy efficiency, emission reduction, and environmental protection.

Komitmen PHE
PHE Commitment

Kebijakan Keberlanjutan PHE
PHE Sustainability Policy

Cita-cita PHE adalah menjadi perusahaan Minyak dan Gas Global terkemuka dan diakui sebagai:

PHE's ambition is to be a leading and reputable Global Oil and Gas company and to be recognized as:

- **Perusahaan Ramah Lingkungan**
  Environmentally Friendly Company
- **Perusahaan Bertanggung Jawab Sosial**
  Societal Responsible Company
- **Perusahaan dengan Tata Kelola yang Baik**
  Good Governance Company

Komite Keberlanjutan PHE
PHE Sustainability Commitee

Ketua
Chairperson
CEO

Anggota
Members

1. Direktur Perencanaan Strategis & Pengembangan Bisnis
   Strategic Planning & Bussines Dev. Director
2. Direktur Pengembangan & Produksi
   Development & Production Director
3. Direktur Eksplorasi
   Exploration Director
4. Direktur Sumber Daya Manusia dan Layanan
   Human Resources & Services Director

Kepatuhan terhadap Standar Internasional Praktik Keberlanjutan
Adherence to International Standards on Sustainability Practice

Standar Pengungkapan
Disclosure Standards

GRI ipieca

Prinsip Panduan
Guiding Principles

SUSTAINABLE DEVELOPMENT GOALS

PARIS2015 COP21-CMP11

Inisiatif Internasional
International Initiatives

Komitmen Pengurangan Emisi
Emission Reduction Commitment
32%
Target Nasional hingga 2030
National Target up to 2030

Target *Net Zero*
Net Zero Target
~ 0%
Target Nasional 2060
National Target 2060

Praktik Terbaik International dalam
International Best Practice in

- **ISO 14001:2015** Manajemen Lingkungan / Environmental Management
- **ISO 45001:2018** Kesehatan dan Keselamatan Kerja / Occupational Health and Safety
- **ISO 50001:2018** Manajemen Energi / Energy Management
- **ISO 37001:2017** Sistem Manajemen Antisuap / Anti Bribery Management System
- **ISO 27001:2022** Sistem Manajemen Keamanan Informasi / Information Security Management System
- **ISO 26000:2010** Tanggung Jawab Sosial / Social Responsibility

Sejalan dengan agenda transisi energi Indonesia dalam mencapai target *Net-Zero Emission* (NZE) dan komitmen NZE pada tahun 2060 Pertamina, Pertamina Hulu Energi bertujuan untuk menjadi Perusahaan yang Ramah Lingkungan. Untuk mencapai tujuan tersebut, PHE berfokus pada isu lingkungan sebagai berikut:

In line with Indonesia's energy transition agenda in achieving the Net-Zero Emission (NZE) target and NZE commitment by 2060 Pertamina, Pertamina Hulu Energi aims to become an Environmentally Friendly Company. To achieve this goal, PHE focuses on the following environmental issues:

Fokus Lingkungan Environmental Focus	Mengatasi Perubahan Iklim Addressing Climate Change		Mengurangi Jejak Lingkungan Reducing Environmental Footprint		Melindungi Keanekaragaman Hayati Protecting Biodiversity		Pengelolaan Air Water Management		Pengelolaan limbah Waste management	
Isu Keberlanjutan Sustainability Issues	Emisi Emission	Mengatasi emisi GRK dari stasioner dan sumber energi bangkitan Listrik yang dibeli yang dikonsumsi, dan emisi tidak langsung lainnya. Addressing GHG emissions from stationary and mobile energy sources, purchased electricity generation consumed, and other indirect emissions.	Energi Energy	Mengatasi dampak lingkungan yang terkait dengan konsumsi energi seperti intensitas energi atau campuran energi (menggabungkan bahan baku fosil dan sumber energi terbarukan). Addressing environmental impacts associated with energy consumption such as energy intensity or energy mix (combining fossil fuels and renewable energy sources).	Keanekaragaman Hayati Biodiversity	Pengelolaan dampak Perusahaan terhadap ekosistem dan keanekaragaman hayati. Management of the Company's impacts on ecosystems and biodiversity.	Air dan Effluen Water and Effluent	Upaya Perseroan dalam mengatasi transparansi penggunaan air, mengurangi konsumsi air, meningkatkan kualitas air, dan , pengelolaan air. The Company's efforts to address transparency in water use, reduce water consumption, improve water quality, and water management.	Limbah Waste	Upaya Perseroan mengenai pembuangan limbah yang berkelanjutan, pengurangan dan pengelolan limbah. The Company's efforts regarding sustainable waste disposal, waste reduction and management.
Inisiatif Initiative	Dekarbonisasi Decarbonization		Meningkatkan efisiensi energi dan konservasi, komitmen pada EBT Improving energy efficiency and conservation, commitment to NRE		Program konservasi dan rehabilitasi Conservation and rehabilitation programs		Pengurangan konsumsi dan buangan air Reduction of water consumption and waste		Pengurangan intensitas pembuangan limbah Reduction in waste disposal intensity	

Secara fundamental, PHE mengelola lingkungan baik dari sisi penaatan regulasi lingkungan yang berlaku (*environmental compliance*) maupun dari sisi *beyond compliance*. Komitmen pengelolaan lingkungan PHE juga tergambar pada *HSSE Policy* dan *Sustainability Policy*. *Sustainability Policy* yang disahkan oleh Direktur Utama PHE pada tanggal 1 Oktober 2022. Berdasarkan kebijakan tersebut PHE Menegaskan 17 komitmennya dalam mencapai cita-citanya menjadi Perusahaan Energi yang terkemuka dan bereputasi baik secara global, dan diakui sebagai perusahaan yang ramah lingkungan, bertanggung jawab secara kemasyarakatan, Perusahaan dengan tata kelola yang baik. [GRI 2-23]

Fundamentally, PHE manages the environment both in terms of environmental compliance and beyond compliance. PHE's commitment to environmental management is also reflected in the HSSE Policy and the Sustainability Policy. The Sustainability Policy was adopted by the President Director of PHE on October 1, 2022. Based on this policy, PHE affirms its 17 commitments to achieving its goal of becoming a leading and reputable energy company globally, and recognized as an environmentally friendly company, socially responsible, and a company with good governance. [GRI 2-23]

Selain itu, PHE juga memiliki kebijakan *Health, Safety, Security & Environment* (HSSE) yang disahkan oleh Direktur Utama PHE pada tanggal 13 Maret 2024. Kebijakan tersebut mengatur mengenai penerapan program-program HSSE yang harus dilaksanakan oleh setiap Pekerja, Mitra Kerja, Kontraktor, dan Tamu yang berada di wilayah operasi Subholding Upstream. Kebijakan-kebijakan ini dirancang untuk tidak hanya memenuhi standar regulasi yang berlaku, tetapi juga untuk menunjukkan kepemimpinan Perusahaan dalam praktik keberlanjutan.

In addition, PHE also has a Health, Safety, Security & Environment (HSSE) policy which was adopted by the President Director of PHE on March 13, 2024. The policy regulates the implementation of HSSE programs that must be implemented by every Worker, Work Partner, Contractor, and Guest in the areas of operation of the Subholding Upstream. These policies are designed to not only meet applicable regulatory standards, but also to demonstrate the Company's leadership in sustainability practices.

Para Pemangku kepentingan dapat mengakses Kebijakan Keberlanjutan PHE melalui link berikut ini:
https://phe.pertamina.com/en/sustainability/policy

Untuk menginternalisasikan Kebijakan Keberlanjutan tersebut, PHE melakukan sosialisasi atas kebijakan tersebut. Bentuk sosialisasi yang dilakukan diantaranya mencakup sosialisasi melalui jaringan intranet Perusahaan, *broadcast email*, survei implementasi kebijakan Sistem Manajemen Terpadu, pemasangan plakat kebijakan di area kerja, dan sebagainya. Sosialisasi dilakukan tidak hanya kepada karyawan, tetapi juga kepada mitra kerja. [OJK F.16] [GRI 2-24]

Stakeholders can access PHE's Sustainability Policy through the following link:
https://phe.pertamina.com/en/sustainability/policy

To internalize the Sustainability Policy, PHE disseminates the policy. The forms of dissemination conducted include dissemination through the Company's intranet network, email broadcasts, Integrated Management System policy implementation surveys, installation of policy plaques in working areas, and so on. Dissemination is conducted not only to employees, but also to work partners. [OJK F.16] [GRI 2-24]



PT Pertamina Hulu Energi

TURUT SERTA MENANGANI PERUBAHAN IKLIM
PARTICIPATION IN CLIMATE CHANGE HANDLING

TATA KELOLA DAMPAK PERUBAHAN IKLIM
CLIMATE CHANGE IMPACT GOVERNANCE

[OJK E.1] [GRI 2-13, 2-23, 2-24]
[SASB EM-EP-160a.1] [TCFD GOV-A,B]

PT Pertamina Hulu Energi (PHE) terus memperkuat tata kelola keberlanjutan dengan menerapkan prinsip-prinsip ESG (*Environmental, Social, and Governance*) dalam seluruh aspek operasionalnya. Untuk mengintegrasikan aspek perubahan iklim ke dalam seluruh lapisan bisnis, PHE membangun dasar tata kelola iklim dan struktur organ tata kelola yang tidak terpisahkan ke dalam struktur organisasi Perseroan. Dasar tata kelola ini terdiri dari *Foundation Initiatives* dan *Business Initiatives*.

PT Pertamina Hulu Energi (PHE) continues to strengthen sustainability governance by implementing ESG (Environmental, Social, and Governance) principles in all aspects of its operations. To integrate climate change aspects into all layers of business, PHE has built a climate governance foundation and governance organ structure that is inseparable from the Company's organizational structure. This governance foundation consists of Foundation Initiatives and Business Initiatives.

PHE Subholding Upstream
Mendukung Keamanan Energi Nasional mencapai 660 MBOPD & 6160 BCFD
Support National Energy Security achieving 660 MBOPD & 6160 BCFD

Inisiatif Bisnis
Business Initiatives

Subpermukaan: Cadangan & Sumber Daya
Subsurface: Reserves & Resources

- Rasio penggantian cadangan >100%
  Reserves replacement ratio >100%
- Akselerasi pematangan sumber daya kontijen untuk meningkatkan rasio RTP
  Acceleration maturation contigent resources to increase RTP ratio

Eksplorasi Penyaluran
Exploration Funnelling

- Studi tanpa batas pada skala regional cekungan
  Borderless study regional skala basin
- Pematangan >50 MMBOE
  Maturation >50 MMBOE
- Kombinasi dan risiko tinggi
  Combination and high risk
- Non-konvensional
  Non-conventional
- Ventura baru
  New venture
- Seismik di area terbuka
  Seismic in open area

Inisiatif Pondasi
Fondation Initiatives

ESG

- Peningkatan aspek HSSE, antara lain pengurangan emisi, kesiapan tumpahan minyak, keamanan, kesehatan, dan keamanan
  Improvement of HSSE aspects, among other emission reduction, oil spill readiness, safety, health and security
- Meningkatkan keterlibatan masyarakat melalui penguatan tata kelola dan manajemen CID yang berkontribusi pada SDGs
  Improving community engagement through strengthening governance and management of CID that contribute to SDGs

PERTAMINA

Perusahaan

Mendukung *Holding* mencapai nilai pasar ES$100 miliar pada tahun 2021
Support Holding achieving ES$100 billion market value 2021

Pengembangan & Produksi
Development & Production

- Memulihkan aset yang sudah ada
  Revitalize existing assets
- Proyek tepat waktu, tepat anggaran, tepat jadwal
  On time, on budget, on schedule projects
- *Step out* & EOR
- Integrasi POD
  POD Integration
- Infrastruktur Terintegrasi
  Integrated infrastructure
- Manajemen integritas fasilitas yang matang
  Mature facility integrity management
- ASR yang efektif
  Affective ASR

Pengembangan Bisnis
Business Development

- Penggabungan & Akuisisi
  Merger & acquisition
- *Joint study/ bid round*/Hak Istimewa untuk Blok Baru
  Joint study/bid round/privilege for new block
- *Termination Block*
- Aliansi Strategis
  Strategic alliance

Peningkatan Komersial
Commercial Improvement

- Monetisasi Minyak Mentah Tersandera dan Gas Marginal (<25MMBOE)
  Crude monetization stranded and marginal gas (<25MMBOE)
- Memastikan GSA dan Alokasi Gas
  Securing GSA and gas allocation
- Sinergi Komersialisasi (C&T), KPI, SHG)
  Commercialization synergy (C&T, KPI, SHG)
- Produk Slide Monetisasi
  Monetization Slide Product

Peningkatan Ekonomi
Economical Improvement

- Optimisasi Biaya
  Cost optimization
- Meningkatkan Keuntungan
  Increase profit
- Mitigasi Risiko
  Risk mitigation
- Optimisasi Portofolio
  Portfolio optimization
- Insentif Fiskal
  Fiscal incentives
- Evaluasi Regulasi untuk Membuka Nilai
  Regulation evaluation to unlock value

Sumber Daya Manusia
Human Capital

- Kepemimpinan dan budaya kinerja tinggi
  Leadership and culture high performance
- Organisasi yang tangkas melalui proses bisnis yang dioptimalkan
  Agile organization through optimized business process

Upstream Services

- Teknologi untuk mendukung layanan inti & daya saing
  Technology to support core service & competitiveness

Optimalisasi Digital
Digital Optimalization

- Pusat Operasi Terintegrasi & Pengadaan Digital
  Integrated operation center & digital procurement

Dalam tata kelola perubahan iklim, beberapa aspek yang telah dilaksanakan oleh PHE, yaitu:

- Perusahaan memiliki komite ESG tingkat dewan yang bertanggung jawab untuk mengawasi strategi dan kinerja ESG perusahaan. Komite ini terdiri dari direktur independen dengan keahlian dalam masalah ESG.
- Perusahaan memiliki sejumlah kebijakan dan prosedur untuk mengelola risiko ESG. Kebijakan dan prosedur ini ditinjau dan diperbarui secara berkala untuk memastikan bahwa mereka selaras dengan tujuan ESG perusahaan.
- Perusahaan memiliki proses penilaian risiko iklim untuk mengidentifikasi, menilai, dan mengelola risiko terkait iklim. Proses ini dipimpin oleh komite ESG dan melibatkan masukan dari berbagai pemangku kepentingan, termasuk karyawan, pemasok, dan pelanggan.
- Perusahaan memiliki rencana manajemen risiko iklim untuk mengurangi risiko terkait iklim. Rencana tersebut mencakup sejumlah strategi, seperti mengurangi emisi, berinvestasi dalam energi terbarukan, dan mengembangkan langkah-langkah adaptasi.
- Perusahaan melaporkan kinerja ESG secara berkala. Laporan tersebut tersedia bagi pemegang saham, investor, dan pemangku kepentingan lainnya.
- Perusahaan memiliki komite ESG tingkat dewan yang mengawasi strategi dan kinerja ESG perusahaan. PHE juga memiliki sejumlah kebijakan dan prosedur untuk mengelola risiko ESG.

Struktur Tata Kelola Perubahan Iklim PHE memberikan pengawasan kepada Dewan Komisaris dan wewenang pengelolaan kepada Direksi atas kebijakan, target, dan strategi iklim Pembangunan Berkelanjutan dan Perubahan Iklim, yang dijabarkan ke bawah ke komite, manajemen eksekutif, direktur unit bisnis, dan staf. Struktur ini memungkinkan Perusahaan untuk menerapkan dan memantau pelaksanaan kebijakan dan memiliki respons yang tepat waktu terhadap kemajuan, risiko, dan peluang program terkait iklim.

Direksi bertanggung jawab untuk menyetujui kebijakan, strategi, dan target terkait perubahan iklim yang akan mendukung pertumbuhan bisnis berkelanjutan dalam jangka pendek, menengah, dan panjang. Hal ini dilakukan dengan mempertimbangkan temuan dan implikasi keuangan dari proses penilaian risiko iklim, sehingga Direksi dapat mengalokasikan dana dan sumber daya untuk implementasi langkah-langkah mitigasi dan adaptasi iklim yang efektif dan tepat waktu.

Struktur Komite Keberlanjutan telah dikukuhkan/disahkan oleh Direktur Utama, beranggotakan para Direktur di area Subholding Hulu dan setingkat Wakil Direktur Utama yang bertanggung jawab kepada Direktur Utama dan bertanggung jawab dalam menjaga aspek keberlanjutan sesuai bidangnya masing-masing.

In climate change governance, several aspects that have been implemented by PHE are:

- The company has a board-level ESG committee responsible for overseeing the company's ESG strategy and performance. The committee consists of independent directors with expertise in ESG issues.
- The Company has a number of policies and procedures in place to manage ESG risks. These policies and procedures are regularly reviewed and updated to ensure that they are aligned with the Company's ESG objectives.
- The company has a climate risk assessment process to identify, assess and manage climate-related risks. The process is led by the ESG committee and involves input from a range of stakeholders, including employees, suppliers and customers.
- The company has a climate risk management plan to mitigate climate-related risks. The plan includes a number of strategies, such as reducing emissions, investing in renewable energy, and developing adaptation measures.
- The company reports its ESG performance regularly. The reports are available to shareholders, investors and other stakeholders.
- The company has a board-level ESG committee that oversees the company's ESG strategy and performance. PHE also has a number of policies and procedures to manage ESG risks.

PHE's Climate Change Governance structure assigns the supervision to the Board of Commissioners and the management authority to the Board of Directors over Sustainable Development and Climate Change climate policies, targets and strategies, which are broken down to committees, executive management, business unit directors and staff. This structure enables the Company to implement and monitor policy implementation and to have timely responses to progress, risks and opportunities of climate-related programs.

The Board of Directors is responsible for approving climate change policies, strategies and targets that will support sustainable business growth in the short, medium and long term. This is done by considering the findings and financial implications of the climate risk assessment process, so that the Board of Directors can allocate funds and resources for the implementation of effective and timely climate mitigation and adaptation measures.

The structure of the Sustainability Committee has been confirmed/approved by the President Director, consisting of Directors in the area of the Subholding Upstream and equivalent to Vice President Director who are responsible to the President Director and responsible for maintaining sustainability aspects according to their respective fields.

Jabatan Komite
- Ketua Komite: Direktur Utama
  Anggota Komite:
  - Direktur Perencanaan Strategis & Pengembangan Usaha
  - Direktur Pengembangan & Produksi
  - Direktur Eksplorasi
  - Direktur SDM & Dukungan Usaha
  - Direktur Keuangan & Investasi
  - Direktur Manajemen Risiko

Struktur lengkap komite keberlanjutan dapat dilihat pada Bab Tata Kelola, dan terkait lingkup tanggung jawabnya dapat dilihat pada tabel berikut ini:

Committee Positions
- Committee Chairman: President Director
  Committee Members:
  - Director of Strategic Planning & Business Development
  - Director of Development & Production
  - Director of Exploration
  - Director of HC & Corporate Services
  - Director of Finance
  - Director of Risk Management

The complete structure of the sustainability committee can be seen in the Governance Chapter, and the scope of its responsibilities can be seen in the following table:

Pejabat Official	Aspek Keberlanjutan Sustainability Aspects
Direktur Perencanaan Strategis & Pengembangan Bisnis Director of Strategic Planning & Business Development	Peta jalan dan strategi jangka panjang, merger & akuisisi ramah lingkungan Roadmap and long-term strategy, green mergers & acquisitions
Direktur Pengembangan & Produksi Director of Development & Production	Dekarbonisasi & Proyek Hijau, Perubahan iklim, *Well integrity and management system, Offshore-well management* Decarbonization & Green Projects, Climate change, Well integrity and management system, Offshore-well management
Direktur SDM & Dukungan Bisnis Director of HC & Corporate Services	Keberagaman, hak asasi manusia, inklusivitas, perekrutan, retensi & pengembangan karyawan, keamanan *cyber*, pengadaan hijau, standar pemasok sosial Diversity, human rights, inclusivity, employee recruitment, retention & development, cybersecurity, green procurement, social supplier standards
Direktur Keuangan & Investasi Director of Finance & Investment	Pendanaan Keberlanjutan, *Sustainability bugdet tagging* Sustainability Funding, Sustainability budget tagging
Direktur Eksplorasi Director of Exploration	Meminimalkan jejak lingkungan dalam aktivitas eksplorasi Minimizing environmental footprint in exploration activities
Direktur Manajemen Risiko Director of Risk Management	Manajemen risiko perusahaan Enterprise risk management
Sekretaris Perusahaan Corporate Secretary	Keterlibatan dan pengembangan masyarakat, tata kelola perusahaan, etika perusahaan, hubungan pemangku kepentingan, strategi komunikasi, formalitas pertanahan Community engagement and development, corporate governance, corporate ethics, stakeholder relations, communication strategies, land formalities
VP HSSE	Perubahan iklim, lingkungan, keanekaragaman hayati, kelangkaan air, limbah, pengelolaan limbah, tanggap darurat, penutupan dan rehabilitasi lahan, kesehatan dan keselamatan, pencegahan kecelakaan besar, keamanan, manajemen risiko iklim Climate change, environment, biodiversity, water scarcity, waste, waste management, emergency response, land closure and rehabilitation, health and safety, major accident prevention, security, climate risk management
VP Upstream Innovation	Reorientasi inovasi dan penelitian hijau, Peta jalan dan strategi CCUS/CCS terintegrasi, Perubahan iklim Reorientation of green innovation and research, Integrated CCUS/CCS roadmap and strategy, Climate change
Chief Audit Executive	*Assurance business* & etika perusahaan, Tindak lanjut sistem pelaporan pelanggaran Assurance of business & corporate ethics, Follow-up on violation reporting system
Direktur Regional 1-5, PT PDSI,PT Elnusa Tbk, PT Badak NGL, Direktur Utama Anak Perusahaan, Cucu Perusahaan dan Afiliasi Direktur Regional 1-5, PT PDSI,PT Elnusa Tbk, PT Badak NGL, Direktur Utama Anak Perusahaan, Cucu Perusahaan dan Afiliasi Directors of Regions 1-5, PT PDSI, PT Elnusa Tbk, PT Badak NGL, President Directors of Subsidiaries, Sub-Subsidiaries and Affiliates	Inisiatif, pelaksanaan percontohan, implementasi ambisi Initiatives, pilot implementation, implementation of ambitions

Struktur Organisasi Pengelolaan Lingkungan

[SASB EM-EP-160a.1]

Khusus terkait pengelolaan aspek lingkungan di PHE Subholding Upstream dijalankan berdasarkan Kebijakan *Health, Safety, Security, and Environment* (HSSE). Tanggung jawab pengelolaan lingkungan berada di bawah Fungsi HSSE yang dipimpin oleh Vice President (VP) dan didukung oleh unit HSSE di tingkat Regional serta Anak Perusahaan. Unit-unit ini bertanggung jawab dalam memastikan keselamatan, keamanan, kesehatan kerja, serta perlindungan lingkungan di seluruh operasional perusahaan.

VP HSSE bertanggung jawab kepada Direktur Utama dan didukung oleh berbagai posisi strategis, termasuk Senior *Manager* HSSE *Performance, Assurance* & ERCM; Senior *Manager Safety*; *Manager Health*; *Manager Security*; *Manager Environment*; serta *Assistant Manager Planning, Management System & Risk Management*. Struktur organisasi ini memastikan bahwa kebijakan dan implementasi HSSE berjalan secara efektif dan sesuai dengan standar yang telah ditetapkan.

Berikut adalah struktur organisasi unit HSSE:

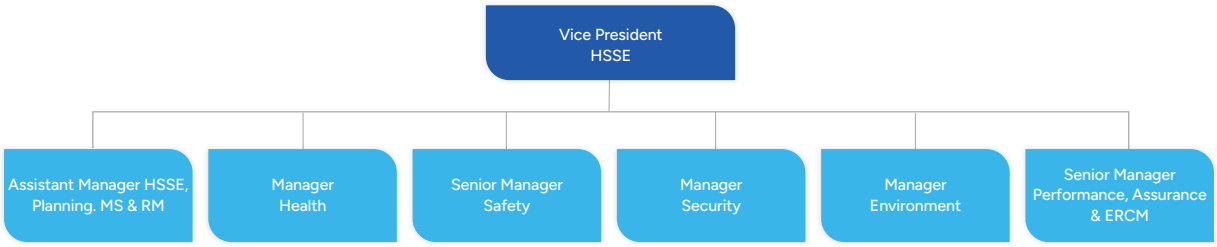
Environmental Management Organizational Structure [SASB EM-EP-160a.1]

Specifically related to the management of environmental aspects at PHE Subholding Upstream, it is conducted based on the Health, Safety, Security, and Environment (HSSE) Policy. The responsibility for environmental management is under the HSSE Function led by the Vice President (VP) and supported by HSSE units at the Regional and Subsidiary levels. These units are responsible for ensuring safety, security, occupational health, and environmental protection throughout the company's operations.

VP HSSE is responsible to the President Director and is supported by various strategic positions, including Senior Manager of HSSE Performance, Assurance & ERCM; Senior Manager of Safety; Manager of Health; Manager of Security; Manager of Environment; and Assistant Manager of Planning, Management System & Risk Management. This organizational structure ensures that HSSE policies and implementations run effectively and in accordance with established standards.

The following is the organizational structure of the HSSE unit:

» **Struktur Organisasi Unit HSSE**
Organizational Structure of the HSSE Unit



STRATEGI DAMPAK PERUBAHAN IKLIM

CLIMATE CHANGE IMPACT STRATEGY

Risiko dan Peluang terkait Iklim

Penerapan manajemen risiko dan krisis yang efektif memperkuat ketahanan perusahaan, baik dalam menghadapi tantangan saat ini maupun di masa depan. PHE mengadopsi pendekatan berlapis guna memastikan bahwa setiap risiko yang terkait dengan bisnis, termasuk risiko keberlanjutan, dapat diidentifikasi, dipahami, dan dikelola secara optimal. Selain itu, perusahaan juga memanfaatkan analisis risiko untuk mengidentifikasi peluang bisnis yang dapat muncul seiring dengan perubahan kondisi industri dan lingkungan.

Sebagai bagian dari strategi manajemen risiko yang komprehensif, PHE mengintegrasikan risiko dan peluang keberlanjutan, termasuk risiko iklim, ke dalam proses identifikasi, penilaian, dan mitigasi risiko yang melibatkan

Climate-related Risks and Opportunities

The implementation of effective risk and crisis management strengthens the company's resilience, in facing both current and future challenges. PHE adopts a layered approach to ensure that every risk associated with the business, including sustainability risks, can be identified, understood, and managed optimally. In addition, the company also utilizes risk analysis to identify business opportunities that may arise along with changes in industrial and environmental conditions.

As a part of a comprehensive risk management strategy, PHE integrates sustainability risks and opportunities, including climate risks, into a multidisciplinary risk identification, assessment and mitigation process across the organization.

berbagai disiplin ilmu di seluruh organisasi. Pendekatan ini memungkinkan perusahaan mengelola risiko yang berdampak terhadap strategi dan kinerja secara lebih efektif, termasuk dalam aspek operasional, pasar dan keuangan, kredit, organisasi, politik, kepatuhan terhadap regulasi, strategi, reputasi, serta keberlanjutan.

This approach enables the company to more effectively manage risks that impact strategy and performance, including the aspects of operations, market and finance, credit, organization, politics, regulatory compliance, strategy, reputation and sustainability.

Penerapan Manajemen Risiko berbasis ISO 31000:2018 yang diintegrasikan ke dalam semua proses bisnis dan sesuai dengan Tata Kelola Perusahaan yang Baik (Good Corporate Governance) dengan tujuan untuk menciptakan dan melindungi nilai Perusahaan. Dengan metodologi ini, PHE dapat meningkatkan ketahanan bisnis, menjaga keseimbangan antara risiko dan peluang, serta memastikan keberlanjutan operasi dalam jangka panjang.

Implementation of ISO 31000:2018-based Risk Management which is integrated into all business processes and in accordance with the Good Corporate Governance with the aim of creating and protecting the Company's value. With this methodology, PHE can improve business resilience, maintain a balance between risks and opportunities, and ensure long-term operational sustainability.

Terdapat dua risiko utama yang dikelola Perseroan yang berkaitan dengan keberlanjutan yaitu *Transition Risk* dan *Physical Risk*. Berkaitan dengan *transition risk* terdapat beberapa *downside risk* yang dihadapi Perseroan seperti:

- Peningkatan biaya
  Perubahan iklim dapat menyebabkan peningkatan biaya PHE, seperti biaya energi, air, dan asuransi.
- Penurunan pendapatan
  Perubahan iklim juga dapat menyebabkan berkurangnya pendapatan PHE, sebagai akibat dari perubahan permintaan terhadap produk dan layanannya.
- Kerusakan aset
  Perubahan iklim juga dapat merusak aset PHE, seperti jaringan pipa dan kilangnya.
- Turunnya reputasi
  Perubahan iklim juga dapat merusak reputasi PHE jika PHE dianggap tidak berbuat cukup untuk mengatasi masalah ini.

There are two main risks managed by the Company related to sustainability, namely Transition Risk and Physical Risk. Related to transition risk, there are several downside risks faced by the Company, such as:

- Increase in costs
  Climate change may lead to increasing PHE costs, such as energy, water and insurance costs.
- Decrease in income
  Climate change may also lead to reduced revenues for PHE, as a result of changes in demand for its products and services.
- Asset damage
  Climate change may also damage PHE's assets, such as its pipelines and refineries.
- Decline in reputation
  Climate change may also damage PHE's reputation if it is seen as not doing enough to address the issue.

Berikut adalah daftar *transition risk* dan *physical risk* baik secara jangka pendek, menengah, maupun panjang Perseroan selama tahun pelaporan:

The following is a list of transition risks and physical risks for the Company in the short, medium and long term during the reporting year:

Kategori Risiko Risk Category	Jangka Waktu Term	Masalah Problem	Deskripsi Dampak Description of Impact	Mitigasi, Strategi Mitigation, Strategy
Risiko Transisi Transition Risk	Pendek Short	Kenaikan harga emisi GRK misalnya pajak karbon Increase in the price of GHG emissions, for example carbon tax	Indonesia telah mengeluarkan undang-undang tentang harmonisasi pajak sebagai dasar penerapan pajak karbon. Indonesia has enacted a law on tax harmonization as a basis for implementing a carbon tax.	• Mengurangi intensitas energi dan emisi Reducing energy intensity and emissions • Mengembangkan strategi NZE Developing NZE strategy
		Kewajiban pelaporan Reporting obligations	Mengantisipasi perubahan dan menjaga keselarasan dengan kewajiban pelaporan iklim terkait dengan standar pelaporan keberlanjutan. Anticipating changes and maintaining alignment with climate reporting obligations related to sustainability reporting standards.	• Melibatkan tenaga ahli eksternal Involving external experts • Mengevaluasi data perhitungan emisi GRK setiap WK dan AP Evaluating GHG emission calculation data for each WA and AP

Kategori Risiko Risk Category	Jangka Waktu Term	Masalah Problem	Deskripsi Dampak Description of Impact	Mitigasi, Strategi Mitigation, Strategy
		Peningkatan kepedulian pemangku kepentingan dan paparan litigasi Increasing stakeholder awareness and litigation exposure	• Kekhawatiran pemangku kepentingan terhadap kegiatan operasional kami yang mana sebagai produsen energi tidak terbarukan. Stakeholders' concerns regarding our operational activities as a producer of non-renewable energy • Meningkatnya risiko litigasi terkait iklim Increasing risk of climate-related litigation.	Memprioritaskan produksi migas yang bertanggung jawab untuk mendukung keamanan dan aksesibilitas energi. Prioritizing responsible oil and gas production to support energy security and accessibility.
		Peningkatan cuaca ekstrem Increasing extreme weather	Peningkatan biaya langsung untuk memperbaiki kerusakan, peningkatan biaya asuransi karena premi pertanggungan meningkat, penurunan produksi karena penutupan fasilitas. Increasing direct costs to repair damage, increasing insurance costs due to increasing insurance premiums, decreasing production due to facility closures.	• Melalui Rencana Tanggap Darurat dan rencana kesinambungan bisnis,kami juga memiliki protokol terperinci untuk memantau, mempersiapkan, dan menanggapi peristiwa cuaca buruk. Through our Emergency Response Plan and business continuity plan, we also have detailed protocols for monitoring, preparing for and responding to severe weather events. • Mempertahankan asuransi sebagai langkah mitigasi untuk mengurangi dampak keuangan. Maintaining insurance as a mitigation measure to reduce the financial impact
		Perubahan suhu ekstrem Extreme temperature changes	Peningkatan bahan bakar gas untuk berbagai peralatan. Hal ini akan membutuhkan sumber daya tambahan (infrastruktur) dan meningkatkan emisi. Selain itu dapat meningkatkan biaya modal yang terkait dengan operasi pengeboran,penyelesaian, dan pengerjaan karena peningkatan jadwal, penurunan produktivitas, dan kerusakan peralatan. Increasing gas fuel for various kinds of equipment This will require additional resources (infrastructure) and increase emissions. It can also increase capital costs associated with drilling, completion and working operations due to increasing schedules, decreasing productivity and equipment damage.	Mengembangkan rencana manajemen risiko yang komprehensif untuk mengatasi risiko yang teridentifikasi secara sistematis. Developing a comprehensive risk management plan to systematically address identified risks.
		Substitusi produk dan layanan ke EBT Substitution of products and services with NRE	Peralihan pasar kepada energi terbarukan dapat berdampak pada permintaan produk migas yang menurun sehingga dapat menurunkan harga komoditas. The market shift to renewable energy could have an impact on decreasing demand for oil and gas products, which could lower commodity prices.	Kami berinvestasi dalam R&D di bidang lain, seperti biogas dan konversi aset minyak dan gas tradisional menjadi produksi panas bumi dan hidrogen, untuk lebih memahami potensi jangka panjang. We are investing in R&D in other areas, such as biogas and conversion of traditional oil and gas assets to geothermal and hydrogen production, to better understand the long-term potential.

Kategori Risiko Risk Category	Jangka Waktu Term	Masalah Problem	Deskripsi Dampak Description of Impact	Mitigasi, Strategi Mitigation, Strategy
Risiko Fisik Physical Risk	Menengah Medium	Peningkatan Tingkat Keparahan Peristiwa Cuaca Ekstrem seperti Topan dan Banjir Increasing Severity of Extreme Weather Events such as Typhoons and Floods	Proyek lepas pantai PHR dan ladang minyak di daerah pesisir dapat dipengaruhi oleh peristiwa cuaca ekstrem seperti siklon, yang mengakibatkan waktu henti atau kerusakan infrastruktur. Peristiwa semacam itu juga dapat berdampak pada kapasitas penanganan hilir mitra kami, yang mengakibatkan pembatasan distribusi dan penjualan produk. PHR's offshore projects and coastal oil fields may be affected by extreme weather events such as cyclones, resulting in downtime or damage to infrastructure. Such events may also impact our partners' downstream handling capacity, resulting in restrictions on product distribution and sales.	• Mempertahankan asuransi sebagai langkah mitigasi untuk mengurangi dampak keuangan yang terkait dengan kerusakan aset. Maintaining insurance as a mitigation measure to reduce the financial impact associated with asset damage • Program integritas aset yang kuat yang mempertahankan fasilitas lepas pantai dengan spesifikasi desain asli kekuatan badai CAT 5 A robust asset integrity program that maintains offshore facilities with original design specifications of CAT 5 hurricane strength • Protokol untuk memantau dan mempersiapkan siklon, dan telah berinvestasi dalam kemampuan tanggap darurat jika terjadi kerusakan pada aset karena cuaca buruk. Protocols for monitoring and preparing for cyclones, and has invested in emergency response capabilities in the event of damage to assets due to severe weather
Risiko Fisik Physical Risk	Panjang Long	Naiknya permukaan laut Sea level rise	Naiknya permukaan laut secara fisik dapat berdampak pada operasi karena masalah seperti banjir, kesulitan transportasi, gangguan rantai pasokan, serta dapat menimbulkan ancaman terkait salinitas air tanah. Sea level rise can physically impact operations due to issues such as flooding, transportation difficulties, supply chain disruptions, and can pose threats related to groundwater salinity.	• Peningkatan beberapa area fasilitas pendukung produksi Improvement of several areas of production support facilities • Meninggikan area operasi rawan banjir Elevating flood-prone areas of operation

Peralihan menuju ekonomi rendah karbon membuka peluang bagi PHE untuk berinovasi dan memperluas pangsa pasar. PHE dapat memanfaatkan pertumbuhan sektor energi terbarukan dan teknologi pengurangan emisi untuk menciptakan sumber pendapatan baru dan mendiversifikasi bisnisnya. Dukungan pemerintah dalam bentuk insentif fiskal dan pendanaan untuk teknologi bersih juga memberikan peluang bagi perusahaan untuk mengurangi biaya transisi serta meningkatkan daya saing. Dengan mengembangkan produk dan layanan yang mendukung adaptasi dan mitigasi perubahan iklim, PHE dapat memperkuat posisinya sebagai perusahaan yang proaktif dan bertanggung jawab dalam transisi energi global.

The transition to a low-carbon economy provides opportunities for PHE to innovate and expand its market share. PHE can leverage the growth of the renewable energy sector and emission reduction technologies to create new revenue streams and diversify its business. Government support in the form of fiscal incentives and funding for clean technologies also provides opportunities for the company to reduce transition costs and increase competitiveness. By developing products and services that support climate change adaptation and mitigation, PHE can strengthen its position as a proactive and responsible company in global energy transition.

Untuk meminimalkan risiko sekaligus mengoptimalkan peluang tersebut, PHE mengintegrasikan strategi adaptasi dan mitigasi perubahan iklim ke dalam perencanaan dan operasionalnya. Perusahaan berinvestasi dalam energi terbarukan, efisiensi energi, dan pengembangan infrastruktur yang lebih tahan terhadap perubahan iklim. Selain itu, langkah-langkah untuk meningkatkan transparansi dan akuntabilitas dalam pengelolaan lingkungan juga diterapkan guna mengurangi potensi dampak negatif. Dengan pendekatan ini, PHE tidak hanya dapat mengurangi eksposur terhadap risiko transisi energi tetapi juga memposisikan diri sebagai pemimpin dalam industri yang semakin mengedepankan keberlanjutan.

To minimize risks and optimize opportunities, PHE integrates climate change adaptation and mitigation strategies into its planning and operations. The company invests in renewable energy, energy efficiency, and infrastructure development that is more resilient to climate change. In addition, steps to increase transparency and accountability in environmental management are also implemented to reduce potential negative impacts. With this approach, PHE can not only reduce exposure to energy transition risks but also position itself as a leader in an industry that increasingly prioritizes sustainability.

PHE menyadari bahwa perubahan iklim menghadirkan risiko fisik yang signifikan, seperti kenaikan permukaan air laut, cuaca ekstrem, perubahan pola curah hujan, dan peningkatan suhu. Untuk mengurangi dampaknya, PHE telah menerapkan berbagai strategi mitigasi. Dalam menghadapi risiko kenaikan permukaan air laut, perusahaan berinvestasi dalam pembangunan tanggul laut dan infrastruktur tahan banjir guna melindungi fasilitas operasionalnya. Untuk mengantisipasi cuaca ekstrem, PHE telah mengembangkan sistem peringatan dini, memasang stasiun cuaca, serta menyusun rencana evakuasi bagi karyawan guna memastikan respons yang cepat dan efektif terhadap kondisi darurat.

PHE recognizes that climate change presents significant physical risks, such as sea level rise, extreme weather, changing rainfall patterns and increasing temperatures. To reduce the impact, PHE has implemented various mitigation strategies. In response to the risk of sea level rise, the company has invested in the construction of sea walls and flood-resistant infrastructure to protect its operational facilities. In anticipation of extreme weather, PHE has developed an early warning system, installed weather stations and developed an evacuation plan for employees to ensure a quick and effective response to emergencies.

Guna mengatasi perubahan pola presipitasi dan peningkatan iklim, PHE mengelola penggunaan air dengan lebih efisien melalui pengumpulan air hujan, penerapan metode irigasi hemat air, serta strategi pengurangan konsumsi air untuk meningkatkan ketahanan terhadap kekeringan. Di sisi lain, PHE juga memperkuat komitmennya dalam pengurangan emisi gas rumah kaca dengan meningkatkan penggunaan energi terbarukan dan menerapkan langkah-langkah efisiensi energi, yang tidak hanya menekan jejak karbon perusahaan tetapi juga membantu mengurangi dampak pemanasan global. Melalui berbagai inisiatif ini, PHE bertujuan untuk meningkatkan ketahanan perusahaan terhadap ancaman perubahan iklim.

To address changing precipitation patterns and climate change, PHE manages water use more efficiently through rainwater harvesting, implementing water-saving irrigation methods, and water consumption reduction strategies to increase resilience to drought. On the other hand, PHE also strengthens its commitment to reducing greenhouse gas emissions by increasing the use of renewable energy and implementing energy efficiency measures, which not only reduce the company's carbon footprint but also help mitigate the impact of global warming. Through these initiatives, PHE aims to increase the company's resilience to the threat of climate change.

PHE telah mengidentifikasi risiko dan peluang terkait iklim dalam jangka pendek (0-3 tahun), menengah (3-6 tahun), dan panjang (6-30 tahun). Evaluasi ini dilakukan dengan menggunakan pendekatan seperti analisis skenario, proyeksi biaya, dan alat Perencanaan Jangka Panjang Emisi untuk menilai dampak keuangan dan menyusun strategi mitigasi yang tepat.

PHE has identified climate-related risks and opportunities in the short (0-3 years), medium (3-6 years), and long (6-30 years) term. This evaluation was conducted using approaches such as scenario analysis, cost projections, and the Long-Term Emissions Planning tool to assess financial impacts and develop appropriate mitigation strategies.

Hasil *monitoring* risiko tahun 2024 menunjukkan efektivitas dalam menurunkan tingkat risiko hingga berada dalam batas toleransi manajemen, serta *Risk Residual Exposure* tetap di bawah ambang batas yang ditetapkan oleh perusahaan. Selain itu, PHE telah mengadopsi *Business Continuity Management System* (BCMS) yang berlandaskan pada ISO 22301:2019, sebagai pedoman dalam merencanakan dan mempersiapkan perusahaan untuk menghadapi situasi yang tidak terduga. Dengan sistem ini, PHE dapat memastikan keberlanjutan operasional serta meningkatkan daya tahan perusahaan dalam menghadapi tantangan perubahan iklim dan transisi energi.

The results of risk monitoring in 2024 show effectiveness in reducing the risk level to within the management tolerance limit, and the Risk Residual Exposure remained below the threshold set by the company. In addition, PHE has adopted the Business Continuity Management System (BCMS) based on ISO 22301:2019, as a guideline in planning and preparing the company to face unexpected situations. With this system, PHE can ensure operational sustainability and increase the company's resilience in facing the challenges of climate change and energy transition.

Analisis Skenario

Evaluasi proyeksi perubahan iklim dilakukan dengan menggunakan dua skenario dari *Representative Concentration Pathways* (RCP) Panel Antarpemerintah tentang Perubahan Iklim (IPCC) untuk periode tahun 2050, sebagaimana diuraikan di bawah ini.

Scenario Analysis

The evaluation of climate change projections was conducted using two scenarios from the Representative Concentration Pathways (RCP) of the Intergovernmental Panel on Climate Change (IPCC) for the period of 2050, as described below.

Tipe Skenario Type of Scenario	Deskripsi Dampak Description of Impact
RCP 8.5 *Business as Usual*	Skenario ini sejalan dengan perkiraan peningkatan sebesar 3,7°C pada akhir abad ini, yang disebabkan oleh terbatasnya atau tidak adanya upaya mitigasi emisi. This scenario is in line with the estimated increase of 3.7°C by the end of this century, due to limited or no emission mitigation efforts.
RCP 4.5 *Middle Path*	Skenario ini sesuai dengan perkiraan kenaikan 1,8°C pada akhir abad ini, yang dihasilkan dari inisiatif moderat yang bertujuan untuk memitigasi emisi. This scenario corresponds to a forecast increase of 1.8°C by the end of the century, resulting from moderate initiatives aimed at mitigating emissions.

Analisis skenario difokuskan pada aset fisik di darat. Berikut adalah risiko dampak yang mungkin muncul yang telah diidentifikasikan oleh Perseroan berdasarkan skenario iklim yang ada.

The scenario analysis focuses on physical assets on land. The following are the potential impact risks that have been identified by the Company based on existing climate scenarios.

Tipe Kejadian Type of Event	Deskripsi Dampak Description of Impact	Usulan Tindakan Mitigasi Risiko Proposed Risk Mitigation Measures
Sangat Panas Very hot	• Potensi ketidaknyamanan akibat tekanan panas Potential discomfort due to heat stress • Berkurangnya efisiensi kerja Reduced employee work efficiency • Panas berlebih dan kerusakan peralatan Overheating and equipment damage • Mengurangi efisiensi peralatan Reduced equipment efficiency	• Mengintegrasikan rencana untuk merespons kondisi panas ekstrem ke dalam protokol tanggap darurat Integrate plans for responding to extreme heat conditions into emergency response protocols • Melakukan pelatihan pekerja untuk mengenali gejala stres akibat panas dan memberikan pertolongan awal Conduct employee training to recognize symptoms of heat stress and provide first aid • Menilai ambang batas suhu operasional peralatan dan mesin saat ini dibandingkan Assess current operational temperature thresholds of equipment and machinery compared to predicted high temperatures
RCP 4.5 *Middle Path*	• Dampak terhadap operasi Impact on operations • Dampak terhadap kebutuhan air domestik Impact on domestic water demand • Risiko reputasi selama periode krisis air Reputational risk during periods of water crisis	• Melakukan penilaian risiko terkait air dan melakukan audit air secara komprehensif Conduct water-related risk assessments and comprehensive water audits • Menyelidiki potensi pengumpulan air hujan baik di lokasi maupun di sekitar daerah tangkapan air Investigate the potential for rainwater collection both on site and around catchment areas • Menerapkan teknologi hemat air untuk mengurangi konsumsi air secara keseluruhan Implement water-saving technologies to reduce overall water consumption • Memeriksa kelayakan pemanfaatan air limbah daur ulang di dalam fasilitas atau dari masyarakat sekitar Check the feasibility of utilizing recycled wastewater within the facility or from the surrounding community

Tipe Kejadian Type of Event	Deskripsi Dampak Description of Impact	Usulan Tindakan Mitigasi Risiko Proposed Risk Mitigation Measures
Banjir Darat Inland Flooding	• Kerusakan infrastruktur, peralatan, dan perlengkapan Damage to infrastructure, tools, and equipment • Keselamatan pekerja Employee safety • Peningkatan biaya penggantian atau perbaikan aset yang rusak Increased cost of replacing or repairing damaged assets • Peningkatan biaya asuransi Increased insurance costs	• Melakukan penilaian risiko banjir di daratan untuk menentukan zona rawan banjir untuk aset-aset penting Conduct onshore flood risk assessments to determine flood-prone zones for critical assets • Mengembangkan dan melaksanakan strategi mitigasi yang tepat, yang mungkin melibatkan peningkatan kapasitas drainase air hujan, memperkuat sistem pemompaan, membangun penghalang banjir, dan lain-lain Develop and implement appropriate mitigation strategies, which may involve increasing rainwater drainage capacity, strengthening pumping systems, building flood barriers, etc • Memasukkan ancaman terkait banjir ke dalam protokol tanggap darurat Incorporate flood-related threats into emergency response protocols • Menilai efektivitas rencana pengelolaan tumpahan dan pengendalian air hujan saat ini Assess the effectiveness of current spill management and stormwater control plans
Banjir Pesisir Coastal Flooding	• Kerusakan infrastruktur, peralatan, dan perlengkapan Damage to infrastructure, tools, and equipment • Keselamatan pekerja Employee safety • Peningkatan biaya penggantian atau perbaikan aset yang rusak Increased cost of replacing or repairing damaged assets • Hilangnya lahan akibat genangan permanen Loss of land due to permanent inundation	• Melakukan penilaian risiko banjir pesisir untuk menentukan daerah rawan banjir untuk aset-aset penting Conduct coastal flood risk assessments to determine flood-prone areas for critical assets • Mengembangkan dan melaksanakan strategi mitigasi yang tepat, yang mungkin melibatkan peningkatan kapasitas sistem pemompaan, pembangunan penghalang banjir, dan lain-lain Develop and implement appropriate mitigation strategies, which may involve increasing pumping system capacity, building flood barriers, etc • Mengintegrasikan risiko terkait banjir ke dalam protokol tanggap darurat Integrate flood-related risks into emergency response protocols
Topan dan Angin Typhoon and Wind	• Kerusakan bangunan dan infrastruktur Damage to buildings and infrastructure • Hilangnya pendapatan karena gangguan operasional Loss of revenue due to operational disruption • Biaya penggantian dan perbaikan infrastruktur yang rusak Cost of replacing and repairing damaged infrastructure • Peningkatan biaya asuransi Increased insurance costs	• Menetapkan protokol pemantauan bekerja sama dengan badan meteorologi nasional atau regional untuk menciptakan sistem peringatan dini Establish monitoring protocols in collaboration with national or regional meteorological agencies to create early warning systems • Mematuhi praktik terbaik nasional atau internasional mengenai beban angin untuk desain dan konstruksi semua struktur Comply with national or international best practices regarding wind loads for the design and construction of all structures • Memasukkan angin topan dan angin sebagai salah satu bahaya dalam rencana tanggap darurat di tingkat lokasi Include hurricanes and winds as one of the hazards in the emergency response plan at the site level • Merumuskan strategi responsif untuk mengatur operasi dan menerapkan tindakan pencegahan Formulate responsive strategies to organize operations and implement preventive measures

Model Bisnis dan Rantai Nilai

Sebagai bagian dari komitmennya terhadap keberlanjutan, PT Pertamina Hulu Energi (PHE) terus mengadaptasi model bisnis dan rantai nilainya untuk menghadapi risiko serta memanfaatkan peluang terkait perubahan iklim. Saat ini, transisi energi global menuntut PHE untuk mempercepat implementasi strategi rendah karbon guna mengurangi risiko fisik dan transisi yang dapat mempengaruhi operasional perusahaan. Dalam model bisnisnya, PHE menerapkan dua pendekatan utama, yaitu dekarbonisasi operasional dan diversifikasi bisnis ke sektor energi yang lebih bersih. Upaya ini mencakup efisiensi energi, elektrifikasi peralatan dan armada, serta pemanfaatan sumber daya energi yang lebih rendah karbon. PHE juga mengintegrasikan teknologi penangkapan dan penyimpanan karbon (CCS/CCUS) guna mengelola emisi dari kegiatan operasionalnya serta mendukung pengurangan emisi secara nasional.

Dampak perubahan iklim terhadap rantai nilai PHE terlihat dalam berbagai aspek, termasuk di wilayah operasional yang memiliki risiko tinggi terhadap peraturan emisi dan kondisi lingkungan ekstrem. PHE mengidentifikasi bahwa fasilitas produksi minyak dan gas di wilayah tertentu, terutama yang memiliki emisi metana tinggi atau ketergantungan pada energi berbasis fosil, menghadapi tantangan dalam memenuhi standar keberlanjutan yang semakin ketat. Oleh karena itu, PHE telah mulai mengalihkan fokus investasi ke infrastruktur energi terbarukan dan solusi berbasis alam yang lebih tangguh terhadap perubahan iklim. Selain itu, rantai nilai PHE juga mencakup peluang dari bisnis baru seperti produksi hidrogen hijau dan biru, pengembangan bahan bakar nabati, serta ekspansi ke pasar karbon yang dapat meningkatkan nilai tambah bagi perusahaan dalam jangka panjang.

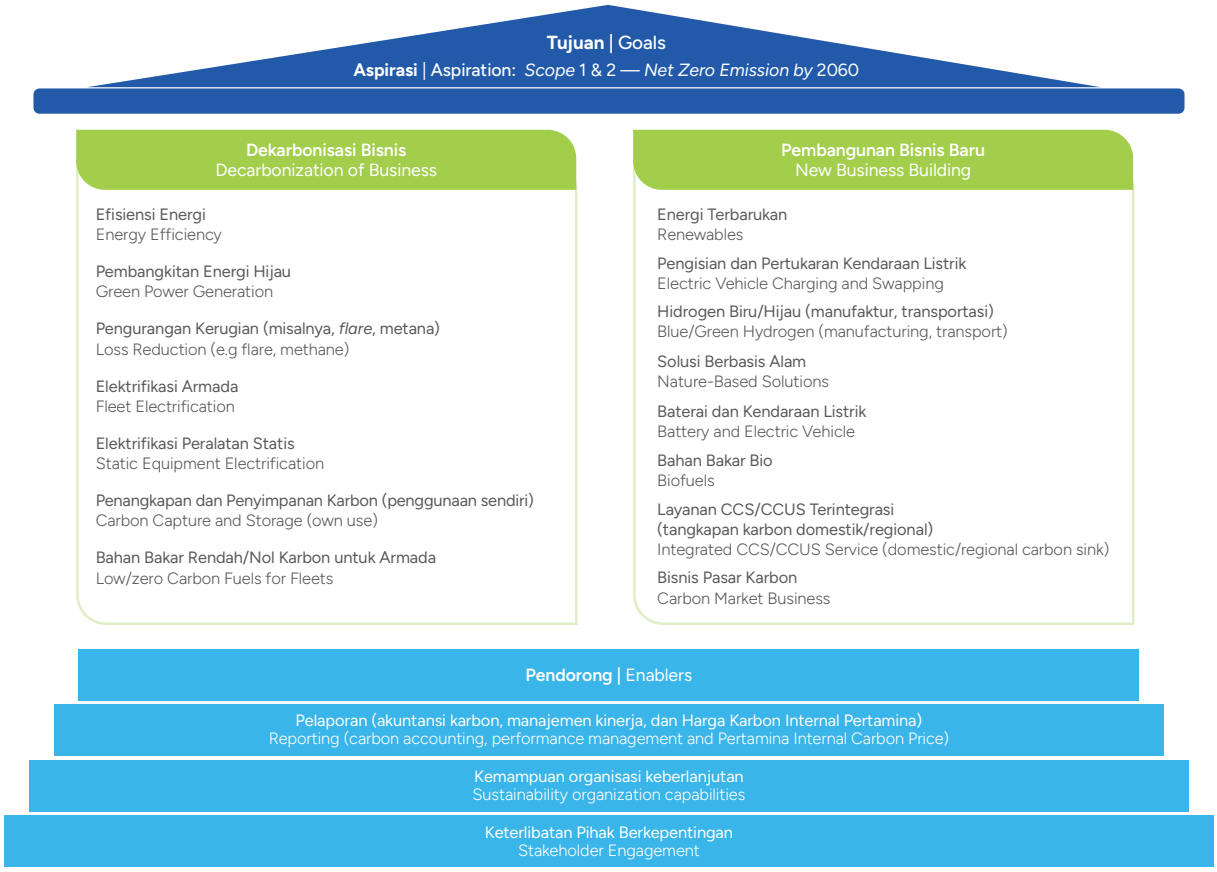
Melalui strategi ini, PHE tidak hanya memastikan keberlanjutan operasionalnya di tengah regulasi yang semakin ketat, tetapi juga memanfaatkan peluang bisnis yang muncul akibat transisi energi global. Dengan memperkuat manajemen risiko iklim dalam model bisnis dan rantai nilainya, PHE mampu menjaga daya saing, meningkatkan efisiensi operasional, serta menciptakan nilai berkelanjutan bagi para pemangku kepentingan. Ke depan, PHE akan terus mengembangkan strategi adaptasi dan mitigasi perubahan iklim yang lebih terintegrasi, termasuk memperluas penggunaan teknologi rendah karbon di seluruh aset dan fasilitasnya untuk mencapai target *Net Zero Emission* pada tahun 2060.

Business Models and Value Chains

As a part of its commitment to sustainability, PT Pertamina Hulu Energi (PHE) continues to adapt its business model and value chain to address risks and take advantage of opportunities related to climate change. Currently, global energy transition requires PHE to accelerate the implementation of low-carbon strategies to reduce physical and transition risks that can affect the company's operations. In its business model, PHE applies two main approaches, namely operational decarbonization and business diversification into cleaner energy sectors. These efforts include energy efficiency, electrification of equipment and fleets, and utilization of lower-carbon energy resources. PHE also integrates carbon capture and storage (CCS/CCUS) technology to manage emissions from its operational activities and support national emission reductions.

The impact of climate change on PHE's value chain is visible in various aspects, including in areas of operation that are at high risk of emission regulations and extreme environmental conditions. PHE has identified that oil and gas production facilities in certain areas, especially those with high methane emissions or dependence on fossil fuels, face challenges in meeting increasingly stringent sustainability standards. Therefore, PHE has begun to shift its investment focus to renewable energy infrastructure and nature-based solutions that are more resilient to climate change. In addition, PHE's value chain also includes opportunities from new businesses such as green and blue hydrogen production, biofuel development, and expansion into the carbon market that can increase added values for the company in the long term.

Through this strategy, PHE not only ensures the sustainability of its operations amidst increasingly stringent regulations, but also takes advantage of business opportunities arising from global energy transition. By strengthening climate risk management in its business model and value chain, PHE is able to maintain competitiveness, improve operational efficiency, and create sustainable values for stakeholders. Going forward, PHE will continue to develop more integrated climate change adaptation and mitigation strategies, including expanding the use of low-carbon technology across its assets and facilities to achieve the Net Zero Emission target by 2060.



EKSPLORASI GEOLOGIC HYDROGEN: LANGKAH STRATEGIS PHE DALAM TRANSISI ENERGI BERSIH

Dalam upaya mendukung transisi energi dan swasembada energi nasional, PT Pertamina Hulu Energi (PHE) terus melakukan inovasi eksplorasi sumber daya energi yang lebih ramah lingkungan. Salah satu inisiatif utama yang dikembangkan adalah eksplorasi *Geologic Hydrogen*, sumber energi bersih yang bebas emisi karbon. Melalui Direktorat Eksplorasi Fungsi *New Venture*, PHE mengambil langkah progresif dalam mengidentifikasi dan memanfaatkan potensi hidrogen alami di Indonesia, yang diyakini dapat berkontribusi signifikan terhadap ketahanan energi masa depan.

GEOLOGIC HYDROGEN EXPLORATION: STRATEGIC STEP OF PHE IN CLEAN ENERGY TRANSITION

In an effort to support the energy transition and national energy self-sufficiency, PT Pertamina Hulu Energi (PHE) continues to make innovations in exploring more environmentally friendly energy resources. One of the main initiatives developed is the exploration of Geologic Hydrogen, a clean energy source that is free of carbon emissions. Through the Directorate of Exploration of the New Venture Function, PHE is taking progressive steps in identifying and utilizing the potential of natural hydrogen in Indonesia, which is believed to be able to contribute significantly to future energy resilience.

Potensi Geologic Hydrogen di Indonesia

Penelitian Pusat Survei Geologi (PSG) – Badan Geologi KESDM mengungkap keberadaan hidrogen alami di East Sulawesi Ophiolite, dengan kandungan H_2 hingga 35%. Indonesia juga memiliki area potensial lainnya seperti North Sumatra, Meratus, Mentawai, Halmahera, Papua, serta Ciletuh, Bayah, dan Karangsambung. Potensi besar ini didukung oleh proses serpentinisasi batuan ultramafik, yang menghasilkan hidrogen secara alami.

Dukungan Strategis dan Regulasi Global

Eksplorasi Geologic Hydrogen yang dilakukan PHE sejalan dengan kebijakan transisi energi nasional serta Roadmap PHE 2025-2034 yang menargetkan pengurangan emisi karbon secara signifikan. Selain itu, regulasi global juga mulai membuka peluang besar dalam pengembangan hidrogen alami. Australia Selatan telah menerbitkan lebih dari 40 lisensi eksplorasi hidrogen alami sejak 2021, dan Filipina juga mulai melelang dua blok eksplorasi hidrogen alami pada Maret 2024. Hal ini menunjukkan bahwa pasar global semakin mengakui pentingnya hidrogen alami sebagai solusi energi masa depan.

Prospek Geologic Hydrogen sebagai Sumber Energi Masa Depan

Dengan meningkatnya permintaan hidrogen global yang diperkirakan akan mencapai 180 juta ton pada 2035, eksplorasi hidrogen alami menjadi semakin penting. Saat ini, hidrogen banyak diproduksi melalui *fossil fuel* (40%) dan elektrolisis (34%), yang memiliki biaya tinggi serta emisi karbon yang lebih besar. Sebaliknya, hidrogen alami memiliki biaya produksi yang lebih rendah (~$1/kg) dan emisi karbon yang lebih kecil (<1 kg CO_2) dibanding metode lainnya yang menghasilkan 1,8 - 11,4 kg CO_2 per kilogram hidrogen.

Eksplorasi Geologic Hydrogen oleh PHE menjadi langkah strategis dalam mewujudkan transisi energi bersih, efisiensi biaya, dan ketahanan energi nasional. Dengan pengalaman panjang dalam eksplorasi migas, PHE berada pada posisi yang kuat untuk menjadi pemimpin dalam pengembangan hidrogen alami di Indonesia, bahkan di tingkat internasional.

Ke depan, PHE akan terus memperkuat kerja sama dengan berbagai pihak, memperluas kajian eksplorasi, serta mengembangkan kebijakan strategis guna memastikan pemanfaatan *Geologic Hydrogen* sebagai bagian dari solusi energi masa depan yang bersih, berkelanjutan, dan berdaya saing global.

Geologic Hydrogen Potential in Indonesia

Research by the Geological Survey Center (PSG) – Geological Agency of the Ministry of Energy and Mineral Resources revealed the presence of natural hydrogen in East Sulawesi Ophiolite, with H_2 content up to 35%. Indonesia also has other potential areas such as North Sumatra, Meratus, Mentawai, Halmahera, Papua, as well as Ciletuh, Bayah, and Karangsambung. This great potential is supported by the serpentinization process of ultramafic rocks, which produce hydrogen naturally.

Global Strategic and Regulatory Support

Geologic Hydrogen exploration done by PHE is in line with the national energy transition policy and the Roadmap 2025-2034 of PHE which targets significant carbon emission reductions. In addition, global regulations have also started to open up great opportunities in the development of natural hydrogen. South Australia has issued more than 40 natural hydrogen exploration licenses since 2021, and the Philippines also began auctioning two natural hydrogen exploration blocks in March 2024. This shows that the global market has increasingly recognized the importance of natural hydrogen as a future energy solution.

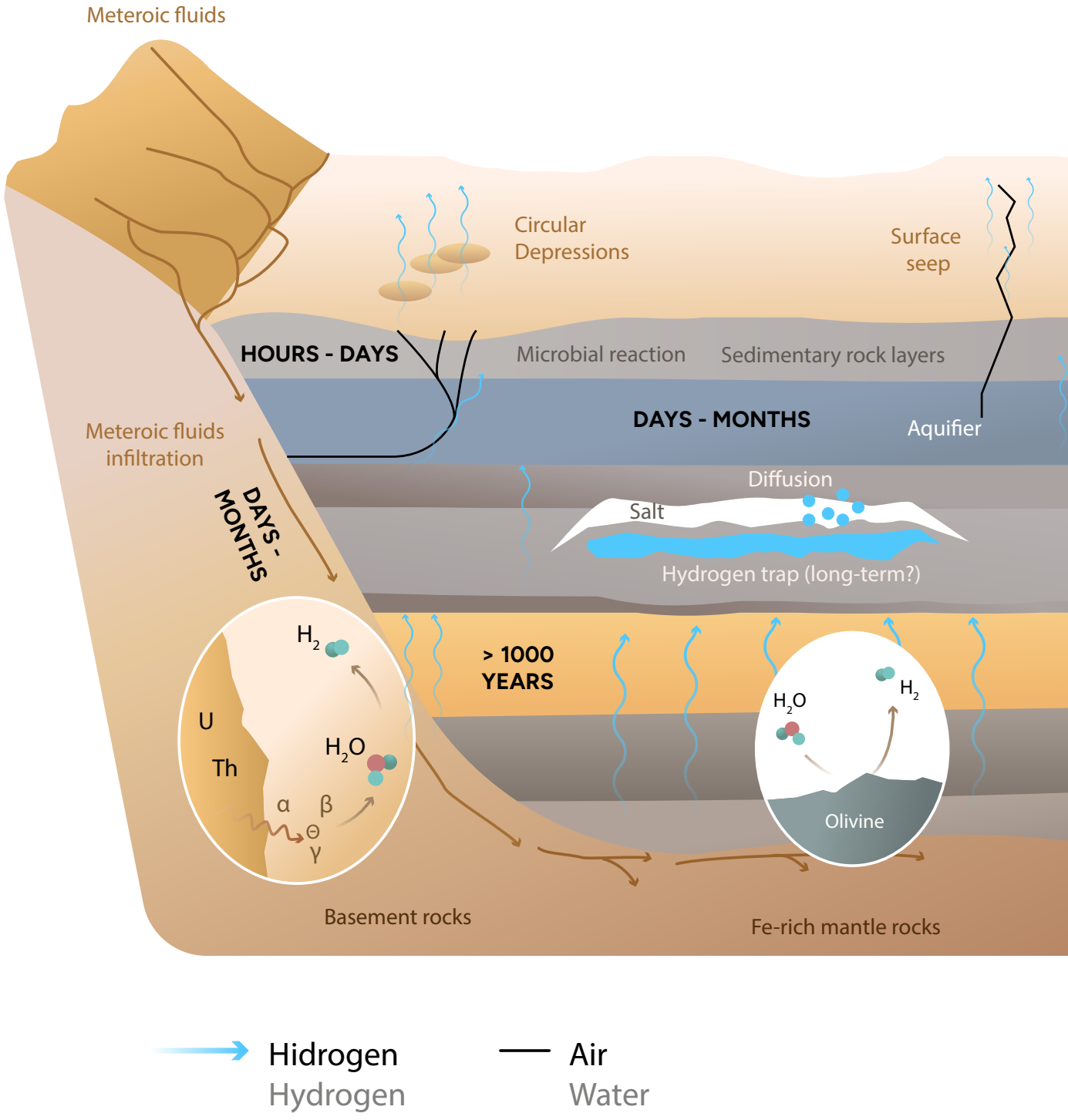
Geologic Prospects of Hydrogen as Future Energy Source

With the increasing global demand for hydrogen expected to reach 180 million tonnes by 2035, the exploration of natural hydrogen becomes increasingly important. Currently, hydrogen is mostly produced through fossil fuels (40%) and electrolysis (34%), which have high costs and higher carbon emissions. In contrast, natural hydrogen has a lower production cost (~$1/kg) and lower carbon emissions (<1 kg CO_2) compared to other methods, producing 1.8 - 11.4 kg CO_2 per kilogram of hydrogen.

PHE's Geologic Hydrogen exploration is a strategic step in realizing a clean energy transition, cost efficiency, and national energy security. With its long experience in oil and gas exploration, PHE is in a strong position to become a leader in the development of natural hydrogen in Indonesia, even at the international level.

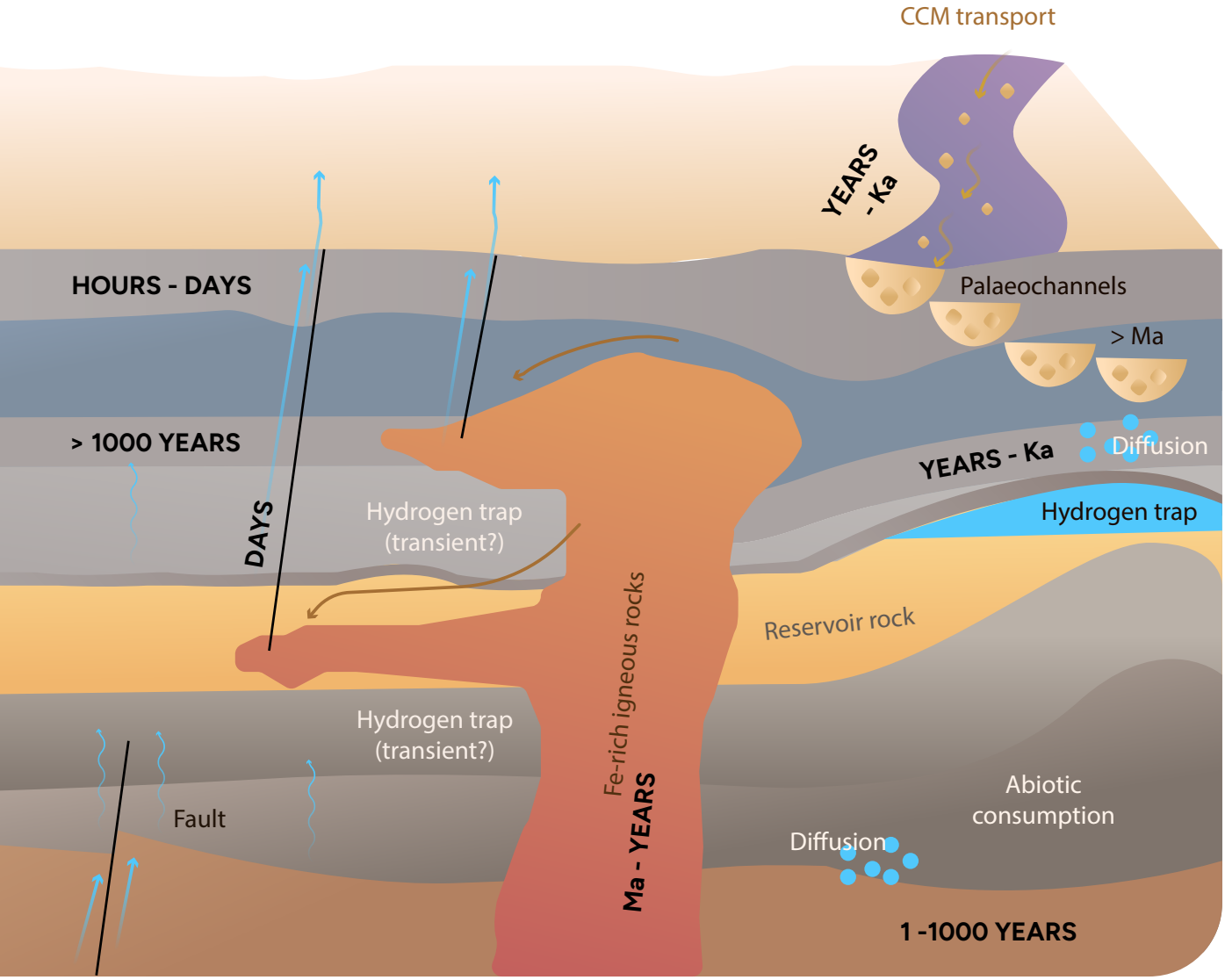
Going forward, PHE will continue to strengthen cooperation with various parties, expand exploration studies, and develop strategic policies to ensure the utilization of Geologic Hydrogen as a part of a clean, sustainable, and globally competitive future energy solution.

» **Diagram Blok Eksplorasi Geologic Hydrogen**
Geologic Hydrogen Exploration Block Diagram



Strategi dan Pengambilan Keputusan

Dalam pengelolaan risiko perubahan iklim, PHE berfokus pada pengurangan emisi gas rumah kaca, investasi dalam teknologi rendah karbon, serta peningkatan kapasitas adaptasi terhadap dampak perubahan iklim. Implementasi strategi dekarbonisasi yang komprehensif menjadi langkah konkret perusahaan dalam mendukung upaya pemerintah untuk mencapai emisi nol bersih, sekaligus memperkuat peran PHE dalam transisi energi yang berkelanjutan.



Strategy and Decision Making

In managing climate change risks, PHE focuses on reducing greenhouse gas emissions, investing in low-carbon technologies, and increasing the capacity to adapt to the impacts of climate change. The implementation of a comprehensive decarbonization strategy is a concrete step by the company in supporting the government's efforts to achieve net zero emissions, while strengthening PHE's role in the sustainable energy transition.

Strategi dekarbonisasi sebagai upaya mencapai target Net Zero Emission (NZE) telah mengikuti prinsip Science-Based Targets (SBT), sebagai berikut:

1. Menetapkan tujuan yang ambisius: Kami telah menetapkan target ambisius untuk mencapai NZE pada tahun 2060 guna mencegah kenaikan suhu di atas 1,5 derajat.
2. Berdasarkan pengetahuan ilmiah: PHE telah mempertimbangkan laporan IPCC dan sumber ilmiah lainnya untuk menentukan target emisi yang tepat.
3. Pemodelan emisi: PHE telah menerapkan proses yang komprehensif, mulai dari mengidentifikasi sumber emisi primer, menghitung baseline emisi, dan menyusun strategi penurunan emisi yang terbagi dalam horizon jangka pendek, menengah, dan panjang.
4. Verifikasi independen: Perhitungan emisi telah diverifikasi secara eksternal, dan emisi yang dilaporkan dalam laporan keberlanjutan tahun 2022 telah dijamin menggunakan standar jaminan AA1000.
5. Pemantauan dan pelaporan: Kami memantau timbulan emisi dari setiap wilayah operasional dan pencapaian penurunan emisi, yang secara berkala kami laporkan kepada Direksi dan pemangku kepentingan.

The decarbonization strategy as an effort to achieve the Net Zero Emission (NZE) target has followed the principles of Science-Based Targets (SBT), as follows:

1. Setting an ambitious goal: We have set an ambitious target to achieve NZE by 2060 to prevent temperature rise above 1.5 degrees.
2. Based on scientific knowledge: PHE has considered IPCC reports and other scientific sources to determine appropriate emission targets.
3. Emission modeling: PHE has implemented a comprehensive process, starting from identifying primary emission sources, calculating emission baselines, and developing emission reduction strategies divided into short, medium and long-term horizons.
4. Independent verification: Emission calculations have been externally verified, and the emissions reported in the sustainability report 2022 have been assured using AA1000 assurance standard.
5. Monitoring and reporting: We monitor emissions from each area of operation and the achievement of emission reductions, which we periodically report to the Board of Directors and the stakeholders.



	New	2026	2030	2040	2050	2060
Carbon Tax Price	Indonesia Carbon Tax: USD2 per ton (UU 7/2021)					
Mitigate	Flare Optimization, Energy Optimization, Huff & Puff Solar Panel	CCUS Solar Panel	Zero Routine Flaring			
Offset		20% NBS	30% NBS	70% NBS	100% NBS	
Carbon Market		CCS				

NBS: Natural Based Solution
CCUS: Carbon Capture Utilization & Storage
CCS: Carbon Capture Storage

PHE mengambil sejumlah inisiatif untuk mengelola risiko fisik iklim, termasuk:

- Berinvestasi pada infrastruktur yang berketahanan iklim
  PHE berinvestasi pada infrastruktur yang dirancang untuk tahan terhadap dampak perubahan iklim. Misalnya, perusahaan ini membangun tembok laut untuk melindungi fasilitasnya dari kenaikan permukaan laut dan mengembangkan tanaman tahan kekeringan untuk mengurangi ketergantungannya pada air.

PHE is taking a number of initiatives to manage physical climate risks, including:

- Investing in climate-resilient infrastructure
  PHE invests in infrastructures designed to withstand the impacts of climate change. For example, the company is building sea walls to protect its facilities from rising sea levels and growing drought-resistant crops to reduce its dependence on water.

- Mengembangkan sistem peringatan dini terhadap kejadian cuaca ekstrim
  PHE sedang mengembangkan sistem peringatan dini untuk membantunya bersiap dan merespons kejadian cuaca ekstrem. Misalnya, perusahaan memasang stasiun cuaca untuk memantau kondisi cuaca dan mengembangkan rencana evakuasi bagi karyawannya.
- Mengelola sumber daya airnya
  PHE mengelola sumber daya airnya untuk mengurangi kerentanannya terhadap kekeringan dan banjir. Misalnya, perusahaan mengumpulkan air hujan dan menggunakannya untuk mengairi tanamannya.
- Mengurangi emisinya
  PHE mengurangi emisinya untuk memitigasi dampak perubahan iklim. Misalnya, perusahaan berinvestasi pada energi terbarukan dan langkah-langkah efisiensi energi.

Dengan mengambil inisiatif ini, PHE mengurangi paparan terhadap risiko perubahan iklim fisik dan melindungi operasinya. Lebih lanjut, PHE telah menyusun prioritas rencana dan tindakan adaptasi dan mitigasi yang terkait dengan risiko transisi seperti yang tergambar pada gambar berikut ini.

- Developing an early warning system for extreme weather events
  PHE is developing an early warning system to help it prepare for and respond to extreme weather events. For example, the company installs weather stations to monitor weather conditions and develop evacuation plans for its employees.
- Managing its water resources
  PHE manages its water resources to reduce its vulnerability to drought and flooding. For example, the company collects rainwater and uses it to irrigate its crops.
- Reducing its emissions
  PHE reduces its emissions to mitigate the impacts of climate change. For example, the company invests in renewable energy and energy efficiency measures.

By taking this initiative, PHE reduces its exposure to physical climate change risks and protects its operations. Furthermore, PHE has determined the priorities in adaptation and mitigation plans and actions related to transition risks as illustrated in the following figure.

» 4 Langkah PHE Menuju Prioritas Inisiatif Dekarbonisasi
4 Steps of PHE Towards Priorities of Decarbonization Initiatives

Pilih aset untuk *decommissioning* dipercepat Select assets for expedited decommissioning	**Terapkan *"low carbon"* & *"no regret" levers*** Apply "low carbon" & "no regret" levers	**Terapkan cara lain untuk mengatasi emisi sisa** Apply other ways to address residual emissions	**Hitung secara keseluruhan biaya pengurangan** Calculate overall cost of reduction

• Berdasarkan ambang batas produksi
Based on production threshold
• Berdasarkan ambang batas Emisi
Based on Emission threshold
	• Energi rendah karbon
	Low carbon energy
	• Elektrifikasi aset & energi terbarukan
	Asset electrification & renewable energy
	• Panas/bahan bakar rendah karbon misalnya biomassa, biofuel
	Heat/low carbon fuels e.g., biomass, biofuels
	• Permintaan & efisiensi energi
	Energy demand & efficiency
	  • Optimasi beban turbin
	  Turbine load optimization
	  • Optimalisasi kapasitas kompresor
	  Optimization of compressor capacity
	  • Peningkatan efisiensi operasional
	  Improved operational efficiency
	• Pemulihan gas & integritas aset
	Gas recovery & asset integrity
	• Pengurangan pembakaran rutin dan non-rutin
	Reduction of routine and non-routine burning
		• CCS sunda asri basin, subang, masela *project* dan pilot ccus sukowati
		CCS in the Sunda Asri Basin, Subang, the Masela Project, and the CCUS pilot in Sukowati.
		• *Offsetting* Kehutanan & sertifikasi sebagai proyek offset
		Offsetting Forestry & certification as offset projects
			• Membuat perkiraan anggaran
			Prepare budget estimates
			• Menghasilkan kurva MAC untuk memprioritaskan inisiatif
			Generate MAC curves to prioritize initiatives
			• Mempertimbangkan tren pajak/harga karbon untuk memproyeksikan keekonomian
			Consider carbon tax/price trends for projection of the economic aspect

Implikasi Finansial Perubahan Iklim [GRI 201-2]

Perubahan iklim dapat memberikan dampak yang signifikan terhadap posisi keuangan, kinerja keuangan, dan arus kas PHE di masa mendatang. Risiko fisik, seperti cuaca ekstrem dan kenaikan permukaan air laut, dapat meningkatkan biaya baik langsung maupun tidak langsung seperti biaya pemeliharaan serta investasi dalam infrastruktur yang lebih tahan terhadap dampak perubahan iklim. Selain itu, risiko transisi akibat kebijakan lingkungan yang semakin ketat, seperti pajak karbon dan standar emisi yang lebih ketat, telah berdampak pada biaya operasional dan strategi investasi perusahaan. Di sisi lain, peluang yang muncul dari pengembangan energi terbarukan dan inisiatif efisiensi energi dapat membuka potensi sumber pendapatan baru, termasuk insentif fiskal dan pendanaan hijau, yang kedepannya dapat memberikan dampak positif terhadap arus kas perusahaan. Namun demikian, secara kuantitatif PHE masih dalam tahap pengkajian dan pengukuran dampak perubahan iklim terhadap posisi keuangan, kinerja keuangan, dan arus kas Perusahaan berdasarkan masing-masing scenario yang dianalisis secara lebih komprehensif.

Financial Implications of Climate Change [GRI 201-2]

Climate change could have a significant impact on PHE's future financial position, financial performance, and cash flow. Physical risks, such as extreme weather and sea level rise, could increase both direct and indirect costs such as maintenance costs and investment in infrastructure that is more resilient to the impacts of climate change. In addition, transition risks due to increasingly stringent environmental policies, such as carbon taxes and stricter emission standards, have impacted the company's operating costs and investment strategy. On the other hand, opportunities arising from the development of renewable energy and energy efficiency initiatives can open up potential new sources of revenue, including fiscal incentives and green financing, which in the future could have a positive impact on the company's cash flow. However, quantitatively PHE remains at the stage of assessing and measuring the impact of climate change on the Company's financial position, financial performance, and cash flow based on each scenario that is analyzed more comprehensively.

Berikut adalah dampak dari perubahan iklim yang akan mempengaruhi kegiatan Perseroan, risiko yang dihadapi, peluang dan implikasi keuangan yang telah diidentifikasi sampai dengan tahun 2024.

The following are the impacts of climate change that will affect the Company's activities, the risks faced, opportunities and financial implications that have been identified up to 2024.

Kategori Risiko Risk Category	Jangka Waktu Term	Masalah Problem	Deskripsi Dampak Description of Impact	Dampak Keuangan Financial Impact
Risiko Transisi Transition Risk	Pendek Short	Kenaikan harga emisi GRK misalnya pajak karbon Increase in the price of GHG emissions, for example carbon tax	Indonesia telah mengeluarkan undang-undang tentang harmonisasi pajak sebagai dasar penerapan pajak karbon. Indonesia telah mengeluarkan undang-undang tentang harmonisasi pajak sebagai dasar penerapan pajak karbon.	• Kenaikan nilai pajak. Increase in tax value • Kenaikan alokasi modal untuk proyek pengurangan emisi. Increase in capital allocation for emission reduction projects
		Kewajiban pelaporan Reporting obligations	Mengantisipasi perubahan dan menjaga keselarasan dengan kewajiban pelaporan iklim terkait dengan standar pelaporan keberlanjutan. Anticipating changes and maintaining alignment with climate reporting obligations related to sustainability reporting standards.	Peningkatan biaya tidak langsung. Increase in indirect costs
		Peningkatan kepedulian pemangku kepentingan dan paparan litigasi Increasing stakeholder awareness and litigation exposure	• Kekhawatiran pemangku kepentingan terhadap kegiatan operasional kami yang mana sebagai produsen energi tidak terbarukan. Stakeholders' concerns regarding our operational activities as a producer of non-renewable energy. • Meningkatnya risiko litigasi terkait iklim. Increasing risk of climate-related litigation.	Berpotensi menurunkan harga saham dan ekuitas pemegang saham, berdampak pada neraca dan membatasi akses atau meningkatkan biaya kredit modal dan utang. Potentially lowering the price of shares and shareholders' equity, impacting on balance sheets and limiting access to or increasing capital credit costs and debts
		Peningkatan cuaca ekstrem Increasing extreme weather	Peningkatan biaya langsung untuk memperbaiki kerusakan, peningkatan biaya asuransi karena premi pertanggungan meningkat, penurunan produksi karena penutupan fasilitas. Increasing direct costs to repair damage, increasing insurance costs due to increasing insurance premiums, decreasing production due to facility closures.	Peningkatan biaya langsung untuk memperbaiki kerusakan, berpotensi menurunkan nilai aset, serta meningkatnya biaya asuransi. Increasing direct costs to repair damage, potentially reducing the value of assets, as well as increasing insurance costs

Kategori Risiko Risk Category	Jangka Waktu Term	Masalah Problem	Deskripsi Dampak Description of Impact	Dampak Keuangan Financial Impact
		Perubahan suhu ekstrem Extreme temperature changes	Peningkatan bahan bakar gas untuk berbagai peralatan. Hal ini akan membutuhkan sumber daya tambahan (infrastruktur) dan meningkatkan emisi. Selain itu dapat meningkatkan biaya modal yang terkait dengan operasi pengeboran,penyelesaian, dan pengerjaan karena peningkatan jadwal, penurunan produktivitas, dan kerusakan peralatan. Increasing gas fuel for various kinds of equipment. This will require additional resources (infrastructure) and increase emissions. It can also increase capital costs associated with drilling, completion and working operations due to increasing schedules, decreasing productivity and equipment damage	Peningkatan biaya langsung, serta biaya modal karena kerusakan peralatan atau terganggunya proses operasi Increasing direct costs, as well as capital costs due to equipment damage or disruption of operational processes
		Substitusi produk dan layanan ke EBT Substitution of products and services with NRE	Peralihan pasar kepada energi terbarukan dapat berdampak pada permintaan produk migas yang menurun sehingga dapat menurunkan harga komoditas. The market shift to renewable energy could have an impact on decreasing demand for oil and gas products, which could lower commodity prices.	Menurunnya pendapatan operasi dikarenakan penjualan menurun. Decrease in operating income due to decreasing sales
Risiko Fisik Physical Risk	Menengah Medium	Peningkatan Tingkat Keparahan Peristiwa Cuaca Ekstrem seperti Topan dan Banjir Increasing Severity of Extreme Weather Events such as Typhoons and Floods	Proyek lepas pantai PHR dan ladang minyak di daerah pesisir dapat dipengaruhi oleh peristiwa cuaca ekstrem seperti siklon, yang mengakibatkan waktu henti atau kerusakan infrastruktur. Peristiwa semacam itu juga dapat berdampak pada kapasitas penanganan hilir mitra kami, yang mengakibatkan pembatasan distribusi dan penjualan produk. PHR's offshore projects and coastal oil fields may be affected by extreme weather events such as cyclones, resulting in downtime or damage to infrastructure. Such events may also impact our partners' downstream handling capacity, resulting in restrictions on product distribution and sales.	Implikasi keuangan yang terkait dengan kerusakan akibat peristiwa cuaca buruk diperkirakan mencapai USD274 juta (total dampak sebelum asuransi) The financial implications associated with damage from severe weather events are estimated at USD274 million (total impact before insurance)
Risiko Fisik Physical Risk	Panjang Long	Naiknya permukaan laut Sea level rise	Naiknya permukaan laut secara fisik dapat berdampak pada operasi karena masalah seperti banjir, kesulitan transportasi, gangguan rantai pasokan, serta dapat menimbulkan ancaman terkait salinitas air tanah. Sea level rise can physically impact operations due to issues such as flooding, transportation difficulties, supply chain disruptions, and can pose threats related to groundwater salinity.	

Ketahanan Bisnis terhadap Perubahan Iklim

Strategi keberlanjutan kami terus menekankan memastikan ketahanan bisnis kami dalam berbagai skenario, dan bertumpu pada tiga aktivitas terkait emisi:

1. Produksi Minyak dan Gas Alam yang Efisien dan Bertanggung Jawab
    - Bahan bakar dengan emisi karbon lebih rendah: Sejak 2015, PHE telah mengalihkan bauran produksi ke gas alam, yang merupakan bahan bakar pembakaran yang lebih bersih dibandingkan bahan bakar fosil lainnya. Perusahaan juga memprioritaskan penjualan bahan bakar di dalam negeri guna mengurangi jejak karbon akibat transportasi serta meningkatkan ketahanan energi nasional.
    - Bahan bakar yang diproduksi secara bertanggung jawab: PHE berkomitmen untuk memastikan bahwa setiap produk dihasilkan dengan cara yang berkelanjutan, menghormati hak pekerja, serta memperhatikan keterlibatan dan kesejahteraan masyarakat sekitar.
    - Transparansi dan pelaporan: Perusahaan telah membangun sistem pelaporan yang kuat dalam pemantauan emisi gas rumah kaca, penggunaan energi, dan indikator lingkungan utama lainnya, yang mendukung pencapaian target pengurangan emisi.
2. Implementasi Solusi Efektif untuk Pengurangan Emisi
    - Peningkatan efisiensi energi: Berbagai inisiatif efisiensi energi dan optimalisasi operasional diterapkan untuk meminimalkan jejak karbon serta mengurangi emisi gas rumah kaca.
    - Penurunan intensitas emisi gas rumah kaca: PHE berkomitmen untuk terus mengurangi emisi yang dihasilkan dari kegiatan produksi, dengan fokus utama pada pengelolaan emisi metana.
3. Pengembangan Teknologi dan Inovasi dalam Produksi Energi PHE secara aktif mengeksplorasi teknologi dan proses baru untuk mengidentifikasi solusi yang dapat diterapkan dalam produksi energi konvensional maupun terbarukan. Perusahaan juga terus mengembangkan keahlian internal di bidang rekayasa, geosains, dan pengeboran guna memperluas pemanfaatan energi alternatif. Inisiatif ini telah dimulai dengan konversi aset minyak dan gas konvensional menjadi sumber energi panas bumi dan hidrogen, sebagai langkah nyata dalam mendukung transisi energi yang lebih bersih dan berkelanjutan.

Business Resilience to Climate Change

Our sustainability strategy continues to emphasize ensuring the resilience of our business across a range of scenarios, and is based on three emissions-related activities:

1. Efficient and Responsible Oil and Natural Gas Production
    - Lower carbon emission fuels: Since 2015, PHE has shifted its production mix to natural gas, which is a cleaner burning fuel than other fossil fuels. The company also prioritizes domestic fuel sales to reduce the carbon footprint from transportation and increase national energy security.
    - Responsibly produced fuel: PHE is committed to ensuring that every product is produced in a sustainable manner, respecting workers' rights and taking into account the involvement and well-being of local communities.
    - Transparency and reporting: The Company has established a robust reporting system in monitoring greenhouse gas emissions, energy use and other key environmental indicators, which supports the achievement of emission reduction targets.
2. Implementation of Effective Solutions for Emission Reduction
    - Energy efficiency improvements: Various energy efficiency initiatives and operational optimizations are implemented to minimize carbon footprint and reduce greenhouse gas emissions.
    - Reducing greenhouse gas emission intensity: PHE is committed to continuously reducing emissions resulting from production activities, with a primary focus on managing methane emissions.
3. Technology Development and Innovation in Energy Production PHE actively explores new technologies and processes to identify solutions that can be applied in both conventional and renewable energy production. The company also continues to develop internal expertise in engineering, geoscience, and drilling to expand the use of alternative energy. This initiative has begun with the conversion of conventional oil and gas assets to geothermal and hydrogen energy sources, as a concrete step in supporting a cleaner and more sustainable energy transition.

MANAJEMEN RISIKO DAMPAK PERUBAHAN IKLIM [OJK E.3] [GRI 2-25] [TCFD RM-A,B,C] [SASB EM-EP-540a.2]

PHE mengintegrasikan pengelolaan risiko dan peluang yang terkait dengan perubahan iklim ke dalam kegiatan yang sedang berlangsung. Risiko dan peluang ini diidentifikasi serta dikategorikan secara sistematis dalam *Risk Intelligence Map* dan Pedoman Manajemen Risiko Perusahaan. Proses *Enterprise Risk Management* (ERM) PHE mengikuti ISO 31000:2018 *Risk Management - Principles & Guidelines*. Acuan kebijakan manajemen risiko di lingkungan *Subholding Upstream*, antara lain Pedoman Manajemen Risiko PT Pertamina Hulu Energi, Tata Kerja Organisasi (TKO) dan Tata Kerja Individu (TKI) terkait manajemen risiko.

Proses ERM memungkinkan Perusahaan untuk mengidentifikasi, menilai, dan mengelola risiko secara sistematis di seluruh operasi bisnis yang terkait dengan risiko dan peluang berbasis iklim. Terutama dengan mempertimbangkan topik-topik penting, seperti Perubahan Iklim dan transisi rendah karbon yang dapat memengaruhi rantai nilai Perusahaan.

Proses Pengelolaan Risiko:

1. Identifikasi Risiko
   Fungsi yang terlibat: Kepala Unit Bisnis, Direktur Anak Perusahaan, dan Kepala Divisi Supporting Function.
   Proses: Identifikasi dan penilaian risiko dan peluang terkait iklim di seluruh aset PHE melalui pertimbangan situasi, dan pengembangan skenario terkait iklim dengan memasukkan lokasi operasional utama PHE dan menerapkan informasi yang diakui secara internasional, misalnya, kemungkinan dan besarnya dampak potensial.

   Dalam mengidentifikasikan risiko, Koordinator Risiko di setiap unit akan menggabungkan risiko dari Pemilik Risiko khusus di *supporting fuction* dan unit bisnis. Risiko terkait iklim diidentifikasi (dan dinilai) di berbagai departemen dan dengan mempertimbangkan harapan pemangku kepentingan.

2. Analisis Risiko
   Fungsi yang terlibat: Manajemen Risiko, Kepala Unit Bisnis, Direktur Anak Perusahaan, dan Tim HSSE, Komite Keberlanjutan.

   Proses: Setelah risiko perubahan iklim diidentifikasi, dilakukan analisis mendalam untuk memahami kemungkinan kejadian dan dampaknya terhadap operasional serta strategi bisnis PHE. Analisis risiko dilakukan dengan mempertimbangkan faktor eksternal seperti regulasi lingkungan, perubahan harga karbon, dan faktor cuaca ekstrem, serta faktor internal seperti kesiapan infrastruktur dan ketahanan rantai pasok. Proses ini menggunakan metode kuantitatif dan kualitatif untuk mengklasifikasikan risiko berdasarkan tingkat urgensi dan dampaknya terhadap operasional.

CLIMATE CHANGE IMPACT RISK MANAGEMENT [OJK E.3] [GRI 2-25] [TCFD RM-A,B,C] [SASB EM-EP-540a.2]

PHE integrates the management of risks and opportunities related to climate change into ongoing activities. These risks and opportunities are systematically identified and categorized in the Risk Intelligence Map and Enterprise Risk Management Guidelines. PHE's Enterprise Risk Management (ERM) process follows ISO 31000:2018 Risk Management - Principles & Guidelines. References for risk management policies within the Subholding Upstream include the Risk Management Guidelines of PT Pertamina Hulu Energi, Organizational Work Procedures (TKO) and Individual Work Procedures (TKI) related to risk management.

The ERM process enables the Company to systematically identify, assess and manage risks across business operations related to climate-based risks and opportunities. Particularly considering important topics, such as Climate Change and the low-carbon transition that may impact the Company's value chain.

Risk Management Process:

1. Risk Identification
   Functions involved: Head of Business Unit, Director of Subsidiary, and Head of Supporting Function Division.
   Process: Identification and assessment of climate-related risks and opportunities across PHE's assets through situational considerations, and development of climate-related scenarios incorporating PHE's key operational locations and applying internationally recognised information, for example, the likelihood and magnitude of potential impacts.

   In identifying risks, the Risk Coordinator in each unit will combine risks from specific Risk Owners in supporting functions and business units. Climate-related risks are identified (and assessed) across departments and taking into account stakeholder expectations.

2. Risk Analysis
   Functions involved: Risk Management, Head of Business Unit, Director of Subsidiary, and HSSE Team, Sustainability Committee.

   Process: Once climate change risks are identified, an in-depth analysis is conducted to understand the likelihood of occurrence and its impact on PHE's operations and business strategies. The risk analysis is conducted by considering external factors such as environmental regulations, changes in carbon prices, and extreme weather factors, as well as internal factors such as infrastructure readiness and supply chain resilience. This process uses quantitative and qualitative methods to classify risks based on their level of urgency and impact on operations.

3. Evaluasi Risiko
   Fungsi yang terlibat: Manajemen Risiko, Kepala Unit Bisnis, Direktur Anak Perusahaan, dan Tim HSSE, Komite Keberlanjutan.

   Proses evaluasi yang diterapkan pada Risiko Fisik: Evaluasi risiko fisik mencakup penilaian terhadap dampak jangka pendek dan jangka panjang dari perubahan iklim terhadap aset dan fasilitas PHE. Risiko yang dianalisis meliputi peningkatan suhu ekstrem, kenaikan permukaan air laut, dan frekuensi bencana alam seperti badai dan banjir yang dapat mengganggu operasional. Evaluasi ini dilakukan dengan mempertimbangkan data historis, proyeksi iklim, serta penilaian terhadap kapasitas mitigasi yang tersedia di masing-masing unit bisnis.

   Proses evaluasi yang diterapkan pada Risiko Transisi: Risiko transisi yang dievaluasi meliputi dampak dari kebijakan dan regulasi baru terkait emisi karbon, perubahan permintaan pasar terhadap energi fosil, serta perkembangan teknologi energi terbarukan yang dapat mempengaruhi daya saing PHE. Proses evaluasi dilakukan melalui analisis skenario yang mengintegrasikan regulasi nasional dan global, tren investasi rendah karbon, serta kebijakan harga karbon yang dapat berdampak pada model bisnis PHE dalam jangka panjang.

   Untuk mengevaluasi dampak substantif risiko terhadap bisnis, risiko dinilai berdasarkan dua aspek, yaitu probabilitas risiko dan dampak risiko. Rentang skala dari 1 hingga 5 digunakan untuk menilai probabilitas dan dampak risiko, yang kemudian digambarkan pada peta risiko. Dengan melakukan penilaian terhadap dampak dan probabilitas risiko, PHE dapat secara efektif memvisualisasikan serta memastikan *Risk Priority Number* (RPN) dan tingkat risiko yang sesuai.

4. Pemantauan dan Peninjauan
   Fungsi yang terlibat: Manajemen Risiko, Kepala Unit Bisnis, Direktur Anak Perusahaan, dan Tim HSSE, Komite Keberlanjutan.

   Proses: Pemantauan risiko perubahan iklim dilakukan secara berkala untuk memastikan bahwa risiko yang telah diidentifikasi dan dianalisis tetap relevan dengan kondisi bisnis dan lingkungan yang terus berkembang. Tim HSSE dan Manajemen Risiko bekerja sama dalam melakukan peninjauan berkala terhadap efektivitas langkah mitigasi yang telah diterapkan serta mengadaptasi strategi berdasarkan perubahan kondisi eksternal dan internal. Evaluasi ini mencakup pembaruan terhadap data risiko fisik dan transisi serta penyesuaian kebijakan mitigasi dan adaptasi iklim di setiap unit bisnis.

3. Risk Evaluation
   Functions involved: Risk Management, Head of Business Unit, Director of Subsidiary, and HSSE Team, Sustainability Committee.

   Evaluation process applied to Physical Risk: The physical risk evaluation includes an assessment of short-term and long-term impacts of climate change on PHE's assets and facilities. The risks analyzed include increasing extreme temperatures, rising sea levels, and frequency of natural disasters such as storms and floods that can disrupt operations. This evaluation is conducted by considering historical data, climate projections, and an assessment of the mitigation capacity available in each business unit.

   Evaluation process applied to Transition Risk: Transition risks evaluated include the impact of new policies and regulations related to carbon emissions, changes in market demand for fossil fuels, and developments in renewable energy technologies that may affect PHE's competitiveness. The evaluation process is conducted through a scenario analysis that integrates national and global regulations, low-carbon investment trends, and carbon pricing policies that may impact PHE's business model in the long term.

   To evaluate the substantive impact of risk on the business, a risk is assessed based on two aspects, namely risk probability and risk impact. A scale range of 1 to 5 is used to assess risk probability and impact, which is then depicted on a risk map. By assessing risk impact and probability, PHE can effectively visualize and ensure the Risk Priority Number (RPN) and the appropriate risk level.

4. Monitoring and Review
   Functions involved: Risk Management, Head of Business Unit, Director of Subsidiary, and HSSE Team, Sustainability Committee.

   Process: Climate change risk monitoring is conducted periodically to ensure that the risks that have been identified and analyzed remain relevant to evolving business and environmental conditions. The HSSE and Risk Management teams work together to conduct regular reviews of the effectiveness of the mitigation measures that have been implemented and adapt strategies based on changes in external and internal conditions. This evaluation includes updates to physical and transition risk data as well as adjustments to climate mitigation and adaptation policies in each business unit.

5. Pelaporan dan Pencatatan
   Fungsi yang terlibat: Manajemen Risiko, Tim HSSE, Komite Keberlanjutan.

   Proses: Setiap hasil identifikasi, analisis, dan evaluasi risiko perubahan iklim didokumentasikan dan dilaporkan kepada manajemen senior serta pemangku kepentingan terkait. Pelaporan ini mencakup informasi mengenai perkembangan strategi mitigasi, capaian dalam mengurangi risiko iklim, serta rekomendasi kebijakan yang perlu diimplementasikan. Dokumentasi dilakukan sesuai dengan standar yang berlaku, termasuk laporan keberlanjutan dan pelaporan regulasi terkait risiko iklim yang diatur oleh pemerintah maupun lembaga internasional.

6. Komunikasi dan Konsultasi
   Fungsi yang terlibat: Manajemen Risiko, Komite Keberlanjutan, dan Pemangku Kepentingan Eksternal.

   Proses: PHE secara aktif berkomunikasi dengan pemangku kepentingan internal dan eksternal mengenai risiko serta peluang yang terkait dengan perubahan iklim. Konsultasi dilakukan dengan berbagai pihak, termasuk regulator, investor, dan mitra strategis untuk memastikan strategi mitigasi risiko iklim selaras dengan perkembangan regulasi dan kebijakan global. Selain itu, komunikasi internal dilakukan secara rutin guna meningkatkan kesadaran di tingkat operasional dan memastikan implementasi kebijakan yang konsisten di seluruh unit bisnis PHE.

Seluruh proses identifikasi dan pengelolaan risiko dan peluang ini dilakukan secara berkala serta telah mendapat persetujuan dan pengawasan dari Direksi dan Dewan Komisaris.

5. Reporting and Recording
   Functions involved: Risk Management, HSSE Team, Sustainability Committee.

   Process: Every result of climate change risk identification, analysis, and evaluation is documented and reported to senior management and relevant stakeholders. This reporting includes information on the development of mitigation strategies, achievements in reducing climate risks, and policy recommendations that need to be implemented. Documentation is conducted in accordance with applicable standards, including sustainability reports and regulatory reporting related to climate risks regulated by the government and international institutions.

6. Communication and Consultation
   Functions involved: Risk Management, Sustainability Committee and External Stakeholders.

   Process: PHE actively communicates with internal and external stakeholders regarding the risks and opportunities associated with climate change. Consultations are conducted with various parties, including regulators, investors, and strategic partners to ensure that climate risk mitigation strategies are aligned with global regulation and policy developments. In addition, internal communications are conducted regularly to raise awareness at the operational level and ensure consistent policy implementation across PHE's business units.

The entire process of identifying and managing risks and opportunities is conducted periodically and has received approval and supervision from the Board of Directors and the Board of Commissioners.

Matriks dan Target

PHE secara reguler melakukan pengukuran tingkat emisi yang dihasilkan. Perhitungan emisi mengacu pada *International GHG Standard Protocol*, dan menggunakan *operational control approach*. Penghitungan hanya dilakukan untuk emisi dari cadangan yang sudah dieksploitasi maupun yang terproduksi, meliputi sumber emisi tidak bergerak dan sumber emisi bergerak.

Matriks and Target

PHE regularly measures the level of emissions produced. Emission calculations refer to the International GHG Standard Protocol, and use the operational control approach. Calculations are only done for emissions from reserves that have been exploited or produced, including stationary emission sources and mobile emission sources.



Emisi yang Dihasilkan
Emission Produced

14,94 juta $TonCO_2eq$*

6,81%
dari tahun sebelumnya
from previous year

Intensitas Emisi
Emission Intensity

0,047 $TonCO_2eq$ /BOE**

22,8%
dari tahun sebelumnya
from previous year

Pengurangan Emisi
Emission Reduction

1,186 juta $TonCO_2eq$*

Intensitas emisi dihitung dengan membandingkan rasio antara total absolut emisi dengan total produksi (*gross up production*). *Gross up* produksi untuk Tahun 2024 adalah sebesar 266,477,193.46 BOE.
*) Merupakan Total emisi yang dihasilkan di *Subholding Upstream* yang memperhitungkan emisi dari Badak LNG, PDSI, dan Elnusa.
**) Intensitas emisi dihitung tanpa memasukkan total emisi dari Badak LNG, PDSI, dan Elnusa. Nilai emisi yang dihasilkan tanpa Badak LNG, PDSI, dan Elnusa adalah 12,56 juta $TonCO_2Eq$.

Emission intensity is calculated by comparing the ratio between the absolute total emissions and the total production (gross-up production). Gross-up production for 2024 is 266,477,193.46 BOE.
*) This is the total emissions generated in the Subholding Upstream which takes into account emissions from Badak LNG, PDSI, and Elnusa.
**) Emission intensity is calculated without including total emissions from Badak LNG, PDSI, and Elnusa. The emission value generated without Badak LNG, PDSI, and Elnusa is 12.56 million $TonCO_2eq$.

Emisi Cakupan 1 berasal dari kegiatan produksi migas dan konsumsi bahan bakar. Emisi karbon biogenik sudah masuk di dalam cakupan perhitungan emisi GRK yang berasal dari kegiatan pembakaran dalam dan luar, suar bakar, venting dan proses, serta *fugitive*. Sedangkan emisi Cakupan 2 berasal dari pembelian listrik dari pihak ketiga pada seluruh Anak Perusahaan. Parameter pengukuran dan perhitungan mengacu pada Standar Pertamina Nomor A04-005/S00000/2022-S9 tentang Pedoman Pengukuran, Penghitungan, Pelaporan, dan Verifikasi Emisi Gas Rumah Kaca sesuai Permen LH No. 12 tahun 2012 yang dinyatakan dalam $TonCO_2eq$. *Base year emission* yang digunakan di PHE Suholding Upstream adalah tahun 2021. Pada tahun 2021, terdapat perubahan yang cukup signifikan pada organisasi PHE dengan bergabungnya Zona Rokan dan PT Badak LNG ke dalam PHE Group. Emisi cakupan 1 pada tahun 2021 adalah 10.056 ribu ton CO_2eq, sedangkan emisi cakupan 2 pada tahun 2021 adalah 887,36 ribu ton CO_2eq. Emisi cakupan 3 belum menggunakan *base year* karena baru mulai dihitung pada tahun 2023. [GRI 305-1, 305-2]

Scope 1 emissions come from oil and gas production and fuel consumption activities. Biogenic carbon emissions are included in the scope of calculations of GHG emissions originating from internal and external combustion activities, flaring, venting and processes, and fugitives. Meanwhile, Scope 2 emissions come from electricity purchase from third parties in all Subsidiaries. Measurement and calculation parameters refer to Pertamina Standard Number A04-005/S00000/2022-S9 concerning Guidelines for Measurement, Calculation, Reporting, and Verification of Greenhouse Gas Emissions according to Regulation of Minister of Environment No. 12 of 2012 which is stated in $TonCO_2eq$. The base year for emissions used in PHE Subholding Upstream is 2021. In that year, there were significant organizational changes within PHE, marked by the integration of Rokan Zone and PT Badak LNG into the PHE Group. Scope 1 emissions in 2021 amounted to 10,056 thousand tons of CO_2eq, while Scope 2 emissions were recorded at 887.36 thousand tons of CO_2eq. Scope 3 emissions do not yet have a designated base year, as calculations only began in 2023. [GRI 305-1, 305-2]

Peningkatan total emisi dan intensitas emisi di tahun 2024 dibandingkan dengan tahun 2023 terjadi karena adanya emisi yang dikeluarkan dari Wilayah Kerja yang baru beroperasi, yaitu PEPC JTB (Zona 12 Regional 4). PHE secara kontinu melakukan pemantauan dan pengukuran emisi GRK. Dalam implementasinya, pengukuran dan pemantauan emisi terintegrasi dengan *dashboard* emisi PHE. Selama tahun 2024, volume emisi GRK yang dihasilkan untuk Cakupan 1 dan Cakupan 2 mencapai 14,94 Juta TonCO_2eq dengan penurunan emisi GRK sebesar 1,186 juta TonCO_2eq terhadap *business as usual* (BAU) *scenario*. Intensitas emisi pada tahun 2024 adalah sebesar 0,047 TonCO_2eq/BOE, meningkat sebesar 22,8% dibandingkan tahun sebelumnya. Gas yang termasuk dalam perhitungan emisi GRK Cakupan 2 adalah CO_2.

The increase in total emissions and emission intensity in 2024 compared to 2023 occurred due to emissions released from the newly operating Working Area, namely PEPC JTB (Zone 12 Region 4). PHE continuously monitors and measures GHG emissions. In its implementation, emission measurement and monitoring are integrated with the emission dashboard of PHE. During 2024, the volume of GHG emissions produced for Scope 1 and Scope 2 reached 14.94 million TonCO_2eq with a decrease in GHG emissions of 1.186 million TonCO_2eq compared to the business as usual (BAU) scenario. The emission intensity in 2024 was 0.047 TonCO_2eq/BOE, increasing by 22.8% compared to the previous year. The greenhouse gas (GHG) included in the calculation of Scope 2 emissions is carbon dioxide (CO_2).

» Jumlah Emisi Cakupan 1 dan 2 yang Dihasilkan Berdasarkan Sumber
Amount of Scope 1 and 2 Emissions Generated Based on Source [OJK F.11] [GRI 305-1, 305-2, 305-4] [SASB EM-EP-110a.1]

Jenis Emisi Berdasarkan Sumber Types of Emissions Based on Source	Satuan Unit	2024	2023	2022
Pembakaran Dalam dan Luar Internal and External Combustion	Ribu TonCO_2eq Thousand TonCO_2eq	7.232,75	7.647,33	7.693,96
Suar Bakar Flare	Ribu TonCO_2eq Thousand TonCO_2eq	2.293,39	2.848,12	2.824,05
Venting and Process	Ribu TonCO_2eq Thousand TonCO_2eq	2.651,33	1.205,20	1.346,29
Fugitive	Ribu TonCO_2eq Thousand TonCO_2eq	280,68	293,55	294,13
Total Emisi Cakupan 1 Total Scope 1 Emissions	Ribu TonCO_2eq Thousand TonCO_2eq	12.458,21	11.994,21	12.158,43
Total Emisi Cakupan 2 Total Scope 2 Emissions	Ribu TonCO_2eq Thousand TonCO_2eq	2.484,49	1.971,92	1.758,16
Total emisi GHG Scope 1 dan Scope 2 Total Scope 1 and Scope 2 GHG emissions	Ribu TonCO_2eq Thousand TonCO_2eq	14.942,70	13.966,13	13.916,59
Total Pendapatan Total Revenue	Juta USD Million USD	14.330,340	14.568,384	16.183,399
Total Produksi Migas ** Total Oil and Gas Production**	Ribu BOE Thousand BOE	266.477,19	287.907,01	282.326,99
Intensitas Emisi* Emission Intensity*	TonCO_2eq/BOE TonCO_2eq/BOE	0,0471	0,0384	0,0389

*) Untuk menghitung intensitas emisi PHE menggunakan pendekatan *operational control approach* sehingga total produksi yang digunakan adalah total produksi dari perusahaan yang berada pada *organization boundary operational control approach*.
**) Total produksi migas yang dicantumkan pada tabel merupakan *gross up production*.
***) Intensitas emisi dihitung tanpa memasukkan total emisi dari Badak LNG, PDSI, dan Elnusa. Nilai emisi yang dihasilkan tanpa Badak LNG, PDSI, dan Elnusa adalah 12,56 juta TonCO_2Eq.

*) To calculate the emission intensity of PHE, the operational control approach is used, therefore, the total production used is the total production of the company within the organization boundary operational control approach.
**) The total oil and gas production listed in the table is gross up production. production.
***) Intensitas emisi dihitung tanpa memasukkan total emisi dari Badak LNG, PDSI, dan Elnusa. Nilai emisi yang dihasilkan tanpa Badak LNG, PDSI, dan Elnusa adalah 12,56 juta TonCO_2Eq.

Selama tahun pelaporan PHE tidak menghasilkan emisi *Ozone Depleting Substances* (ODS). Selain emisi GRK, PHE juga menghasilkan emisi non-GRK atau emisi udara lainnya seperti nitrogen oksida (NOx), sulfur oksida (SOx), *Volatile Organic Compounds* (VOC), *Particulate Matter* (PM), dan *Total Organic Carbon* (TOC). Perhitungan emisi non-GRK dilakukan dengan emission calculator yang merupakan aplikasi standar untuk perhitungan emisi bagi seluruh anak perusahaan PT Pertamina. Emission calculator merujuk kepada API Compendium dan referensi lainnya yang terkait. Berikut adalah

During the reporting year, PHE did not produce any Ozone Depleting Substances (ODS) emissions. In addition to GHG emissions, PHE also produces non-GHG emissions or other air emissions such as nitrogen oxides (NOx), sulphur oxides (SOx), Volatile Organic Compounds (VOC), Particulate Matter (PM), and Total Organic Carbon (TOC). The calculation of non-GHG emissions is carried out using the Emission Calculator, which is a standard application for emissions calculation across all subsidiaries of PT Pertamina. The Emission Calculator refers to the API Compendium and other relevant references. The

emisi GRK Cakupan 1 berdasarkan parameter dan non GRK yang dihasilkan selama tahun 2024. [GRI 305-6, 305-7] [SASB EM-EP-120a.1]

following are Scope 1 GHG emissions based on parameters and non-GHG emissions produced during 2024. [GRI 305-6, 305-7] [SASB EM-EP-120a.1]

» Jumlah Emisi GRK Cakupan 1 yang Dihasilkan Berdasarkan Parameter dan Emisi Non GRK
Amount of Scope 1 GHG Emissions Generated Based on Parameters and Non-GHG Emissions [OJK F.11] [GRI 305-1] [SASB EM-EP-110a.1]

Jenis Emisi Types of Emissions	Satuan Unit	2024	2023	2022
Emisi Gas Rumah Kaca (GRK) | Greenhouse Gas (GHG) Emissions				
CO_2	Ribu Ton Thousand Tons	11.709,09	11.204,74	11.353,50
CH_4	Ribu Ton Thousand Tons	65,54	20,77	22,56
N_2O	Ribu Ton Thousand Tons	0,05	0,91	0,88
Emisi Konvensional | Conventional Emissions				
SOx (sulfur oksida | sulphur oxide)	Ribu Ton Thousand Tons	5,57	3,99	5,45
NOx (nitrogen oksida | nitrogen oxides)	Ribu Ton Thousand Tons	58,76	53,71	58,46
VOC (*Volatile organic compound*)	Ribu Ton Thousand Tons	7,47	38,31	57,30
PM (partikula | particulate matter)	Ribu Ton Thousand Tons	2,30	2,12	2,03
TOC (*Total organic compound*)	Ribu Ton Thousand Tons	17,88	20,50	41,08

JUMLAH EMISI CAKUPAN 1 YANG DIHASILKAN BERDASARKAN SUMBER EMISI
[OJK F.11] [GRI 305-1] [SASB EM-EP-110a.1]

PT Pertamina Hulu Energi melakukan pengelolaan emisi non-GRK dan berupaya melakukan penurunan emisi non-GRK dengan melakukan berbagai program. Beberapa program yang dilakukan yaitu Penggantian Bahan Bakar *Gas Compressor* dari *Associated Gas Menjadi Commercial Gas* di Zona Rokan, Implementasi *Liquid Elimination Based on Phase Envelope* (LEBAH) di Anjungan Bravo dan Implementasi Fuel Manajemen Sistem Kapal pada Proses Produksi di Zona 5. PT Pertamina Hulu Energi juga memiliki target penurunan emisi SO_2 untuk mesin pembakaran dalam sebesar <160 mg/Nm_3 pada tahun 2025 dengan penambahan target tiap tahunnya hingga tahun 2029 yang selaras dengan rencana jangka panjang perusahaan.

TOTAL SCOPE 1 EMISSIONS GENERATED BY EMISSION SOURCE [OJK F.11] [GRI 305-1] [SASB EM-EP-110a.1]

PT Pertamina Hulu Energi manages non-GHG emissions and strives to reduce non-GHG emissions by implementing various programs. Some of the programs implemented are Replacing Gas Compressor Fuel from Associated Gas to Commercial Gas in Rokan Zone, Implementing Liquid Elimination Based on Phase Envelope (LEBAH) on Bravo Platform and Implementing Ship Fuel Management Systems in the Production Process in Zone 5. PT Pertamina Hulu Energi also has a target to reduce SO_2 emissions for internal combustion engines by <160 mg/Nm_3 in 2025 with additional targets each year until 2029 which is in line with the company's long-term plan.

Unit Operasi Operation Units	Uraian Description	Satuan Unit	2024	2023
Region 1 - Sumatra Regional 1 - Sumatra	Pembakaran Dalam dan Luar Internal and External Combustion	Ribu TonCO_2eq Thousand TonCO_2eq	1.810,65	1.866,29
	Suar Bakar Flare	Ribu TonCO_2eq Thousand TonCO_2eq	635,96	1.049,88
	Venting and Process	Ribu TonCO_2eq Thousand TonCO_2eq	16,38	6,92
	Fugitive	Ribu TonCO_2eq Thousand TonCO_2eq	20,18	46,99
Region 2 - Jawa Regional 2 - Java	Pembakaran Dalam dan Luar Internal and External Combustion	Ribu TonCO_2eq Thousand TonCO_2eq	1.201,11	1.186,29

Unit Operasi Operation Units	Uraian Description	Satuan Unit	2024	2023
	Suar Bakar Flare	Ribu TonCO_2eq Thousand TonCO_2eq	793,79	1.069,40
	Venting and Process	Ribu TonCO_2eq Thousand TonCO_2eq	426,95	419,17
	Fugitive	Ribu TonCO_2eq Thousand TonCO_2eq	56,47	44,83
Region 3 - Kalimantan Regional 3 - Kalimantan	Pembakaran Dalam dan Luar Internal and External Combustion	Ribu TonCO_2eq Thousand TonCO_2eq	1.457,96	1.564,15
	Suar Bakar Flare	Ribu TonCO_2eq Thousand TonCO_2eq	274,90	316,66
	Venting and Process	Ribu TonCO_2eq Thousand TonCO_2eq	4,76	40,46
	Fugitive	Ribu TonCO_2eq Thousand TonCO_2eq	157,23	147,31
Region 4 - Indonesia Timur Regional 4 - Eastern Indonesia	Pembakaran Dalam dan Luar Internal and External Combustion	Ribu TonCO_2eq Thousand TonCO_2eq	815,75	574,83
	Suar Bakar Flare	Ribu TonCO_2eq Thousand TonCO_2eq	504,81	197,06
	Venting and Process	Ribu TonCO_2eq Thousand TonCO_2eq	1.688,50	284,84
	Fugitive	Ribu TonCO_2eq Thousand TonCO_2eq	39,02	50,12
Region 5 - Internasional Regional 5 - International	Pembakaran Dalam dan Luar Internal and External Combustion	Ribu TonCO_2eq Thousand TonCO_2eq	162,59	123,46
	Suar Bakar Flare	Ribu TonCO_2eq Thousand TonCO_2eq	31,03	115,81
	Venting and Process	Ribu TonCO_2eq Thousand TonCO_2eq	1,45	0,001
	Fugitive	Ribu TonCO_2eq Thousand TonCO_2eq	5,29	1,86
PDSI	Pembakaran Dalam dan Luar Internal and External Combustion	Ribu TonCO_2eq Thousand TonCO_2eq	7,28	16,14
	Suar Bakar Flare	Ribu TonCO_2eq Thousand TonCO_2eq	0	0
	Venting and Process	Ribu TonCO_2eq Thousand TonCO_2eq	0	0,028
	Fugitive	Ribu TonCO_2eq Thousand TonCO_2eq	0	0
Elnusa	Pembakaran Dalam dan Luar Internal and External Combustion	Ribu TonCO_2eq Thousand TonCO_2eq	85,39	133,21
	Suar Bakar Flare	Ribu TonCO_2eq Thousand TonCO_2eq	0	0
	Venting and Process	Ribu TonCO_2eq Thousand TonCO_2eq	0	0,009
	Fugitive	Ribu TonCO_2eq Thousand TonCO_2eq	0	0
Badak NGL	Pembakaran Dalam dan Luar Internal and External Combustion	Ribu TonCO_2eq Thousand TonCO_2eq	1.692,03	2.182,96
	Suar Bakar Flare	Ribu TonCO_2eq Thousand TonCO_2eq	52,90	99,31
	Venting and Process	Ribu TonCO_2eq Thousand TonCO_2eq	513,28	453,77
	Fugitive	Ribu TonCO_2eq Thousand TonCO_2eq	2,49	2,43
Jumlah Total		Ribu TonCO_2eq Thousand TonCO_2eq	**12.458,21**	**11.994,21**

» Jumlah Emisi Cakupan 2 yang Dihasilkan
Amount of Scope 2 Emissions Generated [OJK F.11] [GRI 305-2]

Unit Operasi Operation Units	Satuan Unit	2024	2023
Region 1 - Sumatra Regional 1 - Sumatra	Ribu $TonCO_2eq$ Thousand $TonCO_2eq$	2.139,13	1.716,89
Region 2 - Jawa Regional 2 - Java	Ribu $TonCO_2eq$ Thousand $TonCO_2eq$	11,44	7,84
Region 3 - Kalimantan Regional 3 - Kalimantan	Ribu $TonCO_2eq$ Thousand $TonCO_2eq$	105,53	59,83
Region 4 - Indonesia Timur Regional 4 - Eastern Indonesia	Ribu $TonCO_2eq$ Thousand $TonCO_2eq$	61,77	40,83
Region 5 - Internasional Regional 5 - International	Ribu $TonCO_2eq$ Thousand $TonCO_2eq$	141,61	137,26
PDSI	Ribu $TonCO_2eq$ Thousand $TonCO_2eq$	0	0,05
Elnusa	Ribu $TonCO_2eq$ Thousand $TonCO_2eq$	15,23	9,13
Badak NGL	Ribu $TonCO_2eq$ Thousand $TonCO_2eq$	9,77	0,09
Jumlah Total	Ribu $TonCO_2eq$ Thousand $TonCO_2eq$	**2.484,49**	**1.971,92**

Sedangkan perhitungan untuk *scope* 3 dilakukan untuk Category 3, 5, 10 dan Category 11, yaitu kategori yang dinilai memiliki dampak signifikan dari industri hulu migas. Hasil perhitungan emisi *Scope* 3 untuk empat kategori tersebut adalah 3,28 Juta $TonCO_2eq$. Berikut ini rincian perhitungan emisi *scope* 3: [GRI 305-3]

Meanwhile, the calculation for scope 3 is done for Category 3, 5, 10 and Category 11, this category is deemed to have a significant impact originating from the upstream oil and gas industry. The results of the calculation of Scope 3 emissions for the four categories are: 3,28 Million $TonCO_2eq$. Here is the detailed calculation of Scope 3 emissions. [GRI 305-3]

Kategori Emisi Scope 3 Scope 3 Emission Category	Satuan Unit	2024	2023
Kategori/Category 3 Fuel and Energy-related Activities (not included in Scope 1 & 2)	Juta $TonCO_2eq$ Million $TonCO_2eq$	0,199	0,578
Kategori/Category 5 Waste Generated in Operations	Juta $TonCO_2eq$ Million $TonCO_2eq$	0,0283	0,0385
Kategori/Category 10 Processing of Sold Products	Juta $TonCO_2eq$ Million $TonCO_2eq$	2,13	2,49
Kategori/Category 11 Use of Sold Products	Juta $TonCO_2eq$ Million $TonCO_2eq$	0,924	0,638

REDUKSI EMISI GRK [OJK F.12] [GRI 305-5] [SASB EM-EP-110a.3] [IPIECA CCE-4, CCE-7]

PHE secara aktif melakukan inovasi-inovasi untuk reduksi emisi dengan mengintegrasikan teknologi terkini. Berikut adalah upaya yang dilakukan untuk mengurangi emisi karbon yang berdampak signifikan terhadap penurunan tingkat emisi, di antaranya:

1. Pemanfaatan Gas Suar: Optimalisasi penggunaan gas suar sebagai bahan bakar turbin di fasilitas Petani GP/GS dan Pematang GS guna mengurangi pemborosan energi.
2. Pengurangan Gas *Flare*: Pemanfaatan *Own Gas Compressor* untuk menggantikan *mini gas compressor* di SP BBS sebagai langkah efisiensi energi dan pengurangan emisi.
3. Penghematan Bahan Bakar di Pembangkit Listrik: Pengoptimalan pembangkitan daya reaktif (MVAR) di unit pembangkit listrik PHR WK Rokan untuk mengurangi konsumsi bahan bakar gas.
4. Efisiensi Operasi Gas Turbin:
   - Penurunan konsumsi gas *fuel* sebesar 2 MMSCFD (dari 28 MMSCFD menjadi 26 MMSCFD).
   - Penurunan konsumsi gas *fuel* sebesar 6 MMSCFD (dari 40 MMSCFD menjadi 34 MMSCFD).
   - Penurunan konsumsi gas *fuel* sebesar 4 MMSCFD (dari 34 MMSCFD menjadi 30 MMSCFD).
   - Penurunan konsumsi gas *fuel* sebesar 2 MMSCFD (dari 30 MMSCFD menjadi 28 MMSCFD).
5. Penggunaan Bahan Bakar Alternatif:
   - Substitusi bahan bakar kapal dengan biosolar B35 untuk armada laut (*marine fleet*).
   - Naturalisasi bahan bakar kapal dari solar konvensional menjadi Diesel B35.
6. Otomatisasi Sistem Antisure Kompresor: Implementasi sistem kontrol otomatis pada kompresor refrigeran untuk mengurangi konsumsi steam dalam proses produksi LNG bertekanan rendah.

Berdasarkan evaluasi kami atas inisiatif reduksi emisi yang diterapkan, selama tahun pelaporan PHE Subholding Upstream dapat mencapai target reduksi emisi berdasarkan KPI. PHE Subholding Upstream terus memantau pencapaian target tersebut. Jika target reduksi emisi tidak tercapai salah satu langkah mitigasi yang dilakukan oleh PHE Subholding Upstream adalah dengan pembelian kredit karbon.

GHG EMISSION REDUCTION [OJK F.12] [GRI 305-5] [SASB EM-EP-110a.3] [IPIECA CCE-4, CCE-7]

PHE actively develops innovations to reduce emissions by integrating the latest technology. The following are efforts made to reduce carbon emissions that have a significant impact on reducing emission levels, including:

1. Utilization of Flare Gas: Optimization of use of flare gas as turbine fuel at Petani GP/GS and Pematang GS facilities to reduce energy waste.
2. Reduction of Gas Flare: Utilization of Own Gas Compressor to replace mini gas compressor at SP BBS as an energy efficiency and emission reduction measure.
3. Fuel Savings in Power Plants: Optimization of reactive power generation (MVAR) in PHR power plant unit in Rokan WA to reduce gas fuel consumption.
4. Gas Turbine Operation Efficiency:
   - Reduction in gas fuel consumption by 2 MMSCFD (from 28 MMSCFD to 26 MMSCFD).
   - Reduction in gas fuel consumption by 6 MMSCFD (from 40 MMSCFD to 34 MMSCFD).
   - Reduction in gas fuel consumption by 4 MMSCFD (from 34 MMSCFD to 30 MMSCFD).
   - Reduction in gas fuel consumption by 2 MMSCFD (from 30 MMSCFD to 28 MMSCFD).
5. Use of Alternative Fuels:
   - Substitution of ship fuel with B35 biodiesel for marine fleets.
   - Naturalization of ship fuel from conventional diesel to Diesel B35.
6. Compressor Anti-surge System Automation: Implementation of automatic control system on refrigerant compressor to reduce steam consumption in low pressure LNG production process.

Based on our evaluation of the emission reduction initiatives undertaken, during the reporting year PHE Subholding Upstream was able to achieve the emission reduction target based on KPI. PHE Subholding Upstream continues to monitor the achievement of the target. If the emission reduction target is not achieved, one of the mitigation steps taken by PHE Subholding Upstream is to purchase carbon credits.

INISIATIF DEKARBONISASI
DECARBONIZATION INITIATIVES





Regional 4
Indonesia Timur
Eastern Indonesia

Area: 62.942 km²

- **Zona 11:** 13 Program
- **Zona 13:** 14 Program
- **Zona 14**: 2 Program

Regional 5
Internasional | International

Area: 62.942 km²

- **Zona 15:** 2 Program

- **PDSI:** 13 Program
- **Elnusa:** 14 Program
- **PT Badak NGL**: 7 Program

Total Program Aktif Inisiatif Dekarbonisasi
Total Decarbonization Initiatives Active Programs

124 Program

Entitas Entity	Lapangan Field	Program Dekarbonisasi Decarbonization Program	Tahun Inplace InPlace Year	Estimasi Penurunan Emisi (Ton CO_2 eq) Estimated Emission Reduction (Tons of CO_2eq)	Total Total	Total Investasi (USD Ribu) Total Investment (USD Thousand)
Zona 5 Zone 5	PHE ONWJ	*Ejector Mounting on Bravo* F/S - ONWJ	2022	717,70	25.266,09	180,00
	PHE ONWJ	*Installation of Solar Panels at* Muara Karang ORF dan Tanjung Priok ORF	Q4 2023	4,83		40,00
	PHE ONWJ	*Zero Routine Flaring Program at Echo* F/S - ONWJ	Q3 2024	763,89		510,51
	PHE ONWJ	Efisiensi Bahan Bakar Kapal dan Konversi ke B30 dan B35 Ship Fuel Efficiency and Conversion to B30 and B35	Q1 2023	20.724,00		0,00
	PHE ONWJ	Efisiensi penggunaan *fuel* dengan optimasi durasi pengetesan *tuning test engine* di Papa F/S Fuel Efficiency through Optimization of Engine Tuning Test Duration at Papa F/S	Q1 2023	55,67		0,00
	PHE ONWJ	Program Optimalisasi Efisiensi Energi dan Kinerja Pompa dan Kompresor Energy Efficiency and Performance Optimization Program for Pumps and Compressors	Q1 2024	3.000,00		0,00
Zona 6 Zone 6	PHE OSES	Efisiensi penggunaan *Fuel Gas* dengan Optimasi Pengoperasian Gas Turbin (Penurunan penggunaan gas fuel sebesar 6 MMSCFD dari sebelumnya 40 MMSCFD menjadi 34 MMSCFD) Fuel Gas Efficiency through Gas Turbine Operation Optimization (Reduction in fuel gas consumption by 6 MMSCFD, from 40 MMSCFD to 34 MMSCFD)	2021	76.788,00	198.000,00	15,83
	PHE OSES	Efisiensi penggunaan *Fuel Gas* dengan Optimasi Pengoperasian Gas Turbin (Penurunan penggunaan gas fuel sebesar 4 MMSCFD dari sebelumnya 34 MMSCFD menjadi 30 MMSCFD) Fuel Gas Efficiency through Gas Turbine Operation Optimization (Reduction in fuel gas consumption by 4 MMSCFD, from 34 MMSCFD to 30 MMSCFD)	2022	68.083,20		5,74
	PHE OSES	Efisiensi penggunaan *Fuel Gas* dengan Optimasi Pengoperasian Gas Turbin (Penurunan penggunaan gas fuel sebesar 2 MMSCFD dari sebelumnya 30 MMSCFD menjadi 28 MMSCFD) Efisiensi penggunaan Fuel Gas dengan Optimasi Pengoperasian Gas Turbin (Penurunan penggunaan gas fuel sebesar 2 MMSCFD dari sebelumnya 30 MMSCFD menjadi 28 MMSCFD)	Q2 2023	22.694,40		8,88
	PHE OSES	Efisiensi penggunaan *Fuel Gas* dengan Optimasi Pengoperasian Gas Turbin (Penurunan penggunaan gas fuel sebesar 2 MMSCFD dari sebelumnya 28 MMSCFD menjadi 26 MMSCFD) Fuel Gas Efficiency through Gas Turbine Operation Optimization (Reduction in fuel gas consumption by 2 MMSCFD, from 30 MMSCFD to 28 MMSCFD)	Q4 2024	8.700,97		10,63

Entitas Entity	Lapangan Field	Program Dekarbonisasi Decarbonization Program	Tahun Inplace InPlace Year	Estimasi Penurunan Emisi (Ton CO_2 eq) Estimated Emission Reduction (Tons of CO_2eq)	Total Total	Total Investasi (USD Ribu) Total Investment (USD Thousand)
	PHE OSES	Implementasi penggunaan EJECTOR untuk pemanfaatan *Casing Gas* di Anjungan CINTA – E (Replikasi Inovasi PHE ONWJ) Implementation of Ejector Technology for Casing Gas Utilization at CINTA – E Platform (Replication of PHE ONWJ Innovation)	Q2 2023	2.195,46		10,00
	PHE OSES	Pemanfaatan Gas *Flare* RAMA-P menggunakan *Gas Compressor* dan *ejector* di Anjungan RAMA-H Utilization of RAMA-P Flare Gas Using Gas Compressor and Ejector at the RAMA-H Platform	Q4 2024	4.191,04		3,84
	PHE OSES	Mengurangi *Flaring* dengan optimalisasi operasi GTG di Pabelokan Reducing Flaring through Optimization of GTG Operations at Pabelokan	2022	9.933,60		1,00
	PHE OSES	*Application of Solar Panels* (PLTS) *on Gas Metering* Cilegon (6 kW) Application of Solar Panels (PLTS) on Gas Metering Cilegon (6 kW)	Q1 2023	20,40		7,20
	PHE OSES	Naturalisasi Bahan Bakar Kapal menjadi Diesel B35 Transition of Vessel Fuel to Diesel B35	Q1 2023	3.385,20		0,00
	PHE OSES	Pemanfaatan Gas Flare WIDURI-P menggunakan Gas Compressor Unit (GCU#2) Utilization of WIDURI-P Flare Gas Using Gas Compressor Unit (GCU#2)	Q4 2024	1.564,89		1.100,00
	PHE OSES	*Application of Solar Panels* (PLTS) on Pabelokan (130 kW)	Q1 2024	442,84		318,00
Zona 7 Zone 7	Field Subang	Pengurangan Gas *Flare* dengan Penggunaan *Own Gas Compressor* menggantikan menggantikan *Mini Gas Composer* - SP BBS Reduction of Gas Flaring through the Use of Own Gas Compressor to Replace Mini Gas Compressor at SP BBS	Q1 2024	64.213,20	64.933,20	550,00
	Field Subang	Pengurangan Unit *Roadtank* untuk transportasi Produced Water di SP BBS melalui pembangunan fasilitas *water injection* Reduction of Road Tanke Units for Produced Water Transportation at SP BBS through the Development of Water Injection Facilities	2022	600,00		7.321,00
	Field Tambun	Pembangunan Thermal Oil Heater Baru - SP Tambun Reduction of Roadtank Units for Produced Water Transportation at SP BBS through Development of Water Injection Facilities	Q1 2024	120,00		278,40

Entitas Entity	Lapangan Field	Program Dekarbonisasi Decarbonization Program	Tahun Inplace InPlace Year	Estimasi Penurunan Emisi (Ton CO_2 eq) Estimated Emission Reduction (Tons of CO_2eq)	Total Total	Total Investasi (USD Ribu) Total Investment (USD Thousand)
Zona 8 Zone 8	Zona 8/Field SPU	Penghematan penggunaan bahan bakar gas pada unit GTS-Dx Fuel Gas Consumption Savings on GTS-Dx Unit	Q1 2023	3.747,00	86.121,13	100,30
	Zona 8/Field CPU	Optimalisasi sistem pembakaran gas pada unit *Flare* CPU-1 Optimization of Gas Combustion System on Flare Unit CPU-1	Q3 2023	5.294,40		110,00
	Zona 8/Field NPU	Penghematan penggunaan bahan bakar gas pada unit GTS-Lx Fuel Gas Consumption Savings on GTS-Lx Unit	Q1 2023	3.747,00		100,00
	Zona 8/Field SPU	Penghematan penggunaan bahan bakar gas pada unit GTS-Ax Fuel Gas Consumption Savings on GTS-Ax Unit	Q1 2023	3.747,00		110,00
	Zona 8/Field SPU	Inovasi "DNA Pro" di Lapangan Senipah "DNA Pro" Innovation at Senipah Field	Q1 2023	23.003,76		110,00
	Zona 8	Penggunaan Biosolar Sebagai Bahan Bakar untuk *Marine Fleet* Use of Biodiesel as Fuel for the Marine Fleet	Q1 2023	45.661,90		279,72
	Zona 8/Field NPU	Inovasi MAXIDRILL Akan Aktivitas *Offline* (MAXIDROFF) untuk Mempercepat Waktu Pemboran Di Lapangan Tunu MAXIDRILL Innovation for Offline Activities (MAXIDROFF) to Accelerate Drilling Time at Tunu Field	Q1 2023	822,69		413,33
	Zona 8/Field NPU	Inovasi Teknologi SMP (*Swamp Monopod Platform*) *Wellhead Platform* Untuk Satu Sumur Baru di Lapangan Tunu SMP (Swamp Monopod Platform) Wellhead Technology Innovation for a New Well at Tunu Field	Q3 2023	97,38		1.171,49
Zona 9 Zone 9	PHSS	Penggantian *Source Power Supply* Pamaguan Replacement of Power Supply Source at Pamaguan	2022	487,37	42.747,50	0,60
	PHSS	Penggantian Source Power Supply MMS - Mutiara Replacement of Power Supply Source at MMS - Mutiara	2022	180,51		1,30
	PHSS	Penggunaan Bahan Bakar Ramah Lingkungan PHSS Use of Environmentally Friendly Fuel at PHSS	2022	1.359,23		2,50
	PHSS	HIPERMART (*High Performance Water Based Mud*)	Q1 2023	1.486,96		0,00
	EP Sangasanga, EP Sangatta, PHSS	FSA Jalur Distribusi Minyak PEP-PHSS, menuju Terminal PHKT FSA Oil Distribution Pipeline from PEP-PHSS to PHKT Terminal	Q1 2023	315,02		10.000,00
	EP Sangasanga	Penggantian *Source Power Supply* SMHK Replacement of Power Supply Source at SMHK	2022	1.805,06		240,00
	EP Sangasanga	Penggunaan Bahan Bakar Ramah Lingkungan EP Sangasanga Use of Environmentally Friendly Fuel at EP Sangasanga	Q1 2023	1.683,68		5,00
	EP Tanjung	Penggunaan Bahan Bakar Ramah Lingkungan EP Tanjung Use of Environmentally Friendly Fuel at EP Tanjung	Q1 2023	1.580,00		5,00
	EP Sangasanga	WHC Recovery Flaring Sangasanga		3.722,50		15,00
	EP Sangatta	Optimalisasi *Own Used Gas* EP Sangatta Optimization of Own-Used Gas at EP Sangatta		28.196,80		0,00
	EP Sangatta	Selongsong Sisipan *Plunger* EP Sangatta Plunger Insert Sleeve at EP Sangatta	Q1 2023	145,72		20,00

Entitas Entity	Lapangan Field	Program Dekarbonisasi Decarbonization Program	Tahun Inplace InPlace Year	Estimasi Penurunan Emisi (Ton CO_2 eq) Estimated Emission Reduction (Tons of CO_2eq)	Total Total	Total Investasi (USD Ribu) Total Investment (USD Thousand)
	EP Sangatta, EP Sangasanga, PHSS	*Borderless*	Q1 2023	1,444.06		14,210.00
	PHSS	*Methane Leaking Checking*	Q4 2023	341.00		43.00
Zona 10 Zone 10	PHKT	Optimisasi Sistem Manajemen Energi pada Kegiatan Perkantoran dan Proses Operasi PHKT Optimization of Energy Management System in Office Activities and Operational Processes at PHKT	Q1 2023	1.732,07	35.000,00	130,02
	PHKT	Penggantian air *dryer tipe heater* dengan *refrigerated* air dryer Replacement of Heater-Type Air Dryer with Refrigerated Air Dryer	Q1 2023	1.220,09		50,00
	PHKT	Konversi bahan bakar diesel solar ke B35 PHKT pada kegiatan operasi dan *transport marine* Conversion of Diesel Fuel to B35 at PHKT for Marine Operations and Transportation	Q1 2023	21.942,85		4.813,55
	PHKT	MONSTERPI (*Monitoring System Energy Performance Indicator*)	Q1 2023	1.549,65		0,00
	PHKT	Optimasi Bahan Bakar Minyak Kapal PHKT Optimization of Marine Fuel Oil at PHKT	Q1 2024	2.203,34		11.908,78
	PHKT	Optimalisasi *Own Used Gas* Energi pada Kegiatan Perkantoran di PEP Tarakan Optimization of Own-Used Gas Energy in Office Activities at PEP Tarakan	Q1 2023	1.068,72		2.920,80
	PEP Tarakan	Instalasi Gas Engine PTL Tarakan Gas Engine Installation at PTL Tarakan	Q1 2023	1.275,00		719,95
	PEP Tarakan	FLADEO (*Flare Decarbonization)*	Q1 2023	3.800,15		1,67
	PEP Tarakan	Penggunaan B35 Pada Kegiatan Operasional Tarakan Field Use of B35 in Operational Activities at Tarakan Field	Q1 2024	1.493,52		5,99
	PEP Bunyu	Optimisasi Sistem Manajemen Energi pada Kegiatan Perkantoran dan Proses Operasi PEP Bunyu Optimization of Energy Management System in Office Activities and Operational Processes at PEP Bunyu	Q1 2023	806,08		2.920,80
	PEP Bunyu	Instalasi Gas *Liquid Separator* pada Annulus Sumur B-209 Bunyu Installation of Gas-Liquid Separator on the Annulus of Well B-209 at Bunyu	Q1 2023	2,49		2,30
	PEP Bunyu	Penggunaan B35 Pada Kegiatan Operasional Bunyu Field Use of B35 Fuel in Operational Activities at Bunyu Field	Q1 2024	1.667,35		250,33

Entitas Entity	Lapangan Field	Program Dekarbonisasi Decarbonization Program	Tahun Inplace InPlace Year	Estimasi Penurunan Emisi (Ton CO_2 eq) Estimated Emission Reduction (Tons of CO_2eq)	Total Total	Total Investasi (USD Ribu) Total Investment (USD Thousand)
Zona 11 Zone 11	PEP Sukowati	Pengurangan emisi dengan penggantian *supply power* untuk *utilities* (110 kVA, 60 Hz) dan ESP (DEG 400 kVA, 50 Hz) dari DEG ke PLN di Sukowati Pad A dan Pad B Emission Reduction through Replacement of Power Supply for Utilities (110 kVA, 60 Hz) and ESP (DEG 400 kVA, 50 Hz) from DEG to PLN at Sukowati Pads A and B	2022	1.400,00	27.557,87	28,00
	PEP Sukowati	Pengurangan emisi dengan penggantian *main supply power Condensat Plant* DEG (kap. 500 kVA) ke PLN di CPA Emission Reduction through Replacement of Main Power Supply for Condensate Plant DEG (Capacity 500 kVA) with PLN Grid at CPA	Q2 2023	243,00		85,00
	PEP Sukowati	Efisiensi Energi dari Gas *Turbin di Power Plant* CPA dengan Pemasangan Unit TerSADown (Filter Scrubber Anti Down) Energy Efficiency of Gas Turbine at CPA Power Plant through Installation of TerSADown Unit (Anti-Down Filter Scrubber)	2022	6.048,00		3,00
	PHE WMO	Penggunaan MTG sebagai alternatif diesel (sumber energi) penggerak ESP di PHE 38B dan 40 Utilization of MTG as an Alternative Diesel Energy Source to Power ESP at PHE 38B and 40	2022	594,20		2.203,00
	PEP Cepu	Efisiensi Energi dari Pencegahan Kehilangan Produksi Migas dengan Penggunaan PLN di area Distrik 1 Tapen Pertamina Field Cepu Energy Efficiency through Prevention of Oil and Gas Production Loss by Utilizing PLN Power in District 1 Tapen, Pertamina Field Cepu	2022	76,68		335,00
	PEP Cepu	Efisiensi Energi dari Pencegahan Kehilangan Produksi Migas dengan Penggunaan PLN di area Distrik 2 Semanggi Pertamina EP Field Cepu Energy Efficiency through Prevention of Oil and Gas Production Loss by Utilizing PLN Power in District 2 Semanggi, Pertamina EP Field Cepu	2022	315,30		759,00
	PEP Cepu	Pengurangan Emisi & Optimasi Pola Operasi Field Cepu Emission Reduction & Optimization of Operational Patterns at Cepu Field	Q1 2023	3.300,00		261,00
	PEP Cepu	Pengurangan Flared Gas dengan GASOPEN (Pemanfaatan Gas Asso untuk Sales di SP Tapen) Reduction of Flared Gas through GASOPEN (Utilization of Associated Gas for Sales at SP Tapen)	2022	3.066,44		17,00
	PHE WMO	Recreation - Rescheduling Crew Change Action	Q3 2023	2.614,68		
	PEP Sukowati	Meningkatkan Reability dan Availability pada *Power Plant* dengan menciptakan alat E-PEPSI "Efektif *Power Plant* Sinkron" Enhancing Reliability and Availability of the Power Plant through Development of the E-PEPSI Device ('Effective Power Plant Synchronization')	Q4 2023	2.700,00		
	PEP Cepu	Pengurangan Emisi GRK dengan PLNisasi di SPU Kawengan Reduction of Greenhouse Gas Emissions via Transition to PLN Grid Power at SPU Kawengan	Q4 2023	1.545,49		35,79

Entitas Entity	Lapangan Field	Program Dekarbonisasi Decarbonization Program	Tahun Inplace InPlace Year	Estimasi Penurunan Emisi (Ton CO_2 eq) Estimated Emission Reduction (Tons of CO_2eq)	Total Total	Total Investasi (USD Ribu) Total Investment (USD Thousand)
	PEP Cepu	Perubahan *artificial* lift pada sumur minyak dari HPU (*Hydrolic Pumping Unit*) ke PCP (*Progressive Cavity Pumps*) di Area Semanggi untuk menciptakan operasional *lifting* yang lebih efisien. Penggantian PCP telah dilakukan sebanyak 9 sumur di area Semanggi Conversion of Artificial Lift from Hydraulic Pumping Unit (HPU) to Progressive Cavity Pumps (PCP) in the Semanggi Area to Achieve More Efficient Lifting Operations. PCP Replacement Has Been Completed for 9 Wells in the Semanggi Area	Q3 2023	1.354,00		16,50
	PHE WMO	Efisiensi Bahan Bakar *Crude Oil Tanker* Fuel Efficiency of Crude Oil Tankers	Q4 2023	4.300,08		
Zona 13 Zone 13	PEP Donggi Matindok	Penerapan *Load Shedding* di *Power Generation* CPP Donggi dan CPP Matindok Implementation of Load Shedding in Power Generation at CPP Donggi and CPP Matindok	2022	25.950,95	46.749,34	69,00
	PEP Donggi Matindok	Pemasangan *Online Adjustable Choke* di Sumuran Gas Donggi Matindok Field untuk Menurunkan Gas *Flaring* Installation of Online Adjustable Choke on Gas Wells at Donggi Matindok Field to Reduce Gas Flaring	Q1 2023	2.647,25		381,00
	PEP Donggi Matindok	Sistem Penjadwalan Transportasi 3 in 1 3-in-1 Transportation Scheduling System	Q1 2023	3,81		0,00
	PEP Donggi Matindok	Pemanfaatan Gas *Flaring* dari *Acid Gas Flash Drum* untuk LP *Fuel Gas* Utilization of Gas Flaring from Acid Gas Flash Drum for LP Fuel Gas	Q3 2023	6,42		2,00
	PEP Donggi Matindok	Optimasi Pengoperasian *Hot Oil Fire Heater* dengan metode AFR di CPP Matindok Optimization of Hot Oil Fire Heater Operation Using AFR Method at CPP Matindok	Q1 2023	1.408,79		9,00
	PEP Donggi Matindok	Penurunan *Losses* Produksi Gas Karena Kegagalan Proses *Startup Hot Oil Fired Heater* A/B dengan Modifikasi *Logic Start Up* Reduction of Gas Production Losses Due to Startup Failures of Hot Oil Fired Heaters A/B through Startup Logic Modification	Q4 2023	376,09		335,10
	PEP Donggi Matindok	Sentralisasi kontrol pada *Booster Compressor* CPP Matindok Centralized Control of Booster Compressor at CPP Matindok	Q4 2023	405,32		299,65
	PEP Donggi Matindok	Perubahan *rute vapour closed drain* ke *Acid Flare* di CPP Matindok untuk mengurangi emisi yang dibuang ke LP Vent Stack Rerouting of Vapour Closed Drain to Acid Flare at CPP Matindok to Reduce Emissions Released to LP Vent Stack	Q4 2023	334,67		537,28
	JOB Tomori	*Upgrading power surge connection Jetty Area*	Q4 2023	404,00		21,00
	JOB Tomori	Pengurangan *Flaring* dengan Teknologi *Steam Atomizing* Reduction of Flaring through Steam Atomizing Technology		14.610,00		247,00
	JOB Tomori	Instalasi PLTS pada *cluster well*, gudang & pos security Lapangan Gas Senoro Installation of Solar Power Systems at Well Clusters, Warehouse, and Security Posts in Senoro Gas Field		7,00		400,00

Entitas Entity	Lapangan Field	Program Dekarbonisasi Decarbonization Program	Tahun Inplace InPlace Year	Estimasi Penurunan Emisi (Ton CO_2 eq) Estimated Emission Reduction (Tons of CO_2eq)	Total Total	Total Investasi (USD Ribu) Total Investment (USD Thousand)
	JOB Tomori	Modifikasi koneksi kabel *fiber optic* untuk menjaga kehandalan *control pipeline* Modification of Fiber Optic Cable Connections to Maintain Pipeline Control Reliability		543,00		4,00
	JOB Tomori	Modifikasi *system* solenoid di WHCP dalam mengatasi kebocoran N_2 Modification of Solenoid System at WHCP to Address N_2 Leakage		52,00		1,00
	JOB Tomori	*Emission reduction through leakage identification* (*Fugitive emission*)	Q4 2024	0,04		25,10
Zona 14 Zone 14	PEP Papua	*Modification of the Klamono injection pump driver and General Facility Energy Supplies into PLN-ization*	Q2 2023	253,00	845,00	748,64
	PEP Papua	Pengaplikasian Bahan Bakar Biosolar B35 (65% *Solar* + 35% *Fatty Acid Metyl Esther*) untuk operasional Perusahaan) Application of B35 Biodiesel Fuel (65% Diesel + 35% Fatty Acid Methyl Ester) for Company Operations	Q4 2023	592,00		
Zona 15 Zone 15	MLN	Pemasangan *Solar Panel* untuk *Power* Installation of Solar Panels for Power Supply	2022	8.200,00	8.200,00	35,00
	MLN	Penggantian lampu *flourescent* ke lampu LED Replacement of Fluorescent Lamps with LED Lighting	Q1 2024	0,00		1,50
PDSI	PDSI	*Rig Hybird (Dynamic Gas Blending System and $NanO_2$ Additive Fuel)*	Q3 2023	980,00	1.550,00	272,00
	PDSI	*Moveable Solar Cell Generator*	Q3 2023	186,00		150,00
	PDSI	*Electric Car for Light vehicle*	Q2 2023	24,00		104,00
	PDSI	Penggantian Lampu TL, Halogen ke LED Replacement of TL and Halogen Lamps with LED Lighting.	Q1 2023	180,00		7,00
	PDSI	*Solar Cell Light Tower at Rig Site*	Q1 2023	180,00		15,00
	PDSI	Integrated Power Barge and Rig 48.2 (05'11.111'S/106'21.244'E)	2022	0,00		0,00
Elnusa	Elnusa	Penghematan *Energy* Menggunakan *Motion Detector* Energy Savings Through the Use of Motion Detectors	2022	0,36	2.118,12	0,33
	Elnusa	Mengganti lampu konvensional dengan lampu jenis LED (proses / menghitung jumlah lampu yg akan di ganti)- di lokasi Graha Replacement of Conventional Lighting with LED Fixtures (including assessment and calculation of units to be replaced) – at the Graha Site	2022	296,40		17,50
	Elnusa	Pemasangan / Penggantian atap transparan di Warehouse BSD + Pemasangan Ventilator Installation/Replacement of Transparent Roofing at BSD Warehouse and Installation of Ventilators	2022	545,40		1,33
	Elnusa	Penggantian Lampu Sorot Listrik Ke Lampu Solar Panel Replacement of Electric Floodlights with Solar-Powered Floodlights	2022	6,00		1,00
	Elnusa	Penggantian lampu konvensional (40 Watt) ke Lampu LED (18 Watt) Replacement of Conventional 40-Watt Lamps with 18-Watt LED Lamps	2022	5,52		1,00

Entitas Entity	Lapangan Field	Program Dekarbonisasi Decarbonization Program	Tahun Inplace InPlace Year	Estimasi Penurunan Emisi (Ton CO_2 eq) Estimated Emission Reduction (Tons of CO_2eq)	Total Total	Total Investasi (USD Ribu) Total Investment (USD Thousand)
	Elnusa	Menghemat pemakaian bahan bakar solar dengan mengurangi jadwal *running test* genset Reducing Diesel Fuel Consumption by Optimizing the Genset Running Test Schedule	2022	0,96		0,00
	Elnusa	Pengurangan penggunaan lampu di siang hari pada Plan B (WS Merak) digantikan dengan pembuatan *skylight* Reduction of Daytime Lighting Usage at Plan B (WS Merak) by Installing Skylights	2022	0,12		1,00
	Elnusa	Optimalisasi Penggunaan BBM *Own Use* untuk *Running Routine* Genset dan *Fire Pump*, Depo Semper, PT Elnusa Petrofin Optimization of Own-Use Fuel Consumption for Routine Operation of Genset and Fire Pump at Semper Depot, PT Elnusa Petrofin	2022	2,76		0,00
	Elnusa	Optimalisasi Penyaluran BBK Avtur ke Pesawat/ Helicopter menggunakan ASPAV yang ditenagai oleh baterai dengan sumber pengisian energi memanfaatkan sinar matahari di DPPU Lampung Optimization of Avtur Fuel Distribution to Aircraft/ Helicopters Using Battery-Powered ASPAV with Solar-Powered Charging System at DPPU Lampung	2022	61,32		12,00
	Elnusa	Konversi penggunaan BBM B30 dengan menggunakan BBM B35 pada operasional PT Elnusa Petrofin unit IT Manggis dan FT Waingapu Conversion of B30 Fuel Usage to B35 Fuel in Operations at PT Elnusa Petrofin, IT Manggis Unit and FT Waingapu	2022	1.080,00		0,00
	Elnusa	Mengganti lampu konvensional dengan lampu jenis LED (proses / menghitung jumlah lampu yg akan di ganti)- di SCUPND Replacement of Conventional Lighting with LED Fixtures (including process and calculation of units to be replaced) - at SCUPND	2022	91,68		10,83
	Elnusa	Efisiensi penggunaan listrik dengan Konversi lampu Fluorescen/TL menjadi lampu LED di *accommodation* level 1 dan Main Deck AWB ELSA-8 Unit PT Elnusa Trans Samudera Efisiensi penggunaan listrik dengan Konversi lampu Fluorescen/TL menjadi lampu LED di accommodation level 1 dan Main Deck AWB ELSA-8 Unit PT Elnusa Trans Samudera	2022	27,60		2,33

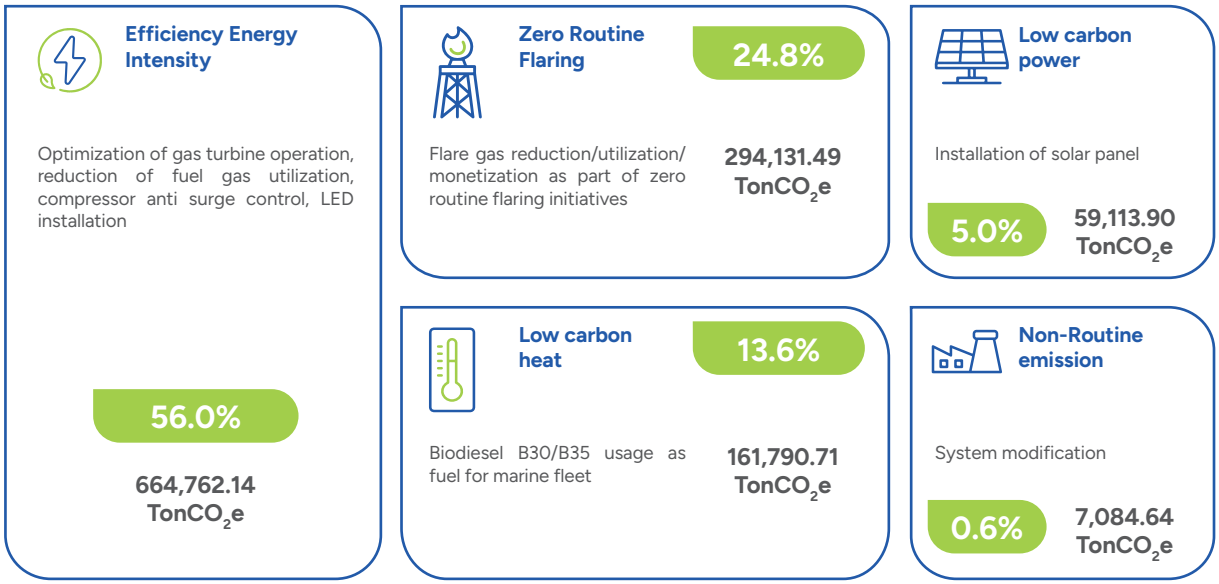
Entitas Entity	Lapangan Field	Program Dekarbonisasi Decarbonization Program	Tahun Inplace InPlace Year	Estimasi Penurunan Emisi (Ton CO_2 eq) Estimated Emission Reduction (Tons of CO_2eq)	Total Total	Total Investasi (USD Ribu) Total Investment (USD Thousand)
PT Badak NGL	PT Badak NGL	Otomatisasi Sistem Pengendalian *Antisurge* Kompresor Refrijeran Untuk Mengurangi Konsumsi *Steam* Pada Produksi LNG Yang Rendah Automation of Antisurge Control System for Refrigerant Compressor to Reduce Steam Consumption in Low LNG Production	2022	20.196,00	99.660,00	25,00
	PT Badak NGL	Otomatisasi Sistem Pengendalian Suhu *Amine Regenerator* Untuk Mengurangi Konsumsi *Steam* di *Train* G dan H Automation of Amine Regenerator Temperature Control System to Reduce Steam Consumption in Train G and H	Q1 2023	19.992,00		5,00
	PT Badak NGL	Optimasi Jumlah *Reboiler Amine Regenerator di Train* G Optimization of the Number of Amine Regenerator Reboilers in Train G	Q3 2023	468,00		0,00
	PT Badak NGL	Program Optimasi Buangan Air *Blowdown* dari *Boiler* Blowdown Water Discharge Optimization Program for Boilers	Q3 2023	6.000,00		0,00
	PT Badak NGL	Program Penggantian *Steam Trap* Steam Trap Replacement Program	Q2 2023	3.144,00		45,00
	PT Badak NGL	Program Peningkatan Kehandalan Kompresor Relikuefaksi BOG LPG Reliability Improvement Program for LPG BOG Liquefaction Compressors	Q1 2023	7.236,00		1,00
	PT Badak NGL	Program Optimasi Operasional Dock/Jetty Untuk Keperluan *Lifting* LNG Operational Optimization Program for Dock/Jetty to Support LNG Lifting Operations	Q1 2023	10.284,00		0,00
	PT Badak NGL	Program Modifikasi Metode/SOP (*Standard Operating Procedure*) Laju Pendinginan *Heat Exchanger* LPBS (LPG *Production Booster System*) Saat *Start Up Train* G atau *Train* H Modification Program for the Method/SOP (Standard Operating Procedure) of Heat Exchanger Cooling Rate in LPBS (LPG Production Booster System) During Startup of Train G or Train H	Q4 2023	4.776,00		0,00
	PT Badak NGL	Optimasi beban *boiler* dan *power generator* yang beroperasi Optimization of Operating Boiler and Power Generator Load	Q4 2023	27.564,00		0,00

Pencapaian Program Dekarbonisasi Tahun 2024

Realisasi reduksi emisi dari program dekarbonisasi tahun 2024 di lingkungan *Subholding Upstream* sebesar 1.186,87 kTonCO_2e pada emisi GRK Cakupan 1 dan 2. Angka ini mengalami kenaikan 36,03% dari realisasi reduksi emisi 2023 sebesar 872,49 kTonCO_2e. Distribusi pencapaian program dekarbonisasi berdasarkan kategori dapat digambarkan sebagai berikut:

Decarbonization Program Achievements in 2024

The realization of emission reductions from the 2024 decarbonization program within the Subholding Upstream amounted to 1,186.87 kTonCO_2e for Scope 1 and 2 GHG emissions. This figure reflects a 36.03% increase from the 2023 emission reduction realization of 872.49 kTonCO_2e. The distribution of decarbonization program achievements based on category can be described as follows:



Kontribusi terhadap realisasi penurunan emisi perusahaan tahun 2024
Contribution to the company's emission reduction realization 2024

Production & Project juga mendukung upaya mencapai *zero routine flaring* di tahun 2030 dengan program-program pemanfaatan *gas flaring* diseluruh titik *flare* rutin yang masih memiliki potensi untuk dimanfaatkan. Di tahun 2024 program pemanfaatan *flaring* berkontribusi memberikan reduksi emisi sebesar 294 kTonCO_2e.

Merujuk pada regulasi yang tertuang dalam Permen ESDM No. 17 Tahun 2021 seluruh titik *flare* rutin di wilayah kerja *Subholding Upstream* sudah memenuhi regulasi sesuai pelaporan *flaring* setiap semester ke kementerian ESDM, namun demikian berdasarkan latar belakang dibawah ini, maka diperlukan *monitoring program Zero Routine Flaring* di *Subholding Upstream*.

- Komitmen pemerintah kepada *World Bank* dalam Pencapaian *Zero Routine Flaring* pada tahun 2030 pada tanggal 20 Februari 2017.
- Surat edaran dari SKK Migas No. SRT-0025/ SKKMF0000/2020/S1 Perihal Pemanfaatan Gas Suar Bakar Menuju 2030 *Zero Routine Flaring* kepada seluruh K3S.
- Kebijakan *zero routine flaring* 2030 *Subholding Upstream* tertuang dalam Surat Direktur D&P No. 015-PHE20000-2024-S0 tentang Implementasi *Zero Routine Flaring* Tahun 2030 di Lingkungan SHU.
- Program sesuai dengan hasil *workshop* dekarbonisasi tanggal 3-5 Oktober 2023. Terdapat 38 titik *flare* rutin yang akan memiliki rencana kajian teknis dan 17 titik *flare* rutin yang memiliki program reduksi *flare* tahun 2024, dan pelaksanaannya dipantau melalui dashboard *zero routine flaring*.

Production & Project also supports efforts to achieve zero routine flaring by 2030 with gas flaring utilization programs at all routine flare points that still have the potential to be utilized. In 2024, the flaring utilization program contributed to reducing emissions by 294 kTonCO_2e.

Referring to the regulations stated in Regulation of Minister of Energy and Mineral Resources No. 17 of 2021, all routine flare points in the working areas of the Subholding Upstream have complied with the regulations according to the reporting of flaring every semester to the Ministry of Energy and Mineral Resources, however, based on the background below, monitoring of the Zero Routine Flaring program in the Subholding Upstream is required.

- Government's commitment to the World Bank in Achieving Zero Routine Flaring by 2030 on February 20, 2017.
- Circular letter from SKK Migas No. SRT-0025/ SKKMF0000/2020/S1 Concerning Utilization of Flared Gas Towards 2030 Zero Routine Flaring to all K3S.
- Zero Routine Flaring policy of 2030 of the Subholding Upstream is stated in Letter of Director of D&P No. 015-PHE20000-2024-S0 concerning Implementation of Zero Routine Flaring of 2030 within SHU.
- The program is in accordance with the results of the decarbonization workshop on October 3-5, 2023. There are 38 routine flare points that will have a technical study plan and 17 routine flare points that have a flare reduction program in 2024, and their implementation is monitored through the zero routine flaring dashboard.

MENGURANGI JEJAK LINGKUNGAN

Pengelolaan dan Efisiensi Energi [OJK F.6, F.7]
[GRI 302]

PHE Subholding Upstream berupaya meningkatkan efisiensi energi dan memperluas pemanfaatan energi bersih serta terbarukan melalui berbagai strategi inovatif. Salah satu langkah yang diambil adalah optimalisasi kinerja peralatan mekanik, seperti pompa, kompresor, dan generator, guna meminimalkan konsumsi energi yang kurang efisien. Dengan memastikan operasional peralatan berjalan secara lebih efektif, PHE Subholding Upstream dapat mengurangi penggunaan energi berlebih serta meningkatkan efisiensi sistem kelistrikan dan mekanis di seluruh fasilitas operasionalnya.

PHE Subholding Upstream juga mengembangkan berbagai alternatif sumber energi untuk memenuhi kebutuhan panas dan listrik, termasuk pemanfaatan *biofuel* serta pemasangan panel surya *fotovoltaik*. Salah satu proyek unggulan adalah pengembangan kapasitas energi surya sebesar 30,2 MWp yang direncanakan mulai beroperasi pada tahun 2025. Dengan diversifikasi sumber energi ini, PHE Subholding Upstream berupaya mengurangi ketergantungan pada bahan bakar fosil serta meningkatkan peran energi terbarukan dalam bauran energinya.

Peningkatan efisiensi energi serta optimalisasi bauran energi ramah lingkungan menjadi fokus utama dalam pengelolaan energi PHE Subholding Upstream. Saat ini, konsumsi energi perusahaan mencakup sumber energi tak terbarukan dari bahan bakar dan uap yang diproduksi sendiri, serta energi terbarukan seperti *biodiesel*, panel surya, dan listrik yang dibeli dari PT PLN (Persero). Namun, penggunaan energi di luar perusahaan, termasuk oleh kontraktor, vendor, dan pemasok, masih belum dimasukkan dalam laporan energi saat ini. Perusahaan menggunaan IPIECA CCE-6 sebagai standar metodologi perhitungan dan API Compendium 2021 atau konversi volume fuel ke satuan energi GJ berdasarkan heating value sebagai referensi faktor konversi. [GRI 302-2]

REDUCING ENVIRONMENTAL FOOTPRINT

Energy Management and Efficiency [OJK F.6, F.7]
[GRI 302]

PHE Subholding Upstream strives to improve energy efficiency and expand the use of clean and renewable energy through various innovative strategies. One of the steps taken is optimizing the performance of mechanical equipment, such as pumps, compressors, and generators, to minimize inefficient energy consumption. By ensuring equipment operations run more effectively, PHE Subholding Upstream can reduce excessive energy use and increase the efficiency of electrical and mechanical systems throughout its operational facilities.

PHE Subholding Upstream also develops various alternative energy sources to meet heat and electricity needs, including the use of biofuels and the installation of photovoltaic solar panels. One of the flagship projects is the development of a solar energy capacity of 30.2 MWp which is planned to start operating in 2025. With this diversification of energy sources, PHE Subholding Upstream seeks to reduce dependence on fossil fuels and increase the role of renewable energy in its energy mix.

Increasing energy efficiency and optimizing an environmentally friendly energy mix are the main focuses in the energy management of PHE Subholding Upstream. Currently, the company's energy consumption includes non-renewable energy sources from fuel and steam produced by itself, as well as renewable energy such as biodiesel, solar panels, and electricity purchased from PT PLN (Persero). However, energy use outside the company, including by contractors, vendors, and suppliers, remains not included in the current energy report. The Company uses IPIECA CCE-6 as the standard methodology for calculations and API Compendium 2021 or volume-to-energy (GJ) conversion based on heating value as a reference for conversion factors. [GRI 302-2]

» **Konsumsi energi tak terbarukan (GJ)**
Non-renewable energy consumption (GJ) [GRI 302-1] [IPIECA CCE-6]

Sumber energi Energy sources	2024	2023	2022
Energi yang dibangkitkan sendiri Self-generated energy	148.394.331,71	155.144.635,52	158.421.608,28
Listrik yang dibeli Purchased electricity	10.113.152,95	9.351.663,96	8.641.357,21
Uap dan Panas yang dibeli Purchased Steam and Heat	22.240.888,00	24.827.143,00	30.372.323,00
Listrik yang dijual/diberikan ke pihak ketiga Electricity sold/given to third parties	125.275,70	107.270,90	102.212,54
Uap dan Panas yang dijual Sold Steam and Heat	0.00	0.00	0.00
Jumlah konsumsi energi tak terbarukan Total non-renewable energy consumption	**180.623.096,96**	**189.216.171,58**	**197.333.075,95**

*) Penyajian kembali informasi (*restatement*) karena adanya perbaikan metodologi perhitungan mengacu pada pedoman IPIECA CCE-6 yaitu berdasarkan volume bahan bakar dan *heating value*.

*) Restatement of information due to improvements in calculation methodology, in accordance with IPIECA CCE-6 guidelines, based on fuel volume and heating value.

Konsumsi energi terbarukan (GJ)
Renewable energy consumption (GJ) [GRI 302-1] [IPIECA CCE-6]

Sumber energi Energy sources	2024	2023	2022
Biodiesel Biodiesel	12.102.936,08	10.448.320,06	9.091.638,30
Solar Cell Solar Cell	302.848,83	157.213,41	109.282,64
Listrik yang dibeli dari sumber terbarukan Electricity purchased from renewable sources	14.854,26	14.781,84	14.829,00
Jumlah konsumsi energi terbarukan Total renewable energy consumption	**12.420.639,16**	**10.620.315,32**	**9.215.749,94**
Persentase penggunaan energi terbarukan dari konsumsi energi total Percentage of renewable energy use against total energy consumption	**6,43%**	**5,31%**	**4,46%**

*) Penyajian kembali informasi (*restatement*) karena adanya perbaikan metodologi perhitungan mengacu pada pedoman IPIECA CCE-6 yaitu berdasarkan volume bahan bakar dan *heating value*.

*) Restatement of information due to improvements in calculation methodology, in accordance with IPIECA CCE-6 guidelines, based on fuel volume and heating value.

Selama tahun 2024, konsumsi energi Perseroan mencapai 180.623.096,96 GJ, turun 4,54% dari tahun 2023. Berdasarkan penggunaan energi di dalam Perusahaan dapat dilihat bahwa tingkat bauran energi terbarukan sebesar 6,43%, meningkat 21% dibandingkan tahun sebelumnya. Hal ini sejalan dengan upaya PHE untuk terus meningkatkan penggunaan energi yang ramah lingkungan. Pengungkapan informasi besaran intensitas energi dalam laporan ini mencakup pada kegiatan produksi migas dari sumber energi tidak terbarukan. Laporan ini tidak menyertakan penghitungan intensitas energi dari penggunaan energi di luar Perusahaan. Intensitas energi dihitung sebagai energi yang dibutuhkan per GJ untuk produksi migas *per barrels of oil equivalent* (BOE). Nilai Intensitas Energi tahun 2024 mencapai 0,53 GJ/BOE. Hal ini menunjukkan dampak positif dari upaya penurunan energi yang telah dijalankan Perusahaan pada tahun berjalan. [GRI 302-3]

During 2024, the Company's energy consumption reached 180,623,096.96 GJ, decreasing by 4.54% from 2023. Based on energy use within the Company, it can be seen that the renewable energy mix rate is 6.43%, increasing by 21% compared to the previous year. This is in line with PHE's efforts to continue to increase the use of environmentally friendly energy. The disclosure of energy intensity figures in this report covers oil and gas production activities utilizing non-renewable energy sources. This report does not include calculations of energy intensity from energy consumption outside the Company's operations. Energy intensity is calculated as the amount of energy required per gigajoule (GJ) for the production of oil and gas, expressed in barrels of oil equivalent (BOE). The Energy Intensity value for 2024 is recorded at 0.53 GJ/BOE This shows a positive impact of the Company's energy reduction efforts in the current year. [GRI 302-3]

Hasil Pengukuran Intensitas Energi* (GJ/BOE)
Energy Intensity Measurement Results* (GJ/BOE) [OJK F.6] [GRI 302-3]

2024	2023**	2022**
0,53	0,49	0,54

*) Intensitas energi dihitung dengan membandingkan rasio antara total pemakaian energi dengan total produksi (*gross up production*) sejumlah 266.477.193,46 BOE pada tahun 2024.
*) Intensitas energi dihitung tanpa memasukkan total energi dari PDSI, Elnusa dan Badak LNG karena angka produksinya tidak dikonversikan menjadi BOE. Apabila memperhitungkan energi dari PDSI, Elnusa dan Badak LNG, intensitas energi 2024 akan menjadi 0,68 GJ/BOE.
**) Penyajian kembali informasi (*restatement*) karena adanya perbaikan metodologi perhitungan mengacu pada pedoman IPIECA CCE-6 yaitu berdasarkan volume bahan bakar dan *heating value*.

*) Energy intensity is calculated by comparing the ratio between total energy consumption and total production (gross-up production) of 266,477,193.46 BOE in 2024.
*) Energy intensity is calculated without including the total energy from PDSI, Elnusa and Badak LNG because their production figures are not converted to BOE. If taking into account the energy from PDSI, Elnusa and Badak LNG, the energy intensity in 2024 will be 0.68 GJ/BOE.
**) Restatement of information due to improvements in calculation methodology, in accordance with IPIECA CCE-6 guidelines, based on fuel volume and heating value.

REDUKSI DAN EFISIENSI KONSUMSI ENERGI

[OJK F.7] [GRI 302-4, 302-5]

Selama tahun 2024 PHE Subholding Upstream telah menjalankan berbagai inisiasi untuk mereduksi tingkat energi yang digunakan. Perhitungan efisiensi energi sesuai dengan perhitungan IPIECA, yaitu mencakup setiap regional dengan basis periode satu tahun, berdasarkan selisih antara jumlah energi terpakai aktual dengan program penghematan energi, dibandingkan estimasi energi terpakai tanpa program penghematan energi (*business as usual scenario*). *Base year* atau *baseline* yang sebagai dasar perhitungan pengurangan konsumsi energi sama dengan *base year* emisi, yaitu 2021. Dengan dilakukannya berbagai inisiasi tersebut Perseroan telah berhasil mereduksi energi sejumlah 4.433.442,25 MWh/tahun. Berikut adalah daftar inisiatif reduksi energi yang dilakukan yang memiliki dampak signifikan yang dijalankan pada tahun 2024:

1. Efisiensi Gas Turbin:
   - Pengurangan konsumsi *gas fuel* sebesar 6 MMSCFD (dari 40 MMSCFD menjadi 34 MMSCFD).
   - Pengurangan konsumsi *gas fuel* sebesar 2 MMSCFD (dari 28 MMSCFD menjadi 26 MMSCFD).
   - Pengurangan konsumsi *gas fuel* sebesar 4 MMSCFD (dari 34 MMSCFD menjadi 30 MMSCFD).
   - Pengurangan konsumsi *gas fuel* sebesar 2 MMSCFD (dari 30 MMSCFD menjadi 28 MMSCFD).
2. Penggunaan Bahan Bakar Alternatif: Naturalisasi bahan bakar kapal menjadi Diesel B35 untuk mendukung efisiensi dan energi yang lebih ramah lingkungan.
3. Otomatisasi Sistem: Implementasi sistem kendali otomatis untuk *antisurge* kompresor *refrigeran*, bertujuan menurunkan konsumsi *steam* dalam proses produksi LNG bertekanan rendah.
4. Inovasi Lapangan: Pengembangan dan penerapan inovasi "DNA Pro" di Lapangan Senipah sebagai bagian dari peningkatan efisiensi dan keandalan operasi lapangan.
5. Optimasi Gas Internal: Optimalisasi penggunaan *Own Used Gas* di EP Sangatta untuk efisiensi energi internal dan pengurangan pemborosan gas.
6. Inovasi Teknologi: Pengembangan alat E-PEPSI ("Efektif Power Plant Sinkron") untuk meningkatkan keandalan dan ketersediaan pembangkit listrik serta mencegah *unplanned shutdown*.
7. Manajemen Beban Listrik: Penerapan strategi *load shedding* pada *power generation* CPP Donggi dan CPP Matindok untuk menjaga kestabilan sistem kelistrikan dan efisiensi operasional.

ENERGY CONSUMPTION REDUCTION AND EFFICIENCY [OJK F.7] [GRI 302-4, 302-5]

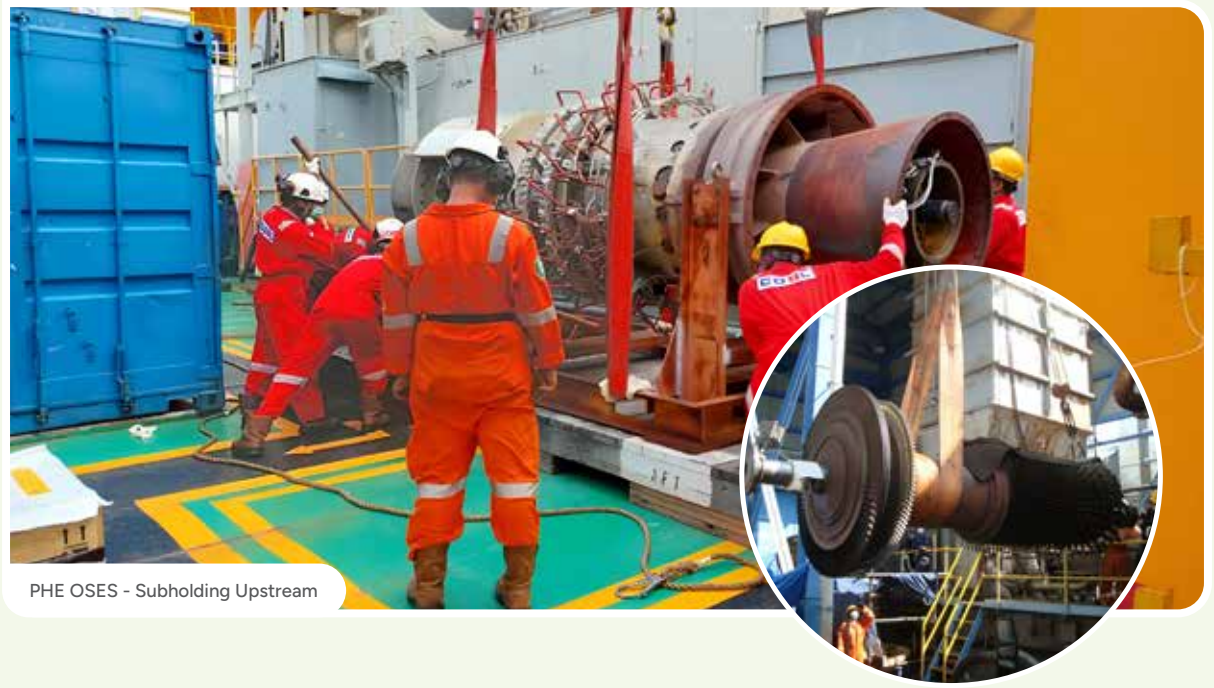
During 2024, PHE Subholding Upstream has undertaken various initiatives to reduce the level of energy used. The calculation of energy efficiency follows the IPIECA methodology, which covers each region on an annual basis. It is based on the difference between the actual energy consumption and the energy savings program, compared to the estimated energy consumption under a business-as-usual scenario. The base year or baseline used as the reference for calculating energy consumption reduction is the same as the emission base year, namely 2021. By undertaking these various initiatives, the Company has succeeded in reducing energy by 4,433,442.25 MWh/year. The following is a list of energy reduction initiatives that have had a significant impact undertaken in 2024:

1. Gas Turbine Efficiency:
   - Reduction of gas fuel consumption by 6 MMSCFD (from 40 MMSCFD to 34 MMSCFD).
   - Reduction of gas fuel consumption by 2 MMSCFD (from 28 MMSCFD to 26 MMSCFD).
   - Reduction of gas fuel consumption by 4 MMSCFD (from 34 MMSCFD to 30 MMSCFD).
   - Reduction of gas fuel consumption by 2 MMSCFD (from 30 MMSCFD to 28 MMSCFD).
2. Use of Alternative Fuels: Naturalization of ship fuel into Diesel B35 to support efficiency and more environmentally friendly energy.
3. System Automation: Implementation of automatic control system for refrigerant compressor anti-surge, aims to reduce steam consumption in the low-pressure LNG production process.
4. Field Innovation: Development and implementation of "DNA Pro" innovation in Senipah Field as a part of improving the efficiency and reliability of field operations.
5. Internal Gas Optimization: Optimization of Own Used Gas usage at EP Sangatta for internal energy efficiency and reduction of gas waste.
6. Technology Innovation: Development of E-PEPSI ("Effective Power Plant Synchronization") tool to improve the reliability and availability of power plants and prevent unplanned shutdowns.
7. Electrical Load Management: Implementation of load shedding strategy in power generation of CPP Donggi and CPP Matindok to maintain electrical system stability and operational efficiency.

Berikut adalah inisiasi efisiensi energi yang dijalankan pada tahun 2024 yang menghasilkan reduksi energi di atas 100 ribu MWh per tahun. Jumlah total energi yang dapat direduksi pada tahun 2024 melalui berbagai inisiatif efisiensi energi adalah sebesar 4.433.442,25 MWh per tahun atau setara dengan 15.960.392,10 GJ.

The following are energy efficiency initiatives implemented in 2024 that result in energy reductions of over 100 thousand MWh per year. The total amount of energy that can be reduced in 2024 through various energy efficiency initiatives is 4,433,442.25 MWh per year equivalent to a total energy consumption of 15,960,392.10 GJ.

Inisiasi Efisiensi Energi **Initiation of Energy Efficiency**	***Reduction***
Efisiensi penggunaan *Fuel Gas* dengan Optimasi Pengoperasian Gas Turbin (Pengurangan penggunaan gas fuel sebesar 6 MMSCFD dari sebelumnya 40 MMSCFD menjadi 34 MMSCFD) Efficiency of use of Fuel Gas with Optimization of Gas Turbine Operation (Reduction of gas fuel usage by 6 MMSCFD from previously 40 MMSCFD to 34 MMSCFD)	792.598,13
Efisiensi penggunaan *Fuel Gas* dengan Optimasi Pengoperasian Gas Turbin (Pengurangan penggunaan *gas fuel* sebesar 2 MMSCFD dari sebelumnya 28 MMSCFD menjadi 26 MMSCFD) Efficiency of use of Fuel Gas with Optimization of Gas Turbine Operation (Reduction of gas fuel usage by 2 MMSCFD from previously 28 MMSCFD to 26 MMSCFD)	592.107,80
Efisiensi penggunaan *Fuel Gas* dengan Optimasi Pengoperasian Gas Turbin (Pengurangan penggunaan *gas fuel* sebesar 4 MMSCFD dari sebelumnya 34 MMSCFD menjadi 30 MMSCFD) Efficiency of use of Fuel Gas with Optimization of Gas Turbine Operation (Reduction of gas fuel usage by 4 MMSCFD from previously 34 MMSCFD to 30 MMSCFD)	528.398,76
Naturalisasi Bahan Bakar Kapal menjadi Diesel B35 Naturalization of Ship Fuel to Diesel B35	481.782,87
Efisiensi penggunaan *Fuel Gas* dengan Optimasi Pengoperasian Gas Turbin (Pengurangan penggunaan *gas fuel* sebesar 2 MMSCFD dari sebelumnya 30 MMSCFD menjadi 28 MMSCFD) Efficiency of use of Fuel Gas with Optimization of Gas Turbine Operation (Reduction of fuel gas usage by 2 MMSCFD from the previous 30 MMSCFD to 28 MMSCFD)	264.199,38
Otomatisasi Sistem Pengendalian *Antisurge* Kompresor Refrijeran Untuk Mengurangi Konsumsi *Steam* Pada Produksi LNG Yang Rendah Automation of Refrigerant Compressor Anti-surge Control System to Reduce Steam Consumption at Low LNG Production	226.823,14
Inovasi "DNA Pro" di Lapangan Senipah "DNA Pro" Innovation in Senipah Field	187.097,54
Optimalisasi *Own Used Gas* EP Sangatta Optimization of Own Used Gas at EP Sangatta	159.785,22
Meningkatkan *Reability* dan *Availability* pada *Power Plant* dengan Menciptakan alat E-PEPSI "Efektif *Power Plant* Sinkron" untuk mengurangi *Unplanned Shutdown* Improving Reliability and Availability in Power Plant by Creating E-PEPSI "Effective Power Plant Synchronization" tool to reduce Unplanned Shutdown	156.778,48
Penerapan *Load Shedding* di *Power Generation* CPP Donggi dan CPP Matindok Implementation of Load Shedding in Power Generation CPP Donggi and CPP Matindok	131.229,86
Mengurangi *Flaring* dengan optimalisasi operasi GTG di Pabelokan Reducing Flaring by optimizing GTG operations in Pabelokan	115.585,14
Program Optimasi Operasional *Dock/Jetty* Untuk Keperluan *Lifting* LNG Dock/Jetty Operational Optimization Program for LNG Lifting Needs	110.865,09



PHE OSES - Subholding Upstream

Efisiensi Penggunaan *Fuel Gas* dengan Optimasi Pengoperasian Gas Turbin dari 40 MMSCFD menjadi 26 MMSCFD

Efficiency of Fuel Gas Use with Optimization of Gas Turbine Operation from 40 MMSCFD to 26 MMSCFD

PT Pertamina Hulu Energi OSES menggunakan listrik untuk mengoperasikan unit-unit fasilitas produksi migas dan penunjangnya, yang dihasilkan dari gas turbin generator. Dalam usahanya untuk menjaga kesinambungan operasi, penyediaan listrik yang efisien dan andal harus dilakukan untuk menjaga dan meningkatkan operasi produksi perusahaan.

PHE OSES memerlukan 40 MMSCFD *fuel gas* untuk menghasilkan listrik sebesar 596.808.013.674 kWh. Untuk itu PHE OSES berupaya meningkatkan efisiensi penggunaan *fuel gas* melalui optimasi pengoperasian gas turbin generator. Program optimasi yang dilakukan diantaranya Perubahan Mode Operasi, *Offhire*/Terminasi GTG, Rekonfigurasi GTG, dan *Engine Exchange*/*Overhaul*.

Program Optimasi Gas Turbin berhasil meningkatkan efisiensi gas turbin dari 22,8% sejak tahun 2021 dengan konsumsi *fuel* gas turbin rata-rata sebesar 40 MMSCFD menjadi 24,01% pada tahun 2024 dengan konsumsi *fuel* gas turbin rata-rata sebesar 24 MMSCFD. Selain itu, program ini berhasil mengurangi emisi gas rumah kaca sebesar 436.298 TonCO_2eq dalam periode 2021 hingga 2024.

PT Pertamina Hulu Energi OSES uses electricity to operate oil and gas production facilities and their supporting units, which are generated from gas turbine generators. In its efforts to maintain operational continuity, efficient and reliable electricity must be provided to maintain and improve the company's production operations.

PHE OSES requires 40 MMSCFD of fuel gas to generate 596,808,013,674 kWh of electricity. Therefore, PHE OSES seeks to increase the efficiency of fuel gas usage through optimization of gas turbine generator operation. The optimization programs implemented include Changes in Operation Mode, Off-hire/Termination of GTG, GTG Reconfiguration, and Engine Exchange/Overhaul.

The Gas Turbine Optimization Program has successfully increased gas turbine efficiency from 22.8% since 2021 with an average gas turbine fuel consumption of 40 MMSCFD to 24.01% in 2024 with an average gas turbine fuel consumption of 24 MMSCFD. In addition, this program has succeeded in reducing greenhouse gas emissions by 436,298 TonCO_2eq in the period from 2021 to 2024.

Offshore Well-Management

PT Pertamina Hulu Energi (PHE) Subholding Upstream menjalankan kegiatan eksplorasi dan produksi minyak serta gas baik di darat maupun lepas pantai, yang berpotensi mempengaruhi ekosistem laut di sekitarnya. Untuk mengurangi dampak lingkungan dan meminimalkan jejak ekologis, pengelolaan sumur lepas pantai dilakukan dengan sistem yang ketat sejak tahap perencanaan hingga penutupan sumur. Seluruh proses ini, yang mencakup fase pra-operasional, operasional, hingga pasca-operasional, mengikuti Pedoman Pengelolaan *Well Integrity* yang telah diberlakukan sejak Januari 2021. Pengelolaan sumur lepas pantai berada di bawah koordinasi Fungsi Produksi, sebagai pemilik aset, serta Fungsi *Drilling Well Intervention*, yang memastikan bahwa setiap aktivitas dilakukan sesuai standar tertinggi guna mengurangi potensi risiko terhadap lingkungan.

Selain menerapkan sistem manajemen yang ketat, PHE Subholding Upstream juga mengadopsi berbagai langkah pengawasan dan evaluasi untuk memastikan bahwa operasional lepas pantai tidak merusak keseimbangan ekosistem laut. Langkah ini mencakup pemantauan berkala terhadap kualitas air serta keberlanjutan biota laut di sekitar area operasi. Selain itu, penerapan teknologi ramah lingkungan digunakan untuk mengurangi emisi dan limbah operasional. Melalui pendekatan ini, PHE berkomitmen untuk menjalankan operasional yang efisien dan berkelanjutan, sekaligus menjaga kelestarian lingkungan maritim.

Offshore Well Management

PT Pertamina Hulu Energi (PHE) Subholding Upstream performs oil and gas exploration and production activities both onshore and offshore, which have the potential to affect the surrounding marine ecosystem. To reduce environmental impacts and minimize ecological footprints, offshore well management is conducted with a strict system from the planning stage to well closure. This entire process, which includes pre-operational, operational, and post-operational phases, follows the Well Integrity Management Guidelines that have been in effect since January 2021. Offshore well management is under the coordination of the Production Function, as the asset owner, and the Drilling Well Intervention Function, which ensures that every activity is conducted to the highest standards to reduce potential risks to the environment.

In addition to implementing a strict management system, PHE Subholding Upstream also adopts various monitoring and evaluation measures to ensure that offshore operations do not damage the balance of the marine ecosystem. These measures include regular monitoring of water quality and the sustainability of marine biota around the areas of operation. In addition, the application of environmentally friendly technology is used to reduce operational emissions and waste. Through this approach, PHE Subholding Upstream is committed to running efficient and sustainable operations, while maintaining the sustainability of marine environment.

Pengelolaan Sumur Lepas Pantai
Offshore Well Management

Praoperasional Pre-operational	Operasional Operational	Pascaoperasional Post-operational
Memastikan semua sumur yang akan dikerjakan mengikuti prinsip-prinsip pemboran dan *well integrity* yang baik, mengacu pada Pedoman Pemboran dan Pedoman Pengelolaan *Well Integrity*. Ensure that all wells to be operated based on the good drilling and integrity principles refers to Drilling Guideline Well Integrity Management Guidelines.	Melakukan *monitoring* dan perawatan umum oleh tim Produksi dan tim *Well Integrity*, mengacu pada Pedoman Pengelolaan *Well Integrity*. General monitoring and maintenance are carried out by the production team and well integrity team referring to the Well Integrity Management Guidelines.	Dilakukan monitoring oleh tim Produksi/ Aset, mengacu pada Pedoman Pengelolaan *Well Integrity* dan Pedoman Kerja Pascaoperasi. Monitoring by the Production/ Asset team refers to Well Integrity Management Guidelines and Post Operation Work Guidelines.

Sesuai dengan visi Pertamina Hulu Energi (PHE) Subholding Upstream untuk "Menjadi Perusahaan Kelas Dunia", maka penting bagi perusahaan untuk dapat memastikan pengelolaan sumur baik di wilayah darat maupun lepas pantai dilakukan dengan sebaik-baiknya dengan mengacu pada

In accordance with the vision of Pertamina Hulu Energi (PHE) Subholding Upstream to "Become a World Class Company", it is important for the company to ensure that well management both onshore and offshore is conducted properly by referring to various applicable regulations. If not managed properly,

berbagai peraturan yang berlaku. Jika tidak dikelola dengan baik, sumur lepas pantai memiliki risiko yang berbahaya bagi lingkungan. Untuk memitigasi risiko tersebut, PHE Subholding Upstream melakukan berbagai upaya seperti asesmen risiko dan manajemen risiko yang mendalam serta memastikan mitigasi risiko dijalankan dengan baik sesuai dengan Pedoman Pengelolaan *Well Integrity*. Selain itu *contingency plan* juga harus disiapkan sebagai bagian dari manajemen risiko untuk memastikan integritas sumur tetap terjaga setiap saat.

offshore wells have dangerous risks to the environment. To mitigate these risks, PHE Subholding Upstream makes various efforts such as in-depth risk assessments and risk management and ensures that risk mitigation is conducted properly in accordance with the Well Integrity Management Guidelines. In addition, a contingency plan must also be prepared as a part of risk management to ensure that well integrity is maintained at all times.

Pada Pedoman Pengelolaan *Well Integrity*, terdapat kebijakan khusus sebagai panduan tata kelola sumur-sumur melalui manajemen risiko, yaitu dengan menerapkan *well integrity* planning dan *well assurance* yang di dalamnya mencakup kepatuhan terhadap kebijakan *well barrier*, termasuk jumlah *barrier*, sistem *monitoring* dan asesmen secara berkala. Untuk menjamin sumur-sumur di lingkungan PHE Subholding Upstream beroperasi sesuai kaidah *well barrier philosophy* yang tercantum pada Pedoman Pengelolaan *Well Integrity*, PHE Subholding memiliki *Well Integrity* Monitoring System untuk memantau kinerja setiap sumur yang dimiliki (terutama sumur produksi/injeksi aktif) yang dilakukan secara berkesinambungan melalui sistem *database* sumur yang baik, sistem *monitoring* risiko sumur yang ter-*update* (*software*), mekanisme peringatan kondisi anomali (*warning system*) serta respon emergensi jika ada kejadian yang mengakibatkan hilangnya *barrier element* dari suatu sumur.

In the Well Integrity Management Guidelines, there are specific policies as guidelines for well management through risk management, namely by implementing well integrity planning and well assurance which include compliance with well barrier policies, including the number of barriers, monitoring systems and periodic assessments. To ensure that wells within PHE Subholding Upstream operate according to the well barrier philosophy principles stated in the Well Integrity Management Guidelines, PHE Subholding has a Well Integrity Monitoring System to monitor the performance of each well owned (especially active production/injection wells) which is conducted continuously through a good well database system, an updated well risk monitoring system (software), anomalous condition warning mechanism (warning system) and emergency response if there is an incident that results in the loss of a barrier element from a well.

Di dalam Roadmaps pengelolaan *Well Integrity* ditargetkan bahwa akan digitalisasi pengelolaan sebagai upaya integrasi pemantauan sumur terus dilakukan secara massive untuk mengurangi dampak negatif terhadap lingkungan. Hingga saat ini digitalisasi pengelolaan *Well Integrity* telah dilakukan pada 2 zona, yaitu zona 8 dan zona 17, dan akan terus bertambah pada wilayah lainnya.

In the Well Integrity management Roadmap, it is targeted that digitalization of management as an effort to integrate well monitoring continues to be conducted massively to reduce negative impacts on the environment. Until now, digitalization of Well Integrity management has been conducted in 2 zones, namely zone 8 and zone 17, and will continue to grow in other areas.

Pengelolaan Wilayah Operasi Non-aktif

PHE Subholding Upstream mengelola anjungan lepas pantai yang tidak aktif dengan melakukan pemeliharaan berkala. Tujuan utama dari pemeliharaan ini adalah untuk memastikan bahwa anjungan tersebut tetap mematuhi standar keselamatan dan perlindungan lingkungan. Proses perencanaan untuk Kegiatan Pasca-operasi (KPO) dilakukan dalam kerjasama erat dengan regulator, termasuk SKK MIGAS, Direktorat Jenderal Minyak dan Gas, dan lembaga perizinan lainnya, dengan fokus utama pada aspek Lingkungan, Sosial, dan Tata Kelola (LST).

Management of Inactive Areas of Operation

PHE Subholding Upstream manages inactive offshore platforms by performing periodic maintenance. The main purpose of this maintenance is to ensure that the platform continues to comply with safety and environmental protection standards. The planning process for Post-Operation Activities is performed in close cooperation with regulators, including SKK MIGAS, the Directorate General of Oil and Gas, and other licensing institutions, with main focus on Environmental, Social, and Governance (ESG) aspects.

Pengelolaan KPO ini berpedoman pada regulasi yang berlaku, yaitu PTK 040 SKK Migas Revisi 2 Tahun 2023 dan Permen ESDM Nomor 15 Tahun 2018, dan PMK No. 140/PMK.06/2020 tentang Pengelolaan Barang Milik Negara Hulu Minyak dan Gas Bumi. Pada tahun 2023, PHE Subholding Upstream telah melakukan studi kelayakan KPO di beberapa

The management of KPO is guided by the applicable regulations, namely PTK 040 SKK Migas Revision 2 of 2023 and Regulation of Minister of Energy and Mineral Resources Number 15 of 2018, and PMK No. 140/PMK.06/2020 concerning Management of Upstream Oil and Gas State Property. In 2023, PHE Subholding Upstream has conducted a KPO feasibility study in several

wilayah kerja. Studi ini merupakan hasil kolaborasi dengan Pusat Riset Kelautan, Kementerian Kelautan dan Perikanan, serta akademisi internasional, yang berfokus pada kajian perencanaan *decommissioning* dan pemanfaatan anjungan lepas pantai yang tidak aktif. Saat ini, Perusahaan juga sedang menginisiasi kegiatan serupa untuk wilayah kerja lainnya, sebagai bagian dari upaya untuk mengelola aset-aset non-aktif secara bertanggung jawab dan berkelanjutan.

working areas. This study was the result of collaboration with the Marine Research Center, the Ministry of Maritime Affairs and Fisheries, and international academicians, which focused on the analysis of decommissioning planning and utilization of inactive offshore platforms. Currently, the Company is also initiating similar activities for other working areas, as a part of an effort to manage inactive assets responsibly and sustainably.

MELINDUNGI KEANEKARAGAMAN HAYATI

Dampak Operasi Terhadap Keanekaragaman Hayati [OJK F.9] [GRI 304]

Kegiatan eksplorasi dan produksi migas yang dijalankan oleh PHE Subholding Upstream memiliki potensi dampak terhadap lingkungan, khususnya terhadap flora dan fauna yang ada di sekitarnya. Untuk meminimalkan risiko tersebut, perusahaan secara proaktif melakukan pemetaan dan pendataan terhadap spesies yang dilindungi maupun yang bersifat endemik sebelum memulai kegiatan lapangan. Seluruh proses ini dijalankan dengan koordinasi bersama instansi berwenang, seperti Balai Konservasi Sumber Daya Alam (BKSDA) serta Dinas Lingkungan Hidup di wilayah operasional. Perusahaan juga menyusun laporan pemantauan secara berkala guna memastikan kegiatan tetap berada dalam koridor peraturan lingkungan yang berlaku. [IPIECA ENV-3]

Sebagian lokasi operasi PHE berada di dalam atau berdekatan dengan wilayah yang secara ekologis penting, termasuk kawasan konservasi dan area dengan tingkat keanekaragaman hayati yang tinggi. Operasional di area tersebut telah mengantongi izin resmi dari Kementerian Lingkungan Hidup dan Kehutanan (KLHK). Sebagai wujud tanggung jawab lingkungan, PHE menerapkan prinsip konservasi dalam setiap tahapan kerjanya, dengan memastikan aktivitas produksi dan eksplorasi tidak menimbulkan gangguan signifikan terhadap ekosistem setempat. Praktik pengelolaan lingkungan dilakukan secara hati-hati, mengikuti panduan teknis dan ketentuan hukum yang berlaku. [GRI 304-1] [IPIECA ENV-4]

Lebih jauh, PHE Subholding Upstream mengintegrasikan aspek keanekaragaman hayati dalam kebijakan pengelolaan lingkungannya. Dampak potensial dari proyek maupun produk terhadap ekosistem dinilai sejak awal dan ditindaklanjuti dengan berbagai langkah mitigasi maupun pemulihan jika diperlukan. Perusahaan berkomitmen untuk menjaga kelestarian habitat alami dan mengurangi gangguan ekologis seminimal mungkin. Melalui pendekatan ini, PHE tidak hanya mematuhi kewajiban hukum, tetapi juga mengambil peran aktif dalam pelestarian lingkungan serta memperkuat posisinya sebagai pelaku industri yang bertanggung jawab dan berkelanjutan. [GRI 304-2]

PROTECTING BIODIVERSITY

Impact of Operations on Biodiversity [OJK F.9] [GRI 304]

Oil and gas exploration and production activities conducted by PHE Subholding Upstream have potential impacts on the environment, especially on the flora and fauna in the surrounding areas. To minimize this risk, the company proactively maps and records protected and endemic species before starting field activities. This entire process is conducted in coordination with authorized agencies, such as the Natural Resources Conservation Agency (BKSDA) and the Environmental Service in the areas of operation. The company also prepares regular monitoring reports to ensure that activities remain compliant with the applicable environmental regulations. [IPIECA ENV-3]

Some of PHE's operations are located in or adjacent to ecologically important areas, including conservation areas and areas with high levels of biodiversity. Operations in these areas have obtained official permits from the Ministry of Environment and Forestry (KLHK). As a form of environmental responsibility, PHE applies conservation principles in every stage of its work, by ensuring that production and exploration activities do not cause significant disruption to the local ecosystem. Environmental management practices are conducted carefully, following applicable technical guidelines and legal provisions. [GRI 304-1] [IPIECA ENV-4]

Furthermore, PHE Subholding Upstream integrates biodiversity aspects into its environmental management policy. The potential impacts of projects and products on the ecosystem are assessed from the start and followed up with various mitigation and recovery measures if necessary. The company is committed to preserving natural habitats and minimizing ecological disturbances. Through this approach, PHE not only complies with legal obligations but also takes an active role in environmental conservation and strengthens its position as a responsible and sustainable industry player. [GRI 304-2]

» Lokasi WK PHE Subholding Upstream di Indonesia yang Berada dan/atau Berdekatan dengan Kawasan Dilindungi

Locations of PHE Upstream Subholding Working Areas in Indonesia Located Within or Adjacent to Protected Areas [IPIECA ENV-4]

Wilayah Kerja Operational Area	AP Pengelola AP Manager	Uraian Description
Donggi Matindok Field	PT Pertamina EP Donggi Matindok Field	Terdapat jalur *trunkline* Donggi Matindok Field yang melewati area konservasi Hutan Bakiriang. Donggi Matindok Field memiliki program konservasi namun tidak di wilayah Hutan Bakiriang melainkan di Hutan Kokolomboi yang berada di Kabupaten Banggai Kepulauan. Program konservasi TAMAN KEHATI KOKOLOMBOI atau Kegiatan Konservasi Satwa Endemik Pulau Peleng/Banggai Kepulauan Melalui Pengkayaan Pakan dengan Tanaman Lokal. Kegiatan ini merupakan kegiatan kerja sama antara PT Pertamina EP Donggi Matindok Field dengan Pengurus Taman Kehati Kokolomboi, Dinas Lingkungan Hidup Banggai Kepulauan dan Pemerintah Kabupaten Banggai Kepulauan. Satwa prioritas yang dilakukan konservasi adalah Satwa Gagak Banggai (*Corvus unicolor*) dan Tarsius Pulau Peleng (*Peleng tarsier*). Keduanya masuk kedalam daftar IUCN Redlist dengan status rentan (VU) dan kritis (CR). Selain kegiatan konservasi, PT Pertamina EP Donggi Matindok Field bersama Pengurus Taman Kehati Kokolomboi juga menjalin kerjasama mitra binaan guna mengembangan sektor Peningkatan Ekonomi Masyarakat melalui Paket Wisata dan Budidaya Madu Hutan. A trunkline of Donggi Matindok Field passes through the conservation area of Bakiriang Forest. Donggi Matindok Field has a conservation program but not in the area of Bakiriang Forest but in Kokolomboi Forest located in Banggai Islands Regency. The TAMAN KEHATI KOKOLOMBOI conservation program or the Endemic Animal Conservation Activity of Peleng Island/Banggai Islands Through Feed Enrichment with Local Plants. This activity is a collaborative activity between PT Pertamina EP Donggi Matindok Field and the Management of Kokolomboi Kehati Park, the Environmental Service of Banggai Islands and the Government of Banggai Islands Regency. The priority animals that are being conserved are Banggai Crow (*Corvus unicolor*) and Peleng Island Tarsier (*Peleng tarsier*). Both are included in the IUCN Red List with vulnerable (VU) and critical (CR) status. In addition to conservation activities, PT Pertamina EP Donggi Matindok Field together with the Management of Kokolomboi Kehati Park also collaborate with assisted partners to develop the Community Economic Improvement sector through Tourism Packages and Forest Honey Cultivation.
Asset 1 Field Rantau	PT Pertamina EP	WK Rantau Field berada dalam satu kabupaten dengan Kawasan Ujung Tamiang, pada tahun 2023 Rantau Field fokus pada penanaman flora untuk menunjang habitat Tuntong Laut. Rantau Field WA is located in the same district as Ujung Tamiang area. In 2023, Rantau Field focused on planting flora to support the habitat of painted terrapins.
Jambi Merang	PT PHE Jambi Merang	Peta Blok Jambi Merang beririsan dengan Kawasan Taman Nasional Sembilang namun hingga saat ini PHE Jambi Merang tidak melakukan aktifitas di dalam area taman nasional sembilang. The Map of Jambi Merang Block overlaps with the Area of Sembilang National Park, but to date PHE Jambi Merang has not conducted any activities within the area of Sembilang National Park.

Wilayah Kerja Operational Area	AP Pengelola AP Manager	Uraian Description
WK Rokan	PT Pertamina Hulu Rokan	Wilayah Operasi Wilayah Operasi Bekasap Rokan berdekatan dengan Suaka Margasatwa Balai Raja. Bekasap Rokan Area of Operation is adjacent to Balai Raja Wildlife Sanctuary.
		Wilayah Operasi Minas Siak berdekatan dengan Taman Hutan Raya Sultan Syarif Hasyim/Tahura SSH yang merupakan perluasan hutan serba guna Takuala Minas. Minas Siak Area of Operation is adjacent to Sultan Syarif Hasyim Forest Park/ Tahura SSH which is an expansion of Takuala Minas multi-purpose forest.
Asset 2 Field Pendopo	PT Pertamina EP	Kawasan konservasi yang ditetapkan berada di wilayah Komplek Pertamina Pendopo Field kec. Talang Ubi Kab. Penukal Abab Lematang Ilir dan Balai Konservasi Spesies Anggrek kec. Selangit kab. Musi Rawas. The designated conservation area is located in Pertamina Pendopo Field Complex, Talang Ubi District, Penukal Abab Lematang Ilir Regency and the Orchid Species Conservation Center, Selangit District, Musi Rawas Regency.
Blok Offshore Northwest Java (ONWJ)	PT PHE ONWJ	WK di perairan Kabupaten Administrasi Kepulauan Seribu beririsan kawasan konservasi Taman Nasional Laut Kepulauan Seribu seluas 324km^2. Selain itu WK terluar di perairan Pulau Biawak Kabupaten Indramayu berdekatan dengan kawasan konservasi laut daerah (KKLD) Kabupaten Indramayu Provinsi Jawa Barat. The WA in the waters of Seribu Islands Administrative Regency overlaps with the conservation area of Seribu Islands National Marine Park of 324 km^2. In addition, the outermost WA in the waters of Biawak Island, Indramayu Regency, is adjacent to the regional marine conservation area (KKLD) of Indramayu Regency, West Java Province.
Blok Offshore Southeast Sumatra (OSES)	PT PHE OSES	WK OSES diapit 2 Taman Nasional: Taman Nasional Kepulauan Seribu di Tenggara, Taman Nasional Way Kambas di Barat. OSES WA is flanked by 2 National Parks: Seribu Islands National Park in the Southeast, Way Kambas National Park in the West.
Asset 5 Field Sanga-Sanga	PT Pertamina EP	Wilayah kerja PEP Field Sanga-sanga area Samboja berbatasan dengan Taman Nasional Bukit Soeharto. PEP's working area Sanga-sanga Field Samboja area is adjacent to Bukit Soeharto National Park.
Asset 5 Field Tarakan	PT Pertamina EP	Memiliki izin IPPKH Nomor 42/1/IPPKH/PMDN/2018 di Kawasan Hutan Lindung Kab. Bulungan dan Kota Tarakan, Kalimantan Utara. Has IPPKH permit Number 42/1/IPPKH/PMDN/2018 in the Protected Forest Area of Bulungan Regency and Tarakan City, North Kalimantan.
Asset 5 Field Sangata	PT Pertamina EP	Wilayah Kerja PEP Field Sangata beririsan dengan kawasan Taman Nasional Kutai. PEP's Working Area Sangata Field overlaps with the area of Kutai National Park.

Perlindungan dan Pemulihan Habitat di Daerah Operasi [OJK F.10] [SASB EM-EP-160a.1] [IPIECA ENV-4]

Selama tahun 2023 PHE Subholding Upstream melakukan upaya perlindungan dan pemulihan habitat di WK masing-masing. Selain itu, PHE Subholding Upstream juga melakukan penanaman kembali 2 pohon dari beragam jenis termasuk spesies endemik. Kegiatan pemulihan habitat maupun pemulihan lahan, serta konservasi, dilaksanakan dengan melibatkan akademisi/perguruan tinggi dan organisasi independen untuk studi dan penelitian, masyarakat untuk penanaman dan pemeliharaan, serta pihak berwenang di KLHK, termasuk BKSDA setempat dan Dinas Lingkungan Hidup. [GRI 304-3]

Habitat Protection and Restoration in Areas of Operation [OJK F.10] [SASB EM-EP-160a.1] [IPIECA ENV-4]

During 2023, PHE Subholding Upstream made efforts to protect and restore habitats in their respective WAs. In addition, PHE Subholding Upstream also replanted 2 trees of various types including endemic species. Habitat restoration and land restoration activities, as well as conservation, were conducted by involving academicians/universities and independent organizations for studies and research, communities for planting and maintenance, and authorities at the Ministry of Environment and Forestry, including the local BKSDA and the Environmental Service. [GRI 304-3]

Spesies Daftar Merah IUCN dan Spesies Daftar Konservasi Nasional Habitat di Wilayah yang Terkena Dampak Operasi [GRI 304-1, 304-4]

[SASB EM-EP-160a.3] [IPIECA ENV-4]

Dari identifikasi yang dilakukan sampai dengan tahun 2023, diketahui ada beberapa spesies fauna yang berstatus dilindungi menurut Daftar Merah *The International Union for Conservation of Nature* (IUCN); Undang-Undang (UU) No. 5 Tahun 1990 tentang Konservasi Sumber Daya Alam; serta Peraturan Pemerintah No. 7 Tahun 1999 tentang Pengawetan Jenis Tumbuhan dan Satwa. [GRI 304-1]

Species in IUCN Red List and Species in National Habitat Conservation List in Areas Affected by Operations [GRI 304-1, 304-4]

[SASB EM-EP-160a.3] [IPIECA ENV-4]

From the identification conducted until 2023, it is known that there are several fauna species that have protected status according to the Red List of The International Union for Conservation of Nature (IUCN); Law (UU) No. 5 of 1990 concerning Conservation of Natural Resources; and Government Regulation No. 7 of 1999 concerning Preservation of Plant and Animal Species. [GRI 304-1]

» Jumlah Spesies Fauna Dilindungi dan Tingkat Kepunahan Berdasarkan Daftar Merah IUCN Tahun 2024
Number of Protected Fauna Species and Extinction Rate Based on IUCN Red List of 2024

Kritis atau Sangat Terancam Punah Critical or Critically Endangered	Terancam Punah Endangered	Rentan Vulnerable	Hampir Terancam Near Threatened	Risiko Rendah Least Concern
11	19	18	9	163



MELAKUKAN PENGELOLAAN AIR DAN AIR LIMBAH
CONDUCTING WATER AND WASTEWATER MANAGEMENT

EFISIENSI PENGGUNAAN AIR DAN PENGELOLAAN EFLUEN [GRI 303]

Air memainkan peran krusial dalam berbagai aspek operasional, produksi, dan kegiatan pendukung Pertamina Hulu Energi Subholding Upstream. Dengan wilayah operasi yang tersebar di darat dan lepas pantai, kebutuhan air perusahaan dipenuhi melalui pemanfaatan sumber air permukaan, seperti sungai, danau, serta laut, serta air tanah yang tidak berasal dari wilayah dengan keterbatasan pasokan air (*water stress areas*). Wilayah dengan stress air adalah daerah yang mengalami keterbatasan pasokan air secara relatif.

Beberapa sumber air yang digunakan dalam operasi perusahaan juga dimanfaatkan oleh masyarakat sekitar, sehingga pengambilan dan penggunaannya dapat berdampak pada mereka. Oleh karena itu, PHE berkomitmen untuk mengelola sumber daya air secara berkelanjutan dengan melibatkan pemangku kepentingan, termasuk masyarakat setempat, pekerja, serta pihak terkait lainnya. Selain itu, sebagai bagian dari upaya pengelolaan air yang bertanggung jawab, PHE terdaftar sebagai anggota *The International Association of Oil & Gas Producers* (IOGP), yang memiliki subkomite khusus dalam pengelolaan air dan limbah cair (*effluent management*). [GRI 303-1] [IPIECA ENV-2]

WATER USE EFFICIENCY AND EFFLUENT MANAGEMENT [GRI 303]

Water plays a crucial role in various aspects of the operations, production, and supporting activities of Pertamina Hulu Energi Subholding Upstream. With areas of operation spread onshore and offshore, the company's water needs are met through the utilization of surface water sources, such as rivers, lakes, and seas, as well as groundwater that does not come from areas with limited water supply (water stress areas). Water stress areas are the areas that have relatively limited water supply.

Some water sources used in the company's operations are also utilized by the surrounding community, therefore, its collection and use may have an impact on them. Accordingly, PHE Subholding Upstream is committed to managing water resources sustainably by involving the stakeholders, including local communities, workers, and other related parties. In addition, as a part of its responsible water management efforts, PHE Subholding Upstream is registered as a member of The International Association of Oil & Gas Producers (IOGP), which has a special subcommittee on water and effluent management. [GRI 303-1] [IPIECA ENV-2]

» Pelibatan Pemangku Kepentingan dalam Pemanfaatan Air
Stakeholder Engagement in Water Utilization [GRI 303-1]

Pengambilan Air Water Intake	Pengolahan Air Bekas Pakai Used Water Treatment	Pelepasan ke Badan Air Discharge Into Bodies of Water
• Pemenuhan Perizinan. Permit Fulfillment. • Peraturan Pemerintah (PP) Nomor 122 Tahun 2015 tentang Pengusahaan Sumber Daya Air. Government Regulation No. 22 of 2015 concerning Water Resources Management. • Ketentuan turunan, sesuai masing-masing daerah. Derivative provisions, based on each region. • Pemantauan, pengukuran, dan pelaporan. Monitoring, measurement, and reporting.	• Pemenuhan Perizinan. Permit Compliance. • Pemantauan dan pengukuran parameter kualitas olahan air limbah. Monitoring and measuring wastewater treatment quality parameters. • Sesuai Peraturan Menteri Lingkungan Hidup Nomor 19 Tahun 2010 tentang Baku Mutu Air Limbah bagi Usaha dan/atau Kegiatan Minyak dan Gas serta Panas Bumi. In accordance with the Minister of Environment Regulation No. 19 of 2010 concerning Wastewater Quality Standards for Oil and Gas and Geothermal Businesses and/or Activities.	• Persetujuan teknis pembuangan air limbah. Technical approval of wastewater disposal. • Sesuai Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor 6 Tahun 2021 tentang Tata Cara dan Persyaratan Pengelolaan Limbah Bahan Berbahaya dan Beracun. In accordance with Minister of Environment and Forestry Regulation Number 6 of 2021 concerning Procedures and Requirements for Management of Hazardous and Toxic Waste.
Masyarakat Society		
Sosialisasi Socialization	Pemantauan dan pengukuran Monitoring and measurement	Penerimaan keluhan dan tindak lanjut Receipt and follow-up of complaints

PHE Subholding Upstream berkomitmen melakukan efisiensi pemakaian air dan mendukung konservasi sumber daya air di WK setiap Anak Perusahaan. Untuk memastikan pengelolaan air yang bertanggung jawab, kami secara rutin memantau seluruh proses pengambilan, penggunaan, serta pengolahan dan pembuangan efluen ke badan air. Kegiatan ini diawasi oleh Fungsi HSSE dan Operasi di setiap Anak Perusahaan dan dilaporkan secara berkala kepada otoritas terkait. [GRI 303-2] [IPIECA ENV-1]

PHE Subholding Upstream is committed to achieving efficiency of water uses and supporting water resource conservation in the Working Areas of each Subsidiary. To ensure responsible water management, we regularly monitor the entire process of taking, using, and treating and discharging effluents into water bodies. These activities are supervised by the HSSE and Operation Functions in each Subsidiary and are reported periodically to the relevant authorities. [GRI 303-2] [IPIECA ENV-1]

Perusahaan telah mengimplementasikan berbagai inisiatif untuk meningkatkan efisiensi pemanfaatan air serta mendukung praktik pengelolaan air yang berkelanjutan di berbagai fasilitas operasional. Salah satu langkah utama adalah penerapan sistem pengolahan air limbah domestik dengan metode fisika-kimia, di mana air olahan dialirkan ke sumur resapan, sementara lumpur dikumpulkan dalam septic tank untuk penanganan lebih lanjut. Selain itu, dilakukan inovasi pada proses pengeboran guna mengoptimalkan konsumsi air secara signifikan.

The company has implemented various initiatives to improve the efficiency of water utilization and support sustainable water management practices at various operational facilities. One of the main steps is the implementation of a domestic wastewater treatment system with a physical-chemical method, where the treated water is channeled to an infiltration well, while the sludge is collected in a septic tank for further treatment. In addition, innovations have been made in the drilling process to significantly optimize water consumption.

Beberapa inisiatif teknis turut dijalankan, antara lain penggunaan *Fire Tube Boiler* di fasilitas Sangasanga, serta sistem penyiraman tanaman di kawasan hunian karyawan (BDV/*Living Quarter*) yang memanfaatkan air hasil olahan dari instalasi pengolahan air limbah (IPAL). Upaya efisiensi juga dilakukan melalui pemasangan alat *Restriction Orifice* pada sumur air (AROWW), serta penerapan *integrated speed control pump* (ISCP) dengan pemasangan *Variable Speed Drive* (VSD) pada *Deepwell Pump* 374 P 1001 A di fasilitas CPP untuk menghemat pemakaian air tanah.

Several technical initiatives were also undertaken, including the use of Fire Tube Boilers at Sangasanga facility, as well as a plant watering system in the employee housing area (BDV/Living Quarter) that utilizes treated water from the wastewater treatment plant (IPAL). Efforts to increase efficiency were also made through the installation of Restriction Orifice devices on water wells (AROWW), as well as the implementation of an integrated speed control pump (ISCP) with the installation of a Variable Speed Drive (VSD) on Deep-Well Pump 374 P 1001 A at the CPP facility to save groundwater usage.

Langkah lain yang diambil mencakup pengurangan waktu operasi pompa di instalasi *Water Treatment Plant* (WTP), kampanye hemat air di area RDP, dan penerapan teknologi *Rain Water Harvesting* di lokasi pengeboran sebagai alternatif sumber air bersih. Selain itu, efisiensi penggunaan air tanah diperkuat melalui pemasangan sistem alarm kontrol pada pompa WTP.

Other steps taken include reducing pump operating time at the Water Treatment Plant (WTP) installation, water saving campaigns in the RDP area, and implementing Rain Water Harvesting technology at drilling sites as an alternative source of clean water. In addition, the efficiency of groundwater use is strengthened by installing a control alarm system on the WTP pump.

Pemanfaatan kembali air limbah domestik dan drainase juga diterapkan sebagai sumber air untuk sistem pemadam kebakaran, sedangkan sirkulasi air pada sistem pendingin *boiler* ditingkatkan untuk mengurangi konsumsi air bersih. Terakhir, optimalisasi sistem kontrol *anti surge* pada kompresor refrigeran turut berkontribusi dalam efisiensi operasional dan konservasi sumber daya air secara menyeluruh.

Reuse of domestic wastewater and drainage is also implemented as a water source for the fire extinguishing system, while water circulation in the boiler cooling system is improved to reduce clean water consumption. Finally, optimization of the anti-surge control system on the refrigerant compressor contributes to overall operational efficiency and water resource conservation.

Total volume air yang ditarik selama tahun 2024 di seluruh WK PT PHE mencapai 26.840.412,46 m^3 atau setara 26.840 megaliter. Sedangkan air yang dilepaskan pada tahun 2024 mencapai 15.485.439,75 m^3 atau setara 15.485 megaliter. Seluruh air yang dilepaskan telah diolah dan lolos uji untuk memastikan kualitas air sesuai dengan standar lingkungan dan aman bagi lingkungan. Selama tahun 2024, jumlah air yang dikonsumsi adalah sebanyak mencapai 11.354.972,71 m^3 atau setara 11.355 megaliter, menurun 4,68% dari tahun 2023, di mana pada tahun 2023 jumlah air yang dikonsumsi adalah 11.912.652,14 m^3.

The total volume of water withdrawn during 2024 across all WAs of PT PHE reached 26,840,412.46 m^3 or equivalent to 26,840 megaliters. Meanwhile, the water discharged in 2024 reached 15,485,439.75 m^3 or equivalent to 15,485 megaliters. All water discharged has been treated and passed tests to ensure that the water quality meets environmental standards and is safe for the environment. During 2024, the amount of water consumed was 11,354,972.71 m^3 or equivalent to 11,355 megaliters, decreasing by 4.68% from 2023, where in 2023 the amount of water consumed was 11,912,652.14 m^3.

Jumlah air yang diambil, dilepaskan, dan dikonsumsi dibagi ke dalam beberapa sumber air yaitu sumber air tanah *renewable* dan *non renewable*, air permukaan, air laut, air dari pihak ketiga. Sumber air tanah *renewable* adalah air tanah yang dapat diperbaharui dalam kurun waktu 50 tahun sedangkan sumber air tanah *non-renewable* adalah air tanah yang sulit untuk diperbaharui dalam kurun waktu 50 tahun dan umumnya berada pada kedalaman yang lebih dalam dibandingkan sumber air tanah *renewable*. Khusus untuk air pada area water stress pada tahun 2024, PHE melakukan pengambilan air sebanyak 981.563,39 m^3 serta membuang air sebanyak 405.430,60 m^3. Total air yang dikonsumsi di water stress adalah 576.132,80 m^3.

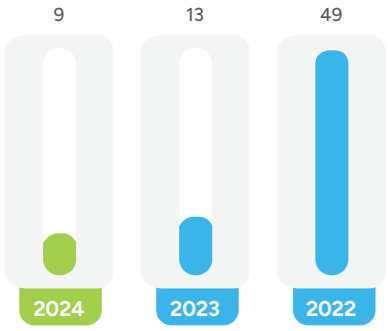
The amount of water taken, discharged, and consumed is divided into several water sources, namely renewable and non-renewable groundwater sources, surface water, seawater, water from third parties. Renewable groundwater sources are groundwater that can be renewed within 50 years while non-renewable groundwater sources are groundwater that is difficult to renew within 50 years and is generally at a deeper depth than renewable groundwater sources. Specifically for water in the water stress area in 2024, PHE took 981,563.39 m^3 of water and discharged 405,430.60 m^3 of water. The total water consumed in the water stress was 576,132.80 m^3.

» Jumlah Air yang Diambil, Dilepaskan, dan Dikonsumsi
The Amount of Water Taken, Discharged, and Consumed [OJK F.8] [GRI 303-3, 303-4, 303-5] [SASB EM-EP-140a.1]

Jenis Air Type of Water	Satuan Unit	2024	2023*	2022*
Air yang diambil Water withdrawn				
Berdasarkan Sumber Air By Water Source				
Jumlah Air Tanah yang Diambil dari Air Tanah Renewable Amount of Groundwater Taken from Renewable Groundwater	Mega Liter Mega Liters	15.847	16.118	15.314
Jumlah Air yang Diambil dari Air Tanah Non Renewable Amount of Water Taken from Non-Renewable Groundwater	Mega Liter Mega Liters	405	424	691
Jumlah Air yang Diambil dari Permukaan Amount of Water Taken from Surface	Mega Liter Mega Liters	9.056	7.437	7.135
Jumlah Air yang Diambil dari Laut Amount of Water Taken from Sea	Mega Liter Mega Liters	988	941	1,060
Jumlah Air dari pihak ketiga Amount of Water from third parties	Mega Liter Mega Liters	387	268	263
Jumlah air dari air hujan (rainwater harvested) Amount of water from rainwater (rainwater harvested)	Mega Liter Mega Liters	157	120	122
Total Penarikan Air Total Water Withdrawal	Mega Liter Mega Liters	26.840	25.307	24.585
Air yang dilepaskan Water Discharge				
Berdasarkan Sumber Air By Water Source				
Jumlah Air yang Dilepaskan Ke Tanah Renewable Amount of Renewable Water Discharged to Ground	Mega Liter Mega Liters	322	346	219
Jumlah Air yang Dilepaskan Ke Tanah Non Renewable Amount of Non-Renewable Water Discharged to Ground	Mega Liter Mega Liters	5.285	4.596	4.219
Jumlah Air yang Dilepaskan ke Permukaan Amount of Water Discharged to Surface	Mega Liter Mega Liters	4.494	3.477	3.218
Jumlah Air yang Dilepaskan ke Laut Amount of Water Discharged to Sea	Mega Liter Mega Liters	4.256	4.183	3.915
Jumlah Air yang Dilepaskan ke Pihak Ketiga Amount of Water Discharged to Third Parties	Mega Liter Mega Liters	1.129	792	721
Total Pelepasan Air Total Water Discharge	Mega Liter Mega Liters	15.485	13.394	12.293
Air yang dikonsumsi Water Consumption				
Total Air yang Dikonsumsi Total Water Consumed	Mega Liter Mega Liters	11.355	11.913	12.293
Gross up production	BOE	266.477.193,46	287.907.006,62	282.326.988,99
Intensitas komsumsi air Intensity of water consumption	m^3/BOE	0,0426	0,0414	0,0435

*) restatement

Jumlah Air yang di Daur Ulang (Mega Liter)
Amount of Water Recycled (Mega Liter) [SASB EM-EP-140a.2]





Pada tahun 2024, tingkat intensitas konsumsi air mencapai 0,0426 m³/BOE. Kami terus melanjutkan penerapan kebijakan efisiensi pemakaian air salah satunya melalui upaya menggunakan air terproduksi yang telah diolah untuk proses injeksi kembali atau disebut *Enhanced Oil Recovery* (EOR). Pengolahan air terproduksi ditujukan agar kandungan di dalam air terproduksi memenuhi baku mutu yang ditetapkan dalam Peraturan Menteri Lingkungan Hidup Nomor 19 Tahun 2010 tentang Baku Mutu Air Limbah bagi Usaha dan/atau Kegiatan Minyak dan Gas serta Panas Bumi. Air terproduksi yang telah diolah kemudian diinjeksi kembali ke sumur minyak untuk menjaga tekanan serta EOR. Selain itu ada yang dilepaskan ke badan air.

In 2024, the intensity level of water consumption reached 0.0426 m3/BOE. We continue to implement efficient water usage policies, one of which is through efforts to use treated produced water for the reinjection process or called Enhanced Oil Recovery (EOR). Produced water treatment aims to make the contents in the produced water meet the quality standards stipulated in Regulation of Minister of Environment Number 19 of 2010 concerning Wastewater Quality Standards for Oil and Gas and Geothermal Businesses and/or Activities. The treated produced water is then re-injected into the oil well to maintain pressure and EOR. In addition, some are discharged into water bodies.

Sepanjang tahun 2024, PHE Subholding Upstream telah menginjeksikan kembali air terproduksi yang telah diolah sebesar 496,97 juta m³ atau 73,04% dari total volume air terproduksi, meningkat dari tahun 2023 dengan volume air terproduksi yang diinjeksi kembali sebanyak 482,05 juta m³ atau 72,46% dari total air terproduksi yang dihasilkan. Selain itu, ada juga 183,41 juta m³ olahan air terproduksi yang dilepaskan kembali ke badan air, meningkat dari tahun 2023 sebesar 183,17 juta m³. [SASB EM-EP-140a.2]

Throughout 2024, PHE Subholding Upstream has reinjected 496.97 million m³ of treated produced water or 73.04% of the total volume of produced water, an increase from 2023 with a volume of re-injected produced water of 482.05 million m³ or 72.46% of the total produced water generated. In addition, 183.41 million m³ of produced treated water was also discharged into water bodies, increasing from 2023 by 183.17 million m³. [SASB EM-EP-140a.2]

Uraian Description	Satuan Units	2024	2023*)	2022*)
Volume Air Terproduksi Diinjeksikan Kembali Volume of Produced Water Re-injected	m³	496.972.461,43	482.046.191,71	480,604,885.87
Volume Air Terproduksi Dialirkan ke Badan Air Volume of Produced Water Flowed to Water Bodies	m³	183.379.455,83	183.166.605,16	170.320.936,11
Volume Air Terproduksi Dialirkan ke Evaporation Pond Volume of Produced Water Flowed to Evaporation Pond	m³	29.207,86	29.287,41	17.674,86
Total Air Terproduksi Total Produced Water	**m³**	**680.381.125,12**	**665.242.084,28**	**650.925.821,98**

*) Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup kategori pelaporan merujuk kepada IOGP Report *Environmental Data Collection User Guide*

*) Restatement of information due to changes in the scope of reporting categories referring to IOGP Report Environmental Data Collection User Guide.



Pertamina EP Donggi Matindok Field

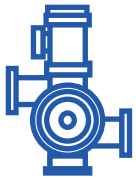
Integrated Speed Control Pump (ISCP)

Integrated Speed Control Pump (ISCP)

Optimalisasi pemakaian air tanah dengan metoda *Integrated Speed Control Pump* (ISCP) dengan memasang VSD di Deepweel Pump 374 P 1001 A di CPP Matindok Field. Program ini berhasil mereduksi konsumsi air bersih sebesar 41.216 meter kubik.

Optimization of groundwater usage with the Integrated Speed Control Pump (ISCP) method by installing VSD in Deep-Well Pump 374 P 1001 A at CPP Matindok Field. This program has succeeded in reducing clean water consumption by 41,216 cubic meters.

BEFORE



Air tanah diambil full sesuai kapasitas *pump*
Groundwater is extracted at full capacity according to the pump's specifications

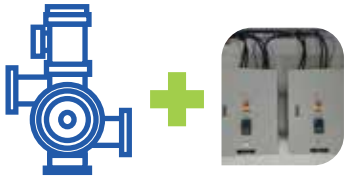


Pengembalian air tanah melebihi kapasitas tank penyimpanan
The return of groundwater exceeds the storage tank capacity



Konsumsi air tanah berlebih
Excessive groundwater consumption

AFTER



Air tanah diambil sesuai kebutuhan
Groundwater is extracted as needed



Tidak melebihi kapasitas tank
Does not exceed the tank capacity



Pengambilan Air Tanah Total mengalami penurunan
Total groundwater extraction has decreased

Pengelolaan Efluen

Sebagai perusahaan yang bergerak dalam produksi minyak dan gas, Pertamina Hulu Energi (PHE) Subholding Upstream memiliki potensi risiko pencemaran lingkungan akibat insiden atau kegiatan non-rutin, seperti tumpahan minyak atau Bahan Berbahaya dan Beracun (B3) di area operasional maupun perairan. Untuk mengelola risiko ini, PHE secara berkala melakukan pemantauan serta pengukuran kualitas air limbah yang telah melalui proses pengolahan. Seluruh kegiatan ini mengikuti standar yang ditetapkan dalam Peraturan Menteri Lingkungan Hidup No. 19 Tahun 2010, yang mengatur Baku Mutu Air Limbah bagi Usaha dan/atau Kegiatan Minyak dan Gas serta Panas Bumi.

Setiap unit usaha di bawah PHE Subholding Upstream telah dilengkapi dengan Instalasi Pengolahan Air Limbah (IPAL) guna memastikan bahwa efluen yang dilepaskan memenuhi standar kualitas yang ditentukan oleh pemerintah. PHE Subholding Upstream juga menjamin bahwa pelepasan efluen tidak dilakukan dengan tekanan tinggi yang dapat merusak struktur permukaan atau dasar perairan. Selama periode pelaporan ini, tidak ada sanksi, denda, atau hukuman lain yang diterima oleh PHE terkait dugaan pencemaran air akibat pelepasan efluen. [GRI 303-2]

Effluent Management

As a company engaged in oil and gas production, Pertamina Hulu Energi (PHE) Subholding Upstream has the potential risk of environmental pollution due to incidents or non-routine activities, such as oil spills or Hazardous and Toxic Materials (B3) in areas of operation or waters. To manage this risk, PHE periodically monitors and measures the quality of wastewater that has been treated. All of these activities follow the standards set out in Regulation of Minister of Environment No. 19 of 2010, which regulates Wastewater Quality Standards for Oil and Gas and Geothermal Businesses and/or Activities.

Each business unit under PHE Subholding Upstream has been equipped with a Wastewater Treatment Plant (WTP) to ensure that the effluent discharged meets the quality standards set by the government. PHE Subholding Upstream also ensures that the discharge of effluent is not conducted at high pressure that can damage the structure of the surface or bottom of the waters. During this reporting period, there were no sanctions, fines, or other penalties received by PHE related to alleged water pollution due to effluent discharge. [GRI 303-2]

Lokasi Kegiatan Location of Activities	Tempat Pengolahan Processing Site	Metode Pengolahan Processing Methods	Bentuk Pemanfaatan Form of Utilization
• Kegiatan di lepas pantai Offshore activities • Kegiatan di daratan Onshore activities	Instalasi pengolahan air limbah (IPAL) Wastewater treatment plant (WTP)	• Biologis. Biological. • Kimiawi. Chemical. • Pemantauan dan pengukuran sesuai Peraturan Menteri Lingkungan Hidup Nomor 19 Tahun 2010 tentang Baku Mutu Air Limbah bagi Usaha dan/atau Kegiatan Minyak dan Gas serta Panas Bumi. Monitoring and measurement in accordance with Minister of Environment Regulation No. 19 of 2010 concerning Wastewater Quality Standards for Oil and Gas and Geothermal Business and/or Activities.	• Digunakan sendiri. Reused. • Dilepaskan ke badan air: laut, berdasar Izin Pembuangan Limbah Cair (IPLC) dari KLHK. Released into bodies of water: the sea, based on the Liquid Waste Disposal Permit (IPLC) from KLHK. • Digunakan sendiri Reused • Dilepaskan ke badan air: saluran air, sungai, danau, berdasarkan izin dari pemerintah daerah. Released into bodies of water: waterways, rivers, lakes, based on permits from the local government.

MELAKUKAN PENGELOLAAN LIMBAH
WASTE MANAGEMENT



Pengelolaan dan Pengolahan Limbah [OJK F.14]

Perusahaan berkomitmen untuk mengelola dan mendaur ulang limbah yang dihasilkan guna mengurangi dampak terhadap lingkungan. Setiap jenis limbah direncanakan pengelolaannya melalui berbagai metode, termasuk eliminasi, substitusi, rekayasa teknis (*engineering*), dan pengendalian administratif. Seluruh proses pengelolaan limbah diawasi secara ketat oleh Fungsi HSSE serta unit terkait di masing-masing Anak Perusahaan. Selain itu, perusahaan juga melakukan pelaporan berkala kepada pihak berwenang untuk memastikan kepatuhan terhadap regulasi yang berlaku. Beberapa pendekatan yang dilakukan oleh PHE dalam pengelolaan limbah: [GRI 306-1, 306-2]

Waste Management and Treatment [OJK F.14]

The company is committed to managing and recycling waste generated to reduce the impact on the environment. Each type of waste is planned to be managed through various methods, including elimination, substitution, engineering, and administrative control. The entire waste management process is strictly supervised by the HSSE Function and related units in each Subsidiary. In addition, the company also conducts regular reporting to the authorities to ensure compliance with applicable regulations. Some approaches taken by PHE Subholding Upstream in waste management: [GRI 306-1, 306-2]

1. Mengurangi limbah dan meningkatkan rasio pengolahan limbah dengan pendekatan *reduce*, *reuse*, *recycle* (3R).
2. Pengelolaan limbah B3 dilakukan dengan prinsip *cradle to grave*. Pengolahan Limbah dilakukan baik secara mandiri oleh unit operasi atau bekerja sama dengan pihak ketiga yang memiliki izin yang mencakup pengangkutan, pemanfaatan, pengolahan, hingga penimbunan limbah B3.
3. Melakukan *monitoring*, pelaporan, dan evaluasi kegiatan pengelolaan limbah baik limbah B3 maupun non-B3.

Berikut adalah beberapa inisiatif yang dilakukan untuk pengelolaan limbah baik limbah berbahaya maupun limbah tidak berbahaya: [OJK F.5]

1. Reducing waste and increasing waste treatment ratio with the reduce, reuse, recycle (3R) approach
2. B3 waste management is conducted with the cradle to grave principle. Waste treatment is conducted either independently by a unit of operation or in collaboration with a third party that has a permit that includes transportation, utilization, treatment, and storage of B3 waste.
3. Conducting monitoring, reporting and evaluation of waste management activities, both B3 and non-B3 waste.

Following are some initiatives undertaken for waste management, both hazardous and non-hazardous waste: [OJK F.5]

10 Inisiatif Teratas dalam Pengurangan Limbah Berbahaya yang Dihasilkan / Dibuang Top 10 Initiatives in Reducing Hazardous Waste Generated/Disposed	10 Inisiatif Teratas dalam Pengurangan Limbah Non-Bahan Berbahaya yang Dihasilkan / Dibuang Top 10 Initiatives in Reducing Non-Hazardous Waste Generated/Disposed
Pemanfaatan Limbah *Drilling Cutting* SOBM Sebagai Raw Material Utilization of SOBM Drilling Cutting Waste as Raw Materials	Composting Limbah Organik Dedaunan dan Rumput Composting of Organic Waste of Leaves and Grass
Pemanfaatan Limbah Serbuk Bor B330-2 Menjadi Bahan Baku Semen oleh Pihak Ketiga Berizin Utilization of B330-2 Drilling Waste as Cement Raw Materials by Licensed Third Parties	Pemanfaatan sampah organik sebagai kompos dan pakan ternak Utilization of organic waste as compost and animal feed
Pemanfaatan Tanah Terkontaminasi sebagai Bahan Baku Semen & Batu Bata Utilization of Contaminated Soil as Raw Materials for Cement & Bricks	Composting Composting
Pemanfaatan Limbah B3 sebagai Alternatif Raw Material oleh pihak ke-3 Utilization of B3 Waste as Alternative Raw Materials by third Parties	Pemanfaatan Limbah Organik menjadi kompos Utilization of Organic Waste into Compost
Pemanfaatan Limbah sludge IPAL sebagai bahan baku batu bata oleh pihak ke-3 Utilization of IPAL sludge waste as raw materials for bricks by third parties	Program 3R limbah non B3 oleh pihak ke-3 3R non-B3 waste program by 3rd parties
Pemanfaatan Limbah Residu Dasar Tangki Minyak Bumi menjadi Bahan Bakar Alternatif Utilization of Petroleum Tank Bottom Residue Waste as Alternative Fuel	Daur ulang sampah Plastik dan Kaleng Recycling of Plastic and Can Waste
Program Pemanfaatan Limbah B3 oleh pihak ke-3 berizin B3 Waste Utilization Program by licensed third parties	Pengolahan Sampah Domestik oleh pihak ketiga Domestic Waste Treatment by Third Parties
Pemanfaatan Limbah Serbuk Bor Oil Base (B330-2) sebagai Bahan Baku Utilization of Oil Base Drilling Waste (B330-2) as Raw Materials	Sedekah Sampah Zona 10 Garbage Charity Zone 10
Upgrading Fasilitas Pemisahan Air Proses di Luar Fasilitas Eksisting Produksi Upgrade of Processed Water Separation Facilities Outside Existing Production Facilities	Daur ulang sampah kertas dan kardus Recycling of paper and cardboard waste
Pemanfaatan Limbah Residu Proses Produksi (A330-2) sebagai bahan baku bata merah oleh pihak ketiga berizin Utilization of Production Process Residue Waste (A330-2) as raw materials for red bricks by licensed third parties	Pemanfaatan Limbah Anorganik (Reuse, Recycle) Utilization of Inorganic Waste (Reuse, Recycle)



Zona 8 - SHU

Program Untuk Bumi Kita (UBUKI)

Program for Our Earth (UBUKI)

Program ini diberi nama "UBUKI" yang merupakan singkatan dari Untuk Bumi Kita, serta memiliki filosofi "*From Secondhand to Become Valuable*". Inovasi ini mulai dirancang dari tahun 2023 dan secara resmi diluncurkan pada tanggal 12 Mei 2024. Dalam program ini, PT Pertamina Hulu Mahakam bekerja sama dengan Yayasan Langkah Bumi Sirkular untuk melalukan proses *upcycling* coverall bekas menjadi produk-produk yang bernilai ekonomi.

Program ini berawal dari permasalahan banyaknya timbunan Alat Pelindung Diri (APD) berupa coverall yang sudah tidak dapat digunakan kembali karena rusak, penurunan fungsi proteksi, atau pun kedaluwarsa, sehingga mendorong Perusahaan untuk berinovasi dengan pengelolaan yang tepat dengan pendekatan 3R (*Reduce, Reuse, Recycle*) dan ekonomi sirkular.

Melalui program UBUKI, Perusahaan telah berhasil mengelola 1 ton coverall bekas per tahun, mendukung pembukaan 65 lapangan pekerjaan baru, menyimpan 2,2 juta TonCO_2eq/tahun, serta mendukung penghematan 3,4 juta liter air dalam proses pembuatan bahan baku baru. Selain itu, program ini juga telah membuka potensi ekonomi sirkular dalam pengelolaan limbah sehingga Perusahaan tidak perlu lagi mengalokasikan biaya untuk pengelolaan coverall bekas sebab program ini dapat menciptakan pembiayaan mandiri.

Program ini berpotensi untuk direplikasi kepada seluruh Subholding Pertamina yang memiliki permasalahan pengelolaan coverall bekas. Salah satu bentuk replikasi yang telah dilakukan adalah:

1. Pada 27 Agustus 2024, PHM diundang oleh Divisi Sustainability dan SMEPP untuk melakukan kurasi dan penilaian terhadap desain dan kualitas sampel produk sepatu olahan coverall bekas yang dibuat oleh UMKM binaan.
2. Replikasi di PT Pertamina Patra Niaga dan telah digunakan acara Sales Meeting (NSM) Direktorat Pemasaran Regional Tahun 2025 pada tanggal 17 Januari 2025.

This program is named "UBUKI" which is an abbreviation of For Our Earth (Untuk Bumi Kita), and has the philosophy "From Secondhand to Become Valuable". This innovation was designed in 2023 and was officially launched on May 12, 2024. In this program, PT Pertamina Hulu Mahakam collaborates with Yayasan Langkah Bumi Sirkular to upcycle used coveralls into products with economic value.

This program started from the problem of the large amount of Personal Protective Equipment (PPE) in the form of coveralls that could no longer be reused due to damage, decreased protective function, or expiration, thus encouraging the Company to innovate with proper management with the 3R approach (Reduce, Reuse, Recycle) and circular economy.

Through the UBUKI program, the Company has successfully managed 1 ton of used coveralls per year, supported the opening of 65 new jobs, saved 2.2 million TonCO_2eq/year, and supported the savings of 3.4 million liters of water in the process of making new raw materials. In addition, this program has also opened up the potential for a circular economy in waste management so that the Company no longer needs to allocate costs for the management of used coveralls because this program can create independent financing.

This program has the potential to be replicated to all Pertamina Subholdings that have problems managing used coveralls. One form of replication that has been conducted is:

1. On August 27, 2024, PHM was invited by the Sustainability Division and SMEPP to conduct curation and assessment of the design and quality of samples of shoe products from processed used coveralls made by assisted MSMEs.
2. Replication at PT Pertamina Patra Niaga and has been used for Sales Meeting (NSM) of Directorate of Regional Marketing of 2025 on January 17, 2025.

JUMLAH LIMBAH YANG DIHASILKAN, LIMBAH YANG DIALIHKAN DARI PEMBUANGAN AKHIR, DAN LIMBAH YANG DIKIRIMKAN KE PEMBUANGAN AKHIR [OJK F.13]

[GRI 306-3, 306-4, 306-5]

Timbulan limbah yang dihasilkan Perseroan terdiri dari limbah yang mengandung bahan beracun dan berbahaya (B3) serta limbah non-B3. Selama tahun 2024, volume timbulan limbah B3 di seluruh WK PHE Subholding Upstream mencapai 175.144,45 ton, dan timbulan limbah non-B3 sebanyak 15.569,27 ton. Sedangkan volume limbah yang dapat dialihkan dari pembuangan akhir melalui upaya pengolahan dan penggunaan kembali *reuse* dan *recycle* secara total adalah 4.374,47 ton. Limbah B3 yang dikelola oleh pihak ketiga, baik yang dimanfaatkan sebagai alternatif bahan baku, alternatif bahan bakar adalah sebesar 84.874,44 ton. Sedangkan pemanfaatan limbah non-B3 adalah sebesar 1.981,47 ton. Limbah yang diproses di pembuangan akhir adalah sebesar 15.415,00 ton untuk limbah B3 dan 6.288,67 ton untuk limbah non-B3. Limbah B3 yang dikelola langsung oleh Perusahaan dengan *incinerator*, bioremediasi, dan injeksi melalui *Sand Management Facility* adalah sebesar 74.535,83 ton dan Limbah Non B3 yang dikelola langsung oleh Perusahaan adalah sebesar 2.600,14 ton.

Dalam proses pengelolaan, tidak ada tumpahan dari material limbah yang membahayakan lingkungan. Kegiatan eksplorasi dan produksi PHE Subholding Upstream tidak menimbulkan *tailings*. Karena tidak ada *tailings* yang dihasilkan maka Perusahaan tidak perlu memiliki *tailings storage facilities* di seluruh Regional dan Anak Perusahaan. [OJK F.15]

AMOUNT OF WASTE GENERATED, WASTE TRANSFERRED FROM LANDFILL, AND WASTE SENT TO LANDFILL [OJK F.13] [GRI 306-3, 306-4, 306-5]

The waste generated by the Company consists of waste containing toxic and hazardous materials (B3) and non-B3 waste. During 2024, the volume of B3 waste generation in all WAs of PHE Subholding Upstream reached 175,144.45 tons, and non-B3 waste generation was 15,569.27 tons. Meanwhile, the volume of waste that can be transferred from the landfill through processing and reuse efforts is a total of 4,374.47 tons. B3 waste managed by third parties, both utilized as alternative raw materials and alternative fuels, was 84,874.44 tons. While the utilization of non-B3 waste was 1,981.47 tons. Waste treated in the landfill was 15,415.00 tons for B3 waste and 6,288.67 tons for non-B3 waste. B3 waste managed directly by the Company with incinerators, bioremediation, and injection through the Sand Management Facility was 74,535.83 tons and Non-B3 waste managed directly by the Company was 2,600.14 tons.

In the management process, there is no spill of waste material that is harmful to the environment. Exploration and production activities of PHE Subholding Upstream do not produce tailings. Because no tailings are produced, the Company does not need to have tailings storage facilities in all Regions and Subsidiaries. [OJK F.15]

» Jumlah Limbah yang Dihasilkan, Limbah yang Dialihkan dari Pembuangan Akhir, dan Limbah yang Dikirimkan ke Pembuangan Akhir

Amount of Waste Generated, Waste Transferred from Landfill, and Waste Sent to Landfill

[OJK F.13] [GRI 306-3, 306-4, 306-5]

Komposisi limbah The composition of waste	Satuan Unit	2024	2023*)	2022*)
Limbah yang Dihasilkan Waste Generated				
Limbah Bahan Berbahaya dan Beracun Hazardous and Toxic Waste	Ton Tonnes	175.144,45	209.622,78	140.440,37
Limbah Non Bahan Berbahaya dan Beracun Non-Hazardous and Non-Toxic Waste	Ton Tonnes	15.569,27	13.887,49	15.856,45
Total Limbah yang Dihasilkan Total Waste Generated	**Ton** Tonnes	**190,713.72**	**223.510,27**	**156.296,82**
Limbah Digunakan Kembali dan Didaur Ulang Waste Reused and Recycled				
Limbah Bahan Berbahaya dan Beracun Hazardous and Toxic Waste	Ton Tonnes	82,89	45,89	94,47
Limbah Non Bahan Berbahaya dan Beracun Non Hazardous and Toxic Waste	Ton Tonnes	4.291,58	3.931.45	2.200,02
Total Limbah Digunakan Kembali dan Didaur Ulang Total Waste Reused and Recycled	**Ton** Tonnes	**4.374,47**	**3.977,33**	**2.294,49**
Limbah Dikelola Sendiri Waste Managed by Itself				
Limbah Bahan Berbahaya dan Beracun Hazardous and Toxic Waste Materials	Ton Tonnes	74.535,83	70.707,34	69.823,72
Limbah Non Bahan Berbahaya dan Beracun Non Hazardous and Toxic Waste	Ton Tonnes	2.600,14	**2.315,77**	7.148,10
Total Limbah Dikelola Sendiri Total Waste Managed by Itself	**Ton** Tonnes	**77.135,97**	73.023,11	**76.971,82**
Limbah Dikelola oleh Pihak Ketiga Waste Managed by Third Parties				
Limbah Bahan Berbahaya dan Beracun Hazardous and Toxic Waste Materials	Ton Tonnes	**100.289,44**	138.830,68	**70.474,85**
Limbah Non Bahan Berbahaya dan Beracun Non Hazardous and Toxic Waste	Ton Tonnes	**8.270,13**	7.115,31	**6.258,11**
Total Limbah Dikelola oleh Pihak Ketiga Total Waste Managed by Third Parties	**Ton** Tonnes	**108.559,57**	**145.945,99**	**76.732,96**

*) Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup kategori pelaporan dengan penambahan kategori limbah dikelola sendiri (Limbah dikelola di perusahaan dan tidak kelola oleh pihak ketiga)

*) Restatement of information due to changes in the scope of reporting categories with the addition of the category of waste managed by itself (Waste managed in the company and not managed by a third party)

KEPATUHAN LINGKUNGAN DAN MEKANISME PENGADUAN LINGKUNGAN

ENVIRONMENTAL COMPLIANCE AND ENVIRONMENTAL COMPLAINT MECHANISM [OJK F.16]

Pertamina Hulu Energi (PHE) Subholding Upstream berkomitmen untuk mematuhi seluruh regulasi lingkungan yang berlaku sebagai bagian dari tanggung jawab perusahaan dalam menjaga kelestarian lingkungan. Sebagai bukti dari komitmen ini, selama periode pelaporan, PHE tidak menerima sanksi akibat ketidakpatuhan terhadap regulasi lingkungan berupa denda. Setiap kegiatan operasional yang dilakukan selalu melalui asesmen kepatuhan lingkungan, yang dievaluasi secara berkala dan dimonitor secara berkelanjutan guna memastikan standar yang ditetapkan tetap terpenuhi.

Dalam menjalankan proyek dan aktivitas operasionalnya, PHE memastikan keterlibatan pemangku kepentingan internal maupun eksternal sejak tahap perencanaan awal. Langkah ini tidak hanya untuk memastikan kepatuhan terhadap regulasi, tetapi juga untuk membangun hubungan yang harmonis dengan masyarakat sekitar serta menjaga keseimbangan antara operasional bisnis dan kesejahteraan komunitas lokal. PHE juga menyediakan mekanisme pengaduan terbuka bagi masyarakat dan pemangku kepentingan lainnya untuk menyampaikan keluhan terkait pengelolaan lingkungan. Pengaduan dapat diajukan langsung ke Kantor Pusat PHE Subholding Upstream di Jakarta atau kantor operasional anak perusahaan di masing-masing wilayah kerja.

Sepanjang tahun 2024, tidak ada pengaduan signifikan yang diterima terkait pencemaran atau masalah lingkungan lainnya, mencerminkan efektivitas sistem pengelolaan lingkungan yang diterapkan serta komunikasi yang baik dengan masyarakat. Adapun pengaduan yang diterima telah diselesaikan oleh perusahaan. Selain itu, tidak ada proyek PHE Subholding Upstream yang mengalami penundaan akibat faktor non-teknis, menunjukkan bahwa perusahaan menjalankan operasionalnya dengan penuh tanggung jawab dan telah mempertimbangkan aspek sosial serta lingkungan dalam setiap kegiatan yang dilakukan. [OJK F.16] [SASB EM-EP-210b.1, 210b.2]

BIAYA PENGELOLAAN LINGKUNGAN

Sepanjang tahun 2024 PHE Subholding Upstream mengelola lingkungan dengan biaya sebesar Rp1.135,98 miliar. Biaya ini digunakan untuk mengurangi emisi, mengelola limbah, menjaga keanekaragaman hayati, dan pelaksanaan penghijauan. [OJK F.4]

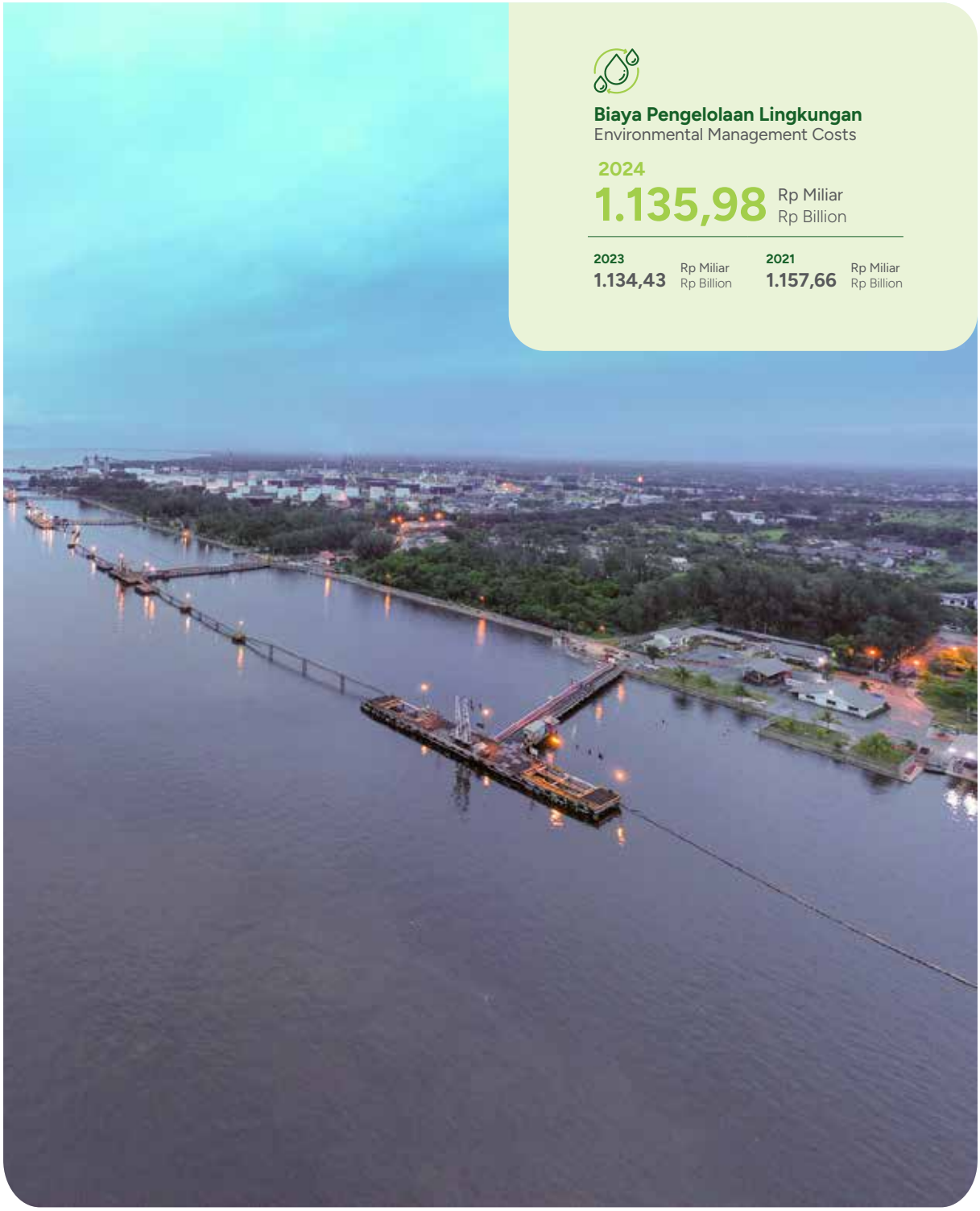
Pertamina Hulu Energi (PHE) Subholding Upstream is committed to complying with all applicable environmental regulations as a part of the company's responsibility for maintaining environmental sustainability. As evidence of this commitment, during the reporting period, PHE did not receive any sanctions due to non-compliance with environmental regulations in the form of fines. Every operational activity conducted always goes through an environmental compliance assessment, which is regularly evaluated and continuously monitored to ensure that the established standards are met.

In performing its projects and operational activities, PHE ensures the involvement of internal and external stakeholders from the early planning stage. This step is not only to ensure compliance with regulations, but also to build harmonious relationships with the surrounding community and maintain a balance between business operations and the welfare of the local community. PHE also provides an open complaint mechanism for the community and other stakeholders to submit complaints related to environmental management. Complaints can be submitted directly to the Head Office of PHE Subholding Upstream in Jakarta or the operational office of a subsidiary in each working area.

Throughout 2024, no significant complaints were received regarding pollution or other environmental issues, reflecting the effectiveness of the environmental management system implemented and good communication with the community. The complaints received have been resolved by the company. In addition, no projects of PHE Subholding Upstream were delayed due to non-technical factors, indicating that the company performs its operations responsibly and has considered social and environmental aspects in every activity conducted. [OJK F.16] [SASB EM-EP-210b.1, 210b.2]

ENVIRONMENTAL MANAGEMENT COSTS

Throughout 2024, PHE Subholding Upstream managed the environment at a cost of Rp1,135.98 billion. This cost was used to reduce emissions, manage waste, maintain biodiversity, and implement reforestation. [OJK F.4]



Biaya Pengelolaan Lingkungan
Environmental Management Costs

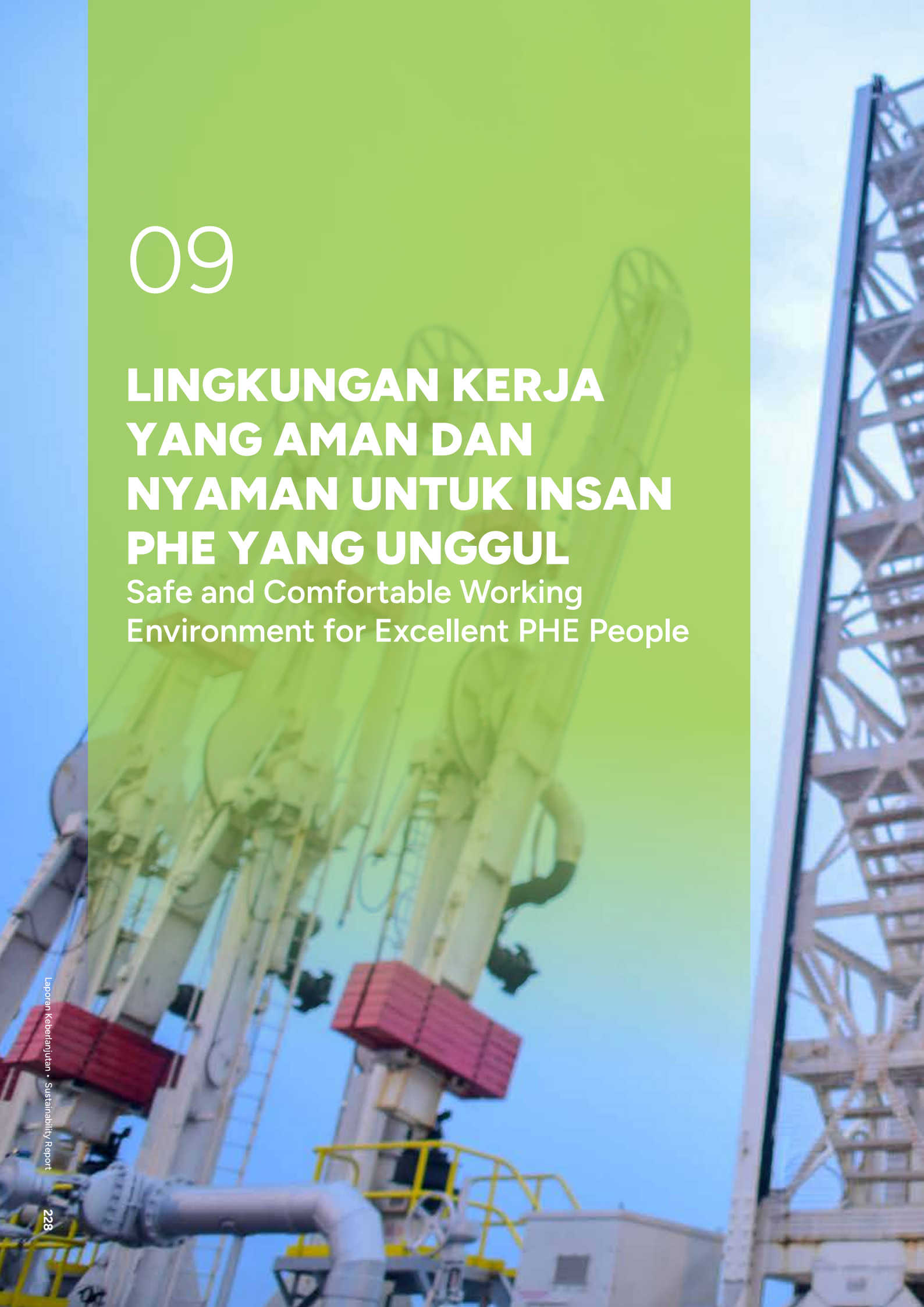
2024
1.135,98 Rp Miliar / Rp Billion

2023		2021	
1.134,43	Rp Miliar / Rp Billion	1.157,66	Rp Miliar / Rp Billion

09

LINGKUNGAN KERJA YANG AMAN DAN NYAMAN UNTUK INSAN PHE YANG UNGGUL

Safe and Comfortable Working Environment for Excellent PHE People





PENGEMBANGAN INSAN PHE YANG UNGGUL DAN PRAKTIK KETENAGAKERJAAN

DEVELOPMENT OF EXCELLENT PEOPLE OF PHE AND EMPLOYMENT PRACTICES

[GRI 3-3, 401]

Pengelolaan SDM suatu perusahaan memiliki dampak signifikan terhadap produktivitas, efisiensi, dan keberlanjutan suatu perusahaan. SDM perlu dipandang sebagai aset strategis dari suatu perusahaan dan dikelola melalui praktik manajemen yang efektif. Pihak Perseroan sepakat bahwa tiap Insan PHE merupakan aset utama perusahaan yang butuh dikelola dengan optimal agar dapat melakukan fungsinya dengan baik dan mencapai target yang dituju perusahaan.

PHE mengalami peningkatan jumlah tenaga kerja yang signifikan setelah melakukan implementasi organisasi Subholding Upstream pada tahun 2021. Peningkatan tersebut juga terjadi pada tenaga kerja anak perusahaan yang sebelumnya berasal dari entitas kecil hulu migas. Oleh karena itu, Perseroan perlu menerapkan kebijakan, peraturan, ketentuan dan sistem yang dapat diimplementasikan kepada seluruh pekerja dari berbagai entitas perusahaan. Penerapan ketentuan tersebut dilakukan dalam rangka meningkatkan kualitas pengelolaan SDM sekaligus menjaga keharmonisan hubungan antara karyawan dengan Perseroan.

Fungsi SDM di bawah Direktorat Sumber Daya Manusia dan Pengembangan Bisnis berperan penting dalam mendukung pencapaian target Perseroan melalui revaluasi desain organisasi, pemenuhan tenaga kerja, pengembangan kompetensi pekerja, dan menjaga retensi karyawan.

Fokus aktivitas *Human Capital* sejalan dengan Aspirasi Direktur SDM Holding, Program Kerja Direktur Utama dan Direktur SDM & Penunjang Bisnis *Subholding Upstream*.

Seluruh rencana kerja dan/atau inisiatif strategis yang disusun dan ditetapkan mengacu kepada *Talent Management System* yang berlaku di Pertamina Group mulai dari *Talent Sourcing, Talent Acquisition, Talent Classification & Review, Talent Development, Talent Mobility & Talent Retention*.

Human resource management of a company has a significant impact on the productivity, efficiency, and sustainability of a company. Human resources need to be viewed as a strategic asset of a company and managed through effective management practices. The Company agrees that each Person of PHE is a main asset of the company that needs to be managed optimally in order to perform its functions properly and achieve the company's targets.

PHE experienced a significant increase in the number of workers after implementing the organization of the Subholding Upstream in 2021. The increase also occurred in the workforce of subsidiaries that previously came from small upstream oil and gas entities. Therefore, the Company needs to implement policies, regulations, provisions and systems that can be implemented to all workers from various company entities. These provisions are implemented in order to improve the quality of HR management while maintaining harmonious relations between employees and the Company.

The HR function under the Directorate of Human Resources and Business Development plays an important role in supporting the achievement of the Company's targets through revaluation of organizational design, workforce fulfillment, employee competency development, and maintaining employee retention.

The focus of Human Capital activities is in line with the Aspirations of the Director of HC of the Holding, the Work Program of the President Director and the Director of HC & Corporate Services of the Subholding Upstream.

All work plans and/or strategic initiatives that are prepared and determined refer to the Talent Management System applicable within Pertamina Group starting from Talent Sourcing, Talent Acquisition, Talent Classification & Review, Talent Development, Talent Mobility & Talent Retention.

Strategic Plan 2024 Direktur SDM & Penunjang Bisnis Subholding Upstream

Strategic Plan 2024 of Director of HC & Corporate Services of Subholding Upstream



1. Development & Production
   a. Advance Analytics for Gas Lift Optimization
   b. Predictive Maintenance for ESP
   c. Decision Support for Drilling Optimization
2. Business Support
   a. Online Commercial System
   b. Advance Analytics of Buyer Masterdata
   c. Analytics for "challenge" Insights
   d. Generative AI & Automation for Procurement Classification
3. System Support
   a. IoT Standardization & Implementation
   b. Upstream Cloud Gen 2.0
   c. Enhancement Cyber Security
   d. Well Database Development

1. Supporting Mechanism Management
   Integrated Digital HC Management System
2. Strengthening ESG HC Initiatives
   Implementation HC program ESG (Diversity & Turn Over) to gain better Score for ESG
3. Strengthening RWP & HSSE Awareness
   Increment Result of engagement survey & HSSE Awareness
4. Global Remuneration (Internal & Expert)
   Global remuneration scheme to support the global talent & Implementation of Global Talent Development Program
5. Talent Development & Readiness
   Develop Upstream Talent's Global competency & Readiness to support New Subholds (AMKA, Deeapsea, EOR & ANK) initiatives
6. SHU Organization Effectiveness
   a. Agile & Effective Organization based on Business Needs
   b. New Organization for new proposed based Organization

1. Standardization
   Continuous Improvement Contract, Guidelines, Procedure & Policies
2. Digitalization
   a. Go Live UCAN, SOLUTION for Prealist, SPR & TKDN
   b. Develop Logistic Management & GS Digitalization (SS AM AMI)
3. Procurement
   Funneling & Integrated Procurement Monitoring, PADI UMKM, Sinergy APIs, Aggreas Demand, e-Catalogue & TKDN Utilization
4. Logistic
   Optimizing Master & Digitalized Inventory Management
5. General Services
   Techno Economic Evaluation for Office Relocation SHU Group, Greenship Certification, Optimizing GA Contracts (office, KRP, Warehouse & RDP)

Dari beberapa inisiatif strategis yang telah ditetapkan di *level Vice President* (VP) HC *Subholding Upstream*, terdapat 6 (enam) strategi sebagai strategi prioritas yang sejalan dengan program kerja SDM Holding dan menjadi inisiatif strategis di tingkat Direktur SDM & Penunjang Bisnis sebagai berikut:

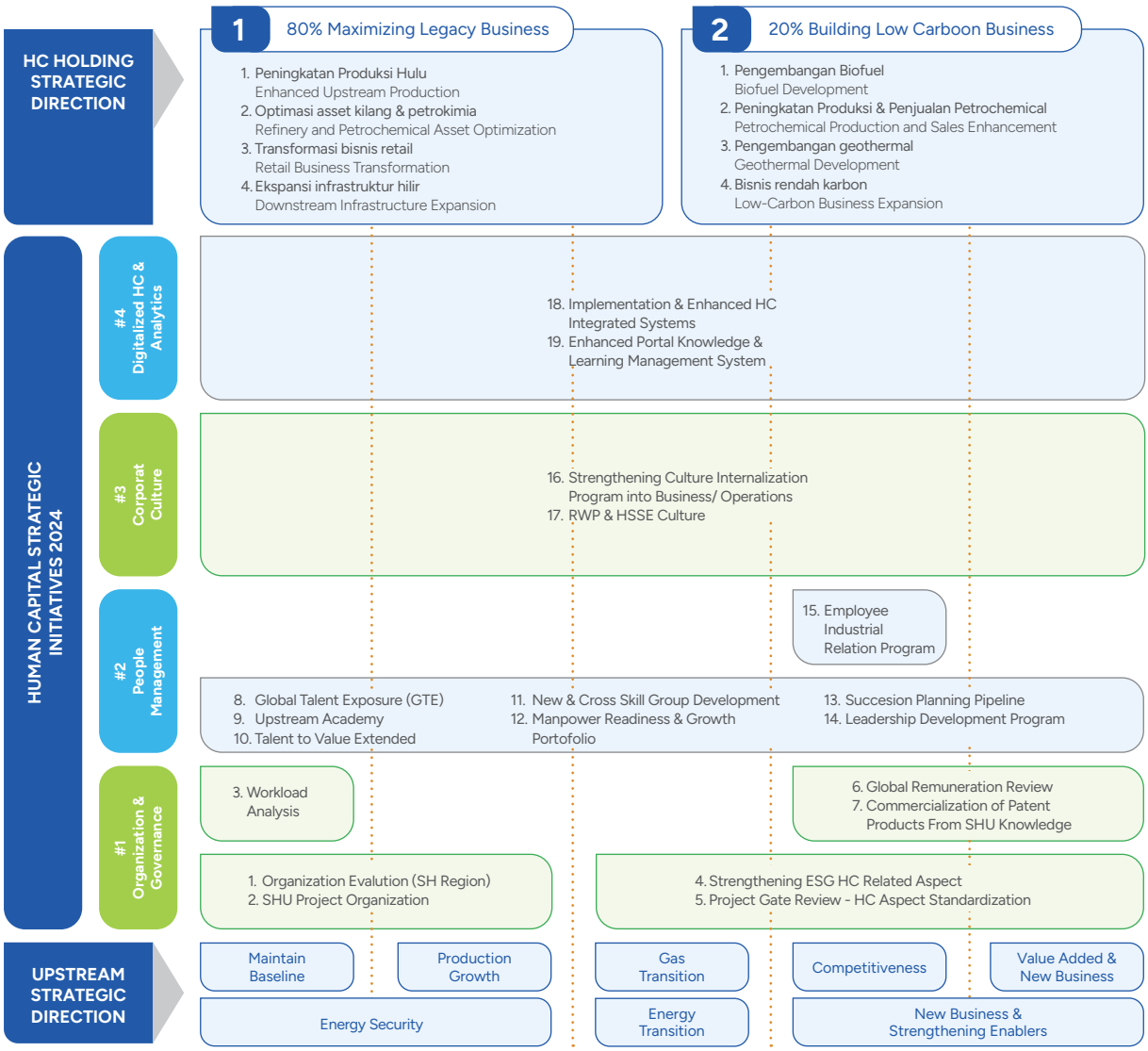
1. *SHU Organization Effectiveness*
2. *Talent Development & Readiness*
3. *Global Remuneration (International Aspect)*
4. *Strengthening RWP & HSSE Culture*
5. *Strengthening ESG HC Related Aspect*
6. *HC Digitalization*

From the several strategic initiatives that have been established at the level of Vice President (VP) HC of the Subholding Upstream, there are 6 (six) strategies as priority strategies that are in line with the HR work program of the Holding and become strategic initiatives at the level of Director of HC & Corporate Services as follows:

1. SHU Organization Effectiveness
2. Talent Development & Readiness
3. Global Remuneration (International Aspect)
4. Strengthening RWP & HSSE Culture
5. Strengthening ESG HC Related Aspect
6. HC Digitalization

» Framework HC Strategic Initiatives 2024

Framework for HC Strategic Initiatives 2024



Program Kerja HC SHU dibagi mnejadi Empat Pilar yaitu:

1. *Organization & Governance*
   Melaksanakan peninjauan organisasi dan strategi pemenuhan tenaga kerja untuk mewujudkan organisasi yang kompetitif, efektif dan efisien.

   Memastikan pengelolaan Sumber Daya Manusia berjalan sesuai dengan tata Kelola Perusahaan dan peraturan perundangan yang berlaku sehingga dapat tercipta hubungan industrial yang harmonis baik di internal maupun eksternal Perusahaan.

2. *People Management*
   Menganalisa dan menentukan program pengembangan Pekerja melalui pelatihan, *coaching* dan *job assignment* untuk membentuk *best talent* dalam rangka memenuhi kebutuhan organisasi sesuai dengan dinamika dan tantangan bisnis.

The HC Work Program of SHU is divided into Four Pillars, namely:

1. Organization & Governance
   Performing organizational reviews and workforce fulfillment strategies to create a competitive, effective and efficient organization.

   Ensuring that Human Resource management is conducted in accordance with Corporate Governance and applicable laws and regulations so as to create harmonious industrial relations both internally and externally within the Company.

2. People Management
   Analyzing and determine employee development programs through training, coaching and job assignments to form the best talent in order to meet organizational needs in accordance with business dynamics and challenges.

3. *Corporate Culture*
Merencanakan dan mengimplementasikan meng-internalisasikan program budaya tata nilai Perusahaan, menjaga sikap saling menghargai dan bebas diskriminasi agar berjalan dengan baik di seluruh lini jabatan sehingga mendukung tercapainya *High Performance Culture*.

4. *Digitalized HC & Analytics*
Membangun dan mengelola digitalisasi dalam aspek HC baik di lingkungan *Subholding Upstream* yang selaras dengan kebutuhan digitalisasi Pertamina *wide*, sehingga dapat mendukung percepatan dan integrasi digitalisasi pada proses bisnis Perusahaan.

ORGANISASI & TATA KELOLA

1. Penyempurnaan Organisasi
Berikut ini adalah daftar perubahan organisasi yang telah mendapatkan persetujuan Dirut PHE maupun SDM Holding sepanjang tahun 2024.

3. Corporate Culture
Planning and implementing/internalizing the Company's value culture program, maintaining an attitude of mutual respect and freedom from discrimination so as to run well across all lines of office, thus supporting the achievement of a High Performance Culture.

4. Digitalized HC & Analytics
Building and managing digitalization in the HC aspect both within the Subholding Upstream that is in line with wide digitalization needs of Pertamina, so as to support the acceleration and integration of digitalization in the Company's business processes.

ORGANIZATION & GOVERNANCE

1. Organizational Improvement
The following is a list of organizational changes that have received approval from the President Directors of PHE and HR of the Holding throughout 2024.

» Tabel Daftar Penyempurnaan Organisasi tahun 2024
List of Organizational Improvements in 2024

No	Organisasi Organization	Tmt Efektif Effective Date
1	Organisasi Projek – Pertamina Norhteast Java Project Organization – Pertamina North East Java	Februari 2024 February 2024
2	Validasi PT PDSI Validation of PT PDSI	Maret 2024 March 2024
3	Validasi PRL PT Elnusa, Tbk. PRL Validation of PT Elnusa, Tbk.	Mei 2024 May 2024
4	Direktorat Risk Management Directorate of Risk Managemen	Juli 2024 July 2024
5	Endstate Organisasi Integrasi PHR & WK Rokan End-state Organization Integration of PHR & Rokan WA	Desember 2024 December 2024

2. Rekrutmen Pekerja
Jumlah Pekerja yang telah direkrut sebanyak 330 Orang dari beberapa program perekrutan sebagai berikut:
- BPS sebanyak 198 Orang,
- BPA sebanyak 77 Orang,
- BKJT sebanyak 50 Orang,
- *Experience Hire* sebanyak 5 Orang.

3. *Environment, Social & Governance* (ESG)
Untuk meningkatkan dan memenuhi kriteria ESG dari aspek Human Capital, terlah dilaksanakan beberapa hal sebagai berikut:
- Penerbitan data *Turnover Rate* 2023 di *Sustainability Report* (SR) PHE 2023
- Penerbitan Surat Perintah ESG di Fungsi HC yang di sahkan oleh VP HC *Subholding Upstream*
- Penyampaian Laporan ESG Aspek HC TW I 2024 kepada HC *Management*

2. Employee Recruitment
The number of workers recruited is 330 people from several recruitment programs as follows:
- 198 people from BPS,
- 77 people from BPA,
- 50 people from BKJT,
- 5 people from Experience Hire.

3. Environment, Social & Governance (ESG)
To improve and fulfill ESG criteria from the Human Capital aspect, the following have been implemented:
- Publication of data of Turnover Rate 2023 in Sustainability Report (SR) 2023 of PHE
- Issuance of an ESG Order Letter in the HC Function which is authorized by the VP HC of the Subholding Upstream
- Submission of ESG Report HC Aspects Q I 2024 to HC Management

- Ikhtisar Persiapan Audit PIPL
- Penerbitan Respectful Workplace Policy 2024
- Penerbitan Human Rights Policy 2024
- Action Plan terkait HC dari Workshop ESG SHU
- Laporan ESG Aspek HC TW II 2024
- Laporan Human Rights Semester I 2024
- Penerbitan data HC termutakhir untuk persiapan assessment ESG
- Pelaksanaan Audit PIPL
- Laporan ESG Aspek HC TW III 2024

4. Perjanjian Kerja Bersama (PKB)
   Fungsi Industrial Relation (IR) Subholding Upstream melakakukan pendampingan selama proses penyusunan PKB di Entitas sampai proses pengesahaan antara Serikat Pekerja dan Perusahaan. Entitas yang telah disahkan sepanjang tahun 2024 yaitu Pertamina Hulu Mahakam, Pertamina Hulu Indonesia dan Pertamia Hulu Kalimantan Timur.

5. Harmonisasi Pengupahan
   Pada tahun 2024, hamornisasi pengupahan yang akan dilakukan sebagai berikut:
   - Harmonisasi Pengupahan – Tunjangan Posisi, sudah mendapatkan persetujuan SDM Holding dan telah dilakukan Pelaksanaan Salary Increase Tahun 2024 di lingkungan SHU Group.
   - *Study* Harmonisasi Pengupahan Aspek Internasional, bekerjasama dengan konsultan untuk dapat membantu Fungsi HC *Subholding Upstream* dan HC Regional 5 melakukan studi. Hasil yang diperoleh berupa data benchmarking remunerasi yang berlaku di wilayah kerja luar negeri saat ini.
   - Pendampingan usulan RKAP 2025 & WP&B 2025 PT Badak NGL.

6. Pengelolaan Sistem Tata Kelola (STK) & ISO
   a. Pengelolan STK
      - Proses pengelolaan secara bertahap dilakukan Reviu sebanyak 37 STK, Proses Persetujuan 28 STK dan sudah di-publish sebanyak 24 STK.
      - STK yang telah dilakukan ratifikasi dari STK Subholding Upstream ke Entitas sebanyak 100 STK.

   b. Pembaharuan & Penerbitan ISO 2024
      Melakukan pembaharuan ISO yaitu: ISO 27001, Information Security Management System (ISMS) applies to The Provision of Information Protection, Cyber Security and Digital Defense Services in Upstream Oil and Gas Business Activities; ISO 37001, Anti-Bribery Management System : Provision of Upstream Oil and Gas Exploration and Production at Head Office; ISO 41001, The Provision of Facility Management Services at Head Office and PUDC Building.

- PIPL Audit Preparation Overview
- Publication of Respectful Workplace Policy 2024
- Publication of Human Rights Policy 2024
- Action Plan related to HC from ESG Workshop of SHU
- ESG Report HC Aspects Q2 2024
- Human Rights Report Semester I 2024
- Publication of latest HC data for ESG assessment preparation
- Implementation of PIPL Audit
- ESG Report HC Aspects Q3 2024

4. Collective Labor Agreement (CLA)
   The Industrial Relations (IR) function of the Subholding Upstream provides assistance during the CLA drafting process in the Entity until the ratification process between the Labor Union and the Company. The entities that have been ratified throughout 2024 are Pertamina Hulu Mahakam, Pertamina Hulu Indonesia and Pertamia Hulu Kalimantan Timur.

5. Wage Harmonization
   In 2024, wage harmonization was conducted as follows:
   - Wage Harmonization – Position Allowances, has received approval from the HR of the Holding and the Salary Increase of 2024 has been implemented within SHU Group.
   - Study of International Aspect of Wage Harmonization, in collaboration with consultants to assist the HC Function of the Subholding Upstream and the HC of Region 5 in conducting a study. The results obtained are in the form of remuneration benchmarking data that applies in the current overseas working areas.
   - Assistance with the 2025 RKAP & 2025 WP&B proposal for PT Badak NGL.

6. Management of Governance System (STK) & ISO
   a. STK Management
      - The gradual management process involves reviewing 37 STKs, approving 28 STKs and publishing 24 STKs.
      - The number of STK that has been ratified from the STK of the Subholding Upstream to the Entity is 100 STK.

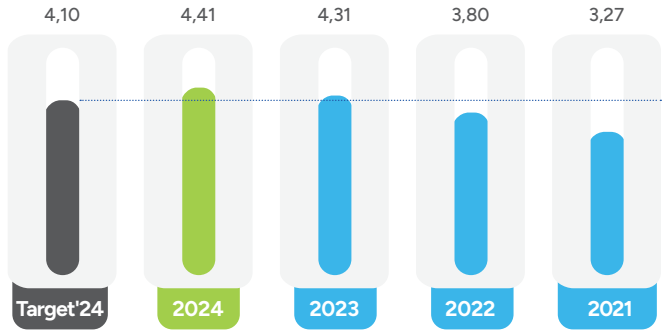
   b. Update & Publication of ISO 2024
      Performing ISO updates, namely: ISO 27001, Information Security Management System (ISMS) applies to Provision of Information Protection, Cybersecurity and Digital Defense Services in Upstream Oil and Gas Business Activities; ISO 37001, Anti-Bribery Management System: Provision of Upstream Oil and Gas Exploration and Production at Head Office; ISO 41001, Provision of Facility Management Services at Head Office and PUDC Building.

7. *Employee Satisfaction Survey/User Satisfaction Index* 2024
Pada tanggal 12 Desember 2024 telah dilakukan pengukuran kepuasan layanan *Human Capital* di Lingkungan SHU melalui metode *survey* dengan responden di Kantor Pusat SHU, Regional 1 s/d Regional 5 sebanyak 2510 Pekerja (122% dari target responden 2042). Realisasi *Index* kepuasan tahun 2024 meningkat 2.3% dari 4.31 menjadi 4.41 dengan rincian sebagai berikut:

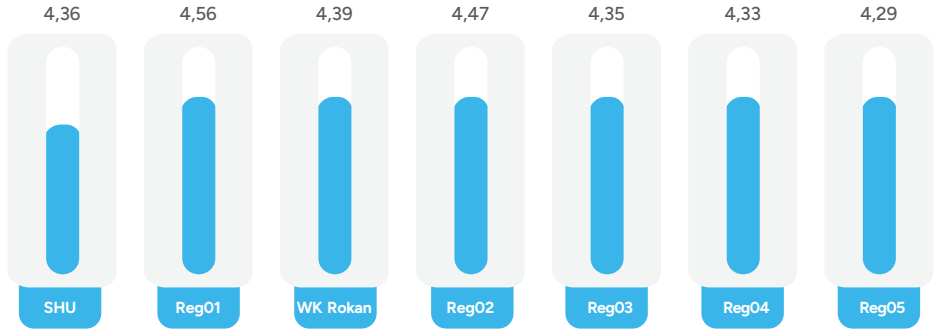
7. Employee Satisfaction Survey/User Satisfaction Index 2024
On December 12, 2024, a measurement of satisfaction with Human Capital services within SHU was conducted through a survey with 2510 Worker respondents at the Head Office of SHU, Region 1 to Region 5 (122% of the target respondents of 2042). The realization of the satisfaction index of 2024 increased by 2.3% from 4.31 to 4.41 with the following details:

» Grafik Relalisasi Index Survey Per Tahun & Per Regional
Chart of Survey Index Realization Per Year & Per Region

01. Trend Index Survey



02. Index Survey per Regional



MANAJEMEN SUMBER DAYA MANUSIA

Pengembangan kapabilitas & kompetensi Pekerja di Subholding Usptream menerapkan *Blended Learning* yang terdiri dari 10% *Formal Learning/Training/Self Study,* 20% Informal Learning/ *Feedback/Coaching & Mentoring* dan *Benchmarking*, dan 70% *Assignment, Special Project,* OJT dan *Rotation.*

1. *Learning & Development Effectiveness* (LDE)
LDE merupakan metode yang diterapkan untuk mengukur apakah pelatihan dan pengembangan sudah merata dilaksanakan oleh Pekerja, kualitas pelaksanaan dan keberhasilan proses pembelajaran serta mengukur dampak pelaksanaan dari suatu pelatihan melalui *feedback* Pekerja. LDE juga menjadi salah satu item KPI tahun 2024 di VP HC *Subholding Upstream.*

PEOPLE MANAGEMENT

Development of employee capabilities & competencies at the Subholding Upstream implements Blended Learning consisting of 10% Formal Learning/Training/Self-Study, 20% Informal Learning/Feedback/Coaching & Mentoring and Benchmarking, and 70% Assignment, Special Project, OJT and Rotation.

1. Learning & Development Effectiveness (LDE)
LDE is a method applied to measure whether training and development have been evenly implemented by Workers, the quality of implementation and success of the learning process and measure the impact of the implementation of a training through Worker feedback. LDE is also one of the KPI items in 2024 at VP HC of the Subholding Upstream.

» Realisasi LDE TW III 2024
Realization of LDE in Q3 2024

No	Rekap Laporan TW III Recap of Q3 Report	Satuan Unit					
1	Realisasi Pelatihan Training Realization	Pekerja Worker	**Headcount PWTT** PWTT Headcount	**Pekerja Hadir Pelatihan** Workers Attending Training	**% Kehadiran** % Presence	**Target TW III** Q3 Target	**Kinerja** Performance
			12.479	12.350	98,96%	80%	123,70
2	Realisasi Kelulusan Post Test Post-Test Passing Realization	Kelulusan Passing	**Jumlah Pelaksanaan Post Test** Number of Post-Test Implementations	**Jumlah Lolos Post Test** Number of Post-Test Passes	**% Keberhasilan** % Success	**Target TW III** Q3 Target	**Kinerja** Performance
			10.483	9.656	92,11%	80%	115,14
3	Feedback Pelatihan Training Feedback						
	a. Distribusi Formulir Feedback Feedback Form Distribution	Formulir Form	**Jumlah Distribusi Form** Number of Form Distributed	**Jumlah Form Kembali** Number of Forms Returned	**% Pengembalian** % Return	**Target TW III** Q3 Target	**Kinerja** Performance
			644	644	100,00%	80%	125,00%
	b. Index Feedback Feedback Index	Index Likert 1-5 Likert Index 1-5	4,29		**Rata-rata Index** Average Index	**Target TW III** Q3 Target	**Kinerja** Performance
					3,5	122,66%	

2. *Global Talent Exposure* (GTE)
   Program GTE telah memasuki fase peningkatan kemampuan berbahasa melalui aplikasi *Go Fluent* serta *Culture Familirization*, dimana fase ini diawali dengan Bahasa Inggris sebagai bahasa umum yang digunakan secara masif. Peserta baru akan dapat melanjutkan peningkatan kemampuan berbahasanya setelah mencapai tingkat tertinggi (C2) di Bahasa Inggris.

3. Tugas Belajar
   Seluruh proses seleksi Tugas Belajar 2024 telah selesai dilaksanakan, dari beberapa Pekerja yang lulus seluruh tahapan, terdapat 5 (lima) Pekerja yang telah memilih Universitas di luar Negeri sebagai berikut:
   - Colorado School of Mines
   - Imperial College London
   - University of Edinburgh
   - University of Strathclyde, Glasgow
   - Cranfield University

   Secara bertahap, Pekerja yang telah lulus tahapan seleksi Tugas Belajar akan menjalankan program pembelajaran di tahun 2025 sesuai dengan kurikulum program belajar yang dipilih oleh Pekerja.

4. *Upstream Academy*
   Modul pengembangan dalam *Upstream Academy* tahun 2024 fokus kepada kompentensi teknis *Deepwater*, CCS/CCUS dan *Merger* & *Acquisition* (M&A). Dimana modul CCS/CCUS dan Deepwater masih dalam proses penyusunan dengan target implementasi di tahun 2025. Untuk modul M&A sudah selesai dan akan berjalan *pilot Training*-nya di Q1 tahun 2025.

2. Global Talent Exposure (GTE)
   The GTE program has entered the language skill improvement phase through Go Fluent application and Culture Familiarization, where this phase begins with English as a common language used massively. New participants will be able to continue improving their language skills after reaching the highest level (C2) in English.

3. Study Assignment
   The entire Study Assignment selection process in 2024 has been completed, from several Workers who passed all stages, there are 5 (five) Workers who have chosen Universities abroad as follows:
   - Colorado School of Mines
   - Imperial College London
   - University of Edinburgh
   - University of Strathclyde, Glasgow
   - Cranfield University

   Gradually, Workers who have passed the Study Assignment selection stage will undertake a learning program in 2025 in accordance with the curriculum of the study program chosen by the Workers.

4. Upstream Academy
   The development module in the Upstream Academy in 2024 focuses on technical competencies of Deepwater, CCS/CCUS and Merger & Acquisition (M&A). Where the CCS/CCUS and Deepwater modules are still in the process of being prepared with an implementation target in 2025. The M&A module has been completed and the pilot training will run in Q1 of 2025.

5. *Knowledge Management System* (KMS)
   Kegiatan menciptakan, mengumpulkan, memantau dan memutakhirkan, mendistribusikan dan memanfaatkan aset pengetahuan agar tercipta budaya berbagi pengetahuan di lingkungan Pertamina. Kegiatan yang telah dilaksanakan sebagai berikut:
   - KOMET, program dari Fungsi *Quality Management* (QM) Holding berbagi ilmu pengetahuan yang dilaksanakan di masing-masing Entitas.

5. Knowledge Management System (KMS)
   Activities to create, collect, monitor and update, distribute and utilize knowledge assets to create a culture of knowledge sharing in Pertamina's environment. Activities that have been conducted are as follows:
   - KOMET, a program from the Quality Management (QM) Function of the Holding, shared knowledge implemented in each Entity.

» Realisasi Pelaksanaan KOMET
Realization of KOMET Implementation

Forum KOMET Webinar
Webinar KOMET Forum
7 Forum | Forums

Forum KOMET Lokal
Local KOMET Forum
108 Forum | Forums

Executive Leader Sharing
12 Pekerja | Worker

Keterlibatan Peserta KOMET Webinar
Participant Engagement in KOMET Webinar
421 Pekerja | Worker

Keterlibatan Pekerja dalam CoP
Employee Engagement in CoP
305 Pekerja | Worker

Pelaksanaan Month of Knowledge Sharing SHU
Implementation of Month of Knowledge Sharing SHU
46 Sesi

Upskilling Kompetensi PIC KM
Competency Upskilling of KM PIC
2 Sesi | Sessions

Pelaksanaan Assessment KOMET
Implementation of KOMET Assessment
46 Sesi | Sessions

Pelaksanaan KOMET Awareness
12 Sesi | Sessions

Eksternalisasi Legacy
Legacy Externalization
46 Sesi | Sessions
2 Pekerja | Worker

Monthly Report Data Realisasi KK KOMET
Monthly Report of KK KOMET Realization Data
5 Tanggal | Dates

Update Interest dalam Portal KOMET
Interest Update in KOMET Portal
312%

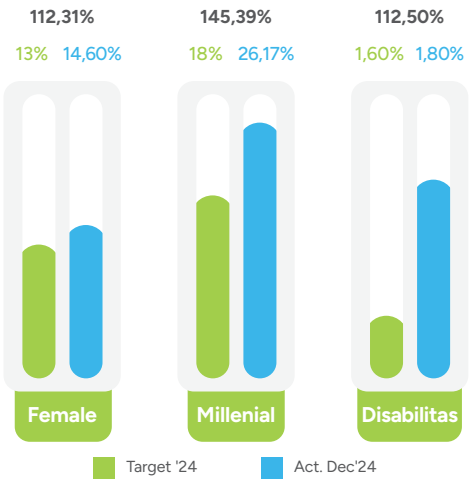
   - PUSHKU, program berbagi ilmu pengetahuan diinisiasi dari *Subholding Upstream* dengan memberikan kesempatan seluas-luasnya seluruh Pekerja di *Subholding Upstream* dapat berpartisipasi sebagai narasumber dengan tema yang beragam. Dilaksanakan sebanyak 120 sesi.

   - PUSHKU, a knowledge sharing program initiated by the Subholding Upstream by providing the widest possible opportunity for all Workers in the Subholding Upstream to participate as resource persons with various themes. Implemented in 120 sessions.

6. *Rasio Inklusivitas & Disabilitas*
   Rasio Inklusivitas dan disabilitas menjadi salah satu indikator untuk mengukur keberhasilan perusahaan dalam mengembangkan dan memberi kesempatan yang sama berbasis *meritocracy* tanpa bias *gender* pada *talent* perempuan serta pemberdayaan Pekerja Disabilitas sehingga meningkatkan *talent diversity* perusahaan, tanpa adanya *glass ceiling*, dan menegaskan anti diskriminasi gender dengan tujuan akhir adalah produktivitas yang menunjang pencapaian target perusahaan serta mengukur keberhasilan perusahaan dalam mengembangkan kapabilitas dan potensi talent dari generasi muda sehingga dapat memiliki opportunity yang lebih tinggi untuk menjadi suksesor *Leaders Positions* di Pertamina Group.

6. Inclusivity & Disability Ratio
   The Inclusivity and Disability Ratio is one of the indicators to measure the company's success in developing and providing equal opportunities based on meritocracy without gender bias for female talents and empowering Disabled Workers so as to increase the company's talent diversity, without a glass ceiling, and emphasizing anti-gender discrimination with the ultimate goal of productivity that supports the achievement of the company's targets and measuring the company's success in developing the capabilities and potential of talent from the younger generation so that they can have a higher opportunity to become successors to Leaders Positions in Pertamina Group.

» Rasio Inklusivitas & Disabilitas
Inclusivity & Disability Ratio





BUDAYA PERUSAHAAN

1. Implementasi ONE Pertamina
   Untuk memastikan bahwa program ONE Pertamina berjalan secara menyuluruh di setiap Fungsi di Lingkungan Subholding Upstream, maka pimpinan Fungsi sebagai *Role Model* harus menyelesaikan beberapa proses persiapan *assessment* LCV dengan rangkaian aktivitas sebagai berikut:
   - Sosialisasi dan internalisasi program ONE Pertamina sejalan Program Budaya 2024,
   - *Monitoring* kelengkapan *evidence* perbulan,
   - Laporan kelengkapan *evidence* periode triwulanan dan Semesteran, selain laporan bulanan,
   - *Coaching Clinic* terjadwal semesteran per SH untuk memastikan progress LCV fungsi.

2. *Assessment* LCV Score 330
   Program percepatan proses internalisasi AKHLAK (*Living Core Values*) pada Pekerja PWTT, PWT dan TAD yang dipimpin oleh para pimpinan (*Level* VP/GM) di Pertamina Group untuk mendorong dan menanamkan budaya kinerja tinggi. Pengukuran tersebut dinilai berdasarkan *assessment score Leaders* pencapaian minimal 330. Untuk mencapai score tersebut Fungsi HC melakuan monitoring pembaharuan *evidence* dan *upskilling* kepada Agent of Change untuk membantu *Leaders* dalam melakukan *assessment.*

   Nilai total SHU tahun 2024 sebesar 368,83 meningkat dari tahun 2023 sebesar 334. Tahun 2024 SHU berhasil meningkatkan *maturity level* internalisasi tata nilai AKHLAK dari *level Engagement* menjadi *Commitment* serta tidak ada lagi satupun VP atau GM yang berada dalam *level Awareness*.

DIGITALIZED HC & ANALYTICS

1. Pengembangan & Peningkatan Aplikasi Aspek HC
   Beberapa pengembangan dan peningkatan aplikasi aspek HC yang telah diimplementasikan sebagai berikut:

CORPORATE CULTURE

1. Implementation of ONE Pertamina
   To ensure that the ONE Pertamina program runs comprehensively in every Function within the Subholding Upstream, the Function leader as a Role Model must complete several LCV assessment preparation processes with the following series of activities:

   - Dissemination and internalization of the ONE Pertamina program in line with the Cultural Program of 2024,
   - Monitoring the completeness of evidence per month,
   - Report on the completeness of evidence for quarterly and semi-annual periods, in addition to monthly reports,
   - Coaching Clinic is scheduled every semester per SH to ensure the progress of LCV function.

2. Assessment LCV Score 330
   Acceleration program for the internalization process of AKHLAK (Living Core Values) in PWTT, PWT and TAD Workers led by leaders (VP/GM Level) in Pertamina Group to encourage and instill a high-performance culture. The measurement is assessed based on the assessment score of Leaders achieving a minimum of 330. To achieve this score, the HC Function monitors the renewal of evidence and upskilling to Agents of Change to assist Leaders in conducting assessments.

   The total value of SHU in 2024 was 368.83, an increase from 2023 which was 334. In 2024, SHU succeeded in increasing the maturity level of internalization of AKHLAK values from the Engagement to Commitment level and there were no longer any VPs or GMs at the Awareness level.

DIGITALIZED HC & ANALYTICS

1. HC Aspect Application Development & Improvement
   Some developments and improvements to the HC aspect applications that have been implemented are as follows:

a. *Digital Travel Management*, aplikasi dari Holding sebagai bentuk ONE Pertamina dimana saat ini masih *pilot project* di Subholding Kantor Pusat.
b. Travel Management Regional 4, aplikasi perjalanan dinas diimplementasikan sepesifik di Regional 4. Kedepannya akan dimigrasi ke Digitas Travel Management.
c. Dashboard BOD/BOC, aplikasi yang dibuat dengan kooridnasi fungsi UBPPM Subholding Usptream untuk menyampaikan laporan bulanan fungsi-fungsi di bawah Direktur SDM & Penunjang Bisnis *Subholding Upstream*.

2. Continous Improvement Program 2024
Rangkaian kegiatan CIP tahun 2024 diawali dengan Pembekalan/*Coaching* PDCA, pembekalan Penulisan Risalah CIP sampai dengan pelaksanaan Forum Presentasi CIP 2024.
Berikut ini adalah beberapa penghargaan/pencapaian yang diperoleh sepanjang tahun 2024, yaitu:
1. International *Intellectual Property, Invention, Innovation And Technology Exposition* (IPITEX), Thailand, 2 – 6 Februari 2024 (1 Grand prize 1, 2 Gold & 1 Silver).
2. *Internation Awards at the 17th International Invention & Innovation Show* INTARG, Polandia (1 Platinum & 3 Gold).

3. APQ *Awards* 2024 (29 Platinum, 25 Gold, 5 Silver & 1 Bronze)
   a. Penghargaan Dharma Karya Energi Kementerian ESDM 2024, 2 Gugus:
      i. PC Prove Musang King – Akselerasi Produksi Gs Sebesar 2.000 MMSCF melalui *Batch Technique Workover* di Block Deepawater Malaysia.
      ii. FT Prove Terapis – Meningkatkan Kehandalan Sistem *Fuel Diesel Engine* dengan Inovasi Filter Pelepah Pisang.
   b. Penghargaan Dharma Karya Energi Kementerian ESDM 2024, 2 Gugus
   c. *Forum Upstream Improvement & Innovation Award* (UIIA) 2024 dan berhasil membukukan *Value Creation real* berbasis *Cost Optimization* yang terverifikasi hingga 2,57 Triliun Rupiah atau sekitar 170 Juta USD. *Best of The Best*' UIIA 2024 diraih oleh Regional 2 PT Pertamina EP.

3. Penyusunan RKAP 2025 & WP&B 2025 KKKS di Lingkungan *Subholding Upstream*.
Telah dilakukan penyampaian usulan RKAP 2025 terkait *Personnel Cost* ke Fungsi Keuangan dan Investasi *Subholding Upstream* dan saat ini masih dilakukan *Challenge Session level Holding Subholding*.

Fungsi HC *Subholding Upstream* telah mengakomodir *Person in Charge* (PIC) WP&B 2025 KKKS di Regional untuk melakukan koordinasi awal dan pembahasan spesifik dengan SDM SKK Migas untuk mendapatkan persetujuan usulan WP&B 2025 aspek SDM. Proses yang akan berjalan selanjutnya yaitu Rapat Pleno WP&B pada bulan Oktober 2024.

a. Digital Travel Management, an application from the Holding as a form of ONE Pertamina which is currently still a pilot project at the Head Office of the Subholding.
b. Travel Management of Region 4, the business travel application is implemented specifically in Region 4. In the future it will be migrated to Digitas Travel Management.
c. BOD/BOC Dashboard, an application created with the coordination of the UBPPM function of the Subholding Upstream to deliver monthly reports of functions under the Director of HC & Corporate Services of the Subholding Upstream.

2. Continuous Improvement Program of 2024
The series of CIP activities in 2024 began with PDCA Briefing/Coaching, briefing on Writing CIP Minutes until the implementation of the CIP Presentation Forum of 2024.
Some of the awards/achievements obtained throughout 2024 are as follows:

1. International Intellectual Property, Invention, Innovation And Technology Exposition (IPITEX), Thailand, February 2 – 6, 2024 (1 Grand prize 1, 2 Gold & 1 Silver).
2. International Awards at the 17th International Invention & Innovation Show INTARG, Poland (1 Platinum & 3 Gold).

3. APQ Awards 2024 (29 Platinum, 25 Gold, 5 Silver & 1 Bronze)
   a. Dharma Karya Energy Award of Ministry of Energy and Mineral Resources of 2024, 2 Clusters:
      i. PC Prove Musang King – Acceleration of Gs Production by 2,000 MMSCF through Batch Technique Workover in Malaysia Deepwater Block.
      ii. FT Prove Terapis – Improving the Reliability of Diesel Engine Fuel Systems with Banana Stem Filter Innovation.
   b. Energy Dharma Karya Award of Ministry of Energy and Mineral Resources of 2024, 2 Clusters
   c. Forum Upstream Improvement & Innovation Award (UIIA) 2024 and successfully recorded a verified real Value Creation based on Cost Optimization of up to 2.57 Trillion Rupiah or around 170 Million USD. Best of The Best' UIIA 2024 was won by Region 2 of PT Pertamina EP.

3. Preparation of RKAP 2025 & WP&B 2025 KKKS within the Subholding Upstream
The submission of proposal of RKAP 2025 regarding Personnel Costs to the Finance and Investment Function of the Subholding Upstream has been conducted and currently the Challenge Session at the Holding Subholding level is still ongoing.

The HC function of the Subholding Upstream has accommodated the Person in Charge (PIC) of WP&B 2025 KKKS in the Region to conduct initial coordination and specific discussions with the HR of SKK Migas to obtain approval for the proposal of WP&B 2025 HR aspect. The next process that took place was WP&B Plenary Meeting in October 2024.

PENEGAKAN HAK ASASI MANUSIA
ENFORCEMENT OF HUMAN RIGHTS [GRI 2-23]



PHE Subholding Upstream berkomitmen untuk selalu menghormati Hak Asasi Manusia (HAM) yang merupakan prinsip dasar kehidupan, yang tidak dapat dikompromikan dalam konteks apapun, termasuk dalam lingkungan kerja. Penghormatan terhadap HAM ini tidak hanya sebatas dalam mematuhi hukum dan regulasi yang telah diatur, tetapi juga tentang menciptakan lingkungan kerja yang adil, aman, dan menghormati martabat setiap individu. Perusahaan berusaha untuk menciptakan lingkungan yang lebih baik untuk pekerja, karena dapat menghasilkan dampak positif pada produktivitas, kinerja, dan pencapaian target perusahaan secara keseluruhan.

Perusahaan sendiri telah menerbitkan kebijakan untuk Menjamin Hak Asasi Manusia Dalam Bisnis Pertamina Hulu Energi pada Oktober 2022. Kebijakan ini didasari pada Undang-Undang No. 39 Tahun 1999 tentang Hak Asasi Manusia, Deklarasi Universal Hak Asasi Manusia Tahun 1948 dari Perserikatan Bangsa-Bangsa, serta Prinsip-prinsip Hak-hak Mendasar di Tempat Kerja berdasarkan 8 Konvensi Inti International Labour Organization (ILO) yang juga telah diratifikasi oleh Pemerintah Indonesia. Kebijakan ini mengatur mengenai sarana untuk penyampaian keluhan terkait pelanggaran HAM, uji tuntas HAM dalam kegiatan bisnis perusahaan, budaya menghormati HAM di antara Perwira PHE Subholding Upstream, menjamin hak pekerja, serta menghormati HAM masyarakat adat.

Dengan komitmen dalam menghormati HAM, perusahaan memfasilitasi akses pelaporan jika terjadi diskriminasi, kekerasan, ataupun pelecehan yang terjadi baik di tempat kerja maupun melalui *whistleblowing system*. Mekanisme pelaporan

PHE Subholding Upstream is committed to always respecting Human Rights (HAM) which is a basic principle of life, which cannot be compromised in any context, including in the work environment. Respect for human rights is not only limited to complying with established laws and regulations, but also about creating a fair, safe, and respectful work environment for the dignity of each individual. The company strives to create a better environment for workers, because it can have a positive impact on productivity, performance, and the achievement of the company's overall targets.

The company itself issued a policy to Guarantee Human Rights in the Business of Pertamina Hulu Energi in October 2022. This policy is based on Law No. 39 of 1999 concerning Human Rights, the Universal Declaration of Human Rights of 1948 of the United Nations, and the Principles of Fundamental Rights at Work based on the 8 Core Conventions of the International Labor Organization (ILO) which have also been ratified by the Government of Indonesia. This policy regulates the means for submitting complaints regarding human rights violations, human rights due diligence in the company's business activities, a culture of respecting human rights among Officers of PHE Subholding Upstream, guaranteeing workers' rights, and respecting the human rights of indigenous peoples.

With a commitment to respecting human rights, the company facilitates access to reporting in the event of discrimination, violence, or harassment that occurs either in the workplace or through the whistleblowing system. This reporting mechanism

ini diatur dalam peraturan perusahaan. Selama tahun 2024, tidak ada pelaporan mengenai insiden diskriminasi terhedap pekerja dan/atau diskriminasi lainnya dalam bekerja. [GRI 406-1]

Perusahaan secara berkala memonitor implementasi kebijakan HAM sejak 2022 hingga 2024 dengan beberapa ikhtisar sebagai berikut:

1. Memasukkan aspek HAM sebagai salah satu *Key Performance Indicator* (KPI) pada jabatan Direktur SDM & Penunjang Bisnis PHE dan Vice President Human Capital PHE.
2. Membuat kebijakan turunan di level operasional terkait HAM, seperti Pedoman Pengimplementasian HAM Dalam Pengamanan.
3. Melaksanakan sosialisasi/pelatihan untuk meningkatkan kesadaran pekerja dan pimpinan tentang HAM, antara lain A*dvancing Decent Work in Business Through the UN Global Compact Labour Principles, Business and Human Rights: How Companies Can Operationalize the UN Guiding Principles, Deepening Human Rights Due Diligence, Voluntary Principles on Security and Human Rights (VPSHR)* bagi para pekerja di bidang pengamanan, *Industrial Relations for Leaders* dimana salah satu materinya berkenaan tentang kebijakan dan implementasi HAM, serta berbagai broadcast email kepada seluruh pekerja tentang kebijakan dan implementasi HAM.
4. Melaksanakan uji tuntas (*due diligence*) HAM berdasarkan indikator-indikator yang terdapat dalam Penilaian Risiko Bisnis dan HAM (PRISMA) yang dikembangkan oleh Direktorat Jenderal HAM Kementerian Hukum dan HAM Republik Indonesia. Penilaian melalui PRISMA telah dilakukan dengan hasil meraih Predikat Hijau dan skor 111. Penilaian ini bertujuan untuk menilai, menganalisis, dan mengurangi risiko-risiko HAM yang mungkin timbul dalam aktivitas bisnis perusahaan. Aspek yang dinilai mencakup Profil Perusahaan, Kebijakan HAM, Dampak HAM, Mekanisme Pengaduan, Rantai Pasok, Tenaga Kerja, Kondisi Kerja, Serikat Pekerja, Diskriminasi, Privasi, Lingkungan, Komunitas Adat, serta Tanggung Jawab Sosial.

Selain dalam lingkungan pekerja, perusahaan juga memberi dukungan pada nilai-nilai universal HAM terhadap penduduk asli/masyarakat adat yang ada di sekitar wilayah kerja PHE Subholding Upstream. Perusahaan selalu menjunjung tinggi hal-hak masyarakat adat, seperti hak atas kepemilikan tanah, hak sosial, hak ekonomi, hak budaya, serta hak partisipasi efektif masyarakat adat. Dalam perjalanannya, perusahaan juga selalu melibatkan masyarakat adat/lokal dan menghargai hak kolektif masyarakat atas aspirasi mereka terhadap rencana pengembangan program yang diusulkan pada wilayah mereka. Prinsip ini sejalan dengan *Free, Prior, and*

is regulated in company regulations. During 2024, there were no reports of incidents of discrimination against a worker and/or other discriminations in employment. [GRI 406-1]

The company regularly monitors the implementation of human rights policies from 2022 to 2024 with the following overview:

1. Incorporating the human rights aspect as one of the Key Performance Indicators (KPI) for the positions of Director of HC & Corporate Services at PHE and Vice President of Human Capital at PHE.
2. Creating derivative policies at the operational level related to human rights, such as Guidelines for Implementation of Human Rights in Security.
3. Conducting dissemination/training to increase workers' and leaders' awareness of human rights, including Advancing Decent Work in Business Through the UN Global Compact Labor Principles, Business and Human Rights: How Companies Can Operationalize the UN Guiding Principles, Deepening Human Rights Due Diligence, Voluntary Principles on Security and Human Rights (VPSHR) for workers in the security sector, Industrial Relations for Leaders where one of the materials concerns human rights policies and implementation, as well as various email broadcasts to all workers about human rights policies and implementation.
4. Conducting human rights due diligence based on indicators contained in the Business and Human Rights Risk Assessment (PRISMA) developed by the Directorate General of Human Rights, Ministry of Law and Human Rights of the Republic of Indonesia. The PRISMA assessment has been conducted with the result of achieving a Green Predicate and a score of 111. This assessment aims to assess, analyze, and reduce human rights risks that may arise in the company's business activities. Aspects assessed include Company Profile, Human Rights Policy, Human Rights Impact, Complaint Mechanism, Supply Chain, Labor, Working Conditions, Labor Unions, Discrimination, Privacy, Environment, Indigenous Communities, and Social Responsibility.

In addition to the work environment, the company also supports universal human rights values for indigenous people/indigenous communities around the working areas of PHE Subholding Upstream. The company always upholds the rights of indigenous peoples, such as the right to land ownership, social rights, economic rights, cultural rights, and the right to effective participation of indigenous peoples. In its journey, the company also always involves indigenous/local communities and respects the collective rights of the community for their aspirations regarding the proposed program development plan in their area. This principle is in line with Free, Prior, and Informed

Informed Consent (FPIC) yang menjadi Pedoman Pengelolaan Tanggung Jawab Sosial dan Lingkungan (TJSL) No.A13-003/PHE01000/2021-S9. Prinsip FPIC diintegrasikan dalam kebijakan dan pedoman yang diterapkan dalam lingkup PHE. Selain itu, PHE juga menyusun *Standard Operating Procedure* (SOP) audit untuk implementasi kebijakan HAM dan memastikan implementasi HAM pada seluruh kontrak penyedia keamanan. Pada tahun 2024, tidak ada laporan mengenai insiden HAM yang terkait hak-hak masyarakat adat.

KOMITMEN TIDAK MEMPEKERJAKAN ANAK DAN KERJA PAKSA [GRI 408, 409]

Sebagai perusahaan yang bertanggung jawab, PHE berkomitmen untuk tidak mempekerjakan anak dan tenaga kerja paksa, baik dalam perusahaan maupun mitra rantai pasok seperti pemasok, kontraktor, dan *vendor*. Kebijakan tersebut diterapkan dengan menggunakan regulasi nasional maupun internasional sebagai acuan, yaitu sebagai berikut:

1. Undang-Undang No. 13 Tahun 2003 tentang Ketenagakerjaan
2. Undang-Undang Republik Indonesia No. 20 Tahun 1999 tentang Pengesahan *ILO Convention No. 138 Concerning Minimum Age for Admission to Employment* (Konvensi ILO tentang Usia Minimum untuk Diperbolehkan Bekerja)
3. Undang-Undang Republik Indonesia No. 1 Tahun 2000 tentang Pengesahan *ILO Convention No. 182 Concerning The Prohibition And Immediate Action for The Elimination of The Worst Forms of Child Labour* (Konvensi ILO tentang Pelarangan dan Tindakan Segera Penghapusan Bentuk-Bentuk Pekerjaan Terburuk untuk Anak)
4. Undang-Undang Republik Indonesia No. 19 Tahun 1999 tentang Pengesahan *ILO Convention No. 105 Concerning The Abolition of Forced Labour* (Konvensi ILO tentang Penghapusan Kerja Paksa) [GRI 408, 409, 11.12.1]

Untuk menetapkan target terhadap HAM, perusahaan akan terus melaksanakan sosialisasi dan pelatihan guna meningkatkan kesadaran pekerja dan pimpinan tentang pentingnya penghormatan terhadap hak asasi manusia. Selain itu, perusahaan juga akan secara rutin melakukan uji tuntas (*due diligence*) HAM berdasarkan indikator-indikator yang terdapat dalam Penilaian Risiko Bisnis dan HAM, serta menuliskan laporan HAM tahunan sebagai bentuk transparansi dan akuntabilitas. Perusahaan juga akan menyediakan layanan saluran pengaduan *Whistle Blowing System* terkait pelanggaran HAM dan memastikan penindaklanjutan yang sesuai. Untuk memperkuat komitmen terhadap HAM, aspek ini akan dimasukkan sebagai salah satu *Key Performance Indicator* (KPI) pada jabatan Direktur SDM & Penunjang Bisnis PHE dan *Vice President* Human Capital PHE, guna memastikan pencapaian yang terukur dan relevansi dengan strategi perusahaan. Dengan menetapkan target tersebut, perusahaan berkomitmen untuk memastikan perlindungan dan penghormatan terhadap hak asasi manusia dalam setiap aspek operasionalnya.

Consent (FPIC) which becomes Guideline for Management of Social and Environmental Responsibility (TJSL) No.A13-003/PHE01000/2021-S9. The FPIC principle is integrated into the policies and guidelines applied within the scope of PHE. In addition, PHE also prepares a Standard Operating Procedure (SOP) for audits to implement human rights policies and ensures the implementation of human rights in all security provider contracts. In 2024, there were no reports of human rights incidents related to indigenous peoples' rights.

COMMITMENT TO NOT EMPLOYING CHILDREN AND FORCED LABOR [GRI 408, 409]

As a responsible company, PHE is committed to not employing children and forced labor, both within the company and supply chain partners such as suppliers, contractors, and vendors. The policy is implemented using national and international regulations as a reference, namely as follows:

1. Law No. 13 of 2003 concerning Manpower
2. Law of the Republic of Indonesia No. 20 of 1999 concerning Ratification of ILO Convention No. 138 Concerning Minimum Age for Admission to Employment
3. Law of the Republic of Indonesia No. 1 of 2000 concerning Ratification of ILO Convention No. 182 Concerning The Prohibition And Immediate Action for The Elimination of The Worst Forms of Child Labour
4. Law of the Republic of Indonesia No. 19 of 1999 concerning Ratification of ILO Convention No. 105 Concerning The Abolition of Forced Labor [GRI 408, 409, 11.12.1]

To set targets for human rights, the company will continue to conduct socialization and training to raise awareness among workers and leaders about the importance of respecting human rights. Additionally, the company will routinely conduct human rights due diligence based on the indicators in the Business and Human Rights Risk Assessment, and prepare an annual human rights report Whistle Blowing System as a form of transparency and accountability. The company will also provide a grievance mechanism related to human rights violations and ensure proper follow-up actions. To strengthen its commitment to human rights, this aspect will be included as one of the Key Performance Indicators (KPIs) for the positions of Director of HR & Business Support at PHE and Vice President of Human Capital at PHE, to ensure measurable achievements and alignment with the company's strategy. By setting these targets, the company is committed to ensuring the protection and respect of human rights in all aspects of its operations.

KEBERAGAMAN, KESEMPATAN YANG SETARA DAN TANPA DISKRIMINASI

DIVERSITY, EQUAL OPPORTUNITY AND NON-DISCRIMINATION [OJK F.18] [GRI 3-3, 202, 405, 406]



Keberagaman, kesempatan yang setara dan tanpa diskriminasi di tempat kerja merupakan prinsip dasar ketenagakerjaan yang dimuat dalam Undang-Undang No. 13 Tahun 2003 tentang Ketenagakerjaan. PHE Subholding Upstream berkomitmen untuk membangun lingkungan kerja yang selalu menghormati dan mengedepankan kesetaraan, keberagaman, dan kepatuhan terhadap regulasi yang berlaku. Perusahaan berprinsip untuk memberikan kesetaraan, kesempatan, dan sikap non-diskriminatif terhadap seluruh insan PHE Subholding Upstream. Prinsip diberikan melalui sosialisasi secara langsung maupun tidak langsung. Sosialisasi secara tidak langsung diberikan melalui pengumuman tentang *Respectful Workplace Policy* yang disampaikan melalui media elektronik dan media sosial. Selama tahun 2024, tidak terdapat laporan mengenai insiden diskriminasi dalam lingkungan kerja PHE Subholding Upstream. [GRI 406-1]

Diversity, equal opportunity and non-discrimination in the workplace are basic employment principles contained in Law No. 13 of 2003 concerning Manpower. PHE Subholding Upstream is committed to building a work environment that always respects and prioritizes equality, diversity, and compliance with applicable regulations. The company adheres to the principle of providing equality, opportunity, and a non-discriminatory attitude to all employees of PHE Subholding Upstream. The principles are provided through direct and indirect dissemination. Indirect dissemination is provided through announcements regarding the Respectful Workplace Policy which is conveyed through electronic media and social media. During 2024, there were no reports of incidents of discrimination in the work environment of PHE Subholding Upstream. [GRI 406-1]

Kesempatan yang setara tidak lepas dari permasalahan gender. Perusahaan selalu berkomitmen untuk memperlakukan pekerja perempuan kesempatan yang setara dengan pekerja pria. Hingga tahun 2024 sendiri, perusahaan telah mempekerjakan perusahaan telah mempekerjakan sebanyak 1897 pekerja perempuan (13,56% dari total Pekerja) dengan 12,67% menduduki posisi manajerial. Perusahaan selalu berusaha untuk meningkatkan persentase ini melalui pemetaan demografi kemampuan pekerja perempuan yang kemudian dibekali dengan program *upskilling* terkait *leadership* dan *coaching*. Keberagaman gender pada level Direksi dan Dewan Komisaris dapat dilihat dari komposisi Direksi dan Dewan Komisaris pada bagian Tata Kelola atau profil lengkap Direksi dan Dewan Komisaris pada Laporan Tahunan Perseroan.

Sejak 4 Juni 2024 juga telah dibentuk Komunitas Keberagaman dan Inklusi Perempuan Pertamina Tangguh Inspiratif Wibawa dan Integritas (PERTIWI) di Subholding Upstream mengacu pada Surat Perintah No. Prin-032/PHE00000/2024-S0 oleh Direktur Utama PT Pertamina Hulu Energi untuk dapat menjalankan dan memonitor berbagai inisiatif *gender equality* secara berkelanjutan, termasuk untuk mendorong semakin banyaknya *female leader* dari level *junior management* hingga level Direksi. Terdapat 4 bidang yang menjadi fokus kegiatan ini yaitu *Sustainability, Development, Wellbeing,* dan *Partnership & Communication*. Berbagai kegiatan yang dilakukan juga telah selaras dengan 7 *Women's Empowerment Principles* dari UN Women dan UN Global Compact.

Keberagaman gender pada level Direksi dan Dewan Komisaris dapat dilihat dari komposisi Direksi dan Dewan Komisaris pada bagian Tata Kelola atau profil lengkap Direksi dan Dewan Komisaris pada Laporan Tahunan Perseroan.

Selain itu, komitmen PHE juga tercermin melalui rasio gaji pokok dan remunerasi karyawan laki-laki terhadap perempuan untuk tiap kategori karyawan. Dalam pengimplementasian kebijakan pengupahan kepada seluruh Karyawan, Perusahaan menerapkan kesetaraan gender diseluruh tingkat jabatan. Hal ini menunjukan bahwa tidak terdapat perbedaan rasio upah atau gaji terdapat karyaran pria maupun wanita. [GRI 405-1, 405-2]

Equal opportunities are inseparable from gender issues. The company is always committed to treating female workers with equal opportunities as male workers. Until 2024, the company has employed the company has employed 1897 female workers (13.56% of total workers) with 12.67% occupying managerial positions. The company always tries to increase this percentage through demographic mapping of female workers' capabilities which are then equipped with upskilling programs related to leadership and coaching. Gender diversity at the Board of Directors and Board of Commissioners level can be observed from the composition of the Board of Directors and Board of Commissioners in the Governance section or from the detailed profiles of the Board of Directors and Board of Commissioners in the Company's Annual Report.

Since June 4, 2024, Diversity and Inclusion Community Perempuan Pertamina Tangguh Inspiratif Wibawa dan Integritas (PERTIWI) was established in the Subholding Upstream referring to Order No. Prin-032/PHE00000/2024-S0 by the President Director of PT Pertamina Hulu Energi so as to conduct and monitor various gender equality initiatives to improve the capabilities of female workers, including to encourage more female leaders from the junior management level to the level of Board Directors and Board of Commissioners. There are 4 areas that are the focus of this activity, namely Sustainability, Development, Wellbeing, and Partnership & Communication. Various activities conducted have also been in line with the 7 Women's Empowerment Principles from UN Women and the UN Global Compact.

Gender diversity at the level of Board of Directors and Board of Commissioners can be seen from the composition of the Board of Directors and the Board of Commissioners in the Governance section or the complete profile of the Board of Directors and the Board of Commissioners in the Company's Annual Report.

In addition, PHE's commitment is also reflected through the ratio of basic salary and remuneration of male to female employees for each employee category. In implementing the wage policy to all employees, the Company applies gender equality at all levels of office. This shows that there is no difference in the wage or salary ratio between male and female employees. [GRI 405-1, 405-2]

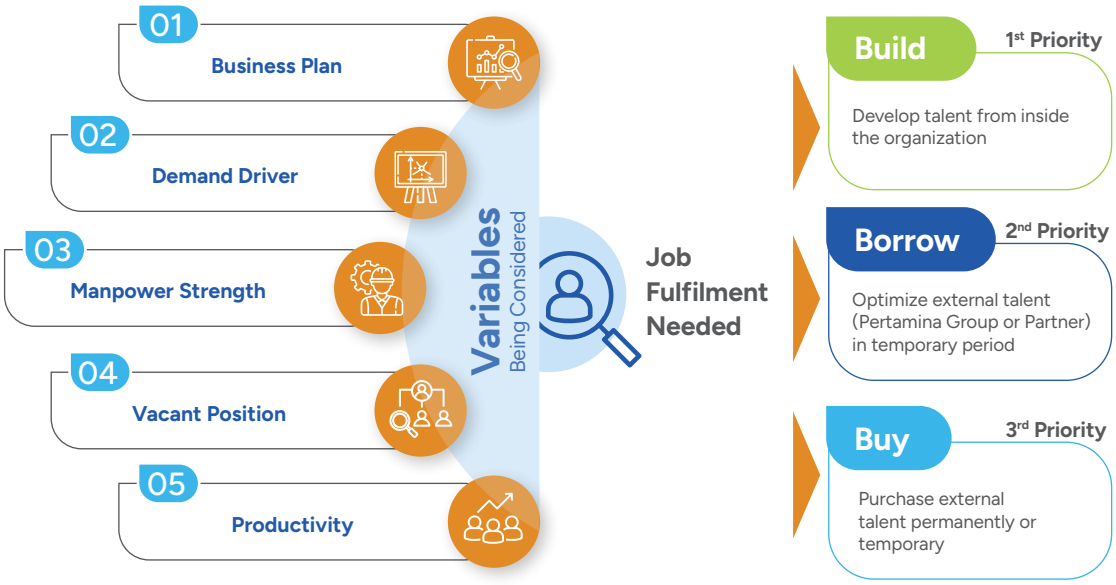
PEREKRUTAN DAN RETENSI KARYAWAN
EMPLOYEE RECRUITMENT AND RETENTION

REKRUTMEN PEKERJA

Rekrutmen merupakan proses yang krusial dalam pengelolaan SDM. Proses rekrutmen yang baik dapat menyaring talenta potensial yang dapat memberikan dampak melalui kontribusinya terhadap perusahaan. Pada tahun 2024, Perseroan mempertimbangkan lima hal dalam strategi rekrutmennya, yaitu:

EMPLOYEE RECRUITMENT

Recruitment is a crucial process in HR management. A good recruitment process can filter potential talents who can make an impact through their contribution to the company. In 2024, the Company considered five things in its recruitment strategy, namely:



(1) rencana jangka pendek dan jangka panjang Perseroan tahun 2024, (2) kebutuhan bisnis, (3) kondisi demografi karyawan terkini untuk menjaga stabilitas operasional Perseroan, (4) jumlah posisi kosong dan produktivitas Perseroan yang dilihat dari sisi produksi, (5) finansial dan jumlah karyawan.

Dengan lima pertimbangan tersebut, strategi dalam memenuhi kebutuhan tenaga kerja dilakukan dengan tiga cara, yaitu mengembangkan talenta internal Perseroan agar dapat memberikan kontribusi lebih besar dalam pertumbuhan bisnis Perseroan, melakukan mutasi atau penugasan dari luar (Pertamina Holding, Subholding lainnya dan perusahaan terafiliasi) ke dalam organisasi Perseroan, *Internal Job Posting* (IJP), dan rekrutmen karyawan baru, baik lulusan muda maupun kandidat berpengalaman. Rekrutmen karyawan baru dilakukan melalui media sosial dan situs rekrutmen terintegrasi Pertamina. Seluruh rangkaian tahap rekrutmen dipastikan untuk melalui proses seleksi yang transparan dan objektif.

(1) the Company's short-term and long-term plans for 2024, (2) business needs, (3) current employee demographic conditions to maintain the Company's operational stability, (4) number of vacant positions and the Company's productivity as seen from the production side, (5) finances and number of employees.

With these five considerations, the strategy to meet the workforce needs is conducted in three ways, namely: developing the Company's internal talents so as to provide greater contributions to the Company's business growth, conducting transfers or assignments from outside (Pertamina Holding, other Subholdings and affiliated companies) into the Company's organization, Internal Job Posting (IJP), and recruiting new employees, both fresh graduates and experienced candidates. Recruitment of new employees is conducted through social media and Pertamina's integrated recruitment site. The entire series of recruitment stages are ensured to go through a transparent and objective selection process.

Perseroan menghindari praktik tenaga kerja di bawah umur dan tenaga kerja paksa dalam aktivitas bisnisnya. Oleh karena itu, tidak ada tenaga kerja paksa dan tenaga kerja di bawah umur yang dipekerjakan di Perseroan. Selain itu, Perseroan menggunakan pendekatan inklusif untuk menciptakan kesempatan yang setara bagi insan PHE, juga menginspirasi inovasi dan kreativitas melalui beragam pengalaman dan perspektif. Jika terdapat perubahan operasional yang terjadi di dalam Perseroan, pihak manajemen akan memberikan *minimum notice* kepada pekerja sesuai klausul yang diatur pada Perjanjian Kerja Bersama (PKB). Sepanjang tahun 2024, terdapat 507 karyawan baru yang ditempatkan di seluruh wilayah kerja Perseroan dengan rincian sebagai berikut: [OJK F.19] [GRI 401-1]

The Company avoids the practice of underage labor and forced labor in its business activities. Therefore, there is no forced labor and underage labor employed in the Company. In addition, the Company uses an inclusive approach to create equal opportunities for people of PHE, and also inspires innovation and creativity through diverse experiences and perspectives. If there are operational changes that occur within the Company, the management will provide minimum notice to workers in accordance with the clauses stipulated in the Collective Labor Agreement (CLA). Throughout 2024, there were 507 new employees placed throughout the Company's working areas with the following details: [OJK F.19] [GRI 401-1]

» Komposisi Pekerja Baru Berdasarkan Jenis Kelamin dan Usia
Composition of New Workers by Gender and Age

Komposisi Pekerja Baru Composition of New Workers	2024	2023	2022
Jenis Kelamin / Gender	507	456	338
Laki-laki / Male	425	387	268
Perempuan / Female	101	70	70
Usia / Age	507	456	338
>50 tahun / years	221	223	202
30 - 50 tahun / years	291	224	124
< 30 tahun / years	14	10	12
Wilayah / Region			
Sumatra / Sumatra	90	30	69
Jawa / Java	242	193	156
Kalimantan / Kalimantan	101	45	74
Indonesia Timur / Eastern Indonesian	70	188	38
Internasional / International	4	0	1

Perseroan juga memberikan kesempatan setara bagi masyarakat lokal dalam aktivitas bisnis sebagai pegawai PHE melalui program Bimbingan Keahlian Juru Teknik (BKJT). Program ini ditujukan untuk membina lulusan SMA setempat dari kategori masyarakat lokal dan masyarakat adat. Perekrutan untuk masyarakat lokal dilakukan terhadap masyarakat yang tinggal di sekitar wilayah operasional aktif Pertamina Hulu Energi, sedangkan rekrutmen untuk masyarakat adat diselenggarakan melalui perekrutan pekerja dari daerah 3T (Tertinggal, Terdepan, dan Terluar). Selain itu, dilakukan juga perekrutan pekerja dari etnis marginal tertentu. Pada 2024, program BKJT berhasil merekrut 45 pegawai baru. Upaya ini merupakan wujud dari komitmen Perseroan untuk meningkatkan ekonomi masyarakat sekitar perusahaan. [GRI 202-2]

The Company also provides equal opportunities for local communities in business activities as employees of PHE through the Technician Expertise Guidance (BKJT) program. This program is intended to foster local high school graduates from the local and indigenous communities. Recruitment for local communities is conducted for communities living around the active areas of operation of Pertamina Hulu Energi, while recruitment for indigenous communities is conducted through the recruitment of workers from the 3T (Disadvantaged, Frontier, and Outermost) areas. In addition, recruitment of workers from certain marginalized ethnic groups is also conducted. In 2024, the BKJT program successfully recruited 45 new employees. This effort is a manifestation of the Company's commitment to improving the economy of the community around the company. [GRI 202-2]

» Rekrutmen Masyarakat Lokal melalui BKJT (Bimbingan Keahlian Juru Teknik)
Local Community Recruitment through BKJT (Technician Expertise Guidance)

Area Operasional Operational Area	Masyarakat Lokal Local Communities
Regional 1 Region 1	18
Regional 2 Region 2	22
Regional 3 Region 3	2
Regional 4 Region 4	3
Total	**45**

Dari 14.008 orang karyawan PHE tahun 2024, 45 orang merupakan karyawan yang direkrut dari masyarakat lokal melalui Program Bimbingan Keahlian Juru Teknik BKJT). Sementara itu, seluruh karyawan PHE (100%) berkewarganegaraan Indonesia. Perusahaan mendefinisikan karyawan lokal sebagai karyawan yang berkewarganegaraan sesuai dengan domisili Perusahaan, yaitu karyawan yang berkewarganegaraan Indonesia.

PHE memberikan kesempatan pengembangan karir yang setara kepada seluruh karyawan untuk mencapai jenjang karir yang terbaik. Selama tahun 2024 terdapat 1.086 orang karyawan yang dapat menduduki posisi manajer ke atas, atau 7,67% dari total karyawan.

TINGKAT TURNOVER

Di samping bertambahnya jumlah pekerja melalui rekrutmen, Perseroan juga mengalami berkurangnya jumlah tenaga kerja akibat terdapat karyawan yang meninggalkan Perseroan dengan alasannya masing-masing. Perseroan memenuhi hak mereka sesuai regulasi yang diatur dalam Undang-Undang No.13 Tahun 2003 tentang Ketenagakerjaan, yang diperbarui melalui Undang-Undang Nomor 6 Tahun 2023 tentang Penetapan Peraturan Pemerintah Pengganti Undang-Undang No. 2 Tahun 2022 tentang Cipta Kerja.

Selama tahun 2024, sebanyak 1,80% karyawan meninggalkan Perseroan dengan alasan mengundurkan diri, pensiun sukarela, dan lainnya. Jumlah tersebut menurun sebanyak 2.32%. Kondisi tersebut menggambarkan bahwa Perusahaan memiliki program-program retensi yang dapat menjaga serta meningkatkan loyalitas karyawan. Perhitungan tingkat *turnover* dilakukan tanpa memperhitungkan jumlah Pensiun Sukarela karena komponen tersebut dianggap kurang tepat untuk menentukan tingkat *turnover* pekerja. Hal ini selaras dengan Survei Kepuasan Pekerja (*Employee Satisfaction Survey*) Tahun Buku 2024 yang mencapai 4.41 (skala 5) dari 4.31 (skala 5) pada tahun sebelumnya.

From 14,008 employees of PHE in 2024, 45 people are employees recruited from the local community through the BKJT (Technician Expertise Guidance Program). Meanwhile, all employees of PHE (100%) are Indonesian citizens. The company defines local employees as employees whose citizenship is in accordance with the Company's domicile, namely employees who are Indonesian citizens.

PHE provides equal career development opportunities to all employees to achieve the best career level. During 2024, there were 1,086 employees who occupied managerial positions and above, or 7.67% of the total employees.

TURNOVER RATE

In addition to increasing the number of workers through recruitment, the Company also experienced a reduction in the number of workers due to employees leaving the Company for their own reasons. The Company fulfills their rights in accordance with the regulations stipulated in Law No. 13 of 2003 concerning Manpower, which was updated through Law No. 6 of 2023 concerning Stipulation of Government Regulation in Lieu of Law No. 2 of 2022 concerning Job Creation.

In 2024, a total of 1.80% of employees left the Company due to resignation, voluntary retirement, and other reasons. This figure represents a decrease of 2.32%, indicating that the Company has implemented effective retention programs that help maintain and enhance employee loyalty. The turnover rate calculation excludes Voluntary Retirement, as this component is considered less appropriate in assessing employee turnover levels. This condition aligns with the results of the 2024 Employee Satisfaction Survey, which recorded a score of 4.41 (on a scale of 5), an increase from 4.31 (on a scale of 5) in the previous year.

Jumlah Karyawan Keluar
Number of Employees Leaving

Karyawan Keluar Employees Leaving	2024	2023	2022
Jenis Kelamin **Gender**			
Laki-laki Male	228	285	428
Perempuan Female	27	43	88
Usia **Age**			
>50 tahun >50 years	30	43	105
30 - 50 tahun 30 - 50 years	121	201	311
< 30 tahun < 30 years	104	84	100
Wilayah **Region**			
Sumatra Sumatra	19	16	23
Jawa Java	160	164	274
Kalimantan Kalimantan	69	138	210
Indonesia Timur Eastern Indonesian	3	9	8
Internasional International	1	1	1
Jumlah **Total**	254	328	516

Berdasarkan data tersebut, tingkat *turnover* pekerja pada tahun 2024 adalah sebesar 1,81%. Dengan kata lain, tingkat *turnover* pekerja telah menurun sebesar 0,95% dari tahun sebelumnya. Perhitungan tingkat *turnover* dilakukan tanpa memperhitungkan jumlah Pensiun Sukarela karena komponen tersebut dianggap kurang tepat untuk menentukan tingkat *turnover* pekerja.

Based on the data, the employee turnover rate in 2024 is 1.81%. In other words, the employee turnover rate has decreased by 0.95% from the previous year. The calculation of the turnover rate is conducted without taking into account the number of Voluntary Retirements because this component is considered less appropriate for determining the employee turnover rate.

Tingkat Turnover Pekerja
Employee Turnover Rate

2024	2023	2022
1,81%	2,76%	2,64%

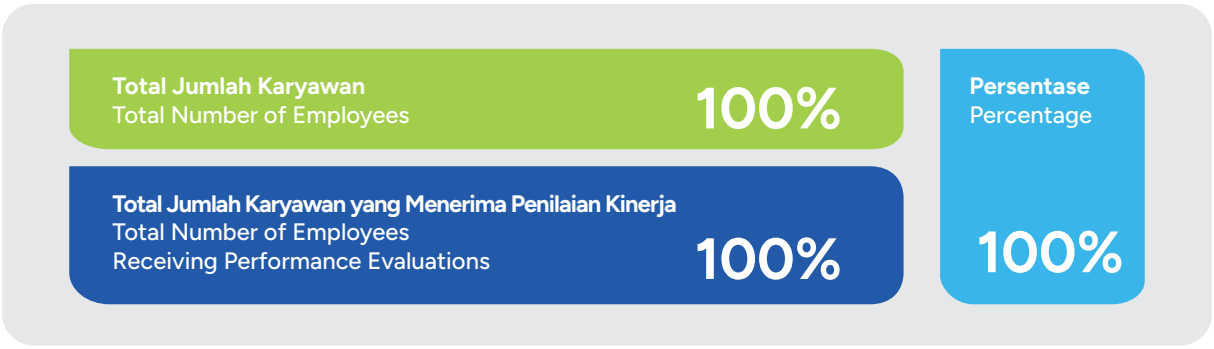
EVALUASI KINERJA DAN KOMPENSASI YANG ADIL
FAIR PERFORMANCE EVALUATION AND COMPENSATION

Dalam rangka meningkatkan kompetensi pekerjanya secara berkelanjutan, Perseroan menyelenggarakan sistem evaluasi kinerja bagi karyawannya. Evaluasi tersebut dapat membantu tiap pekerja untuk mengetahui ruang pengembangan bagi individu maupun kelompok. Sebagai perusahaan yang bertanggung jawab, evaluasi tersebut harus berjalan secara adil tanpa diskriminasi atau menguntungkan pihak tertentu. Penilaian dilakukan berdasarkan pengukuran yang telah terstandardisasi dan disepakati bersama.

Perseroan menetapkan KPI (*Key Performance Indicator*) bagi seluruh karyawan. KPI tersebut telah disesuaikan dengan *Pertamina Reference Level* (PRL), fungsi, divisi, serta tanggung jawab tiap individu. Kemudian, Perseroan secara rutin setiap tahun melakukan *People Review Annual Process*. Hasil dari penilaian tersbut akan digunakan untuk menentukan jalur promosi, penetapan bonus, penentuan kebutuhan, pengembangan kompetensi, dan portfolio pekerja. Selama tahun 2024, 100% karyawan menerima penilaian kinerja dan pengembangan karir. [GRI 404-3]

In order to continuously improve the competence of its employees, the Company organizes a performance evaluation system for its employees. The evaluation can help each employee to know the areas of improvement for individuals and groups. As a responsible company, the evaluation must be conducted fairly without discrimination or benefiting certain parties. The assessment is conducted based on standardized and mutually agreed measurements.

The Company sets KPI (Key Performance Indicator) for all employees. The KPI has been adjusted to the Pertamina Reference Level (PRL), function, division, and responsibility of each individual. Then, the Company routinely conducts the People Review Annual Process every year. The results of the assessment will be used to determine promotion paths, determine bonuses, determine needs, develop competencies, and employee portfolios. During 2024, 100% Employees received performance evaluation and career development. [GRI 404-3]



Persentase Karyawan yang Menerima Tinjauan Rutin Terhadap Kinerja dan Pengembangan Karir Berdasarkan *Gender* dan Jabatan.

Percentage of Employees Receiving Regular Performance Reviews and Career Development by Gender and Position

Jabatan Position	Satuan Units	2024			2023			2022		
		♂	♀	Keseluruhan Overall	♂	♀	Keseluruhan Overall	♂	♀	Keseluruhan Overall
Direksi Board of Directors	%	100	100	100	100	100	100	100	100	100
General Manager	%	100	100	100	100	100	100	100	100	100
Vice President	%	100	100	100	100	100	100	100	100	100
Konsultan Consultant	%	100	100	100	100	100	100	100	100	100
Manajer/Setara Manager/Equivalent	%	100	100	100	100	100	100	100	100	100

Jabatan Position	Satuan Units	2024			2023			2022		
		♂	♀	Keseluruhan Overall	♂	♀	Keseluruhan Overall	♂	♀	Keseluruhan Overall
Assistant Manajer/Setara Assistant Manager/ Equivalent	%	100	100	100	100	100	100	100	100	100
Senior Staff	%	100	100	100	100	100	100	100	100	100
Staff	%	100	100	100	100	100	100	100	100	100
% Keseluruhan % Overall		100	100	100	100	100	100	100	100	100

Keterangan / Notes: ♂ = Laki-laki / Male ♀ = Perempuan / Female

Alur mekanisme *People Review Annual Process* yang diselenggarakan Perseroan adalah sebagai berikut: [GRI 404-3]

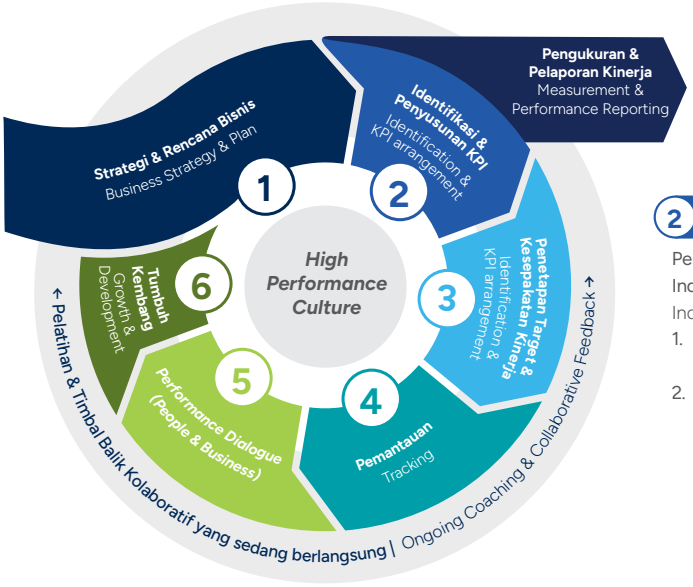
The mechanism flow of the People Review Annual Process organized by the Company is as follows: [GRI 404-3]

People Review Annual Process

1 *RJPP Setting*

Perumusan tujuan/rencana Perusahaan (RJPP & RKAP) berdasarkan Visi & Misi, *Benchmark*, kondisi bisnis, *change driven & key success factor*.

The formulation of company objectives/plans (RJPP & RKAP) is based on the Vision & Mission, Benchmarks, business conditions, change-driven factors, and key success factors.



2 *KPI Setting*

Penyusunan Target Kinerja Individu (IGS)
Individual Goal Setting (IGS)

1. *KPI Function/Cascading KPI Function*
2. Kontribusi Individu: Keterlibatan dalam Proyek & Komunitas. Tujuan HSSE, Komitmen Pengembangan/ Pengembangan Bakat
   Individual Contributory: Project & Community Involvement. HSSE Objective, Development Commitment/Talent Development

3 *IG Setting*

Kesepakatan Kinerja Individu
Individual Performance Agreement

1. Expection Setting Conversation
   Expection Setting Conversation
2. Penetapan Item, Bobot, Target & Juknis IG
   Determination of Items, Weight, Targets & Guidelines for IG

4 *MYPR Realization*

1. *Pulse Check/Progress tracking* kinerja
   Pulse Check/Progress Tracking Performance
2. Gal Analysis & Perumusan solusi (SAMBAL)
   Gap Analysis & Formulation of Solutions (SAMBAL)

5 *EYPR Realization*

1. Proses penilian mengacu pada target distribusi & *meaningful differentiation* untuk aspek: Target kinerja (KPI/IG) dan AKHLAK Behavior + 5CB
   The evaluation process refers to target distribution & meaningful differentiation for aspects: Performance Target (KPI/IG) and AKHLAK Behavior + 5CB.
2. Diskusi *People Review*
   People Review Discussion

6 *Dialogue Day*

1. Penyampaian & *feedback rating* kinerja
   Performance delivery & feedback rating
2. Diskusi rencana pengembangan (IDP), *training, coaching, assignment*
   Discussion of development plans (IDP), training, coaching, assignment

Reward & Consequences:

1. Penghargaan atas pencapaian kinerja
   Recognition for performance achievement
2. Pemberian konsekuensi kinerja rendah
   Giving consequences for low performance

Selain keadilan dalam proses penilaian, Perseroan juga wajib memenuhi hak-hak dasar pekerja seperti cuti melahirkan. Hak tersebut diatur dalam Undang-Undang No. 13 Tahun 2003 tentang Ketenagakerjaan Pasal 82. Pada peraturan tersebut, cuti melahirkan selama tiga bulan wajib diberikan oleh perusahaan terhadap seluruh pekerja wanita. Oleh karena itu, Perseroan memberikan hak cuti melahirkan kepada pekerja wanita selama 90 hari kalender. Selain itu, pekerja pria yang istrinya melahirkan juga memperoleh jatah cuti sebanyak 5 hari kerja. Selama tahun 2024, terdapat 58 karyawan wanita dan 291 karyawan pria yang menggunakan hak cuti melahirkan. [GRI 401-3]

In addition to fairness in the assessment process, the Company is also required to fulfill basic worker rights such as maternity leave. These rights are regulated in Law No. 13 of 2003 concerning Manpower Article 82. In this regulation, three months of maternity leave must be given by the company to all female workers. Therefore, the Company provides maternity leave rights to female workers for 90 calendar days. In addition, male workers whose wives give birth also receive a leave of 5 working days. During 2024, there were 58 female employees and 291 male employees who exercised their maternity leave rights. [GRI 401-3]

» Total Pekerja yang Menggunakan Hak Cuti Melahirkan
Total Workers Exercising Maternity Leave Rights

Deskripsi Description	Jenis Kelamin Gender	2024	2023	2022
Jumlah karyawan yang berhak mendapat cuti melahirkan Total number of employees entitled to maternity leave	Laki-laki Male	11.000,00	11.143,00	11.346,00
	Perempuan Female	1.342,00	1.370,00	1.365,00
Jumlah karyawan yang mengambil cuti melahirkan Total number of employees taking maternity leave	Laki-laki Male	291,00	354,00	280,00
	Perempuan Female	58,00	72,00	73,00
Jumlah karyawan yang kembali bekerja pada periode pelaporan setelah cuti melahirkan berakhir Total number of employees returning to work in the reporting period after maternity leave ended	Laki-laki Male	289,00	352,00	277,00
	Perempuan Female	58,00	71,00	72,00
Jumlah karyawan yang kembali bekerja setelah cuti melahirkan berakhir, yang masih dipekerjakan 12 bulan setelah kembali bekerja Total number of employees returning to work after maternity leave ended, who were still employed 12 months after returning to work	Laki-laki Male	289,00	350,00	274,00
	Perempuan Female	58,00	70,00	70,00

TUNJANGAN DAN MANFAAT PEKERJA BERDASARKAN STATUS KEPEGAWAIAN

Sebagai perusahaan yang bertanggung jawab, PHE memberikan imbalan yang sesuai kepada tiap pekerjanya. Imbalan tersebut disepakati oleh kedua belah pihak di awal kerja sama. Melalui imbalan tersebut, Perseroan berupaya agar tiap pegawai dapat memperoleh kesejahteraan dan meningkatkan taraf hidupnya. Pemberian imbalan atau yang disebut dengan remunerasi juga dapat membantu produktivitas tiap karyawan yang seterusnya akan memberi dampak positif bagi perusahaan. Remunerasi tidak hanya mencakup gaji atau upah, melainkan juga berbagai jenis insentif, tunjangan, dan manfaat lainnya.

EMPLOYEE ALLOWANCES AND BENEFITS BASED ON EMPLOYMENT STATUS

As a responsible company, PHE provides appropriate compensation to each of its employees. The compensation is agreed upon by both parties at the beginning of the cooperation. Through this compensation, the Company strives to ensure that each employee can obtain welfare and improve their standard of living. The provision of compensation or what is called remuneration can also help the productivity of each employee which will then have a positive impact on the company. Remuneration does not only include salary or wages, but also various types of incentives, allowances, and other benefits.

Perseroan menjamin bahwa remunerasi yang diberikan telah sesuai dengan regulasi yang berlaku, termasuk memberikan upah di atas rata-rata Upah Minimum Provinsi (UMP). Remunerasi yang diberikan juga dikalkulasi dan ditetapkan secara adil berdasarkan indikator objektif seperti posisi, masa kerja, dan pencapaian kinerja tanpa praktik diskriminasi terhadap aspek jenis kelamin, agama, suku, dan lainnya. Pada tahun 2024, gaji terendah yang diberikan di PHE mencapai rata-rata 126% di atas standar Upah Minimum Provinsi pada setiap wilayah operasional. [OJK F.20] [GRI 202-1]

The Company guarantees that the remuneration provided is in accordance with applicable regulations, including providing wages above the average Provincial Minimum Wage (UMP). The remuneration provided is also calculated and determined fairly based on objective indicators such as position, term of service, and performance achievement without discriminatory practices against the aspects of gender, religion, ethnicity, and others. In 2024, the lowest salary given at PHE reached an average of 126% above the Provincial Minimum Wage standard in each area of operation. [OJK F.20] [GRI 202-1]

» Rasio Remunerasi Karyawan Tingkat Pemula berdasarkan Jenis Kelamin terhadap UMR
Ratio of Remuneration of Entry-Level Employees by Gender to UMR

Keterangan Description	Satuan Units	Yearly Performance		
		2024	2023	2022
Rasio rata-rata remunerasi *entry level* karyawan terhadap UMR Average ratio of remuneration of entry-level employee to UMR	Rasio Ratio	126%	129%	134%
Rasio rata-rata remunerasi *entry level* karyawan wanita terhadap UMR Average ratio of remuneration of entry-level female employees to UMR	Rasio Ratio	126%	129%	134%
Rasio rata-rata remunerasi *entry level* karyawan laki-laki terhadap UMR Average ratio of remuneration of entry-level male employees to UMR	Rasio Ratio	126%	129%	134%

Remunerasi yang diberikan kepada pekerja Perseroan berdasarkan status kepegawaian adalah sebagai berikut:
[OJK F.20] [GRI 202-1]

The remuneration given to the Company's employees based on their employment status is as follows:
[OJK F.20] [GRI 202-1]

» Tunjangan dan Manfaat Pekerja Berdasarkan Status Kepegawaian [GRI 401-2]
Employees' Allowances and Benefits Based on Employment Status

No.	Jenis Tunjangan Types of Allowances	Pekerja Tetap Fixed Employee	Pekerja Kontrak Contract Employee
1.	Bantuan Uang Makan/*Extra Fooding* Extra Fooding Assistance	✓*	✓*
2.	Penghargaan Atas Pengabdian (Uang Pensiun) Award for Service (Pension)	✓	✓
3.	Tunjangan Hari Raya Keagamaan Religious Holiday Allowance	✓	✓
4.	Tunjangan Posisi (Uang Jabatan) Position Allowance (Position Money)	✓	✓
5.	Tunjangan Tugas Belajar (Uang Pendidikan) Study Assignment Allowance (Tuition Fee)	✓	×
6.	Pakaian Dinas/Seragam Official Attire/Uniform	✓	✓
7.	Bantuan Fasilitas Istirahat Tahunan (Uang Cuti) Annual Rest Facility Assistance (Leave Money)	✓	✓
8.	Bantuan Bagi Pekerja & Keluarga Meninggal Dunia (Uang Kematian) Assistance for Employees & Families of the Deceased (Bereavement Support)	✓	✓
9.	Tunjangan Daerah (Tunjangan Lokasi) Local Allowance (Location Allowance)	✓	✓

*) Pada saat lembur.
During Overtime.

Selain pekerja tetap dan pekerja kontrak, terdapat pula pekerja dari pihak *supplier* dan kontraktor yang bertugas di bidang teknis di lapangan. Pekerja tersebut melakukan aktivitas dalam lingkup PHE, sehingga PHE berkewajiban memberi kompensasi sesuai kontrak kerja yang disepakati di awal kerja sama. Pada kontrak kerja tersebut, Perseroan telah memastikan sudah terdapat pernyataan-pernyataan penting seperti pemenuhan upah minimum, kebijakan jam kerja, pelarangan diskriminasi, kondisi lingkungan tempat kerja, dan tempat tinggal pribadi yang disesuaikan dengan regulasi terkait ketenagakerjaan, baik nasional maupun internasional.

In addition to permanent workers and contract workers, there are also workers from suppliers and contractors who work in the technical field. These workers conduct activities within the scope of PHE, so PHE is obliged to provide compensation according to the work contract agreed upon at the beginning of the cooperation. In the work contract, the Company has ensured that there are important statements such as fulfillment of minimum wages, working hour policies, prohibition of discrimination, conditions of the workplace environment, and personal residences that are adjusted to regulations related to employment, both national and international.



KESEHATAN DAN KESELAMATAN KERJA
OCCUPATIONAL HEALTH AND SAFETY

[OJK F.21] [GRI 3-3, 403]

PHE Subholding Upstream memiliki komitmen untuk selalu melaksanakan kegiatan operasional dengan memperhatikan aspek Kesehatan dan Keselamatan Kerja (K3), keamanan, serta perlindungan terhadap lingkungan dan masyarakat sekitar. Perusahaan selalu berfokus pada keselamatan dan *asset integrity* secara terus menerus, yang sejalan dengan tata nilai perusahaan yaitu AKHLAK. PHE Subholding Upstream berprinsip bahwa dengan mengedepankan K3, keberhasilan perusahaan akan didapat dalam jangka panjang.

Komitmen tersebut semakin dikuatkan dengan diterbitkannya HSSE (*Health, Safety, Security, and Environment*) *Policy* pada tahun 2024. Kebijakan ini berisikan tentang:
1. Upaya pencegahan dan mitigasi risiko insiden dan kecelakaan kerja
2. Upaya pencegahan kecelakaan besar
3. Upaya pencegahan pencemaran lingkungan
4. Upaya pencegahan gangguan keamanan
5. Pengelolaan dan pemantauan kondisi pekerja
6. Peningkatan kompetensi HSSE pekerja
7. Penerapan *governance* yang baik khususnya di bidang lingkungan
8. Teknologi digitalisasi HSSE dan sarana-prasarana kerja aspek HSSE

Kebijakan ini dibuat untuk dilaksanakan oleh setiap Pekerja, Mitra Kerja, Kontraktor dan Tamu yang berada di wilayah operasi Subholding Upstream dengan menjunjung tinggi *HSSE Golden Rules* Pertamina: **Patuh - Intervensi - Peduli**.

STRUKTUR DAN KEDUDUKAN FUNGSI HSSE

Struktur organisasi Fungsi HSSE ditetapkan sesuai Surat Keputusan Direksi No. KPTS.052/PHE00000/2022-S0 tanggal 15 Juli 2022. Berikut disampaikan struktur dan kedudukan Fungsi HSSE yang menggambarkan peran dan fungsi serta koordinasi dalam keorganisasian PHE. *Vice President* (VP) HSSE sebagai koordinator bertanggung jawab kepada Direktur Utama dan dibantu oleh *Assistant Manager Planning, Management System & Risk Management; Manager Health; Senior Manager Safety; Manager Security; Manager Environment; dan Senior Manager HSSE Performance, Assurance & ERCM*.

PHE Subholding Upstream is committed to always conducting operational activities by paying attention to the aspects of Occupational Health and Safety (OHS), security, and protection of the environment and surrounding communities. The company always focuses on safety and asset integrity continuously, which is in line with the company's values, namely AKHLAK. PHE Subholding Upstream has the principle that by prioritizing OHS, the company's success will be achieved in the long term.

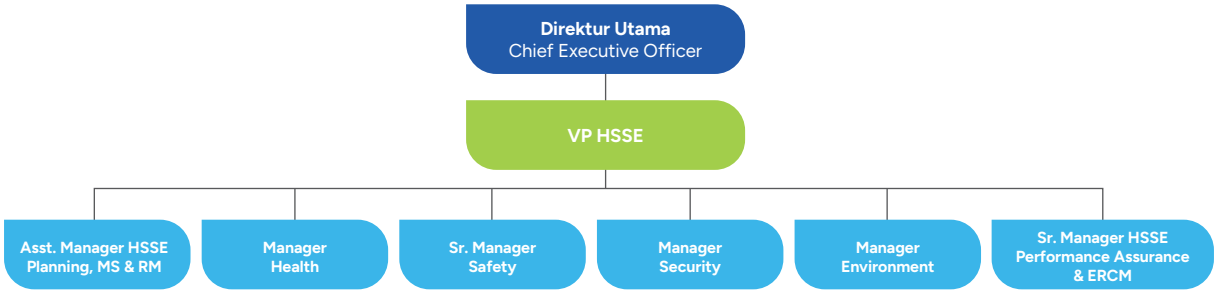
This commitment was further strengthened by the issuance of the HSSE (Health, Safety, Security, and Environment) Policy in 2024. This policy contains:
1. Efforts to prevent and mitigate the risk of incidents and work accidents
2. Efforts to prevent major accidents
3. Efforts to prevent environmental pollution
4. Efforts to prevent security disturbance
5. Management and monitoring of workers' conditions
6. Improvement of HSSE competency of workers
7. Implementation of good governance especially in the environmental sector
8. HSSE digitalization technology and HSSE aspect work infrastructure

This policy is made to be implemented by every Worker, Work Partner, Contractor and Guest in the areas of operation of the Subholding Upstream by upholding Pertamina's HSSE Golden Rules: **Compliance - Intervention - Care**.

STRUCTURE AND POSITION OF HSSE FUNCTION

The organizational structure of the HSSE Function is determined in accordance with Resolution of Board of Directors No. KPTS.052/PHE00000/2022-S0 dated July 15, 2022. The following is the structure and position of the HSSE Function which describes the roles and functions as well as coordination in the organizational structure of PHE. The Vice President (VP) HSSE as the coordinator is responsible to the President Director and is assisted by the Assistant Manager of Planning, Management System & Risk Management; Manager of Health; Senior Manager of Safety; Manager of Security; Manager of Environment; and Senior Manager of HSSE Performance, Assurance & ERCM.

Struktur Organisasi Fungsi HSSE
Organizational Structure of HSSE Function



Hingga akhir tahun 2024, jumlah pekerja yang tergabung dalam Fungsi HSSE sebanyak 63 (enam puluh tiga) pekerja dengan status PWTT sebanyak 39 (tiga puluh sembilan) pekerja, dengan status PWT sebanyak 1 (satu) pekerja, dan 23 (dua puluh tiga) pekerja dengan status TKJP dengan total keseluruhan pekerja adalah 63 (enam puluh tiga) pekerja.

Until the end of 2024, the number of workers who are members of the HSSE Function is 63 (sixty-three) workers, 39 (thirty-nine) workers with PWTT status, 1 (one) worker with PWT status, and 23 (twenty-three) workers with TKJP status for a total of 63 (sixty-three) workers.

SISTEM MANAJEMEN KESEHATAN, KESELAMATAN KERJA, DAN LINGKUNGAN HIDUP [GRI 403-1]

Sistem manajemen kesehatan, keselamatan kerja, dan lingkungan hidup di PHE Subholding Upstream berpegang pada kebijakan K3LL/HSSE yang ditetapkan oleh PT Pertamina (Persero). Peraturan lainnya yaitu mengacu pada Undang-Undang No. 22 Tahun 2001 tentang Minyak dan Gas Bumi. Dilandasi dari dua peraturan tersebut, perusahaan wajib memastikan penerapan standar dan kualitas, mengadopsi praktik teknik yang baik, serta menjalankan prinsip-prinsip keselamatan dan kesehatan kerja dan pengelolaan lingkungan sesuai dengan kebijakan K3LL/HSSE PT Pertamina (Persero), HSSE *Golden Rules*, dan *Corporate Life Saving Rules* (CLSR). Perusahaan juga telah melaksanakan audit Manajemen Pengamanan Hulu Migas (MPHM) menggunakan auditor dari pihak ketiga yang ditunjuk oleh SKK Migas.

Dalam menjalankan operasional perusahaan, PHE Subholding Upstream selalu menerapkan prinsip-prinsip K3LL/HSSE dan melibatkan semua pekerja, termasuk pekerja dari kontraktor, vendor, pemasok, serta *stakeholder* yang turut beraktivitas di wilayah kerja perusahaan. Untuk memastikan kepatuhan dan efektivitas implementasi K3LL/HSSE, perusahaan secara berkala melakukan evaluasi dan audit, memverifikasi bahwa 100% mitra kerja telah menerapkan standar K3LL/HSSE yang ditetapkan dan menjamin keselamatan serta kesehatan pekerja mereka. [GRI 403-8]

OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM [GRI 403-1]

The occupational health, safety, and environmental management system at PHE Subholding Upstream adheres to the K3LL/HSSE policy set by PT Pertamina (Persero). Other regulations refer to Law No. 22 of 2001 concerning Oil and Gas. Based on these two regulations, the company is required to ensure the implementation of standards and quality, adopt good engineering practices, and implement the principles of occupational health and safety and environmental management in accordance with the K3LL/HSSE policy of PT Pertamina (Persero), HSSE Golden Rules, and Corporate Life Saving Rules (CLSR). The company has also conducted an Upstream Oil and Gas Security Management (MPHM) audit using a third-party auditor appointed by SKK Migas.

In running the company's operations, PHE Subholding Upstream always applies the principles of K3LL/HSSE and involves all workers, including workers from contractors, vendors, suppliers, and stakeholders who are also active in the company's working areas. To ensure compliance and effectiveness of K3LL/HSSE implementation, the company periodically conducts evaluations and audits, verifying that 100% of work partners have implemented the established K3LL/HSSE standards and guaranteeing the safety and health of their workers. [GRI 403-8]

Total Jumlah Pekerja PHE Total Number of Workers of PHE	**115.583**
Worker Coverage Worker Coverage	**100%**
Total Jumlah Pekerja yang Tercakup dalam Implementasi Sistem K3 Total Number of Workers Covered in Implementation of OHS System	**115.583**

Berikut ini gambaran mengenai sistem manajemen K3LL yang diterapkan di seluruh wilayah kerja Perseroan mengacu pada *HSSE Policy* yang telah ditetapkan:

The following is an overview of the HSSE management system implemented in all of the Company's working areas referring to the established HSSE Policy:

» PHE Subholding Upstream menerapkan sistem manajemen K3 untuk seluruh pekerja
PHE Subholding Upstream implements an OHS management system for all workers

[GRI 403-1] [SASB EM-EP-540a.2] [IPIECA SHS-1]

Keselamatan
Safety

PHE sangat memperhatikan aspek-aspek keselamatan dalam bekerja dan beraktivitas. Keselamatan adalah prioritas utama.
PHE pays close attention to the aspects of safety in work and activities. Safety is the main priority.

Tujuan
Objectives

- Tanpa insiden;
  Zero incidents;
- Menghilangkan faktor-faktor risiko kecelakaan kerja.
  To eliminate risk factors for work accidents.

Kesehatan
Health

Bagi PHE, kesehatan adalah aset yang sangat penting dalam bekerja dan beraktivitas. Kami mengadakan program-program untuk mendukung kesehatan pekerja.
For PHE, health is a very important asset in working and doing activities. We hold programs to support workers' health.

Tujuan
Objectives

- Mencegah penyakit akibat kerja;
  To prevent occupational diseases;
- Menciptakan iklim kerja yang sehat, serta mendukung kesehatan pekerja.
  To create a healthy work climate and to support workers' health.

Standardisasi K3
OHS Standardization

Internal

- SUPREME
- *Corporate Life Saving Rules*
- Pedoman HSSE
  HSSE Guidance
- *Contractor Safety Management System* (CSMS)

Eksternal
External

- Sistem Manajemen K3 dan Lindung Lingkungan (SMK3LL);
  Occupational Health and Safety Management System (OHSMS);
- Sistem Manajemen Pengamanan Peraturan Kapolri No. 24/2007;
  Security Management System pursuant to Regulation of Chief of Indonesian National Police No. 24/2007;
- ISO 45001 Sistem Manajemen K3.
  ISO 45001 OHS Management System.

SUPREME DAN HSSE *GOLDEN RULES*

SUPREME (*Sustainability Pertamina Expectations For HSSE Management Excellence*) merupakan sistem manajemen untuk mengintegrasikan praktik-praktik HSSE terbaik/kelas dunia secara terstruktur dan sistematis pada tingkat Korporat, Direktorat, Unit Operasi, dan Anak Perusahaan Pertamina. Sistem manajemen ini juga memastikan bahwa praktik-praktik HSSE dapat memberikan kontribusi keberlanjutan bisnis secara keseluruhan, dapat mengelola risiko yang terkait dengan bisnis, dan menetapkan hingga mencapai target bisnis dan HSSE. Sistem ini didasarkan pada pemenuhan peraturan perundangan yang berlaku seperti SMK3, SMP Perkap 24/2007, dan Proper KLHK serta standar sistem manajemen internasional seperti ISO 9001, ISO 14001, ISO 26000, ISO 27001, ISO 28000, ISO 31000, ISO 39001, ISO 45001, ISO 50001, dan standar lainnya.

SUPREME AND HSSE GOLDEN RULES

SUPREME (Sustainability Pertamina Expectations For HSSE Management Excellence) is a management system to integrate the best/world-class HSSE practices in a structured and systematic manner at the Corporate, Directorate, Operational Unit, and Subsidiary levels of Pertamina. This management system also ensures that HSSE practices can contribute to overall business sustainability, can manage risks related to the business, and set and achieve business and HSSE targets. This system is based on the fulfillment of applicable laws and regulations such as SMK3, SMP Perkap 24/2007, and Proper KLHK as well as international management system standards such as ISO 9001, ISO 14001, ISO 26000, ISO 27001, ISO 28000, ISO 31000, ISO 39001, ISO 45001, ISO 50001, and other standards.

SUPREME telah ditetapkan sebagai PERTAMINA Standar (PS) oleh PERTAMINA *Standardization & Certification* (PSC) dan telah terdapat perbaruan dengan Nomor PS-S-023-440-2023. Saat ini, PHE Subholding Upstream menerapkan SUPREME Revisi Ke-1 Tahun 2019 yang menggantikan Pedoman Sistem Manajemen HSSE Pertamina versi sebelumnya (No. A-001/I00200/2011–S0 [Rev. 2]). Di dalam SUPREME, terdapat standar pengelolaan aspek HSSE 'Kelas Dunia', termasuk hal-hal mengenai perbaikan terus menerus (*continuous improvement*) dan keberlanjutan bisnis (*business sustainability*).

Berikut ini kerangka kerja SUPREME yang diaplikasikan dalam lingkungan kerja PHE Subholding Upstream:

SUPREME has been designated as PERTAMINA Standard (PS) by PERTAMINA Standardization & Certification (PSC) and has been updated with Number PS-S-023-440-2023. Currently, PHE Subholding Upstream implements SUPREME Revision 1 of 2019 which replaces the previous version of Pertamina's HSSE Management System Guidelines (No. A-001/I00200/2011–S0 [Rev. 2]). In SUPREME, there are 'World-Class' HSSE aspect management standards, including matters regarding continuous improvement and business sustainability.

The following is the SUPREME framework applied in the work environment of PHE Subholding Upstream:

» Proses, Ekspektasi, Kelengkapan, dan Tujuan SUPREME
Process, Expectations, Completeness, and Goals of SUPREME

Proses & Ekspektasi Processes & Expectations	Kelengkapan Completeness	Tujuan Objectives
Proses Process 1 — Kepemimpinan dan Akuntabilitas Leadership and Accountability	191 Ekspektasi Expectations	HSSE *Beyond Culture* Kompetensi pengendalian risiko dan kepatuhan aspek HSSE sebagai *"Way of Life"* Perwira PHE Risk control competency and compliance with HSSE aspects as the "Way of life" of Perwira PHE
Proses Process 2 — Kebijakan dan Sasaran Policies and Targets		
Proses Process 3 — Organisasi, Tanggung Jawab, Sumber Daya, dan Dokumen Organization, Responsibilities, Resources, and Documents	• Pedoman Implementasi SUPREME SUPREME Implementation Guidelines • SUPREME *Internal Audit Protocol* • *Continuous Performance Improvement Management Tools* • Pedoman Standar Proses-proses Bisnis Utama HSSE Standard Guidelines for HSSE Key Business Processes	Anda dan Saya **PATUH** pada hukum, kebijakan, peraturan, dan prosedur You and I **COMPLY** with laws, policies, regulations, and procedures
Proses Process 4 — Manajemen Risiko Risk Management		
Proses Process 5 — Perencanaan dan Prosedur Planning and Procedure		Anda dan Saya harus segera melakukan **INTERVENSI** terhadap tindakan tidak aman dan yang menyalahi peraturan You and I must immediately **INTERVENE** against unsafe acts and those that violate the rules
Proses Process 6 — Implementasi dan Pengendalian Operasional Implementation and Control		
Proses Process 7 — Jaminan: Pemantauan, Pengukuran, dan Audit Assurance: Monitoring, Measurement, and Audit		Anda dan Saya **PEDULI** pada setiap orang di sekitar kita You and I **CARE** for everyone around us.
Proses Process 8 — Tinjauan Review		

Dengan menggunakan sistem SUPREME, perusahaan berusaha mencegah dan memitigasi risiko terjadinya insiden dan/atau kecelakaan kerja dengan mengidentifikasi risiko-risiko berdasarkan pengalaman kejadian sebelumnya, menetapkan langkah mitigasi, serta mendelegasikan PIC ke dalam mekanisme teknis pelaksanaan SUPREME. Setelah melalui proses identifikasi, kemudian dilakukan proses evaluasi, penliaian, serta audit terhadap pelaksanaannya. Proses audit sangat penting karena dapat memastikan apakah perusahaan sudah mengikuti praktik kesehatan, keselamatan, keamanan, dan pengelolaan lingkungan dengan tepat. Audit juga mengevaluasi dan menilai seberapa baik perusahaan dapat mengelola risiko dan memastikan lingkungan kerja yang aman. Selain itu, dengan melakukan audit juga dapat mengidentifikasi area yang memerlukan perbaikan sistem HSSE. Sistem ini juga dapat memberikan peringkat yang berfungsi sebagai potret pengelolaan risiko di lingkungan perusahaan. Peringkat tersebut diatur sebagai berikut: [GRI 403-2] [IPIECA SHS-7]

By using the SUPREME system, the company seeks to prevent and mitigate the risk of incidents and/or work accidents by identifying risks based on previous incident experiences, determining mitigation steps, and delegating PIC to the technical mechanism for implementing SUPREME. After going through the identification process, an evaluation, assessment, and audit process is then conducted on its implementation. The audit process is very important because it can ensure whether the company has followed health, safety, security, and environmental management practices properly. The audit also evaluates and assesses how well the company can manage risks and ensure a safe work environment. In addition, conducting an audit can also identify areas that require improvement in the HSSE system. This system can also provide a rating that functions as a portrait of risk management within the company. The rating is arranged as follows: [GRI 403-2] [IPIECA SHS-7]

» Peringkat Identifikasi Pengelolaan Risiko HSSE di Lingkungan PHE Subholding Upstream
HSSE Risk Management Identification Rating in PHE Subholding Upstream Environment

	Operate With Managable Risk (Organisasi dioperasikan berdasarkan risiko yang telah dikelola/ The organization operates based on managed risks.)	Seluruh proses, SPT & SBT, dan implementasinya telah melampaui syarat minimum sehingga secara umum risiko kegiatan operasional telah mampu dikelola secara aman. The entire process, SOPs & SBPs, and their implementation have exceeded the minimum requirements, thus generally ensuring that operational activities' risks can be safely managed. **(Excellence/Generative)**
		Seluruh proses, SPT & SBT, dan implementasinya telah memenuhi syarat minimum sehingga secara umum risiko kegiatan operasional telah mampu dikelola secara aman. The entire process, SOPs & SBPs, and their implementation have met the minimum requirements, thus generally ensuring that operational activities' risks can be managed safely. **(Acceptable/Fully adequate)**
		Sebagian besar proses, SPT & SBT, dan implementasinya telah memenuhi syarat minimum dan pengelolaan risikonya secara umum masih dapat ditoleransi/mencukupi untuk dapat melaksanakan kegiatan operasional. Most of the processes, SOPs & SBPs, and their implementation have met the minimum requirements, and the management of their risks can generally still be tolerated/sufficient to carry out operational activities. **(Tolerable/adequate)**
	Operate With Unmanageble Risk (Organisasi dioperasikan berdasarkan risiko yang belum dikelola dengan baik/ The organization operates based on risks that have not been managed well.)	Sebagian besar proses, SPT & SBT, dan implementasinya tidak memenuhi syarat serta berpotensi memberikan dampak risiko menengah ke tinggi terhadap kegiatan operasional sehingga kondisi tersebut tidak dapat ditoleransi. Most of the processes, SOPs & SBPs, and their implementation do not meet the requirements and have the potential to pose medium to high risks to operational activities, making this condition intolerable. **(Not tolerable)**
		Sebagian besar proses, SPT & SBT, dan implementasinya tidak memenuhi syarat serta berpotensi memberikan dampak risiko tinggi terhadap kegiatan operasional sehingga kondisi tersebut tidak dapat diterima. Most of the processes, SOPs & SBPs, and their implementation do not meet the requirements and have the potential to pose high risks to operational activities, making this condition. **(Unacceptable)**

Melalui identifikasi, mitigasi, dan perbaikan gap, perusahaan dapat mengurangi kemungkinan terjadinya kecelakaan dan mampu menekan laju TRIR pada Tingkat kejadian lebih rendah. Sepanjang tahun 2024, telah dilakukan pengukuran kinerja HSSE melalui audit internal SUPREME. Hasil yang ditemukan yaitu mengenai kemampuan perusahaan dalam mengelola risiko kegiatan operasional, yang dapat dinilai dalam lima tipe warna, yakni: Hijau Tua, Hijau Muda, Kuning, Oranye, dan Merah.

Through identification, mitigation, and improvement of gaps, the company can reduce the likelihood of accidents and are able to suppress the TRIR rate at a lower incidence rate. Throughout 2024, HSSE performance measurements have been conducted through SUPREME internal audits. The results found were regarding the company's ability to manage operational activity risks, which can be assessed in five color types, namely: Dark Green, Light Green, Yellow, Orange, and Red.

» Hasil Audit Internal SUPREME Tahun 2024
SUPREME Internal Audit Results 2024



CORPORATE LIFE SAVING RULES (CLSR)

Corporate Life Saving Rules (CLSR) atau peraturan tentang keselamatan perusahaan merupakan bagian dari strategi perusahaan untuk memastikan bahwa semua operasi dilaksanakan dengan standar keselamatan tertinggi. Kebijakan CLSR ini mengacu pada kebijakan Pertamina yang diperbarui pada tahun 2024 dan dituangkan dalam Surat Keputusan Direktur Utama PT Pertamina Hulu Energi No. KPTS-015/PHE00000/2024-S0 tentang CLSR yang berlaku untuk seluruh entitas di PHE Subholding Upstream untuk mencegah terjadinya kecelakaan yang dapat mengancam jiwa bagi setiap pekerja, mitra kerja, serta kontraktor pada aktivitas dan pekerjaan di PHE Subholding Upstream.

Penerapan CLSR di PHE Subholding Upstream dilakukan secara fokus, menggunakan skala prioritas, masif dan menggunakan pendekatan pengendalian risiko yang efektif terhadap aktivitas yang tercantum dalam 10 elemen CLSR dengan melibatkan peran dan tanggung jawab Pimpinan Tertinggi di Entitas PHE Subholding Upstream, seluruh Pekerja Pertamina maupun kontraktor.

Secara serius dengan serangkaian langkah dan prosedur yang wajib diikuti oleh setiap pekerja, termasuk di dalamnya adalah kontraktor. Perusahaan telah menetapkan 10 indikator CLSR yang berasal dari kegiatan berisiko tinggi dan berpotensi menimbulkan kecelakaan kerja. Dengan menetapkan 10 CLSR ini, diharapkan pekerja dapat lebih waspada dalam melakukan persiapan dan pelaksanaan pekerjaan di wilayah kerja.

Seiring berjalannya praktik CLSR di area wilayah kerja, perusahaan juga kerap melakukan *monitoring* dan evaluasi secara berkala untuk mengukur efektivitas dari implementasinya. Perusahaan melakukan identifikasi area yang perlu perbaikan, serta memastikan bahwa kegiatan operasional dapat berjalan dengan standar keselamatan yang telah ditetapkan. Konsistensi implementasi CLSR dapat menciptakan lingkungan kerja yang aman dan dapat melindungi seluruh pekerja dan *stakeholder*.

CORPORATE LIFE SAVING RULES (CLSR)

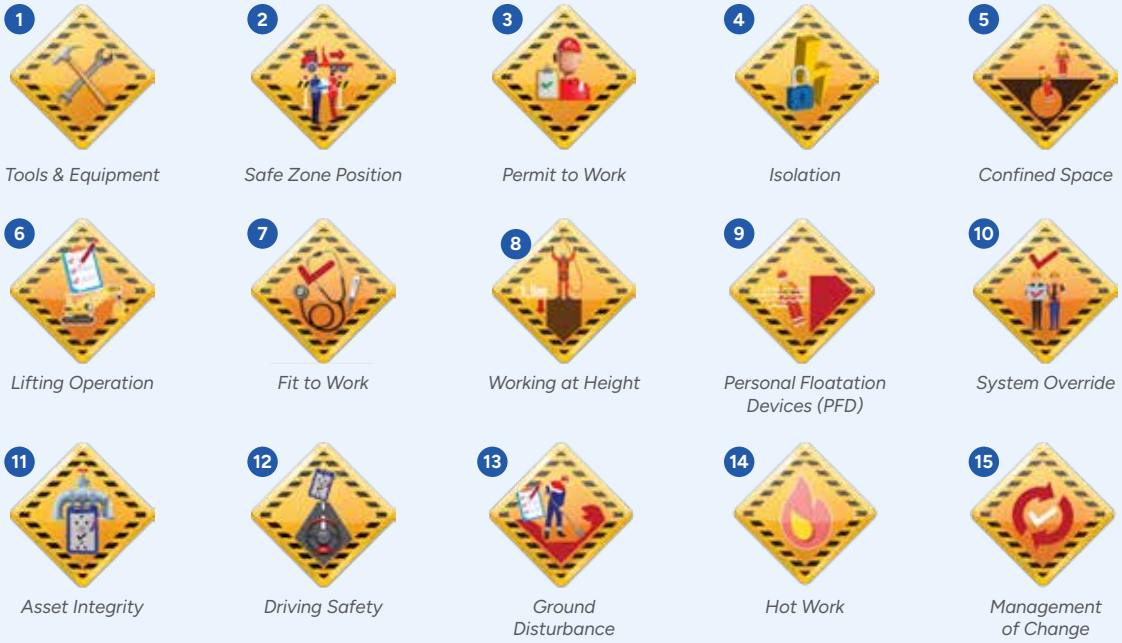
Corporate Life Saving Rules (CLSR) or company safety regulations are parts of the company's strategy to ensure that all operations are conducted with the highest safety standards. This CLSR policy refers to Pertamina's policy which was updated in 2024 and is stated in Decision of President Director of PT Pertamina Hulu Energi No. KPTS-015/PHE00000/2024-S0 concerning CLSR which applies to all entities in PHE Subholding Upstream to prevent accidents that can threaten the lives of every worker, work partner, and contractor in activities and work at PHE Subholding Upstream.

The implementation of CLSR at PHE Subholding Upstream is conducted in a focused manner, using a priority scale, massively and using an effective risk control approach to the activities listed in the 10 CLSR elements by involving the roles and responsibilities of the Top Leadership at the Entity of PHE Subholding Upstream, all Pertamina Workers and contractors.

Seriously with a series of steps and procedures that must be followed by every worker, including contractors. The company has set 10 CLSR indicators that come from high-risk activities and have the potential to cause work accidents. By setting these 10 CLSRs, it is expected that workers can be more vigilant in preparing for and performing work in the working areas.

As CLSR practices run in the working areas, the company also often conducts periodic monitoring and evaluation to measure the effectiveness of its implementation. The company identifies areas that need improvement, and ensures that operational activities can run with established safety standards. Consistent implementation of CLSR can create a safe working environment and can protect all workers and stakeholders.

Corporate Life Saving Rules (CLSR)



KINERJA PENGELOLAAN DAN KESELAMATAN KERJA

Penerapan sistem manajemen K3LL ini membawa perusahaan mendapat banyak penghargaan dalam sektor K3 yang selalu mengutamakan aspek keselamatan dan lingkungan dalam kegiatan operasionalnya di wilayah kerja. Berikut adalah penghargaan yang diperoleh PHE Subholding Upstream sepanjang tahun 2024:

1. Anugrah PROPER Emas sebanyak 12 dan PROPER Hijau sebanyak 19 oleh Kementerian Lingkungan Hidup dan Kehutanan.
2. Subroto *Awards* bidang Efisiensi Energi Nasional oleh Kementerian ESDM.
3. Penghargaan *Environmental and Social Innovation Award* (ENSIA) untuk penerapan prinsip 3R (*Reuse, recycle, recovery*) pada limbah padat non B3.
4. *Best Award EPSA: Eco-Cycle Innovation, Ecosystem Protection, Green Power Innovation, Hydro Smart Innovation.*
5. Penghargaan dan penanggulangan HIV/AIDS di tempat Kerja.
6. Penghargaan Efisiensi Energi (PEEN).
7. Penghargaan *Environmental and Social Innovation Awards* (ENSIA).

OCCUPATIONAL SAFETY AND MANAGEMENT PERFORMANCE

The implementation of the HSSE management system has made the company receive many awards in the OHS sector which always prioritizes safety and environmental aspects in its operational activities in the working areas. The following are the awards received by PHE Subholding Upstream throughout 2024:

1. 12 Gold PROPER Awards and 19 Green PROPER Awards by the Ministry of Environment and Forestry.
2. Subroto Awards in the field of National Energy Efficiency by the Ministry of Energy and Mineral Resources.
3. Environmental and Social Innovation Award (ENSIA) for the application of the 3R principle (Reuse, recycle, recovery) on non-B3 solid waste.
4. EPSA Best Award: Eco-Cycle Innovation, Ecosystem Protection, Green Power Innovation, Hydro Smart Innovation.
5. Recognition and management of HIV/AIDS in the workplace.
6. Energy Efficiency Award (PEEN).
7. Environmental and Social Innovation Awards (ENSIA).

8. Penghargaan Inisiator Teknologi Ramah Lingkungan di Industri Migas.
9. Penghargaan Keselamatan Migas Tanpa Kehilangan Jam Kerja Patra Nirbhaya Karya Utama Adinugraha, Madya.
10. Penghargaan Penggerak Kegiatan Donor Darah Aktif oleh Palang Merah Indonesia (PMI).
11. Penghargaan World Safety Organization (WSO) - Indonesia Pakistan Safety Culture Award (WISCA-WPSA).
12. *Zero Accident Awards.*

Konsistensi perusahaan dalam memperhatikan aspek keselamatan lingkungan kerja di setiap lokasi usaha dan lingkungan sekitar perusahaan ini mengacu pada peraturan perundang-undangan keselamatan kerja dan standar pengelolaan lingkungan. Pada tahun 2024 sendiri, perusahaan melakukan perhitungan *Total Recordable Incident Rate* (TRIR) menggunakan metode OSHA Log 300 dengan basis perhitungan per-1.000.000, dan tidak ada pekerja yang dikecualikan dalam penghitungan. Dalam periode 2024, TRIR sebesar 0,09 dengan jumlah insiden tercatat 31 insiden, dan jumlah total jam kerja mencapai 326.965.407. TRIR tersebut turun sebanyak 35,7% dari tahun lalu (0,14) dan berhasil memenuhi target yang sebelumnya diterapkan sebesar 0,19 (capaian semakin rendah semakin baik). [GRI 403-9] [SASB EM-EP-320a.1]

JUMLAH HILANG HARI KERJA (KARYAWAN DAN PEKERJA BUKAN KARYAWAN)

8. Environmentally Friendly Technology Initiator in Oil and Gas Industry Award.
9. Oil and Gas Safety Without Loss of Working Hours Patra Nirbhaya Karya Utama Adinugraha Award, Medium.
10. Active Blood Donor Activity Promotor Award by the Indonesian Red Cross (PMI).
11. World Safety Organization (WSO) - Indonesia Pakistan Safety Culture Award (WISCA-WPSA).
12. Zero Accident Awards.

The company's consistency in paying attention to the safety aspects of the work environment in each business location and the environment around the company refers to occupational safety laws and regulations and environmental management standards. In 2024, the company calculated the Total Recordable Incident Rate (TRIR) using the OSHA Log 300 method with a calculation basis per 1,000,000, and no workers were excluded from the calculation. In the period of 2024, the TRIR was 0.09 with 31 incidents recorded, and the total number of working hours reached 326,965,407. The TRIR decreased by 35.7% from last year (0.14) and succeeded in meeting the previously set target of 0.19 (the lower the achievement the better). [GRI 403-9] [SASB EM-EP-320a.1]

NUMBER OF LOST WORK DAYS (EMPLOYEES AND NON-EMPLOYEE WORKERS)

» Pengelolaan Keselamatan Kerja Berdasarkan Insiden Tercatat dan Jumlah Jam Kerja
Occupational Safety Management Based on Recorded Incidents and Number of Working Hours

[GRI 403-9] [IPIECA SHS-3]

Kinerja Performance	2024 Jumlah Total	2023 Jumlah Total	2022 Jumlah Total
Insiden Tercatat/ Recorded Incidents			
Fatality	1*	3	0
Lost Time Incident (LTI)	9	5	2
Restricted Work Day Case (RWDC)	7	15	9
Medical Treatment Case (MTC)	14	24	20
First Aid Case (FAC)	88	84	77
Jumlah Total	119	131	108
Jam Kerja Tercatat/ Recorded Working Hours			
Jumlah Jam Kerja Selamat (Juta) Total Safety Manhour (Million)	**43**	**57,6**	**121,4**

*) Catatan = seluruh kejadian insiden di lingkungan SHU dialami oleh pekerja kontraktor, kecuali 1 case fatality insiden merupakan karyawan SHU.
Note = all incidents in this table are incidents experienced by contractor workers, except for 1 case fatality incident in 2024 which was an employee of SHU.

Pada tahun 2024, PHE mencatat total 6 kejadian keamanan proses yang diklasifikasikan sebagai Tier 1 dan 11 kejadian keamanan proses Tier 2. Pengelompokan kejadian-kejadian tersebut berdasarkan aktivitas bisnis adalah sebagai berikut: [GRI 11.8.3]

In 2024, PHE recorded a total of 6 process safety incidents classified as Tier 1 and 11 process safety incidents of Tier 2. The grouping of these incidents based on business activities is as follows: [GRI 11.8.3]

Proses Bisnis Business Process	Kejadian Keamanan Tier 1 (kejadian) Tier 1 Security Incident (event)	Kejadian Keamanan Tier 2 (kejadian) Tier 2 Security Incident (incident)
Eksplorasi Exploration	1	0
Pengembangan Development	0	0
Produksi Production	3	10
Penutupan dan Rehabilitasi Closure and Rehabilitation	0	0
Pengolahan dan Penyulingan Processing and Refining	2	1
Transportasi dan Penyimpanan Transportation and Storage	0	0
Jumlah Total	**6**	**11**

Penerapan *Corporate Life Saving Rules* (CLSR) Pertamina adalah bagian dari komitmen perusahaan untuk menciptakan lingkungan kerja yang aman dan bebas dari kecelakaan fatal. Kepatuhan terhadap 10 elemen ini bukan hanya kewajiban, tetapi juga bentuk tanggung jawab bersama dalam menjaga keselamatan diri sendiri, rekan kerja, serta operasional perusahaan.

The implementation of Pertamina's Corporate Life Saving Rules (CLSR) is a part of the company's commitment to creating a safe working environment free from fatal accidents. Compliance with these 10 elements is not only an obligation, but also a form of shared responsibility in maintaining the safety of oneself, co-workers, and operations of the company.

Selain penerapan CLSR tersebut, PHE Subholding Upstream juga memiliki *Loss Prevention Committee* (LPC) atau setara dengan panitia Pembina Keselamatan dan Kesehatan Kerja (P2K3). Komite ini berfungsi sebagai komite bersama dalam mendukung penerapan K3 di wilayah kerja. Perusahaan membentuk tim komite ini dalam mengelola keselamatan kerja, mencegah potensi kerugian, dan memastikan kepatuhan terhadap standar K3 di lingkungan kerja dan penerapan kebijakan HSSE Perusahaan untuk mendukung tercapainya Tujuan, Visi & Misi Perusahaan untuk pencapaian target *Zero Accident* dan membangun budaya Keselamatan Kerja serta operational *excellence*. Komite LPC rutin melakukan pertemuan guna mengevaluasi penerapan kebijakan HSSE dan mencari solusi atas masalah yang menyebabkan kerugian akibat *asset integrity*, kecelakaan kerja, penyakit akibat kerja, permasalahan lingkungan, dan sosio-security; mengevaluasi potensi Major *Accident Hazard* (MAH), *Safety and Environmental Critical Element* (SECE) dan juga dilakukan evaluasi *performance* HSSE (*lagging dan leading*). [GRI 403-4]

In addition to the implementation of CLSR, PHE Subholding Upstream also has a Loss Prevention Committee (LPC) or equivalent to the Occupational Safety and Health Supervisory Committee (P2K3). This committee functions as a joint committee in supporting the implementation of OHS in the working areas. The company forms this committee in managing occupational safety, preventing potential losses, and ensuring compliance with OHS standards in the work environment and the implementation of the Company's HSSE policy to support the achievement of the Company's Goals, Vision & Missions to achieve the Zero Fatality target and build a culture of Occupational Safety and operational excellence. The LPC Committee regularly holds meetings to evaluate the implementation of HSSE policies and find solutions to problems that cause losses due to asset integrity, work accidents, work-related diseases, environmental problems, and socio-security; evaluate the potential for Major Accident Hazards (MAH), Safety and Environmental Critical Elements (SECE) and also evaluate HSSE performance (lagging and leading). [GRI 403-4]

PHE juga mengawasi terjadinya penyakit akibat kerja yang dialami oleh karyawan, yaitu penyakit yang disebabkan oleh pekerjaan dan/atau lingkungan kerja. Berdasarkan Peraturan Menteri Kesehatan No. 56 Tahun 2016, penyakit akibat kerja dilakukan melalui tujuh tahapan sebagai berikut:

PHE also monitors the occurrence of occupational diseases suffered by employees, namely diseases caused by work and/or the work environment. Based on Regulation of Minister of Health No. 56 of 2016, occupational diseases are established through the following seven stages:

1. Penetapan diagnosis klinis.
2. Identifikasi paparan yang dialami pekerja di lingkungan kerja.
3. Analisis hubungan antara paparan tersebut dengan diagnosis klinis.
4. Pengukuran tingkat paparan.
5. Penilaian faktor individu yang mungkin berkontribusi
6. Memastikan tidak adanya faktor eksternal di luar pekerjaan utama yang memengaruhi.
7. Penentuan diagnosis okupasi.

Kementerian Kesehatan juga mengelompokkan penyebab penyakit akibat kerja ke dalam lima kategori, yaitu: faktor fisik (seperti kebisingan, getaran, radiasi pengion, radiasi non-pengion, tekanan udara, dan suhu ekstrem); faktor kimiawi yang berasal dari berbagai bahan kimia; faktor biologis (seperti bakteri, virus, jamur, dan parasit); faktor ergonomis (seperti posisi tubuh yang tidak wajar atau gerakan berulang); serta faktor psikososial (seperti beban kerja berlebihan, pekerjaan monoton, dan stres kerja). Selama tahun 2024, tidak ditemui penyakit akibat kerja pada seluruh pekerja PHE, baik pada karyawan maupun pada non-karyawan yang pekerjaan atau tempat kerjanya dikendalikan oleh PHE. [GRI 403-10]

KESELAMATAN PROSES DAN PENCEGAHAN INSIDEN SKALA BESAR [IPIECA SHS-6]

PHE Subholding Upstream yang bergerak di bidang eksplorasi dan produksi minyak dan gas bumi tak luput dari risiko kebakaran, ledakan, pencemaran lingkungan, gangguan keamanan, dan bencana alam yang dapat menimbulkan konsekuensi berupa korban jiwa, kerusakan lingkungan, kerusakan asset, dan turunnya reputasi perusahaan. Oleh karena itu, pengelolaan keselamatan proses (*process safety*) menjadi prioritas utama untuk mencegah terjadinya insiden besar, memitigasinya dan mendukung keberlanjutan bisnis. Untuk mengelola aspek ini, perusahaan telah membuat Pedoman *Process Safety & Asset Integrity Management System* (PSAIMS) No. A8-004/PHE04000/2021-S9. Perusahaan juga telah membuat Pedoman Pengelolaan Tanggap Darurat dan Manajemen Krisis No. A8-001/PHE04000/2021-S9 Revisi-2 yang mencakup penanganan keadaan darurat kebakaran, tumpahan minyak dan bahan beracun dan berbahaya (B3), medis, keamanan, dan bencana alam. Selain itu, perusahaan menjalin kolaborasi erat dengan entitas (Subholding) lain dalam Grup PERTAMINA untuk memperkuat sinergi dalam menghadapi keadaan darurat.

Dalam keadaan normal, pengelolaan sistem tanggap darurat dilakukan oleh Fungsi HSSE, khususnya melalui entitas *Emergency Response and Crisis Management* (ERCM). Sebelum keadaan darurat terjadi, persiapan tanggap darurat dilakukan pada semua aspek, yaitu aspek sistem informasi, aspek organisasi dan kompetensi, aspek peralatan dan perlengkapan, aspek prosedur, dan dukungan *external stakeholder*. Latihan tanggap darurat (*emergency exercise*)

1. Determination of a clinical diagnosis.
2. Identification of exposures experienced by workers in the work environment.
3. Analysis of the relationship between exposure and clinical diagnosis.
4. Exposure level measurement.
5. Assessment of individual factors that may contribute.
6. Ensure that there are no external factors outside the main job that influence.
7. Determination of occupational diagnosis.

The Ministry of Health also groups the causes of occupational diseases into five categories, namely: physical factors (such as noise, vibration, ionizing radiation, non-ionizing radiation, air pressure, and extreme temperatures); chemical factors originating from various chemicals; biological factors (such as bacteria, viruses, fungi, and parasites); ergonomic factors (such as unnatural body positions or repetitive movements); and psychosocial factors (such as excessive workload, monotonous work, and work stress). During 2024, no occupational diseases were found in all workers of PHE, both employees and non-employees whose work or workplace was controlled by PHE. [GRI 403-10]

PROCESS SAFETY AND LARGE-SCALE INCIDENT PREVENTION [IPIECA SHS-6]

PHE Subholding Upstream, which is engaged in the exploration and production of oil and gas, is not immune to the risks of fire, explosion, environmental pollution, security disturbances, and natural disasters that can result in fatalities, environmental damage, asset damage, and a decline in the company's reputation. Therefore, process safety management is a top priority to prevent major incidents, mitigate them, and support business sustainability. To manage this aspect, the company has created the Process Safety & Asset Integrity Management System (PSAIMS) Guidelines No. A8-004/PHE04000/2021-S9. The company has also created Emergency Response and Crisis Management Guidelines No. A8-001/PHE04000/2021-S9 Revision-2 which includes handling emergency situations such as fire, oil spills and toxic and hazardous materials (B3), medical, security, and natural disasters. In addition, the company collaborates closely with other entities (Subholdings) in PERTAMINA Group to strengthen the synergy in dealing with emergencies.

Under normal circumstances, emergency response system management is conducted by the HSSE Function, especially through the Emergency Response and Crisis Management (ERCM) entity. Before an emergency occurs, emergency response preparation is made in all aspects, namely the information system aspect, organizational and competency aspects, equipment and supplies aspects, procedure aspects, and external stakeholder support. Emergency response

rutin dilaksanakan untuk mengevaluasi kesiapan tim (ERO), efektivitas respons, kelengkapan & kinerja peralatan darurat, dan keakuratan prosedur.

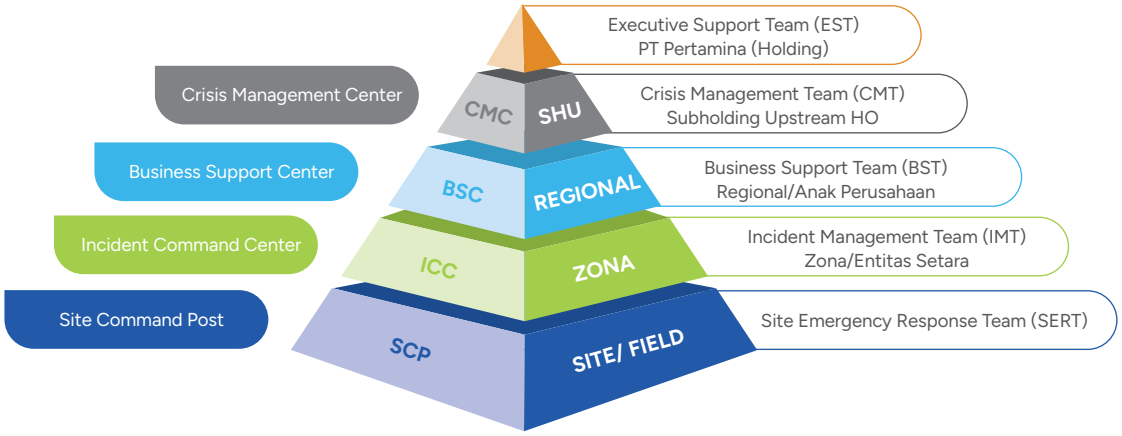
Dalam keadaan darurat, aktifitas tanggap darurat dilakukan oleh *Emergency Response Organization* (ERO). Aktifitas tanggap darurat tersebut diterapkan secara berjenjang (*tiered response*) oleh ERO yang berbeda, dimulai dari di fasilitas lapangan/*site/field* (*Site Emergency Response Team*), ke tingkat Zona atau setara (*Incident Management Team*), ke Regional atau Anak Perusahaan (*Business Support Team*), dan ke Subholding Upstream (*Crisis Management Team*), bergantung pada kompleksitas keadaan darurat.

Berikut ini adalah hirarki organisasi tanggap darurat (ERO) Subholding Upstream:

exercises are regularly done to evaluate team readiness (ERO), response effectiveness, completeness & performance of emergency equipment, and procedure accuracy.

In an emergency, emergency response activities are conducted by the Emergency Response Organization (ERO). These emergency response activities are implemented in a tiered response by different EROs, starting from the site/field facility (Site Emergency Response Team), to the Zone level or equivalent (Incident Management Team), to a Region or Subsidiary (Business Support Team), and to the Subholding Upstream (Crisis Management Team), depending on the complexity of the emergency.

The following is the hierarchy of the Emergency Response Organization (ERO) of the Subholding Upstream:



Pada tahun 2024, tercatat sebanyak 17 insiden terkait keselamatan proses, yang terdiri dari 6 insiden *Process Safety Event* (PSE) *Tier* 1 dan 11 insiden *Process Safety Event* (PSE) *Tier* 2. Seluruh insiden tersebut telah ditindaklanjuti dengan berbagai upaya pencegahan untuk meminimalkan risiko dan meningkatkan keandalan sistem keselamatan.

Sebagai bagian dari strategi peningkatan keselamatan proses, perusahaan melanjutkan program yang berfokus pada *Process Hazard Analysis* (PHA), *Major Accident Hazard* (MAH), serta registrasi *Safety and Environmental Critical Elements* (SECE) di CMMS. Langkah ini bertujuan untuk memonitor dan mengidentifikasi potensi kegagalan *barrier* keselamatan, sehingga dapat dilakukan tindakan mitigasi yang tepat sehingga terhindar dari MAH.

Selain itu, peningkatan *awareness* dan kompetensi dalam keselamatan proses terus diperkuat melalui berbagai program, antara lain:

- *Computer-Based Training* (CBT) untuk memastikan pemahaman teknis yang lebih baik.
- Sesi berbagi *(sharing session)* terkait pembelajaran dari insiden sebelumnya.

In 2024, 17 incidents related to process safety were recorded, consisting of 6 Process Safety Event (PSE) incidents of Tier 1 and 11 Process Safety Event (PSE) incidents of Tier 2. All of these incidents have been followed up with various preventive efforts to minimize risks and improve the reliability of the safety system.

As a part of the process safety improvement strategy, the company continues the program that focuses on Process Hazard Analysis (PHA), Major Accident Hazard (MAH), and Safety and Environmental Critical Elements (SECE) registration in CMMS. This step aims to monitor and identify potential safety barrier failures, so that appropriate mitigation actions can be taken to avoid MAH.

In addition, increasing awareness and competence in process safety continues to be strengthened through various programs, including:

- Computer-Based Training (CBT) to ensure better technical understanding.
- Sharing session related to lessons from previous incidents.

- Penerapan *best practices* dalam keselamatan proses guna meningkatkan budaya keselamatan di seluruh lini operasional.
- Melalui inisiatif ini, perusahaan berkomitmen untuk terus meningkatkan standar keselamatan proses dan integritas aset guna mencapai operasi yang lebih andal, aman, dan berkelanjutan. [SASB EM-EP-540a.1]

PENCEGAHAN DAN MITIGASI K3 TERKAIT RELASI BISNIS [GRI 403-7]

PHE Subholding Upstream menerapkan *Contractor Safety Management System* (CSMS) untuk mengontrol konsistensi kinerja aspek HSSE para Mitra Kerja selama periode kontrak kerja di lingkungan Perusahaan.

Sistem ini dirancang melalui pendekatan terstruktur, sistematis dan komprehensif untuk mengidentifikasi, menilai, dan mengelola potensi risiko yang terkait dengan aktivitas Mitra Kerja yang ditetapkan dalam bentuk prosedur. Selain itu, Perusahaan juga menetapkan pengelolaan tanggap darurat antara Perusahaan dan Mitra Kerja sebagai upaya memastikan keselamatan personal, lingkungan, asset dan reputasi.

Implementasi dari CSMS ini untuk menunjukkan komitmen dalam memprioritaskan keselamatan dan meminimalkan risiko yang terkait dengan alih daya pekerjaan ke pihak eksternal. Dengan menerapkan CSMS, dapat menciptakan budaya HSSE dan akuntabilitas di antara seluruh pekerja yang terlibat dalam proses kontrak.

Selama tahun 2024 kontrak kerja dengan klasifikasi risiko tinggi sebesar 80% dan 20% untuk risiko menengah.

Semua Mitra Kerja telah menerima kontrak yang mencakup klausul *socio-economic exhibit*, sejalan dengan Perusahaan yang telah mengadopsi Kebijakan Sosial untuk Pemasok dan Kontraktor PT Pertamina (Persero) sebagai upaya memastikan prinsip-prinsip HAM diterapkan bagi pekerja di lingkungan kerja mereka. Setiap kontrak juga memuat klausul pengembangan Rencana Kerja HSSE, termasuk upaya pengurangan emisi. Evaluasi terhadap seluruh persyaratan aspek HSSE dilakukan berdasarkan TKO Pengelolaaan CSMS No. B8-004/PHE04000/2021-S9 Rev.1.

LAYANAN DAN PENINGKATAN KUALITAS KESEHATAN KERJA [GRI 403-3, 403-6, 403-10] [IPIECA SHS-2]

Kesehatan merupakan faktor yang memiliki pengaruh signifikan terhadap produktivitas karyawan. Oleh karena itu, layanan kesehatan baik yang bersifat preventif maupun kuratif perlu diberikan kepada karyawan agar tidak terdapat penurunan kinerja baik dalam tingkat individu maupun tim. Pada tahun 2024, Perseroan memberikan beberapa program sebagai bentuk upaya peningkatan kualitas kesehatan kerja sebagai berikut:

- Implementation of best practices in process safety to improve safety culture across all operational lines.
- Through this initiative, the company is committed to continuously improving process safety and asset integrity standards to achieve more reliable, safe and sustainable operations. [SASB EM-EP-540a.1]

PREVENTION AND MITIGATION OF OHS RELATED TO BUSINESS RELATIONS [GRI403-7]

PHE Subholding Upstream implements the Contractor Safety Management System (CSMS) to control the consistency of the HSSE aspect performance of the Work Partners during the work contract period in the Company's environment.

This system is designed through a structured, systematic and comprehensive approach to identify, assess and manage potential risks associated with the activities of Work Partners that are set out in the form of procedures. In addition, the Company also establishes emergency response management between the Company and Work Partners as an effort to ensure personal safety, the environment, assets and reputation.

The implementation of this CSMS is to demonstrate a commitment to prioritizing safety and minimizing the risks associated with work outsourcing to external parties. By implementing CSMS, it can create a culture of HSSE and accountability among all workers involved in the contract process.

During 2024, work contracts with high risk classification will be 80% and 20% for medium risk.

All Work Partners have received contracts that include socio-economic exhibit clauses, in line with the Company's adoption of the Social Policy for Suppliers and Contractors of PT Pertamina (Persero) as an effort to ensure that human rights principles are applied to workers in their work environment. Each contract also contains a clause on the development of an HSSE Work Plan, including efforts to reduce emissions. Evaluation of all HSSE aspect requirements is conducted based on CSMS Management TKO No. B8-004/PHE04000/2021-S9 Rev.1.

OCCUPATIONAL HEALTH SERVICES AND QUALITY IMPROVEMENT [GRI 403-3, 403-6, 403-10] [IPIECA SHS-2]

Health is a factor that has a significant influence on employee productivity. Therefore, health services, both preventive and curative, need to be provided for employees so that there is no decline in performance at the individual or team level. In 2024, the Company provided several programs as an effort to improve the quality of occupational health as follows:

Program Kesehatan
Health Program



No Valid MCU No Entry
No Follow Up No Entry

Dalam pengelolaan risiko kesehatan Perwira, Perusahaan menerapkan program *No Valid* MCU *No Entry*. Sesuai dengan surat SVP HSSE no. 047/S00000/2024-S0, pekerja wajib melakukan MCU sebelum 20 Juni. Dan juga para pekerja di wajibkan untuk melakukan *follow up* MCU 3 bulan setelahnya.

In managing the health risks of Officers, the Company implements the No Valid MCU No Entry program. In accordance with the letter of SVP HSSE No. 047/S00000/2024-S0, workers are required to carry out MCU before June 20. And workers are also required to carry out MCU follow-up 3 months later.



Health Talk

Berdasarkan hasil *Medical Check Up* tahun 2024, angka obesitas dan *overweigth* pekerja 70% sehingga perlu adanya *awareness* terkait dengan manajemen obesitas. Dimana para pekerja di berikan pengetahuan dasar terkait dengan pengelolaan berat badan sehingga para pekerja dapat menerapkan *healthy lifestyle*

Based on the results of the 2024 Medical Check Up, the obesity and overweight rate of workers is 70% so there needs to be awareness related to obesity management. Where workers are given basic knowledge related to weight management so that workers can implement a healthy lifestyle.



Sebusepro

Sebagai perwujudan upaya peningkatan aspek *Wellbeing at Workplace*, PT Pertamina (Persero) telah meluncurkan Program SeBUSe Pro (Sehat Bugar Senang Produktif) pada tanggal 24 Juli 2024, program tersebut mengintegrasikan pengelolaan aspek kesehatan fisik dan mental pekerja secara paripurna, sehingga diharapkan dapat tercapai derajat kesehatan pekerja yang tinggi dan peningkatan produktivitas pekerja.

Program ini dilaksanakan di seluruh Pertamina Group sesuai Surat SVP HSSE No 121/S00000/2024-vS0 pada Tanggal 6 Agustus 2024 dan akan di laksanakan di Subholding Upstream pada tanggal 4 September 2024.

As a manifestation of efforts to improve the Wellbeing at Workplace aspect, PT Pertamina (Persero) has launched the SeBUSe Pro (Healthy, Fit, Happy, Productive) Program on July 24, 2024, the program integrates the management of physical and mental health aspects of workers in a comprehensive manner, so that it is hoped that a high level of worker health and increased worker productivity can be achieved.

This program is implemented throughout the Pertamina Group in accordance with the SVP HSSE Letter No. 121/S00000/2024-S0 on August 6, 2024 and will be implemented in the Upstream Subholding on September 4, 2024.

Program tersebut disosialisasikan dan dipublikasikan melalui *broadcast* dalam bentuk tautan video agar karyawan dapat mengakses program tersebut secara mudah. Melalui upaya ini, diharapkan pekerja di lingkungan PHE memiliki kesadaran untuk menjaga kesehatan lingkungan, diri sendiri, dan sesama serta mengetahui gaya hidup sehat yang perlu diterapkan dalam kehidupan sehari-hari.

Selain program yang disediakan PHE Subholding Upstream, layanan kesehatan ekstensif juga disediakan bagi karyawan dan keluarganya. Layanan tersebut mencakup di antaranya adalah sebagai berikut:

1. Rawat jalan.
2. Rawat inap.
3. Layanan tambahan seperti perawatan gigi dan mata.
4. Fasilitas BPJS Kesehatan untuk pekerja dan keluarganya.
5. Tambahan asuransi sesuai kebutuhan operasional. [GRI 403-6, 11.9.7]

Selain itu, PHE Subholding Upstream juga mengukur tingkat budaya HSSE dalam perusahaan melalui Survei Budaya HSSE. Hal ini dilakukan untuk mengukur ketercapaian HSSE *Beyond Culture* yang mengarah pada HSSE Generatif. Survei yang dilakukan pada tahun 2024 menunjukkan bahwa PHE Subholding Upstream memiliki nilai rata-rata skor 4,25 (skala 5) atau berada pada level *proactive*, lebih tinggi dari tahun 2023 yaitu sebesar 4,21 (skala 5). [SASB EM-EP-320a.2]

The program is disseminated and published through broadcasts in the form of video links so that employees can access the program easily. Through this effort, it is expected that workers within PHE have awareness to maintain the health of the environment, themselves, and others and know the healthy lifestyle that needs to be applied in everyday life.

In addition to the programs provided by PHE Subholding Upstream, extensive health services are also provided for employees and their families. These services include the following:

1. Outpatient.
2. Inpatient.
3. Additional services such as dental and eye care.
4. BPJS Health Facilities for workers and their families.
5. Additional insurance according to operational needs [GRI 403-6, 11.9.7]

In addition, PHE Subholding Upstream also measures the level of HSSE culture in the company through the HSSE Culture Survey. This is done to measure the achievement of HSSE Beyond Culture which leads to Generative HSSE. The survey conducted in 2024 showed that PHE Subholding Upstream had an average score of 4.25 (scale 5) or was at the proactive level, higher than in 2023 which was 4.21 (scale 5). [SASB EM-EP-320a.2]

» Hasil Survei Budaya HSSE
HSSE Culture Survey Results

Uraian Description	2024	2023	2022
Jumlah Lokasi Total Location	30	29	18
Skor Score	4,25	4,21	4,08
Level	Proaktif Proactive	Proaktif Proactive	Proaktif Proactive

PELATIHAN KESELAMATAN DAN KESEHATAN KERJA DAN LINDUNG LINGKUNGAN

[GRI 403-5]

Dalam rangka menjaga lingkungan kerja yang aman, sehat, dan berkelanjutan, Perseroan perlu menerapkan *HSSE Policy*. Salah satu hal yang perlu diimplementasikan adalah upaya untuk meningkatkan kesadaran dan kompetensi pekerja dalam menciptakan lingkungan kerja yang aman, yaitu melalui *HSSE Mandatory Training* dan *Technical Competencies*. *HSSE Mandatory Training* wajib diberikan kepada seluruh pekerja untuk mengajarkan mengenai hal-hal mendasar dan esensial mengenai keselamatan, kesehatan, dan keamanan di lingkungan kerja, seperti kebijakan, prosedur, standar, dan praktik lainnya. Di sisi lain, *Technical Competencies* merujuk pada kemampuan teknis yang perlu dikuasai pekerja agar mereka dapat berkontribusi dalam menciptakan budaya kerja yang aman dan nyaman.

OCCUPATIONAL SAFETY AND HEALTH AND ENVIRONMENTAL PROTECTION TRAINING

[GRI 403-5]

In order to maintain a safe, healthy, and sustainable work environment, the Company needs to implement HSSE Policy. One of the things that needs to be implemented is an effort to increase worker awareness and competence in creating a safe work environment, namely through HSSE Mandatory Training and Technical Competencies. HSSE Mandatory Training must be provided for all workers to teach them about the basic and essential things about safety, health, and security in the work environment, such as policies, procedures, standards, and other practices. On the other hand, Technical Competencies refer to the technical skills that workers need to master so that they can contribute to creating a safe and comfortable work culture.

PHE Subholding Upstream telah menyelenggarakan *HSSE Mandatory Training* secara rutin bagi karyawannya. Pada tahun 2024, terdapat 302 pelatihan terkait K3LL dengan total waktu pelatihan sebanyak 764.816 jam dan total peserta 50.659 orang. Rerata jam pelatihan yang berkaitan dengan K3LL adalah 15,1 jam per karyawan.

PHE Subholding Upstream has regularly held HSSE Mandatory Training for its employees. In 2024, there were 302 trainings related to HSSE with a total training time of 764,816 hours and a total of 50,659 participants. The average training hours related to HSSE were 15.1 hours per employee.

» Pelatihan K3
OHS Training

No.	Topik Pelatihan K3 K3 Training Topics	Durasi Pelatihan Training Duration	Jumlah Peserta Number of Participants
1	Sistem Pengamatan dan Intervensi HSSE (PEKA / BBS) HSSE Observation and Intervention System (PEKA / BBS)	141.070	17.350
2	Perilaku Hidup Sehat Healthy Living Behavior	184.795	15.165
3	*Corporate Life Saving Rules* (CLSR) & *Golden Rules*	74.618	7.496
4	*Process Safety Awareness* (CBT)	23.608	2.359
5	*Basic Sea Survival / HUET / T-BOSIET*	12.570	1.079
6	*Incident Command System* (ICS)	12.360	438
7	*HSSE Leadership*	10.510	734
8	*Confined Space*	11.920	293

» Pelatihan K3
OHS Training

No.	Wilayah Operasional Operational Area	Satuan Satuan	Jumlah Pelatihan Total Training		
			2024	2023	2022
1.	*Corporate Life Saving Rules*	Peserta pelatihan Training participants	7.496	24.801	2.343
2.	*Process Safety Management dan Awareness*	Peserta pelatihan Training participants	2.384	3.598	31
3.	*Incident Command System*	Peserta pelatihan Training participants	439	15	97
4.	*Training* SUPREME	Peserta pelatihan Training participants	668	1.183	1.256
5.	Pelatihan *First Aid* Pelatihan First Aid	Peserta pelatihan Training participants	431	203	161

» Karyawan yang Mengikuti Pelatihan K3
Employees Attending OHS Training

No.	Wilayah Operasional Area of Operation	Satuan Unit	Jumlah Pelatihan Total Training		
			2024	2023	2022
1.	HO SHU	Peserta pelatihan Training participants	3.608	2.966	738
2.	Regional 1	Peserta pelatihan Training participants	1.469	13.793	1.696
3.	Regional 2	Peserta pelatihan Training participants	585	8.871	1.025
4.	Regional 3	Peserta pelatihan Training participants	3.275	13.276	1.198
5.	Regional 4	Peserta pelatihan Training participants	14.838	6.761	1.671
6.	Regional 5	Peserta pelatihan Training participants	7.811	278	111
7.	PDSI	Peserta pelatihan Training participants	23.469	1.762	107
8.	ELNUSA	Peserta pelatihan Training participants	4.590	1.999	55
9.	BADAK LNG	Peserta pelatihan Training participants	1.226	1.543	15

Untuk *Technical Competencies,* pelatihan yang diutamakan adalah *Upstream Fire Rescue Challenge* atau UFRC. Tujuan pelatihan ini adalah untuk melatih kemampuan tim khusus pada setiap Anak Perusahaan dalam menjaga keselamatan karyawan dan aset perusahaan. Pelatihan tersebut juga menumbuhkan tanggung jawab dalam diri pesertanya agar tetap siaga dan cepat tanggap dalam kondisi darurat. UFRC diselenggarakan di HSE *Training Center* Sungai Gerong, Sumatra Selatan. Lokasi tersebut merupakan fasilitas pelatihan *rescue* terbesar di Indonesia dan dikelola oleh PERTAMINA Corporate University.

Dengan diselenggarakannya *HSSE Mandatory Training* dan pelatihan *Technical Competencies* yang berkaitan dengan K3LL, budaya untuk menciptakan lingkungan kerja yang aman dan sehat dapat terjaga dan menjadi kesadaran bersama bagi para karyawannya. Pekerja menjadi lebih perhatian terhadap risiko keselamatan yang mungkin terjadi, juga meminimalisasi terjadinya insiden di lingkungan kerja. Dengan lingkungan yang kondusif, produktivitas perusahaan akan terbantu, terutama dalam mencapai pertumbuhannya dari tahun ke tahun.

For Technical Competencies, the priority training is Up-stream Fire Rescue Challenge or UFRC. The purpose of this training is to train the ability of special teams in each Subsidiary in maintaining the safety of employees and assets of the company. The training also fosters responsibility in participants to remain alert and responsive in emergency conditions. UFRC is held in HSE Training Center of Sungai Gerong, South Sumatra. The location is the largest rescue training facility in Indonesia and is managed by PERTAMINA Corporate University.

By holding HSSE Mandatory Training and Technical Competencies training related to HSSE, the culture of creating a safe and healthy work environment can be maintained and become a shared awareness for its employees. Workers become more aware of possible safety risks, and also minimize incidents in the work environment. With a conducive environment, the company's productivity will be helped, especially in achieving its growth from year to year.

PROGRAM PENGEMBANGAN PEKERJA

EMPLOYEE DEVELOPMENT PROGRAM [OJK F.22] [GRI 3-3, 404]



Dalam mencapai tujuan perusahaan, PHE membutuhkan SDM yang berkualitas dan mampu bersaing hingga kancah internasional. Hal tersebut diwujudkan melalui program-program pengembangan pekerja yang dilakukan secara rutin dan sistematis oleh Perseroan. Seluruh insan PHE berhak untuk memperoleh pendidikan dan pelatihan tanpa terkecuali. Inklusivitas dalam pengembangan kompetensi dapat mewujudkan lingkungan belajar yang kondusif dalam Perseroan, sehingga terbentuk budaya yang mendukung pertumbuhan dan kesuksesan bagi pekerjanya. Peningkatan kompetensi juga mampu membantu karyawan agar adaptif dan tetap relevan dalam menghadapi perubahan zaman dan lingkungan bisnis.

Program peningkatan kualitas SDM dilakukan melalui berbagai jenis kegiatan. Selama tahun 2024, Perseroan telah melaksanakan berbagai jenis pelatihan baik yang bersifat *soft skill* maupun *hard skill*. Total jumlah jam pembelajaran mencapai 487.049 jam pelatihan dengan rerata 34,77 jam pembelajaran per karyawan. Rata-rata jam pelatihan untuk karyawan laki-laki adalah 32,90 jam per karyawan laki-laki, dan rata-rata jam pelatihan untuk karyawan perempuan adalah 46,69 jam per karyawan perempuan. Selain keterampilan teknis, Perseroan juga berharap agar peserta pelatihan dapat memiliki kesadaran untuk terus mengembangkan diri dan meningkatkan kualitas kinerjanya. [GRI 404-1, 404-2]

In achieving the company's goals, PHE requires quality human resources that are able to compete internationally. This is realized through employee development programs that are conducted regularly and systematically by the Company. All employees of PHE have the right to receive education and training without exception. Inclusiveness in competency development can create a conducive learning environment in the Company, so as to create a culture that supports growth and success for its employees. Competency improvement can also help employees to be adaptive and remain relevant in facing changes in the era and business environment.

The HR quality improvement program is conducted through various types of activities. During 2024, the Company has implemented various types of training, both soft skills and hard skills. The total number of learning hours reached 487,049 training hours with average 34.77 learning hours per employee. The average training hours for male employees are 32.90 hours per male employee, and the average training hours for female employees are 46.69 hours per female employee. In addition to technical skills, the Company also expects that training participants can have the awareness to continue to develop themselves and improve the quality of their performance. [GRI 404-1, 404-2]

Total Jam Pelatihan berdasarkan Gender dan Jabatan Karyawan
Total Training Hours by Employee Gender and Position

Jabatan Position	Satuan Units	2024			2023			2022		
				Rata-rata Average			Rata-rata Average			Rata-rata Average
Dewan Komisaris Board of Commissioners	Jam pelatihan Training Hours	572	62	18,65	501	90	18.47	151	51	6,12
Direksi Board of Directors		2.825	95	94,19	2620	316	94.71	4.648	1.552	206,67
SVP/VP/GM/ Setara SVP/VP/GM/ Equivalent		8.152	1.419	62,56	6114	2818	61.17	17.462	4.530	134,10
Sr Manager/Manager/ Setara Sr Manager/Manager/ Equivalent		43.963	8.672	60,64	53589	17804	77.18	92.820	22.600	131,91
Asisten Manajer ke bawah Assistant Manager and below		308785	72.983	329,68	277394	92018	330.13	423765	121.581	494,42
Assistant Manajer/ Setara Assistant Manager/ Equivalent		34.035	5.486	3,36	54.178	18.242	6,10	88.030	30.404	9,93
Rata-rata Average		**32,90**	**46,69**	**34,77**	**32,24**	**69,39**	**37,21**	**51,09**	**97,42**	**57,17**

Keterangan / Notes: = Laki-laki / Male = Perempuan / Female

Jenis Pelatihan selama tahun 2024
Types of Training during 2024

Soft Skill Training	*Hard Skill Training*	*Hard Skill Training*	*Hard Skill Training*	*Hard Skill Training*
Being Trapologist at Work	Advanced Financial Management	Pacific Gas Insiders Briefing (PGI) 2024	Training Basic Intelijen	Training Reservoir Geomechanics
Communication, Negotiation Skills and Smart Working	Audit Internal SMAP ISO 37001:2016	Pelatihan Investigasi Insiden	Training Basic Quantitative Seismic Interpretation	Training UCAN
Competency Based Interview	Basic Chemical EOR and Tracer Test Application	Pelatihan Teknik Audit Internal Sistem Manajemen Mutu Laboratorium SNI ISO/ IEX 17025:2017	Training Basic Reservoir Engineering	Training Warehouse Excellence
Training Leadership Exponent Serum	Basic Reservoir Engineering for Non-Reservoir Engineering	Pembekalan Certified Maintenance Reliability Professional (CMRP)	Training Basic Reservoir Simulation	Upskilling & Refreshment Training - SAP Modul HC & Request Form SS HC
Industrial Relations for Pertamina Leaders	C2/GR3 Job Analysis, Documentation and Evaluation (Exam)	Pembekalan Sertifikasi Profesi Penilai K3LL Mitra Kerja Strata Auditor LSP P2 SKK Migas	Training Basic Valuation & Introduction to PSC Cost Recovery/New Gross Split	Upskilling Implementasi PROPAR
Kursus Bahasa Perancis French Language Courses	Carbon Capture & Storage (CCS) Technology Advancements & Economics	Pengangkatan & Pengambilan Sumpah/ Janji Advokat	Training Chemical EOR: Design, Formulation, QC/QA, and Planning Consideration	Upskilling Company Preparedness for Personal Data Protection
Leadership & Human Capital Essentials	Certified Risk for Professional	Penyusunan dan Penyajian Laporan Keuangan sesuai PSAK Update	Training Compensation & Benefit	Upstream Tax Academy: Mentoring Penghitungan & Pelaporan Form SPT 1771

Soft Skill Training	Hard Skill Training	Hard Skill Training	Hard Skill Training	Hard Skill Training
Training Leadership LVT Serum	Certified Risk Management Professional (CRMP)	Pertamina Geodetic Coordinate Reference System and Transformation	Training dan Sertifikasi First Aid	Upstream Tax Academy: Transfer Pricing in Pertamina Group dan TP Documentation
Networking for Enhance Collaboration	Commercial Oil Operations and Logistics	Petroleum Engineering For Non Petroleum Engineer	Training dan Sertifikasi PRINCE2 Foundation	Well Integrity Management
Pelatihan Penulisan Notulen dan Protokoler	Compliance Management Awareness	Refreshment Training Digital Procurement SMART by GEP	Training Data Science	Well Test Design & Analysis
Pembekalan Asesor Asesmen KOMET & Auditor Audit Sustainability Kekayaan Intelektual Subholding Upstream 2024	Contactor Safety Management System (CSMS)	SPE : IOR/EOR Practices for Enhanced Efficiency	Training Deepwater Well Preparation & Design	
Process Safety Asset Integrity Management System (PSAIMS) for Leaders	Core Workshop (Deltaic-Deep water Sedimentology, Core review & Core Lab Analysis RCA-SCAL)	SPE Workshop : CCUS Management	Training DevSecOps	
Program Commander	Digital Procurement SMART By GEP	SPE Workshop Contaminated Gas Management 2024	Training Drilling for Non Drilling	
Project Management	Field Trip Geology and Petroleum System of East Java	Stakeholder Mapping	Training Formation Evaluation Fundamental Course	
Recertification Organizational Development Practicioner	Financial Modelling and Valuation	StartUP - SharePoint untuk Upskilling Pekerja Human Capital	Training Geomechanics PPFG	
SHU Leader as Coach	Geomechanics and Rock Mechanics Applications in CCS/CCUS	The 4 th IndoPacific LNG Summit Bali 2024	Training Geophysics for Non Geophysicst	
SUPREME For Champion	GR 1 TOTAL REWARDS MANAGEMENT (Course & Exam)	Training Acidizing & Hydraulic Fracturing Design	Training Hukum Kepailitan dan PKPU	
Training Aviator	GR6 Variable Pay-Improving Performance with Variable Pay	Training Acquisition & Processing Seismic	Training Hydraulic Fracturing	
Training Knowledge Management	HA100 - SAP Hana Introduction	Training Advance Waterflood Design, Monitoring, & Evaluation	Training Inspeksi Housekeeping & Safety Barrier	
Training Sustainable Development Goals	IICCS Forum 2024	Training Advanced Reservoir Simulation	Training Pajak Terapan Brevet AB Terpadu	
Upskilling Decision Support & Analytical Tools	International Gas Business Management Certificate Program	Training Basic Artificial Lift	Training Pedoman Pengadaan Barang/Jasa A7001	
Upskilling Penulisan Risalah CIP	Introduction to Oil & Gas (PE for Non PE)	Training Basic Electrical, Instrument Control System, and Surface Engineering Introduction	Training Progressive Cavity Pump (PCP)	
Upskilling Strategy Management	Microsoft Plan Project 5	Training Basic Fundamental Log Analysis	Training Reserves & Resources Evaluation	

Selain itu, untuk karyawan yang memasuki masa persiapan pensiun, Perseroan juga menyelenggarakan pelatihan persiapan pensiun bagi pekerja yang telah memasuki masa tunggu pensiun, yaitu dalam lima tahun sebelum mencapai usia 56 tahun. Pelatihan ini dirancang untuk membantu pekerja mempersiapkan mental, menjaga kesehatan, merencanakan kegiatan pasca pensiun, serta memahami peluang investasi yang dapat dilakukan agar dana pensiun yang diperoleh dapat dimanfaatkan secara optimal. Selama tahun 2024, Perseroan telah mengadakan pelatihan sebanyak 12 kali, dengan tingkat kehadiran peserta mencapai 100%. Langkah ini menunjukkan komitmen Perseroan untuk memastikan transisi karyawan menuju masa pensiun berjalan lancar dan produktif.

In addition, for employees entering the retirement preparation period, the Company also provides retirement preparation training for workers who have entered the retirement waiting period, namely within five years before reaching the age of 56. This training is designed to help workers prepare mentally, maintain health, plan post-retirement activities, and understand investment opportunities that can be conducted so that the pension funds obtained can be used optimally. During 2024, the Company has held 12 trainings, with the level of participant attendance reaching 100%. This step demonstrates the Company's commitment to ensuring that employees' transition to retirement runs smoothly and productively.



PT Pertamina Hulu Energi



10

MENCIPTAKAN NILAI BERSAMA BAGI MASYARAKAT

Generating Shared Value for the Community





Kesejahteraan masyarakat dan pelestarian lingkungan menjadi fokus utama yang dipegang teguh oleh PHE Subholding Upstream sebagai perusahaan minyak dan gas bumi berkelas dunia. Dalam menjalankan perannya sebagai perusahaan yang bertanggung jawab secara sosial, PHE Subholding Upstream berkomitmen untuk melibatkan masyarakat dan menjaga lingkungan sekitar. Salah satu implementasinya adalah melalui penerapan prinsip-prinsip Kesehatan dan Keselamatan yang turut mengikutsertakan masyarakat setempat untuk mendorong pembangunan sosial dan ekonomi. Kebijakan keberlanjutan yang diusung PHE Subholding Upstream mencerminkan kepatuhan terhadap peraturan perundang-undangan dan berorientasi pada penciptaan nilai jangka panjang bagi seluruh pemangku kepentingan, termasuk masyarakat, kelompok rentan, komunitas adat, serta pemberdayaan Usaha Mikro Kecil Menengah (UMKM).

Kebijakan Keberlanjutan mencakup komitmen untuk mendukung pembangunan sosial dan ekonomi masyarakat sebagai bagian dari upaya pembangunan nasional. Berbagai komitmen yang telah disebutkan sebelumnya diwujudkan melalui pelaksanaan tanggung jawab sosial dan lingkungan (TJSL), yang diatur dalam Pedoman Pengelolaan Tanggung Jawab Sosial dan Lingkungan No. A13-003/PHE01000/2021-S9. PHE Subholding Upstream melaksanakan TJSL dengan fokus pada pelibatan dan pemberdayaan masyarakat atau disebut sebagai program CID *(Community Involvement & Development)* atau program pengembangan masyarakat.

Community welfare and environmental preservation are the main focuses held firmly by PHE Subholding Upstream as a world-class oil and gas company. In performing its role as a socially responsible company, PHE Subholding Upstream is committed to involving the community and protecting the surrounding environment. One of the implementations is through the application of Health and Safety principles that also involve the local community to encourage social and economic development. PHE Subholding Upstream's sustainability policies reflect compliance with laws and regulations and are oriented towards creating long-term values for all stakeholders, including the community, vulnerable groups, indigenous communities, and empowerment of Micro, Small and Medium Enterprises (MSMEs).

The Sustainability Policy includes a commitment to support social and economic development of the community as a part of national development efforts. The various commitments mentioned above are realized through the implementation of social and environmental responsibility (TJSL), which is regulated in the Guidelines for Social and Environmental Responsibility Management No. A13-003/PHE01000/2021-S9. PHE Subholding Upstream implements TJSL with a focus on community involvement and empowerment or referred to as the CID (Community Involvement & Development) program or community development program.

PENGELOLAAN DAMPAK KEGIATAN OPERASIONAL TERHADAP MASYARAKAT

MANAGEMENT OF IMPACT OF OPERATIONAL ACTIVITIES ON COMMUNITY

[OJK F.23] [GRI 3-3, 413] [SASB EM-EP-210b.1] [IPIECA SOC-9]

PHE Subholding Upstream memiliki program pengelolaan dampak kegiatan operasional terhadap masyarakat dan lingkungan sekitar dengan melakukan identifikasi, pemahaman, dan penanganan dampak baik secara positif maupun negatif, yang bisa timbul dari kegiatan perusahaan. Pengelolaan ini dilakukan guna mencapai keseimbangan dalam keberlanjutan ekonomi, sosial, dan lingkungan sekitar dengan masyarakat. Termasuk di dalamnya untuk menjalin hubungan yang positif antara perusahaan dengan masyarakat, komunitas adat, serta UMKM, juga berusaha meminimalkan dampak negatif yang mungkin muncul seiring berjalannya waktu. [GRI 413-1]

Dalam perjalanannya, PHE Subholding Upstream menyusun program CID (*Community Involvement & Development*) atau program pengembangan masyarakat yang meliputi mekanisme perencanaan, implementasi program, *monitoring* dan evaluasi, serta yang terakhir adalah pelaporan. Penyusunan program ini dibuat berdasarkan hasil dari beberapa studi yang dilakukan, seperti; Sosial *mapping*, penyusunan *grand design*, Analisis Dampak Lingkungan (AMDAL), dan kajian relevan lainnya yang melibatkan masyarakat dan lingkungan. Selain itu, masyarakat di sekitar wilayah operasi dan pemangku kepentingan seperti pemerintah setempat dilibatkan dalam setiap tahapan program CID atau program pengembangan masyarakat dari proses pemetaan, perencanaan, implementasi, *monitoring* & evaluasi program CID atau program pengembangan masyarakat.

Program dijalankan dengan persetujuan kerja sama dari pejabat berwenang setempat, dan pelaksanaannya dilakukan sesuai dengan indikator kinerja demi ketepatan waktu yang telah ditentukan sebelumnya. Selanjutnya, program diawasi untuk melihat berbagai progress yang kemudian dapat dievaluasi untuk dinilai keefektifan programnya. *Monitoring* dan evaluasi ini terus dipantau untuk mencapai target sasaran yang sudah ditentukan oleh perusahaan, yang selanjutnya akan dituliskan dalam bentuk pelaporan sebagai bahan ulas dan evaluasi secara internal perusahaan dalam pengelolaan program CID (*Community Involvement & Development*) atau program pengembangan masyarakat yang sudah berjalan. [GRI 413-2]

Program CID (*Community Involvement & Development*) atau program pengembangan masyarakat ini dievaluasi secara internal melalui pelaporan, yang dinilai berdasarkan *Key Performance Indicator* (KPI) yang terlaksana, evaluasi *Social Return on Investment* (SROI), pengukuran Indeks Kepuasan Masyarakat (IKM), dan keikutsertaan pada berbagai kompetisi maupun ESG rating. Secara keseluruhan berikut merupakan dampak positif dan negatif untuk masyarakat yang terjadi dalam lingkup kerja PHE. [GRI 413-2, 11.15.3]

PHE Subholding Upstream has a program to manage the impact of operational activities on the community and the surrounding environment by identifying, understanding, and handling both positive and negative impacts that may arise from the company's activities. This management is conducted in order to achieve balance in economic, social, and environmental sustainability with the community. This includes establishing positive relationships between the company and the community, indigenous communities, and MSMEs, as well as trying to minimize negative impacts that may arise over time. [GRI 413-1]

Along the way, PHE Subholding Upstream prepared the CID (Community Involvement & Development) program or the community development program which includes planning mechanisms, program implementation, monitoring and evaluation, and the last is reporting. The preparation of this program is based on the results of several studies conducted, such as; Social mapping, preparation of grand design, Environmental Impact Analysis (AMDAL), and other relevant studies involving the community and the environment. In addition, the community around the areas of operation and the stakeholders such as the local government are involved in every stage of the CID program or the community development program starting from the mapping process, planning, implementation, monitoring & evaluation of the CID program or the community development program.

The program is run with approval for cooperation from local authorities, and its implementation is conducted in accordance with performance indicators for the sake of timeliness that has been previously determined. Furthermore, the program is monitored to see various progresses that may then be evaluated to assess the effectiveness of the program. The monitoring and evaluation are continuously monitored to achieve the targets that have been determined by the company, which will then be written in the form of a report as materials for internal review and evaluation by the company in managing the CID (Community Involvement & Development) program or the community development program which is already running. [GRI 413-2]

This CID (Community Involvement & Development) program or the community development program is evaluated internally through reporting, which is assessed based on the implemented Key Performance Indicators (KPI), evaluation of Social Return on Investment (SROI), measurement of Community Satisfaction Index (CSI), and participation in various competitions and ESG ratings. Overall, the following are positive and negative impacts on the community that occur within the scope of PHE's work. [GRI 413-2, 11.15.3]

» Dampak Operasional terhadap Masyarakat
Operational Impact on Society

No	Jenis Dampak Positif Types of Positive Impacts	Pihak/Lokasi Terdampak Affected Parties/Locations	Program Pengembangan Development Program
1	Perusahaan memiliki *core competency* sebagai perusahaan yang bergerak di bidang hulu migas. Salah satu *core competency* yang dimiliki yakni *Market Interface Capabilities* yang dilakukan oleh fungsi Community Relations & CID melalui kompetensi dalam merancang dan melakukan aktivitas pemberdayaan masyarakat. The company has a core competency as a company engaged in the upstream oil and gas sector. One of the core competencies owned is Market Interface Capabilities which is conducted by the Community Relations & CID function through competency in designing and performing community empowerment activities.	Prabumulih, Sumatra Selatan	Melalui Program Pengendalian Agrokimia dalam Pertanian Karet Berbasis Pengolahan Sampah (Pakar Balam), dari dampak positif perusahaan yang ada mampu terciptanya transfer pengetahuan kepada kelompok mitra binaan dengan memberikan pelatihan digital marketing dan packaging untuk kelompok yang terlibat dalam program Pakar Balam seperti Kelompok Mokusaku Bersemi, Kelompok Pusat Daur Ulang (PDU) dan Kelompok Wanita Tani Kemuning & Matoa. Manfaat transfer pengetahuan yang didapatkan oleh kelompok selaras dengan dampak ekonomi yang dihasilkan. Dari segi ekonomi, terdapat Rp468.000.000/tahun omzet yang didapatkan kelompok pengolah sampah anorganik yakni Kelompok Pusat Daur Ulang (PDU) dari hasil penjualan cacahan plastik, wadah getah karet *ecofirendly* dan berbagai macam produk furniture plastik residu lainnya. Di sisi lain kelompok pengolah sampah organik di antaranya Kelompok Mokusaku Bersemi dan Kelompok KWT Kemuning dan Matoa mendapatkan omzet sekitar Rp 182.470.000/tahun. Indikator terakhir yaitu kalkulasi keuntungan yang didapatkan dari penggunaan mokusaku atau cuka kayu adalah sebesar Rp 78.968.000/tahun di mana jumlah tersebut didapatkan dari deviasi waktu dan biaya akibat penggunaan cuka para pada pertanian karet. Through the Agrochemical Control Program in Rubber Farming Based on Waste Processing (Pakar Balam), from the existing positive impact of the company, it is able to create knowledge transfer to the assisted partner groups by providing digital marketing and packaging training for groups involved in the Pakar Balam program such as the Mokusaku Bersemi Group, the Recycling Center Group (PDU) and the Kemuning & Matoa Women Farmers Group. The benefits of knowledge transfer obtained by the group are in line with the economic impact generated. From the aspect of economy, Rp468,000,000/year of turnover is obtained by the inorganic waste processing group, namely the Recycling Center Group (PDU) from the sale of plastic shreds, eco-friendly rubber latex containers and various other residual plastic furniture products. On the other hand, the organic waste processing group including the Mokusaku Bersemi Group and the Kemuning and Matoa KWT Group get a turnover of around Rp182,470,000/year. The last indicator, namely the calculation of the profit obtained from the use of mokusaku or wood vinegar, is Rp78,968,000/year, where this amount is obtained from the deviation of time and costs due to the use of para vinegar in rubber farming.

No	Jenis Dampak Negatif Types of Negative Impacts	Pihak/Lokasi Terdampak Affected Parties/Locations	Program Pengembangan Development Program
1	Adanya *excess gas* dari hasil produksi dari sumur produksi (minyak, gas, dan air terproduksi) yang biasanya menjadi *flaring*. The presence of excess gas from production wells (oil, gas and produced water) which usually becomes flaring.	Aceh Tamiang	Pertamina EP Rantau Field memiliki inovasi berupa Alat Pemisah Pasir dan Gas yang telah dipatenkan dengan Nomor Paten IDS000007070 pada 31 Desember 2023. Alat ini berfungsi untuk memisahkan pasir dari gas berlebih, sehingga gas yang dihasilkan lebih bersih dan efisien untuk dikonversi menjadi energi. Inovasi ini mendukung penggunaan gas yang lebih aman dan efisien untuk berbagai keperluan, termasuk sebagai sumber energi skala rumahan. Salah satu penerapannya adalah dalam Inovasi Rumah Energi pada program Rumah Kreatif Tamiang. Pertamina EP Rantau Field has an innovation in the form of a Sand and Gas Separator Tool that has been patented with Patent Number IDS000007070 on December 31, 2023. This tool functions to separate sand from excess gas, so that the gas produced is cleaner and more efficient to be converted into energy. This innovation supports the use of safer and more efficient gas for various purposes, including as a home-scale source of energy. One of its applications is in the Energy House Innovation in the Tamiang Creative House program.

Sebagai bagian dari Grup Pertamina, PHE menggunakan saluran komunikasi 135 yang beroperasi selama 24 jam setiap hari sebagai sarana penerimaan saran dan keluhan dari masyarakat. Setiap laporan yang diterima akan dikelola oleh fungsi *Corporate Secretary* dan diteruskan ke pihak terkait untuk ditindaklanjuti. Sepanjang tahun 2024, tidak ada laporan keluhan dari masyarakat mengenai dampak operasional PHE. [GRI 2-25, 411-1, 11.16]

As a part of Pertamina Group, PHE uses the communication channel 135 which operates 24 hours a day as a means of receiving suggestions and complaints from the public. Every report received will be managed by the Corporate Secretary function and forwarded to the relevant parties for follow-up. Throughout 2024, there were no reports of complaints from the public regarding the impact of operations of PHE. [GRI 2-25, 411-1, 11.16]

PENEGAKAN HAM DI LINGKUNGAN MASYARAKAT

Selain dalam lingkungan pekerja, perusahaan juga memberi dukungan pada nilai-nilai universal HAM terhadap penduduk asli/masyarakat adat yang ada di sekitar wilayah kerja PHE Subholding Upstream. Perusahaan selalu menjunjung tinggi hal-hak masyarakat adat, seperti hak atas kepemilikan tanah, hak sosial, hak ekonomi, hak budaya, serta hak partisipasi efektif masyarakat adat. Dalam perjalanannya, perusahaan juga selalu melibatkan masyarakat adat/lokal dan menghargai hak kolektif masyarakat atas aspirasi mereka terhadap rencana pengembangan program yang diusulkan pada wilayah mereka. Prinsip ini sejalan dengan *Free, Prior, and Informed Consent* (FPIC) yang menjadi Pedoman Pengelolaan Tanggung Jawab Sosial dan Lingkungan (TJSL) No.A13-003/PHE01000/2021-S9. Prinsip FPIC diintegrasikan dalam kebijakan dan pedoman yang diterapkan dalam lingkup PHE. Selain itu, PHE juga menyusun *Standard Operating Procedure* (SOP) audit untuk implementasi kebijakan HAM dan memastikan implementasi HAM pada seluruh kontrak penyedia keamanan. Pada tahun 2024, tidak ada laporan mengenai insiden HAM yang terkait hak-hak masyarakat adat.

ENFORCEMENT OF HUMAN RIGHTS IN COMMUNITY

In addition to the work environment, the company also supports universal human rights values for indigenous people/indigenous communities around the working areas of PHE Subholding Upstream. The company always upholds the rights of indigenous peoples, such as the right to land ownership, social rights, economic rights, cultural rights, and the right to effective participation of indigenous peoples. In its journey, the company also always involves indigenous/local communities and respects the collective rights of the community for their aspirations regarding the proposed program development plans in their area. This principle is in line with Free, Prior, and Informed Consent (FPIC) which becomes Guideline for Management of Social and Environmental Responsibility (TJSL) No.A13-003/PHE01000/2021-S9. The FPIC principle is integrated into the policies and guidelines applied within the scope of PHE. In addition, PHE also prepares a Standard Operating Procedure (SOP) for audits to implement human rights policies and ensures the implementation of human rights in all security provider contracts. In 2024, there were no reports of human rights incidents related to indigenous peoples' rights.

PELIBATAN MASYARAKAT DALAM KEGIATAN TJSL

COMMUNITY INVOLVEMENT IN TJSL ACTIVITIES [OJK F.24] [IPIECA SOC-9]

PHE Subholding Upstream menyadari pentingnya Program CID *(Community Involvement & Development)* atau program pengembangan masyarakat di sekitar wilayah kerja perusahaan, karena merupakan bagian dari tanggung jawab dan praktik keberlanjutan dalam kegiatan sosial perusahaan. Program ini diyakini dapat secara efektif membangun kepercayaan dan kemitraan yang berupa simbiosis mutualisme antara perusahaan migas dengan masyarakat dan komunitas lokal, sekaligus dapat meningkatkan citra positif perusahaan.

PHE Subholding Upstream realizes the importance of the CID (Community Involvement & Development) Program or the community development program around the company's working areas, because it is a part of the responsibility and sustainability practices in the company's social activities. This program is believed to be able to effectively build trust and partnerships in the form of mutual symbiosis between the oil and gas company and local communities, while also being able to improve the company's positive image.

Sepanjang tahun 2024, 781 program yang melibatkan dan memberdayakan masyarakat dilakukan oleh perusahaan di sekitar daerah wilayah kerjanya. Program-program ini dikembangkan sesuai dengan indikator-indikator yang telah dikaji sebelumnya, untuk mendapatkan hasil yang maksimal bagi masyarakat maupun perusahaan. Salah satu program unggulan yang telah dilaksanakan adalah program Desa Energi Berdikari maupun program-program unggulan pemberdayaan masyarakat lainnya.

Dasar yang melatarbelakangi program pelibatan dan pemberdayaan masyarakat ini adalah kajian pemetaan sosial dan pelibatan pemangku kepentingan. Maka dari itu, selama tahun 2024, telah dilakukan kajian sebanyak 44 kali di wilayah kerja sekitar perusahaan. Kajian-kajian tersebut bertujuan untuk mengumpulkan potensi dan tantangan yang dihadapi oleh masyarakat sekitar, dan peluang pengembangan program dapat dilaksanakan. Perusahaan juga memberikan wadah bagi masyarakat yang ini menyampaikan aspirasi, pengaduan, maupun keluhan terkait kinerja pengelolaan dampak sosial dari program yang dijalankan oleh perusahaan. Selama tahun 2024, tidak ada kejadian tidak menyenangkan atau perselisihan antara PHE Subholding Upstream dengan masyarakat sekitar yang signifikan. [OJK F.24]

Throughout 2024, 781 programs involving and empowering communities were conducted by the company around its working areas. These programs were developed in accordance with previously studied indicators, to obtain maximum results for both the community and the company. One of the leading programs that has been implemented is the Independent Energy Village program and other leading community empowerment programs.

The basis for this community involvement and empowerment program is a social mapping study and stakeholder involvement. Therefore, during 2024, 44 studies have been conducted in the working areas of the company. These studies aimed to collect the potentials and challenges faced by the surrounding community, and opportunities for program development to be implemented. The company also provides a forum for the community to convey aspirations, complaints, or grievances related to the performance of social impact management of programs run by the company. During 2024, there were no unpleasant incidents or significant disputes between PHE Subholding Upstream and the surrounding community. [OJK F.24]

PROGRAM UNGGULAN PELIBATAN DAN PEMBERDAYAAN MASYARAKAT (PROGRAM PENGEMBANGAN MASYARAKAT)

FLAGSHIP COMMUNITY INVOLVEMENT AND EMPOWERMENT PROGRAM (COMMUNITY DEVELOPMENT PROGRAM) [OJK F.25]

PHE Subholding Upstream memiliki program-program unggulan di bidang pemberdayaan masyarakat, baik dalam aspek meningkatkan perekonomian masyarakat, memperbaiki kondisi lingkungan, meningkatkan kuantitas dan kualitas pendidikan masyarakat, hingga meningkatkan layanan kesehatan. Program-program ini mendapatkan banyak apresiasi maupun penghargaan di tingkat nasional hingga internasional. Penghargaan skala nasional yang didapatkan oleh PHE Subholding Upstream adalah penghargaan PROPER yang dilaksanakan oleh Kementrian Lingkungan Hidup dan Kehutanan.

Pada tahun 2024, perusahaan berhasil meraih 12 penghargaan PROPER Emas atau penghargaan peringkat tertinggi. Program unggulan yang dilaksanakan oleh perusahaan telah memberikan manfaat keberlanjutan bagi masyarakat dan lingkungan sebagai berikut:

PHE Subholding Upstream has flagship programs in the field of community empowerment, both in terms of improving the community's economy, improving environmental conditions, increasing the quantity and quality of community education, and improving health services. These programs have received much appreciation and awards at the national and international levels. The national award received by PHE Subholding Upstream is the PROPER award presented by the Ministry of Environment and Forestry.

In 2024, the company successfully won 12 PROPER Gold awards or the highest ranking award. The flagship programs implemented by the company have provided sustainable benefits for the society and the environment as follows:

1. *Nature*
   Nature atau aspek lingkungan, program unggulan yang dijalankan oleh PHE Subholding Upstream telah berhasil mereduksi emisi karbondioksida lebih dari 23.777 ribu TonCO_2eq/ tahun, mengelola limbah cair lebih dari 18.144 ribu liter/tahun, mengolah sampah organik lebih dari 1.894 ton/tahun dan sampah anorganik lebih dari 1.178 ton/ tahun, serta penurunan penggunaan pupuk kimia sebesar 400 kg/tahun.
2. *Economy*
   Secara ekonomi, program unggulan ini telah berhasil meningkatkan pendapatan kelompok lebih dari Rp920 juta/ tahun dan total penghematan biaya kelompok lebih dari Rp74,59 juta/tahun.
3. *Well-being*
   Kesejahteraan individu dalam masyarakat salah satunya bisa dilihat dari jumlah penerima manfaat langsung, dari 12 program unggulan tersebut jumlah penerima manfaat langsungnya yaitu 400 orang, yang termasuk di dalamnya adalah pemberdayaan terhadap 116 orang perempuan dan pemberdayaan terhadap 19 orang difabel. Perusahaan juga turut mendorong kesetaraan gender dan meningkatkan kesadaran perilaku peduli lingkungan.
4. *Society*
   Dalam kehidupan sosial masyarakat, program unggulan ini berhasil membentuk 12 kelembagaan kelompok baru, serta terjalinnya 33 kolaborasi eksternal dengan berbagai pemangku kepentingan.

Berdasarkan pencapaian dan penghargaan yang didapat, PHE Subholding Upstream kemudian melakukan pengukuran *Social Return On Investment* (SROI) untuk 12 program unggulan tersebut. Hasil SROI dari seluruh program unggulan tersebut mendapatkan nilai diatas 1 yang mana itu menunjukan bahwa program-program tersebut memberikan dampak sosial yang terukur dan luas serta berhasil mengalokasikan sumber daya secara efektif untuk menghasilkan dampak yang berkelanjutan. Selain SROI, perusahaan juga menilai Indeks Kepuasan Masyarakat (IKM) dalam program pemberdayaan ini, dimana didapatkan angka nilai konversi Indeks Kepuasaan Masyarakat (IKM) rata-rata yaitu 89,58% atau masuk dalam katergori Sangat Baik yang berarti para pemangku kepentingan merasa puas akan program unggulan yang dilaksanakan oleh perusahaan.

1. Nature
   Nature or environmental aspects, the flagship program run by PHE Subholding Upstream has succeeded in reducing carbon dioxide emissions by more than 23,777 thousand TonCO_2eq/year, managing liquid waste of more than 18,144 thousand liters/year, processing organic waste of more than 1,894 tons/year and inorganic waste of more than 1,178 tons/year, as well as reducing the use of chemical fertilizers by 400 kg/year.
2. Economy
   Economically, this flagship program has succeeded in increasing group income by more than Rp920 million/year and total group cost savings of more than Rp74.59 million/ year.
3. Well-being
   The welfare of individuals in the society can be seen from the number of direct beneficiaries, from the 12 flagship programs, the number of direct beneficiaries is more than 400 people, which includes the empowerment of 116 women and the empowerment of 19 people with disabilities. The company also promotes gender equality and increases awareness of environmental behaviour.

4. Society
   In the social life of the community, this flagship program has succeeded in forming 12 new group institutions, as well as establishing 33 external collaborations with various stakeholders.

Based on the achievements and awards received, PHE Subholding Upstream then measured the Social Return On Investment (SROI) for the 12 flagship programs. The SROI results from all flagship programs obtained a value above 1, which indicates that these programs provide measurable and broad social impacts and have succeeded in allocating resources effectively to produce sustainable impacts. In addition to SROI, the company also assessed the Community Satisfaction Index (CSI) in this empowerment program, where the average Community Satisfaction Index (CSI) conversion value was 89.58% or fell into Very Good category, which means that the stakeholders are satisfied with the flagship programs implemented by the company.



JAKA SAMUDRA

Jaringan Kawasan Sistem Pelampung Akuakultur Modern Ramah Lingkungan

Modern, Environmentally Friendly Aquaculture Float System Area Network

Bagan Jaka Samudra menjadi inovasi sosial Badak LNG tahun 2024 yang mewujudkan mimpi para nelayan Tihi-Tihi dalam mencari ikan untuk menyambung hidup tanpa terbatas pada jarak dan cuaca ekstrem. Jaka Samudra merupakan singkatan dari "Jaringan Kawasan Sistem Pelampung Akuakultur Modern Ramah Lingkungan" yaitu sebuah metode tangkap ikan menggunakan platform jaring terapung yang dilengkapi dengan tiga unsur utama yaitu yang pertama Pelampung bagan terbuat dari *polyurethane* dan pipa FRP *(Fiber Reinforced Polymer)* yaitu limbah non B3 sebagai material *ex-used* perusahaan. Pelampung FRP ini memiliki ketahanan hingga >40 tahun. Kedua, Sensor kebocoran yang terbuat dari tubing tembaga yang berasal dari limbah non B3 peralatan kilang yaitu *propane condensor* (E4E-1 A/B) untuk memonitoring kebocoran pelampung dan mencegah bagan karam. Dan ketiga, Apartemen ikan dengan susunan konkret berbentuk vertikal yang terbuat dari campuran limbah non B3 kalsium silikat sebagai atraktor ikan dan hunian ikan-ikan.

Jaka Samudra frame is a social innovation of Badak LNG in 2024 that realized the dreams of fishermen in Tihi-Tihi in finding fish to make a living without being limited by distance and extreme weather. Jaka Samudra stands for "Jaringan Kawasan Sistem Pelampung Aquakultur Modern Ramah Lingkungan" (Modern, Environmentally Friendly Aquaculture Float System Area Network) which is a fishing method using a floating net platform equipped with three main elements, namely, first, frame float made of polyurethane and FRP (Fiber Reinforced Polymer) pipe, namely non-B3 waste as the company's ex-used material. This FRP float has a durability of up to >40 years. Second, a leak sensor made of copper tubing from non-B3 waste from refinery equipment, namely a propane condenser (E4E-1 A/B) to monitor float leaks and prevent the frame from sinking. And third, a fish apartment with a vertical concrete arrangement made of a mixture of non-B3 calcium silicate waste as a fish attractor and fish habitat.

Terdapat beberapa dampak dari program Jaka Samudra dari aspek *Nature* yakni terdapat 0,26 TonCO_2eq/Tahun Penurunan emisi gas rumah kaca (GRK) dari aktivitas pemanfaatan limbah Non B3 FRP menjadi pelampung dan 0,11

There are several impacts of the Jaka Samudra program from the Nature aspect, namely 0.26 TonCO2eq/Year of Reduction in greenhouse gas (GHG) emissions from the activity of utilizing Non-B3 FRP waste into floats and 0.11 TonCO_2eq/



TonCO_2eq/Tahun Penurunan emisi gas rumah kaca (GRK) dari aktivitas pemanfaatan limbah Non B3 kalsium silikat menjadi apartemen ikan. Dari aspek *Economy* masyarakat mampu menghasilkan nilai ekonomi dari hasil penjualan wisata kuliner hasil laut yang dikelola oleh ibu-ibu sebesar Rp119.985.000, pemasukan dari penjualan paket wisata *homestay* sebesar Rp2.250.000, pemasukan dari hasil tangkap ikan di bagan Jaka Samudra sebesar Rp9.000.000/bulan, serta penghematan cost production dari aktivitas budidaya rumput laut sebesar Rp3.000.000. Dari aspek *wellbeing* yakni 12 orang nelayan memiliki keterampilan membuat dan mengoperasikan bagan berteknologi sensor, 30 orang Ibu Rumah Tangga (IRT) di Tihi-Tihi memiliki keterampilan memasak dan mengelola kelompok dan 97 KK memiliki kesadaran gotong-royong untuk mengembangkan Kampung Tihi-Tihi. Dari aspek *Society* yakni terbentuknya 3 kelompok baru yaitu (Kelompok Pembudidaya Rumput Laut & Nelayan, Kelompok Usaha Kuliner & Kelompok Sadar Wisata), 12 *influencer* Bontang berpartisipasi mempromosikan wisata di Kampung Tihi-Tihi, Rp8.799.000 kas kelompok Marina (kelompok nelayan dan rumput laut) dan 97 KK di Kampung Tihi-Tihi memiliki pertumbuhan partsipasi dan nilai gotong royong yang pesat, rasa persatuan serta kekompakan untuk maju bersama (Kohesi Sosial)

Year of Reduction in greenhouse gas (GHG) emissions from the activity of utilizing Non-B3 calcium silicate waste into fish apartments. From the Economy aspect, the community is able to generate economic value from the sale of culinary tourism of seafood managed by women amounting to Rp119,985,000, income from the sale of homestay tour packages amounting to Rp2,250,000, income from fishing catches in the Jaka Samudra frame amounting to Rp9,000,000/month, and savings in production costs from seaweed cultivation activities amounting to Rp3,000,000. From the wellbeing aspect, namely 12 fishermen have the skills to make and operate frames with sensor technology, 30 housewives in Tihi-Tihi have cooking skills and manage groups and 97 families have mutual cooperation awareness to develop Tihi-Tihi Village. From the Society aspect, namely the formation of 3 new groups, namely (Seaweed Cultivators & Fishermen Group, Culinary Business Group & Tourism Awareness Group), 12 Bontang influencers participated in promoting the tourism in Tihi-Tihi Village, Rp8,799,000 cash for the Marina group (fishermen and seaweed group) and 97 families in Tihi-Tihi Village have rapid growth in participation and mutual cooperation values, a sense of unity and togetherness to move forward together (Social Cohesion).

Nilai SROI
SROI Score **1,93**





PROGRAM EKORIPARIAN SUNGAI HITAM LESTARI

Ecoriparian Program of Hitam Lestari River

Program Ekoriparian Sungai Hitam Lestari merupakan inisiatif berbasis ekowisata dan pengelolaan lingkungan yang dikembangkan untuk mengatasi pencemaran Sungai Hitam akibat limbah domestik rumah tangga yang diinisiasi oleh PT Pertamina EP Sangasanga Field. Program ini berfokus pada pemanfaatan Instalasi Pengelolaan Air Limbah (IPAL) terapung yang dapat beradaptasi dengan dinamika pasang surut sungai, memastikan efektivitas pengolahan limbah di kawasan pesisir. Selain itu, program ini juga mencakup konservasi ekosistem sungai yang merupakan habitat bekantan, primata endemik Kalimantan yang terancam punah, serta pemberdayaan ekonomi masyarakat sekitar melalui ekowisata dan Usaha Mikro, Kecil, dan Menengah (UMKM) berbasis mangrove.

Program ini terbagi dalam empat zona utama, yaitu zona inti (hutan mangrove sebagai habitat bekantan), zona penyangga (*agroforestry* dan pembibitan mangrove), zona pengembangan (aktivitas ekowisata seperti wisata susur sungai bekantan dan edukasi konservasi), serta zona pengolahan air limbah (pemanfaatan IPAL terapung). Sinergi dari keempat zona ini menciptakan sistem berkelanjutan yang tidak hanya meningkatkan kualitas lingkungan, tetapi juga memberikan manfaat ekonomi dan sosial bagi masyarakat.

The Ecoriparian Program of Hitam Lestari River is an ecotourism and environmental management-based initiative developed to address the pollution of Hitam River due to domestic household waste initiated by PT Pertamina EP Sangasanga Field. This program focuses on the utilization of floating Wastewater Treatment Plants (IPAL) that can adapt to the dynamics of river tides, ensuring the effectiveness of waste processing in coastal areas. In addition, this program also includes the conservation of river ecosystems which are the habitat of proboscis monkeys, endangered primates endemic to Kalimantan, as well as empowering the economy of the surrounding community through ecotourism and mangrove based Micro, Small, and Medium Enterprises (MSMEs).

The program is divided into four main zones, namely the core zone (mangrove forest as a habitat for proboscis monkeys), buffer zone (agroforestry and mangrove nurseries), development zone (ecotourism activities such as proboscis monkey river tours and conservation education), and wastewater treatment zone (utilization of floating IPAL). The synergy of these four zones creates a sustainable system that not only improves environmental quality, but also provides economic and social benefits for the community.





Program ini telah memberikan dampak signifikan baik dari sisi lingkungan maupun ekonomi. Dari aspek lingkungan, pemanfaatan IPAL terapung telah berhasil menurunkan beban pencemaran sungai, dengan penurunan kadar *Biochemical Oxygen Demand* (BOD) dari 99,74 mg/L menjadi 50,97 mg/L, Chemical Oxygen Demand (COD) dari 718 mg/L menjadi 183 mg/L, serta *Total Suspended Solids* (TSS) dari 129 mg/L menjadi 73 mg/L. Selain itu, program penanaman mangrove juga telah membantu mengurangi emisi Gas Rumah Kaca sebesar 0,323 TonCO_2eq.

Dari sisi ekonomi, aktivitas wisata susur sungai bekantan menghasilkan pendapatan sebesar Rp87.000.000 per tahun, sementara sektor UMKM menyumbang pendapatan Rp17.500.000 per tahun. Jumlah wisatawan juga meningkat, mencapai 427 wisatawan lokal dan 673 wisatawan mancanegara. Selain itu, kerja sama dengan beberapa UMKM di wilayah sekitar telah meningkatkan pendapatan masing-masing usaha hingga Rp100.000 per bulan.

This program has had a significant impact both from the aspect of environment and economy. From the aspect of environment, the utilization of floating wastewater treatment plants has succeeded in reducing the burden of river pollution, with a decrease in Biochemical Oxygen Demand (BOD) levels from 99.74 mg/L to 50.97 mg/L, Chemical Oxygen Demand (COD) from 718 mg/L to 183 mg/L, and Total Suspended Solids (TSS) from 129 mg/L to 73 mg/L. In addition, the mangrove planting program has also helped reduce Greenhouse Gas emissions by 0.323 TonCO_2eq.

From the aspect of economy, the proboscis monkey river tour activity generates an income of Rp87,000,000 per year, while the MSMEs sector contributes an income of Rp17,500,000 per year. The number of tourists has also increased, reaching 427 local tourists and 673 foreign tourists. In addition, cooperation with several MSMEs in the surrounding area has increased the income of each business by up to Rp100,000 per month.

Nilai SROI
SROI Score **2,96**





Pertanian Berkelanjutan Petani Banggai

PANUTAN BANGGAI

Sustainable Agriculture of Banggai Farmers (Panutan Banggai)

Panutan Banggai adalah program inovasi sosial yang bertujuan untuk mengatasi kegagalan panen akibat serangan hama tikus serta meningkatkan kesejahteraan petani melalui praktik pertanian berkelanjutan yang diinisiasi oleh JOB Pertamina-Medco E&P Tomori. Program ini melibatkan berbagai pendekatan, seperti pemanfaatan burung hantu Serak Sulawesi (*Tyto Rosenbergii*) sebagai predator alami tikus, pengolahan pupuk organik, penggunaan pompa air tenaga kincir angin, serta pengembangan Eko-Eduwisata Burung Hantu sebagai pusat edukasi lingkungan dan ekonomi berbasis wisata.

Program ini menyasar 5 kelompok rentan, yaitu 100 petani pemilik sawah, 25 buruh tani, 4 orang kelompok usaha kecil, 74 fakir miskin, dan 20 anak-anak. Melalui program ini, para petani diberikan edukasi mengenai pertanian organik, pengelolaan limbah pertanian, dan peningkatan akses pasar untuk produk pertanian mereka. Selain itu, program ini juga mengubah stigma negatif masyarakat terhadap burung hantu dari mitos sebagai pembawa sial menjadi sahabat petani yang membantu mengendalikan hama.

Panutan Banggai is a social innovation program that aims to overcome crop failure due to attacks of rats and improve farmer welfare through sustainable agricultural practices initiated by JOB Pertamina-Medco E&P Tomori. This program involves various approaches, such as the use of Sulawesi masked owls (*Tyto Rosenbergii*) as natural predators of rats, organic fertilizer processing, the use of windmill-powered water pumps, and the development of Owl Eco-Edutourism as a center for environmental education and tourism-based economy.

This program targets 5 vulnerable groups, namely 100 rice field owners-farmers, 25 farm laborers, 4 small business groups, 74 poor people, and 20 children. Through this program, farmers are given education on organic farming, agricultural waste management, and increasing market access for their agricultural products. In addition, this program also changes the negative stigma of the community towards owls from the myth of bringing bad luck to being a friend of farmers who help control pests.





Dari segi lingkungan, program ini berhasil mengurangi kerusakan tanaman padi akibat hama tikus dari 40-70% menjadi hanya 5% per hektar. Pemanfaatan burung hantu sebagai bio-predator juga menghilangkan risiko kematian petani akibat penggunaan setrum listrik untuk membasmi tikus. Selain itu, penggunaan limbah non-B3 untuk pembuatan Rumah Burung Hantu (Rubuha) berbahan beton telah mengurangi 14 ton limbah non-B3 serta menurunkan emisi CO_2 dari transportasi limbah sebesar 0,14 TonCO_2eq.

From the aspect of environment, this program has succeeded in reducing damage to rice plants due to rats from 40-70% to only 5% per hectare. The use of owls as bio-predators also eliminates the risk of death of farmers due to the use of electric shocks to eradicate rats. In addition, the use of non-B3 waste for the construction of concrete Owl Houses (Rubuha) has reduced 14 tons of non-B3 waste and reduced CO_2 emissions from waste transportation by 0.14 TonCO_2eq.

Dari segi ekonomi, program ini membantu 7 KK dalam meningkatkan pendapatan hingga di atas UMP Provinsi Sulawesi Tengah 2023, serta menciptakan 4 UMKM baru serta menciptakan keuntungan UMKM sebesar Rp22.500.000/tahun. Wisata edukasi burung hantu yang dikembangkan dalam program ini juga memberikan tambahan sumber pendapatan bagi masyarakat. Selain itu, program ini meningkatkan luas lahan pertanian organik sebesar 85 hektar serta mendukung 89 ekor Serak Sulawesi yang kini tinggal di rumah-rumah burung buatan.

From the aspect of economy, this program helps 7 families to increase their income above the Provincial Minimum Wage of Central Sulawesi of 2023, and creates 4 new MSMEs and creates MSMEs profits of Rp22,500,000/year. The educational owl tourism developed in this program also provides additional sources of income for the community. In addition, this program increases the area of organic farming by 85 hectares and supports 89 Sulawesi masked owls that now live in the artificial bird houses.

Nilai SROI
SROI Score **2,88**



SINAR PELITA

Sistem Inklusif dan Responsif Pelibatan Difabel dalam Tanggap Bencana

Inclusive and Responsive System for Involvement of People with Disabilities in Disaster Response

SINAR PELITA (Sistem Inklusif dan Responsif Pelibatan Difabel dalam Tanggap Bencana) adalah program inovasi sosial yang dikembangkan untuk meningkatkan peran kelompok difabel dalam penanggulangan bencana di Aceh Tamiang yang diinisiasi oleh PT Pertamina EP Rantau Field. Program ini berangkat dari dua isu utama di wilayah tersebut, yaitu tingginya jumlah penyandang difabel dan frekuensi bencana banjir yang tinggi. Sebagai solusi, program ini membentuk SATGAS DIGDAYA (Satuan Tugas Difabel Siaga Tanggap Bencana dan Berdaya), yang tidak hanya bertindak sebagai eksekutor dalam situasi darurat tetapi juga sebagai konseptor dalam penyusunan SOP dan kebijakan tanggap bencana.

Program ini berbasis pada tiga pilar utama: infrastruktur, peningkatan kapasitas, dan pemberdayaan ekonomi. Dari segi infrastruktur, program ini membangun *Inclusive Shelter, Evacuation Electric Boat* yang memanfaatkan gas berlebih dari operasi perusahaan, serta *Box Energy* sebagai sumber listrik darurat. Dari segi peningkatan kapasitas, difabel diberikan pelatihan mitigasi bencana dan edukasi tanggap darurat. Dari sisi ekonomi, program ini mengembangkan biskuit darurat bencana (BDB) dan usaha berbasis budidaya lele untuk mendukung kebutuhan pangan saat bencana.

SINAR PELITA (Inclusive and Responsive System for Involvement of People with Disabilities in Disaster Response) is a social innovation program developed to increase the role of people with disabilities in disaster management in Aceh Tamiang initiated by PT Pertamina EP Rantau Field. This program is based on two main issues in the region, namely the high number of people with disabilities and the high frequency of flooding. As a solution, this program formed SATGAS DIGDAYA (Task Force of People with Disabilities for Disaster Response and Empowerment), which not only acts as an executor in emergency situations but also as a conceptor in the preparation of SOPs and disaster response policies.

The program is based on three main pillars: infrastructure, capacity building, and economic empowerment. From the aspect of infrastructure, the program builds Inclusive Shelters, Evacuation Electric Boats that utilize excess gas from the company's operations, and Energy Box as an emergency power source. In terms of capacity building, people with disabilities are given disaster mitigation training and emergency response education. From the aspect of economy, the program develops disaster emergency biscuits (BDB) and catfish cultivation-based businesses to support food needs during disasters.



Program ini memberikan dampak yang signifikan terhadap berbagai kelompok masyarakat. Dari segi dampak sosial, SINAR PELITA berhasil memberikan manfaat kepada 30 difabel, 5 ibu hamil, 30 anak-anak, 4 lansia, dan 250 korban bencana. Selain itu, kelompok difabel tidak lagi hanya dianggap sebagai kelompok rentan tetapi juga berperan aktif dalam penanganan bencana melalui SATGAS DIGDAYA, yang secara resmi diakui oleh BPBD Aceh Tamiang.

Dari aspek lingkungan dan ekonomi, program ini telah menanam 7.000 pohon di daerah aliran sungai, mengurangi emisi sebesar 6,38 TonCO_2eq/tahun melalui penggunaan PLTS, serta mengolah 1,02 ton sampah organik dan 2,58 ton sampah anorganik per tahun di *Green Inclusive School*. Secara ekonomi, program ini meningkatkan pendapatan kelompok binaan hingga Rp182.400.000 per tahun dan memperluas manfaat bagi 150 penerima manfaat tidak langsung.

This program has a significant impact on various community groups. In terms of social impact, SINAR PELITA has succeeded in providing benefits to 30 people with disabilities, 5 pregnant women, 30 children, 4 elderly people, and 250 disaster victims. In addition, the group of people with disabilities is no longer only considered a vulnerable group but also plays an active role in disaster management through SATGAS DIGDAYA, which is officially recognized by BPBD Aceh Tamiang.

From the aspects of environment and economy, the program has planted 7,000 trees in the watershed, reduced emissions by 6.38 TonCO_2eq/year through the use of solar power plants, and processed 1.02 tons of organic waste and 2.58 tons of inorganic waste per year at the Green Inclusive School. Economically, the program has increased the income of the assisted groups by up to Rp182,400,000 per year and expanded benefits to 150 indirect beneficiaries.

Nilai SROI
SROI Score **2,40**



SINAR PELITA

Sistem Inklusif dan Responsif Pelibatan Difabel dalam Tanggap Bencana

Integrated Community-Based of Honey Processing and Ecotourism System

Inovasi SIMPUL EMAS (Sistem Pengolahan Madu dan Ekowisata Terintegrasi Berbasis Masyarakat) merupakan program pemberdayaan yang dikembangkan oleh PT Pertamina EP Donggi Matindok Field bekerja sama dengan Masyarakat Adat Togong-Tanga dan Pemerintah Kabupaten Banggai Kepulauan. Program ini berfokus pada pelestarian hutan adat melalui pendekatan berbasis masyarakat, yang mengombinasikan

SIMPUL EMAS (Integrated Community-Based of Honey Processing and Ecotourism System) innovation is an empowerment program developed by PT Pertamina EP Donggi Matindok Field in collaboration with the Togong-Tanga Indigenous Community and the Government of Banggai Islands Regency. This program focuses on preserving indigenous forests through a community-based approach, which combines

konservasi hutan, agroforestri berbasis apikultur (budidaya lebah madu), serta pengembangan ekowisata berbasis edukasi. Dengan melibatkan masyarakat lokal, program ini bertujuan untuk mengubah pola perilaku mereka dalam mengelola hutan secara berkelanjutan, sekaligus meningkatkan kesejahteraan ekonomi masyarakat adat melalui sumber penghidupan alternatif seperti produksi madu dan jasa wisata.

Berbeda dari pendekatan konservasi konvensional, SIMPUL EMAS mengintegrasikan kebutuhan ekonomi dengan kepentingan lingkungan dalam sebuah ekosistem bisnis berkelanjutan. Program ini memberikan pelatihan kepada masyarakat dalam bidang pengelolaan madu, konservasi hutan, dan ekowisata, sehingga masyarakat tidak hanya menjaga kelestarian alam, tetapi juga memperoleh manfaat ekonomi. Selain itu, program ini juga melibatkan pemuda dan anak-anak dalam upaya edukasi lingkungan dan pemberdayaan sosial, menjadikannya model konservasi berbasis komunitas yang dapat direplikasi di wilayah lain.

Program SIMPUL EMAS telah memberikan dampak yang signifikan terhadap masyarakat adat Togong-Tanga, khususnya dalam aspek ekonomi, sosial, dan lingkungan. Secara ekonomi, program ini telah meningkatkan pendapatan anggota kelompok masyarakat yang terlibat dalam produksi madu, dengan peningkatan rata-rata penghasilan antara Rp1.445.000 – Rp8.547.534 per bulan. Selain itu, masyarakat adat berhasil mengelola lebih dari 13 Ha kawasan konservasi berbasis masyarakat dan memperluas cakupannya hingga lebih dari Ha di enam desa lain sebagai bagian dari replikasi model konservasi.

Dari sisi sosial, program ini telah membantu 25 keluarga miskin yang sebelumnya bergantung pada perburuan liar dan perambahan hutan untuk beralih ke usaha berkelanjutan. Empat orang dari komunitas adat kini dipercaya mengelola pusat pengolahan madu di Kokolomboi. Program ini juga melibatkan 9 pemuda yang sebelumnya putus sekolah dalam pengelolaan ekowisata dan produksi madu. Infrastruktur desa juga mengalami peningkatan, dengan perbaikan akses jalan yang memudahkan mobilitas masyarakat dan meningkatkan akses pendidikan bagi anak-anak.

forest conservation, apiculture-based agroforestry (honey bee cultivation), and education-based ecotourism development. By involving local communities, this program aims to change their behavioral patterns in managing forests sustainably, while improving the economic welfare of indigenous communities through alternative livelihoods such as honey production and tourism services.

Different from conventional conservation approaches, SIMPUL EMAS integrates economic needs with environmental interests in a sustainable business ecosystem. This program provides training for the communities in honey management, forest conservation, and ecotourism, so that the communities not only preserve nature but also gain economic benefits. In addition, this program also involves youth and children in environmental education and social empowerment efforts, making it a community-based conservation model that can be replicated in other areas.

The SIMPUL EMAS program has had a significant impact on the Togong-Tanga indigenous community, especially in economic, social, and environmental aspects. Economically, this program has increased the income of community group members involved in honey production, with an average increase in income between Rp1,445,000 - Rp8,547,534 per month. In addition, the indigenous community has succeeded in managing more than 13 Ha of community-based conservation areas and expanding its coverage to more than Ha in six other villages as a part of the replication of the conservation model.

From the social aspect, the program has helped 25 poor families who previously depended on poaching and forest encroachment to switch to sustainable businesses. Four people from the indigenous community are now trusted to manage the honey processing center in Kokolomboi. The program also involves 9 young people who previously dropped out of school in managing ecotourism and honey production. Village infrastructure has also improved, with improved road access that facilitates community mobility and increases access to education for children.

Nilai SROI
SROI Score **3,63**



GEMA DEWATA

Gerakan Ekonomi Masyarakat Desa Wujudkan Air Talas Mandiri

Village Community Economic Movement to Create Independent Taro Water

GEMA DEWATA (Gerakan Ekonomi Masyarakat Desa Wujudkan Air Talas Mandiri) adalah program pemberdayaan berbasis pertanian organik yang dikembangkan oleh PT Pertamina EP Limau Field untuk meningkatkan kesejahteraan masyarakat Desa Air Talas. Program ini bertujuan mengatasi berbagai masalah, termasuk tingginya limbah kulit jeruk yang tidak terkelola, penurunan produktivitas pertanian akibat penyakit tanaman, serta rendahnya pendapatan kelompok rentan. Salah satu inovasi utama dalam program ini adalah Oraplast, yaitu bioplastik berbasis limbah kulit jeruk yang ramah lingkungan dan dapat terurai dalam 3-6 bulan.

Program ini melibatkan berbagai sub-program, seperti BU JUSI (Budidaya Jeruk Siam) untuk meningkatkan hasil panen jeruk, PAKLEK MANIS (Pengolahan Limbah Kulit Jeruk Siam) yang mengolah limbah jeruk menjadi bioplastik, serta BUDE ARTA MAJU yang mendukung perempuan dalam usaha pengolahan jeruk. Selain aspek ekonomi, program ini juga berdampak pada lingkungan dengan mengurangi timbulan limbah organik dan mendorong adopsi praktik pertanian organik yang lebih berkelanjutan.

GEMA DEWATA (Village Community Economic Movement to Create Independent Taro Water) is an empowerment program based on organic farming developed by PT Pertamina EP Limau Field to improve the welfare of people of Air Talas Village. This program aims to overcome various problems, including the high level of unmanaged orange peel waste, decreased agricultural productivity due to plant diseases, and low incomes of vulnerable groups. One of the main innovations in this program is Oraplast, namely an environmentally friendly bioplastic based on orange peel waste that can decompose in 3-6 months.

The program involves various sub-programs, such as BU JUSI (Cultivation of Mandarin Oranges) to increase orange harvests, PAKLEK MANIS (Processing of Mandarin Orange Peel Waste) which processes orange waste into bioplastics, and BUDE ARTA MAJU which supports women in orange processing businesses. In addition to the economic aspect, the program also has an environmental impact by reducing organic waste generation and encouraging the adoption of more sustainable organic farming practices.



Dari segi lingkungan, program ini berhasil mengurangi emisi karbon hingga 10.957,5 TonCO_2eq per tahun melalui pengolahan limbah kulit jeruk menjadi bioplastik. Limbah kulit jeruk yang sebelumnya tidak terkelola dan mencapai 34,79 ton per tahun kini dimanfaatkan secara produktif. Selain itu, inovasi fungisida berbasis Trichoderma telah meningkatkan hasil panen jeruk dari 3 ton/ha menjadi 5 ton/ha, sekaligus mengurangi penggunaan pupuk kimia hingga 20%.

Dari sisi ekonomi, program ini telah meningkatkan kesejahteraan masyarakat, dengan penghasilan anggota Kelompok Amerta mencapai kurang lebih Rp4.200.000 per bulan dari produksi bioplastik Oraplast. Selain itu, sebanyak 13 dari 42 penerima BLT-Desa berhasil mandiri setelah bergabung dengan program ini. Program ini juga memberdayakan 133 anak sekolah dalam edukasi lingkungan, serta melibatkan 7 lansia dari keluarga miskin dalam kegiatan pertanian dan pengolahan jeruk, menjadikannya model pemberdayaan yang inklusif.

From the aspect of the environment, this program has succeeded in reducing carbon emissions by 10,957.5 TonCO_2eq per year through the processing of orange peel waste into bioplastic. Previously unmanaged orange peel waste reaching 34.79 tons per year is now used productively. In addition, the innovation of Trichoderma-based fungicides has increased orange yields from 3 tons/ha to 5 tons/ha, while reducing the use of chemical fertilizers by 20%.

From the economic aspect, this program has improved community welfare, with the income of Amerta Group members reaching approximately Rp4,200,000 per month from Oraplast bioplastic production. In addition, 13 out of 42 BLT-Village recipients have become independent after joining this program. This program also empowers 133 school children in environmental education, and involves 7 elderly people from poor families in farming and orange processing activities, making it an inclusive empowerment model.

Nilai SROI
SROI Score **2,54**





PRABU KRESNA

Petani Rahayu Bersatu, Kreatif, Sehat, dan Sejahtera

United, Creative, Healthy, and Prosperous Farmers of Rahayu

Prabu Kresna (Petani Rahayu Bersatu, Kreatif, Sehat, dan Sejahtera) adalah program inovasi sosial yang dikembangkan oleh PT Pertamina EP Sukowati Field untuk meningkatkan ketahanan pangan dan kesejahteraan petani di Desa Rahayu, Kabupaten Tuban. Program ini berfokus pada transformasi pertanian konvensional menuju pertanian organik berbasis metode *System of Rice Intensification* (SRI), yang lebih ramah lingkungan dan berkelanjutan. Selain pertanian padi, program ini juga mencakup budidaya hortikultura, produksi pupuk organik, serta pengembangan teknologi tepat guna untuk mendukung efisiensi pertanian.

Selain aspek pertanian, program ini juga menyediakan akses air bersih berbasis BUMDes yang menjangkau lebih dari 78% rumah tangga di Desa Rahayu. Penyediaan air bersih ini membantu mengatasi ketergantungan warga terhadap air Sungai Bengawan Solo yang sebelumnya tercemar. Program ini juga menargetkan regenerasi petani muda, peningkatan peran perempuan dalam sektor pertanian, serta mendukung keberlanjutan lingkungan dengan penerapan teknologi ramah lingkungan.

Prabu Kresna (United, Creative, Healthy, and Prosperous Farmers of Rahayu) is a social innovation program developed by PT Pertamina EP Sukowati Field to improve food security and farmer welfare in Rahayu Village, Tuban Regency. This program focuses on the transformation of conventional agriculture to organic farming based on the System of Rice Intensification (SRI) method, which is more environmentally friendly and sustainable. In addition to rice farming, this program also includes horticultural cultivation, organic fertilizer production, and the development of appropriate technology to support agricultural efficiency.

In addition to the agricultural aspect, this program also provides access to clean water based on BUMDes which reaches more than 78% of households in Rahayu Village. The provision of clean water helps overcome residents' dependence on the previously polluted Bengawan Solo River water. This program also targets the regeneration of young farmers, increasing the role of women in the agricultural sector, and supporting environmental sustainability by implementing environmentally friendly technology.



Dari sisi lingkungan, penerapan sistem pertanian organik SRI berhasil meningkatkan produksi padi dari 3-4 ton/ha menjadi 6-9 ton/ha, dengan tingkat keberhasilan panen yang lebih tinggi dan tanpa gagal panen. Selain itu, inovasi pupuk organik telah mengurangi ketergantungan terhadap pupuk kimia sebesar 15,8%, yang juga membantu menghemat biaya produksi hingga Rp2.817.688 per hektar per musim.

Dari sisi ekonomi dan sosial, program ini meningkatkan pendapatan petani secara signifikan. Pendapatan petani padi meningkat hingga 14 kali lipat, dari sebelumnya Rp2.980.000 menjadi Rp43.749.688 per hektar per musim. Program ini juga membantu mengentaskan 26% pengangguran usia muda melalui pelibatan mereka dalam pertanian hortikultura dan hidroponik, yang mampu menciptakan omset usaha budidaya melon hidroponik mencapai Rp30.462.000/musim. Selain itu, kelompok perempuan kini aktif dalam produksi dan pemasaran produk herbal, menciptakan sumber pendapatan tambahan bagi keluarga.

From the aspect of environment, the implementation of the SRI organic farming system has succeeded in increasing rice production from 3-4 tons/ha to 6-9 tons/ha, with a higher harvest success rate and without crop failure. In addition, organic fertilizer innovation has reduced dependence on chemical fertilizers by 15.8%, which also helps save production costs of up to Rp2,817,688 per hectare per season.

From the aspect of economy and social, this program significantly increases farmers' income. Rice farmers' income increased 14-fold, from previously Rp2,980,000 to Rp43,749,688 per hectare per season. This program also helps to alleviate 26% of youth unemployment through their involvement in horticulture and hydroponic farming, which is able to create a turnover of hydroponic melon cultivation reaching Rp30,462,000/season. In addition, women's groups are now active in the production and marketing of herbal products, creating additional sources of income for families.

Nilai SROI
SROI Score **2,04**



JAM PASIR

Jaga Alam Melalui Pemberdayaan Masyarakat Pesisir

Protecting Nature Through Empowerment of Coastal Communities

Program JAM PASIR merupakan inisiatif pemberdayaan masyarakat pesisir di Desa Sukajaya, Kabupaten Karawang yang diinisiasi PHE ONWJ yang bertujuan mengatasi permasalahan abrasi pantai, pengelolaan sampah pesisir, serta pemberdayaan ekonomi komunitas nelayan. Salah satu inovasi utama dalam program ini adalah APPOSTRAPS (Alat Pemecah, Peredam Ombak, dan Sedimen Traps) yang terbuat dari limbah ban bekas. Teknologi ini telah mendapatkan paten dari Kementerian Hukum dan HAM RI dan terbukti mempercepat proses sedimentasi, menciptakan daratan baru yang kemudian dikembangkan sebagai kawasan ekowisata *mangrove*.

Selain aspek lingkungan, program ini juga mencakup diversifikasi mata pencaharian nelayan, penguatan UMKM berbasis produk perikanan, serta edukasi mitigasi bencana bagi anak-anak pesisir. Konsep "*New Land, New Hope*" yang diusung oleh JAM PASIR memungkinkan masyarakat untuk memanfaatkan lahan hasil sedimentasi sebagai pusat ekonomi baru, termasuk sentra UMKM, pemasaran hasil perikanan, dan tempat pengolahan sampah.

The JAM PASIR program is an initiative to empower coastal communities in Sukajaya Village, Karawang Regency, initiated by PHE ONWJ, which aims to overcome the problems of coastal abrasion, coastal waste management, and economic empowerment of fishing communities. One of the main innovations in this program is APPOSTRAPS (Breaking Devices, Wave Dampers, and Sediment Traps) made from used tire waste. This technology has been patented by the Indonesian Ministry of Law and Human Rights and is proven to accelerate the sedimentation process, creating new land which is then developed as a mangrove ecotourism area.

In addition to the environmental aspect, the program also includes diversification of fishermen's livelihoods, strengthening fishery-based MSMEs, and disaster mitigation education for coastal children. The concept of "New Land, New Hope" carried by JAM PASIR allows the community to utilize sedimentation land as a new economic center, including MSMEs centers, fishery product marketing, and waste processing sites.



Dari sisi ekonomi, program ini telah meningkatkan pendapatan kelompok ekowisata hingga Rp142 juta/tahun dan UMKM istri nelayan sebesar Rp52 juta/tahun. Kunjungan wisatawan mencapai 21.824 orang pada tahun 2024, serta pendapatan perempuan rawan sosial ekonomi meningkat antara Rp 400 ribu – Rp 5 juta/bulan. Selain itu, program ini juga menghemat biaya penanganan abrasi hingga 70%, sekaligus meningkatkan Pendapatan Asli Desa sebesar Rp86,2 juta.

Dari sisi Sosial: Terdapat sebanyak 861 masyarakat pesisir terselamatkan dari abrasi, memunculkan 5 alternative pekerjaan baru bagi nelayan ketika musim paceklik, penerapan muatan local pendidikan lingkungan hidup di 2 sekolah dasar, pengentasan angka pengangguran desa sebanyak 36 orang, terbentuk 3 kelompok binaan (pengelolaan ekowisata, UMKM, pengelolaan sampah) dan Peningkatan kapasitas 25 UMKM istri nelayan.

Dari sisi lingkungan, program ini telah memulihkan 3,62 hektar lahan terdampak abrasi, menambah 400 meter garis pantai, serta menciptakan habitat baru bagi 28 spesies flora dan 52 spesies fauna. Penggunaan 19.100 limbah ban bekas dalam konstruksi APPOSTRAPS berhasil mengurangi potensi polusi udara sebesar 18,3 TonCO_2eq, sedangkan penanaman 47.000 pohon mangrove telah menyerap 13,49 TonCO_2eq. Selain itu, 861 masyarakat pesisir kini terlindungi dari abrasi berkat adanya sedimentasi yang dihasilkan.

From the aspect of economy, this program has increased the income of ecotourism groups by up to Rp142 million/year and fishermen's wives' MSMEs by Rp52 million/year. Tourist visits reached 21,824 people in 2024, and the income of women at socio-economic risk increased by between Rp400 thousand - Rp5 million/month. In addition, this program also saves abrasion handling costs by up to 70%, while increasing Village Original Income by Rp86.2 million.

From the aspect of social: There are 861 coastal communities saved from abrasion, 5 new alternative jobs have emerged for fishermen during the lean season, implementation of local content of environmental education in 2 elementary schools, eradication of village unemployment by 36 people, formation of 3 assisted groups (ecotourism management, MSMEs, waste management) and increasing the capacity of 25 fishermen's wives' MSMEs.

From the aspect of environment, the program has restored 3.62 hectares of abrasion-affected land, added 400 meters of coastline, and created new habitats for 28 species of flora and 52 species of fauna. The use of 19,100 used tires in the construction of APPOSTRAPS has reduced potential air pollution by 18.3 TonCO_2eq, while the planting of 47,000 mangrove trees has absorbed 13.49 TonCO_2eq. In addition, 861 coastal communities are now protected from abrasion thanks to the sedimentation produced.

Nilai SROI
SROI Score **3,50**



SI TEMAN BAIK

Sistem Inovasi dan Transformasi Ekonomi Masyarakat Petani Kelulut Adaptif Perubahan Iklim

Economic Innovation and Transformation System of Stingless Bee Farming Community Adaptive to Climate Change

Program SI TEMAN BAIK (Sistem Inovasi dan Transformasi Ekonomi Masyarakat Petani Kelulut Adaptif Perubahan Iklim) adalah inisiatif pemberdayaan petani hutan lebah kelulut di Desa Sangatta Selatan, Kutai Timur yang diinisiasi oleh PT Pertamina EP Sangatta Field. Program ini bertujuan untuk meningkatkan kesejahteraan kelompok tani Trigona Reborn, yang mayoritas anggotanya berasal dari kelompok rentan seperti fakir miskin, perempuan rawan sosial ekonomi, penyandang difabel, serta anak putus sekolah. Dengan fokus pada budidaya lebah kelulut yang lebih modern dan adaptif terhadap perubahan iklim, program ini mengembangkan teknologi inovatif seperti alat panen madu otomatis, alat pengurang kadar air madu, serta alat destilasi asap cair berbasis *exceed* gas dari operasi perusahaan.

Selain produksi madu, program ini mengembangkan berbagai unit usaha berbasis *zero waste*, seperti Bank Sampah Trigona, Depot Energi untuk pemanfaatan limbah organik menjadi energi, serta *Cafetaria Zero Waste* yang menyediakan

SI TEMAN BAIK (Economic Innovation and Transformation System of Stingless Bee Farming Community Adaptive to Climate Change) program is an empowerment initiative for stingless bee forest farmers in Sangatta Selatan Village, East Kutai, initiated by PT Pertamina EP Sangatta Field. This program aims to improve the welfare of the Trigona Reborn farmer group, the majority of whose members come from vulnerable groups such as the poor, women with socio-economic disadvantages, people with disabilities, and school dropouts. With a focus on more modern and climate-adaptive stingless bee farming, this program develops innovative technologies such as automatic honey harvesting tools, honey water reduction tools, and liquid smoke distillation tools based on exceed gas from the company's operations.

In addition to honey production, this program develops various zero waste-based business units, such as the Trigona Waste Bank, Energy Depot for the utilization of organic waste into energy, and Zero Waste Cafeteria which provides honey-based







produk olahan berbasis madu. Program ini juga menciptakan Eduwisata Budidaya Kelulut, yang menjadi pusat pembelajaran dan kunjungan wisata edukasi bagi siswa dan masyarakat umum.

Dari sisi ekonomi, program ini meningkatkan pendapatan kelompok tani Trigona Reborn hingga Rp100.260.000 per tahun, serta mengurangi biaya produksi pertanian sebesar Rp26.400.000 per tahun melalui pemanfaatan sumber daya lokal seperti pupuk organik dari limbah sampah dan energi surya untuk operasional. Program ini juga berhasil mengentaskan 13 anggota kelompok dari garis kemiskinan dan membuka akses pekerjaan bagi 1.588 penerima manfaat tidak langsung, termasuk kelompok rentan.

Dari sisi lingkungan, program ini mengolah 3,6 ton sampah organik per tahun, mengurangi emisi karbon sebesar 50,29 TonCO_2eq per tahun, serta menanam lebih dari 1.000 pohon per tahun untuk menjaga keberlanjutan ekosistem lebah kelulut. Program ini juga mengubah 81 koloni lebah kelulut menjadi lebih produktif melalui sistem kemitraan antar kelompok tani, sekaligus mencegah perambahan hutan liar untuk mencari sarang lebah secara tradisional.

processed products. This program also created Stingless Bee Farming Edutourism, which is a center for learning and educational tourism visits for students and the public.

From the aspect of economy, this program increases the income of the Trigona Reborn farmer group by up to Rp100,260,000 per year, and reduces agricultural production costs by Rp26,400,000 per year through the use of local resources such as organic fertilizer from waste and solar energy for operations. This program has also succeeded in lifting 13 group members out of poverty and opening up access to employment for 1,588 indirect beneficiaries, including vulnerable groups.

From the aspect of environment, the program processes 3.6 tons of organic waste per year, reduces carbon emissions by 50.29 TonCO_2eq per year, and plants more than 1,000 trees per year to maintain the sustainability of the stingless bee ecosystem. The program also transforms 81 stingless bee colonies into more productive ones through a partnership system between farmer groups, while preventing illegal forest encroachment to search for beehives in a traditional manner.

Nilai SROI
SROI Score **1,53**





PROGRAM ECO EDUFARMING

Eco Edufarming adalah program inovasi sosial yang dikembangkan untuk merevitalisasi lahan kering di Desa Bandangdaja, Bangkalan, Madura, dengan pendekatan pertanian regeneratif berbasis teknologi tepat guna yang diinisiasi oleh PHE WMO. Program ini bertujuan mengatasi masalah kekeringan, ketergantungan pangan dari luar daerah, serta rendahnya kesejahteraan petani lokal. Dengan menerapkan metode *regenerative agriculture*, program ini berfokus pada pemulihan ekosistem tanah, efisiensi penggunaan air, dan pengelolaan pertanian berkelanjutan.

Teknologi utama yang diterapkan dalam program ini mencakup irigasi tetes, pemanfaatan energi surya untuk pompa air, sistem Machida untuk budidaya melon hidroponik, *rain harvesting*, serta pemanfaatan limbah organik untuk pupuk kompos. Program ini juga mengembangkan Eduwisata Pertanian yang berfungsi sebagai pusat pembelajaran bagi petani dan masyarakat sekitar. Dengan konsep "Bersahabat dengan Hama", petani dilatih untuk mengurangi ketergantungan pada pestisida kimia dan menerapkan pengelolaan hama berbasis ekologi.

Eco Edufarming is a social innovation program developed to revitalize dry land in Bandangdaja Village, Bangkalan, Madura, with a regenerative agriculture approach based on appropriate technology initiated by PHE WMO. This program aims to overcome the problems of drought, food dependence from outside the region, and the low welfare of local farmers. By implementing regenerative agriculture methods, this program focuses on restoring soil ecosystems, efficient water use, and sustainable agricultural management.

The main technologies implemented in this program include drip irrigation, solar energy utilization for water pumps, Machida system for hydroponic melon cultivation, rain harvesting, and utilization of organic waste for compost fertilizer. This program also develops Agricultural Edutourism which functions as a learning center for farmers and the surrounding community. With the concept of "Friendly with Pests", farmers are trained to reduce dependence on chemical pesticides and implement ecological-based pest management.



Dari segi lingkungan, program ini berhasil mengurangi limbah ternak hingga 95 ton per tahun dengan mengolahnya menjadi pupuk organik, serta menghemat penggunaan air hingga 300% melalui sistem irigasi tetes. Sebanyak 6,7 hektar lahan kering berhasil direvitalisasi, dengan tingkat keberhasilan panen mencapai 99,3%, jauh lebih tinggi dibandingkan pertanian konvensional di daerah sekitar.

From the aspect of environment, the program has succeeded in reducing livestock waste by 95 tons per year by processing it into organic fertilizer, and saving water usage by 300% through a drip irrigation system. A total of 6.7 hectares of dry land have been revitalized, with a harvest success rate of 99.3%, much higher than conventional farming in the surrounding area.

Dari segi ekonomi dan sosial, program ini meningkatkan pendapatan petani hingga Rp 50 juta per musim tanam, serta terberdayakannya 65 anggota kelompok petani dan peternak. Sebanyak lebih dari 500 orang melakukan kegiatan kunjungan belajar baik dari petani, masyarakat lokal, maupun siswa/i dan mahasiswa di Jawa Timur.

From the aspect of economy and social, this program increases farmers' income up to Rp50 million per planting season, and empowers 65 members of farmer and livestock groups. More than 500 people conducted study visits from farmers, local communities, and students in East Java.

Nilai SROI
SROI Score **2,97**



PURNAMA SUBANG

Purna Pekerja Migran Indonesia Berdaya Menjaga Lingkungan Bersama

Former Indonesian Migrant Workers Empowered to Protect Environment Together

Purnama Subang (Purna Pekerja Migran Indonesia Berdaya Menjaga Lingkungan Bersama) adalah program inovasi sosial yang bertujuan memberdayakan purna pekerja migran (PMI) dan kelompok rentan lainnya di Desa Compreng, Kabupaten Subang, Jawa Barat yang diinisiasi oleh PT Pertamina EP Subang Field. Program ini dikembangkan untuk mengatasi tantangan reintegrasi sosial dan ekonomi yang dihadapi purna PMI setelah kembali ke tanah air, termasuk stigma negatif, keterbatasan keterampilan, serta kurangnya akses ke pekerjaan atau usaha yang layak. Purnama Subang memberikan solusi melalui pendekatan berbasis komunitas, dengan lima kegiatan utama: Warjos Purnama (UMKM & layanan migran), Aplikasi Sapa Migran, *Swarna Integrated Farming* (budidaya mangga super) yang memperkenalkan teknik pengelolaan tanaman yang baru menggunakan UHDP (*Ultra High Density Plantation*) yaitu alat sprinkle system yang terkoneksi dengan panel surya sebagai alat untuk penyemprotan obat hama yang lebih efektif dan efisien untuk kebun mangga, pengolahan limbah, serta *Purnama Goes to School and Community*.

Program ini tidak hanya berfokus pada aspek ekonomi tetapi juga lingkungan, dengan inisiatif pengolahan sampah organik, kotoran hewan, dan minyak jelantah menjadi produk bernilai ekonomi seperti pupuk, biogas, dan sabun. Selain itu, teknologi

Purnama Subang (Former Indonesian Migrant Workers Empowered to Protect Environment Together) is a social innovation program that aims to empower former migrant workers (PMI) and other vulnerable groups in Compreng Village, Subang Regency, West Java, initiated by PT Pertamina EP Subang Field. This program was developed to address the challenges of social and economic reintegration faced by former PMI after returning to their homeland, including negative stigma, limited skills, and lack of access to decent work or business. Purnama Subang provides solutions through a community-based approach, with five main activities: Warjos Purnama (MSMEs & migrant services), Sapa Migran Application, Swarna Integrated Farming (super mango cultivation) which introduces new plant management techniques using UHDP (Ultra High Density Plantation) which is a sprinkler system connected to solar panels as a tool for spraying pesticides more effectively and efficiently for mango plantations, waste processing, and Purnama Goes to School and Community.

This program focuses not only on economic aspects but also on the environment, with initiatives to process organic waste, animal waste, and used cooking oil into products of economic value such as fertilizer, biogas, and soap. In addition, Ultra High



Ultra High Density Plantation (UHDP) diterapkan dalam perkebunan mangga, menggunakan sistem sprinkle dan panel surya untuk irigasi yang lebih efisien. Dengan konsep inklusif, program ini melibatkan berbagai elemen masyarakat, termasuk lansia, janda, penyandang disabilitas, dan keluarga PMI, guna menciptakan ekosistem pemberdayaan yang berkelanjutan.

Dari sisi lingkungan, program ini telah melakukan penanaman 1.705 bibit pohon, yang berkontribusi pada reduksi emisi karbon sebesar 0,73 tCO_2e. Selain itu, pengolahan limbah menghasilkan pengurangan signifikan dalam pencemaran lingkungan, termasuk sampah diaper yang diolah menjadi pot tanaman, serta limbah kotoran ternak yang diubah menjadi biogas. Upaya ini membantu mengurangi risiko banjir di Desa Compreng serta meningkatkan kesadaran masyarakat akan pentingnya pengelolaan limbah yang ramah lingkungan.

Dari sisi ekonomi dan sosial, program ini berhasil mengentaskan 5,81% kemiskinan di Kabupaten Subang serta meningkatkan kesejahteraan kelompok rentan. Warjos Purnama telah memberikan pelatihan dan keterampilan kepada 62 peserta, sementara program edukasi *Purnama Goes to School* telah menjangkau 3.521 siswa, dan 120 orang melalui *Purnama Goes to Community*. Dari sisi ekonomi, sebanyak 19 dari 327 keluarga miskin di Desa Compreng telah terentaskan, serta beberapa kelompok rentan seperti 2 lansia, 11 janda, dan 3 penyandang disabilitas mendapatkan peningkatan pendapatan. Program ini juga menghasilkan penghematan biaya operasional sebesar Rp58.900.000 per tahun serta pendapatan kelompok Swarna Integrated Farming Rp250.000.000/tahun melalui inovasi yang diterapkan.

Density Plantation (UHDP) technology is applied in mango plantations, using a sprinkler system and solar panels for more efficient irrigation. With an inclusive concept, this program involves various elements of society, including the elderly, widows, people with disabilities, and PMI families, in order to create a sustainable empowerment ecosystem.

From the aspect of environment, the program has planted 1,705 tree seedlings, which contributed to a reduction in carbon emissions of 0.73 tCO_2e. In addition, waste processing resulted in a significant reduction in environmental pollution, including diaper waste being processed into plant pots, and livestock waste being converted into biogas. These efforts help reduce the risk of flooding in Compreng Village and raise public awareness of the importance of environmentally friendly waste management.

From the aspect of economy and social, this program has succeeded in eradicating 5.81% of poverty in Subang Regency and improving the welfare of vulnerable groups. Warjos Purnama has provided training and skills for 62 participants, while the Purnama Goes to School education program has reached 3,521 students, and 120 people through Purnama Goes to Community. From the aspect of economy, poverty of 19 out of 327 families in Compreng Village has been eradicated, and several vulnerable groups such as 2 elderly people, 11 widows, and 3 people with disabilities have increased their income. This program also resulted in operational cost savings of Rp58,900,000 per year and the income of the Swarna Integrated Farming group of Rp250,000,000/year through the innovations implemented.

Nilai SROI
SROI Score **2,07**


PERTAMINA
GETAH KARET PETANI



PAKAR BALAM

Pengendalian Agrokimia dalam Pertanian Karet Berbasis Pengelolaan Sampah

Agrochemical Control in Rubber Farming Based on Waste Management

Program PAKAR BALAM merupakan inovasi sosial yang diinisiasi oleh PT Pertamina EP Prabumulih Field dan dikembangkan untuk mengatasi ketergantungan petani karet terhadap bahan kimia berbahaya (cuka para/asam formiat) dalam proses pengolahan lateks serta mengurangi limbah sampah yang menyebabkan *overcapacity* di TPA Kota Prabumulih. Program ini memanfaatkan sampah biomassa kayu untuk menghasilkan cuka kayu (*mokusaku*) sebagai alternatif penggumpal lateks alami, sehingga mengurangi dampak lingkungan dan risiko kesehatan bagi petani.

Selain itu, PAKAR BALAM mengembangkan sistem *zero waste*, di mana sampah anorganik seperti plastik residu diolah menjadi wadah getah karet *eco-friendly*, dan sampah organik diubah menjadi pupuk organik untuk pertanian. Program ini juga melibatkan kelompok rentan, termasuk buruh tani karet prasejahtera, pemulung, serta perempuan rawan sosial ekonomi, dalam berbagai kegiatan pemberdayaan ekonomi berbasis lingkungan.

Dari sisi lingkungan, program ini berhasil mengurangi penggunaan cuka para sebesar 790 liter per tahun, yang setara dengan pengurangan 1.024 ton sampah biomassa kayu per tahun. Selain itu, pemanfaatan sampah plastik residu dalam produksi wadah getah karet *eco-friendly* telah mengurangi 1.560 ton limbah plastik per tahun. Program ini juga berkontribusi terhadap reduksi emisi gas *flare* perusahaan hingga 40,15 MMSCF per tahun, mendukung visi perusahaan untuk mengurangi dampak karbon.

Dari sisi sosial dan ekonomi, program ini telah meningkatkan pendapatan buruh tani karet hingga Rp78.968.000 per tahun melalui substitusi cuka para dengan mokusaku. Selain itu, melalui program daur ulang sampah plastik oleh kelompok Pusat Daur Ulang (PDU), telah dihasilkan omzet sebesar Rp468.000.000 per tahun. Program ini juga berhasil mengentaskan 16,8% penduduk miskin di tiga kelurahan (Muara Dua, Patih Galung, dan Sungai Medang) berdasarkan indikator UMK Kota Prabumulih.

The PAKAR BALAM program is a social innovation initiated by PT Pertamina EP Prabumulih Field and developed to overcome the dependence of rubber farmers on hazardous chemicals (para vinegar/formic acid) in the latex processing and reduce waste that causes overcapacity in the landfill of Prabumulih City. This program utilizes wood biomass waste to produce wood vinegar (*mokusaku*) as an alternative natural latex coagulant, thereby reducing environmental impacts and health risks for farmers.

In addition, PAKAR BALAM has developed a zero-waste system, where inorganic waste such as residual plastic is processed into eco-friendly rubber latex containers, and organic waste is converted into organic fertilizer for agriculture. This program also involves vulnerable groups, including underprivileged rubber farm laborers, scavengers, and socio-economically vulnerable women, in various environment-based economic empowerment activities.

From the aspect of environment, the program has succeeded in reducing the use of vinegar by 790 liters per year, which is equivalent to reducing 1,024 tons of wood biomass waste per year. In addition, the use of residual plastic waste in the production of eco-friendly rubber latex containers has reduced 1,560 tons of plastic waste per year. The program has also contributed to reducing the company's flare gas emissions by 40.15 MMSCF per year, supporting the company's vision to reduce carbon impact.

From the aspect of social and economy, this program has increased the income of rubber farm laborers by up to Rp78,968,000 per year through the substitution of para vinegar with mokusaku. In addition, through the plastic waste recycling program by the Recycling Center (PDU) group, a turnover of Rp468,000,000 has been generated per year. This program has also succeeded in eradicating poverty of 16.8% of the population in three sub-districts (Muara Dua, Patih Galung, and Medang River) based on the UMK indicator of Prabumulih City.

Nilai SROI
SROI Score **1,73**



PROGRAM DESA ENERGI BERDIKARI

Program Desa Energi Berdikari (DEB) merupakan program unggulan CID PHE Subholding Upstream yang mendukung ketersediaan akses masyarakat terhadap energi yang ramah lingkungan, terjangkau, dan berkelanjutan sehingga diharapkan dapat mendorong peningkatan ekonomi masyarakat. Pada tahun 2024, sumber energi baru terbarukan (EBT) yang dikembangkan meliputi pemanfaatan pembangkit listrik tenaga surya di 20 lokasi dengan total kapasitas panel surya terpasang sebesar 115,26 kWp. Atas program yang telah dijalankan, program ini berpotensi mereduksi emisi sebesar 149,84 TonCO_2eq/tahun serta memberikan penghematan ekonomi sebesar Rp212,63 juta/tahun. Sepanjang 2024, beberapa yang berhasil dikembangkan di lingkungan Subholding Upstream adalah sebagai berikut:

INDEPENDENT ENERGY VILLAGE PROGRAM

The Independent Energy Village (DEB/Desa Energi Berdikari) Program is a flagship program of CID PHE Subholding Upstream that supports the availability of community access to environmentally friendly, affordable, and sustainable energy so that it is expected to encourage economic growth in the community. In 2024, the new renewable energy (NRE) sources developed include the use of solar power plants in 20 locations with a total installed solar panel capacity of 115.26 kWp. Based on the programs that have been implemented, this program has the potential to reduce emissions by 149.84 TonCO_2eq/year and provide economic savings of Rp212.63 million/year. Throughout 2024, some that have been successfully developed within the Subholding Upstream are as follows:





DEB Jambi Merang Community
PERI MENTARI

Desa Energi ini dikembangkan melalui program Peri Mentari yang merupakan binaan PHE Jambi Merang dan berlokasi di Desa Mendis, Kecamatan Bayung Lencir, Kabupaten Musi Banyuasin, Sumatra Selatan. Program ini mengintegrasikan kegiatan pertanian, peternakan, dan perikanan dengan pendekatan *waste management* untuk mendukung ketahanan pangan dan mendorong partisipasi masyarakat dalam pembangunan ekonomi lokal. Energi baru terbarukan berbasis panel surya berkapasitas 4,4 kWp digunakan untuk menunjang operasional pompa air hidroponik yang mendukung kegiatan pertanian berkelanjutan. Sistem ini dilengkapi dengan lithium battery 5 kWh, serta fitur pemantauan berbasis IOT melalui aplikasi Growatt Monitoring untuk meningkatkan efisiensi dan efektivitas pengelolaan energi. Pemanfaatan EBT di DEB Jambi Merang Community Program Peri Mentari berpotensi menurunkan biaya listrik sebesar Rp8 juta/tahun dan berpotensi mengurangi emisi karbon hingga 5,72 ton CO_2/tahun.

This Energy Village was developed through the Peri Mentari program which is assisted by PHE Jambi Merang and is located in Mendis Village, Bayung Lencir District, Musi Banyuasin Regency, South Sumatra. This program integrates agricultural, livestock, and fisheries activities with a waste management approach to support food security and encourage community participation in local economic development. New renewable energy based on solar panels with a capacity of 4.4 kWp is used to support the operation of hydroponic water pumps that support sustainable agricultural activities. This system is equipped with a 5 kWh lithium battery, as well as an IOT-based monitoring feature through the Growatt Monitoring application to improve the efficiency and effectiveness of energy management. The use of EBT in the DEB Jambi Merang Community Peri Mentari Program has the potential to reduce electricity costs by Rp8 million/year and has the potential to reduce carbon emissions by up to 5.72 tons of CO_2/year.





DEB Pendopo Community
GEMILANG

Desa Energi ini dikembangkan pada program Gemilang yang merupakan binaan PEP Pendopo dan berlokasi di Kabupaten Musi Rawas, Sumatra Selatan. Program ini memanfaatkan potensi turunan buah pinang untuk diolah menjadi berbagai produk seperti bandrek jahe pinang, tepung mocaff, koping pinang, dan lain-lain, sehingga turut mendorong penguatan ekonomi masyarakat berbasis UMKM. Energi baru terbarukan berbasis panel surya berkapasitas 6,6 kWp digunakan untuk menunjang operasional peralatan pengolahan seperti *mixer*, oven, pengering, hingga kompor listrik, yang semuanya berkontribusi dalam meningkatkan efisiensi dan kapasitas produksi. Sistem ini dilengkapi dengan lithium battery 5 kWh, serta sistem pemantauan berbasis IOT melalui aplikasi Deye Cloud Monitoring untuk pengelolaan energi secara real-time. Pemanfaatan EBT di DEB Pendopo Community – Gemilang berpotensi menurunkan biaya listrik sebesar Rp12 juta/tahun dan berpotensi mengurangi emisi karbon hingga 8,58 ton CO_2/tahun.

This Energy Village was developed in the Gemilang program which is assisted by PEP Pendopo and is located in Musi Rawas Regency, South Sumatra. This program utilizes the potential of areca nut derivatives to be processed into various products such as ginger betel nut bandrek, mocaff flour, betel nut koping, and others, thereby helping to strengthen the community economy based on MSMEs. New renewable energy based on solar panels with a capacity of 6.6 kWp is used to support the operation of processing equipment such as mixers, ovens, dryers, and electric stoves, all of which contributes to increasing efficiency and production capacity. This system is equipped with a 5 kWh lithium battery, as well as an IOT-based monitoring system through the Deye Cloud Monitoring application for real-time energy management. The use of EBT in the DEB Pendopo Community - Gemilang has the potential to reduce electricity costs by Rp12 million/year and has the potential to reduce carbon emissions by up to 8.58 tons of CO_2/year.



DEB Jatibarang Community
JARI TANGAN

Desa Energi ini dikembangkan melalui program Jari Tangan yang dibina oleh PEP Jatibarang dan berlokasi di Kabupaten Indramayu, Jawa Barat. Program ini ditujukan untuk mendukung aktivitas pertanian terpadu masyarakat, khususnya dalam proses penyemaian, pembibitan, penanaman, serta perawatan tanaman hortikultura. Pemanfaatan energi baru terbarukan melalui Pembangkit Listrik Tenaga Surya (PLTS) berkapasitas 4,4 kWp turut menunjang operasional laboratorium pertanian yang dimiliki komunitas. PLTS ini dilengkapi dengan teknologi IoT dan aplikasi Growatt untuk *monitoring online*, serta didukung penyimpanan energi melalui baterai lithium berkapasitas 5 kWh. Pemanfaatan PLTS pada DEB Jatibarang Community berpotensi menurunkan biaya listrik hingga Rp8 juta per tahun, dan mengurangi emisi karbon sekitar 5,720 ton CO_2/tahun.

This Energy Village was developed through the Jari Tangan program assisted by PEP Jatibarang and is located in Indramayu Regency, West Java. This program is intended to support integrated agricultural activities of the community, especially in the process of sowing, breeding, planting, and caring for horticultural plants. The use of new renewable energy through a 4.4 kWp Solar Power Plant (PLTS) also supports the operation of the agricultural laboratory owned by the community. This PLTS is equipped with IoT technology and the Growatt application for online monitoring, and is supported by energy storage through a 5 kWh lithium battery. The use of PLTS at the DEB Jatibarang Community has the potential to reduce electricity costs by up to Rp8 million per year, and reduce carbon emissions by around 5,720 tons of CO_2/year.





DEB Subang Community
PURNAMA SUBANG

Desa Energi ini dikembangkan pada program sosial Sahabat Purnama, binaan PEP Subang, yang berlokasi di Kabupaten Subang, Jawa Barat. Program ini berfokus pada pemberdayaan sosial pekerja migran dan keluarga serta purna PMI melalui kegiatan seperti pengembangan budidaya mangga dengan teknologi UHDP, pembibitan pohon, dan penguatan produk UMKM. Energi baru terbarukan berbasis panel surya berkapasitas 6,6 kWp digunakan untuk mendukung operasional sistem penyiraman mangga dengan teknologi *sprinkle system* dan pompa air. Sistem ini turut dilengkapi teknologi IOT dengan pemantauan melalui aplikasi Deye Cloud serta penyimpanan energi menggunakan baterai lithium berkapasitas 5 kWh. Pemanfaatan PLTS di DEB Subang Community berpotensi menurunkan biaya listrik hingga Rp12 juta per tahun dan berpotensi mengurangi emisi sebesar 8,58 ton CO_2 per tahun.

This Energy Village was developed in the Sahabat Purnama social program, assisted by PEP Subang, located in Subang Regency, West Java. This program focuses on the social empowerment of migrant workers and their families and former PMI through activities such as developing mango cultivation with UHDP technology, tree nurseries, and strengthening MSMEs products. New renewable energy based on solar panels with a capacity of 6.6 kWp is used to support the operation of the mango watering system with sprinkler system technology and water pumps. This system is also equipped with IOT technology with monitoring through the Deye Cloud application and energy storage using a 5 kWh lithium battery. The use of PLTS in the DEB Subang Community has the potential to reduce electricity costs by up to Rp12 million per year and has the potential to reduce emissions by 8.58 tons of CO_2 per year.



DEB PHSS Community
BALANIPA

Balanipa merupakan program pemberdayaan sosial binaan PHSS yang berlokasi di Kabupaten Kutai Kartanegara, Kalimantan Timur. Program ini mengusung pendekatan inklusif dengan melibatkan kelompok rentan, khususnya perempuan, melalui kegiatan utama berupa pengolahan daur ulang limbah tali kapal bekas. Penerapan energi baru terbarukan melalui PLTS berkapasitas 4,4 kWp digunakan untuk mendukung operasional pemintalan tali bekas kapal Balanipa Rope Technology atau BaroTech. PLTS ini dilengkapi dengan sistem *monitoring* berbasis IoT menggunakan aplikasi Growatt serta baterai lithium berkapasitas 5 kWh untuk penyimpanan energi. Pemanfaatan PLTS di DEB PHSS Community berpotensi menurunkan biaya listrik hingga Rp8 juta per tahun dan berpotensi mengurangi emisi karbon sebesar 5,72 ton CO_2 per tahun.

Balanipa is a social empowerment program assisted by PHSS located in Kutai Kartanegara Regency, East Kalimantan. This program carries an inclusive approach by involving vulnerable groups, especially women, through the main activity of recycling waste from used ship ropes. The application of new renewable energy through a 4.4 kWp PLTS is used to support the operation of the Balanipa Rope Technology or BaroTech used ship rope spinning. This PLTS is equipped with an IoT-based monitoring system using the Growatt application and a 5 kWh lithium battery for energy storage. The use of PLTS in the DEB PHSS Community has the potential to reduce electricity costs by up to Rp8 million per year and has the potential to reduce carbon emissions by 5.72 tons of CO_2 per year.



DEB PHKT - DOBS Community

SEMUR CENDAWAN

Program Semur Cendawan adalah bagian dari upaya pemberdayaan masyarakat dalam program Desa Energi Berdikari (DEB). Program ini terintegrasi dengan kegiatan CSR Pertamina Hulu Energi (PHKT) melalui inisiatif "Semai Jamur dengan Cerdas dan Berwawasan Pangan". Program ini dilaksanakan di Kelurahan Waru, Kecamatan Waru, Kabupaten Penajam Paser Utara, Kalimantan Timur. Program ini mendukung penuh aktivitas dari hulu ke hilir dalam budidaya jamur Semur Cendawan, mulai dari penyediaan sumber energi untuk mesin *autoclave*, pengepresan media tanam, hingga pembuatan produk turunan seperti UMKM Bumantara. Energi juga digunakan untuk blower kompor pada program Kompor Jelita (Jelantah untuk Energi Hibrida Terbarukan), serta pengabutan rumah cendawan secara efisien. Pemanfaatan PLTS berkapasitas 4,4 kWp yang dilengkapi sistem IoT menggunakan aplikasi Deye Cloud Monitoring serta baterai lithium 5 kWh ini berpotensi menurunkan biaya listrik sebesar Rp8 juta per tahun dan berpotensi mengurangi emisi hingga 5,72 ton CO_2 per tahun.

Semur Cendawan Program is a part of the community empowerment efforts in the Independent Energy Village (DEB) program. This program is integrated with the CSR activities of Pertamina Hulu Energi (PHKT) through the "Smart Mushroom Seedlings and Food Insight" initiative. This program is implemented in Waru Village, Waru District, Penajam Paser Utara Regency, East Kalimantan. This program fully supports activities from upstream to downstream in the cultivation of Semur Cendawan Mushroom, starting from providing energy sources for autoclave machines, pressing planting media, to making derivative products such as Bumantara MSMEs. Energy is also used for the stove blower in the Kompor Jelita (Used Oil for Renewable Hybrid Energy) program, as well as efficient fogging of mushroom houses. The use of a 4.4 kWp capacity PLTS equipped with an IoT system using the Deye Cloud Monitoring application and a 5 kWh lithium battery has the potential to reduce electricity costs by Rp8 million per year and has the potential to reduce emissions by up to 5.72 tons of CO_2 per year.



DEB JTB Community
AGROSILVOPASTORAL

Program ini merupakan inisiatif pemberdayaan yang dibina oleh PEPC JTB dan berlokasi di Desa Bandungrejo, Kecamatan Ngasem, Kabupaten Bojonegoro. Bersama Lembaga Masyarakat Desa Hutan (LMDH), program ini mengintegrasikan kehutanan, pertanian, peternakan, dan perikanan dalam sistem *Agrosilvopastoral Fishery* yang berbasis ekologi dan berkelanjutan. Kegiatan mencakup penanaman pohon MPTS (*Multi Purpose Tree Species*), budidaya kambing, pengelolaan limbah ternak menjadi pupuk organik, serta pengembangan perikanan untuk mendukung ketahanan pangan dan lingkungan. Sebagai dukungan terhadap transisi energi bersih, program ini memanfaatkan sistem PLTS dengan kapasitas 8,72 kWp, didukung baterai lithium 10 kWh, dan terhubung dengan aplikasi Growatt untuk IoT *monitoring online*. Energi dari PLTS digunakan untuk operasional sistem irigasi tanaman MPTS serta budidaya kambing dan perikanan. Manfaat PLTS dalam program ini berpotensi mencakup penghematan biaya listrik hingga Rp16 juta per tahun dan berpotensi mengurangi emisi karbon sebesar 11,34 ton CO_2/tahun.

This program is an empowerment initiative assisted by PEPC JTB and is located in Bandungrejo Village, Ngasem District, Bojonegoro Regency. Together with the Forest Village Community Institution (LMDH), this program integrates forestry, agriculture, livestock, and fisheries in an ecologically based and sustainable Agrosilvopastoral Fishery system. The activities include planting MPTS (Multi-Purpose Tree Species) trees, goat farming, managing livestock waste into organic fertilizer, and developing fisheries to support food and environmental security. As support for the clean energy transition, this program utilizes a PLTS system with a capacity of 8.72 kWp, supported by a 10 kWh lithium battery, and connected to the Growatt application for online IoT monitoring. Energy from the PLTS is used for the operation of the MPTS plant irrigation system as well as goat and fisheries cultivation. The benefits of PLTS in this program have the potential to include electricity cost savings of up to Rp16 million per year and have the potential to reduce carbon emissions by 11.34 tons of CO_2/year.



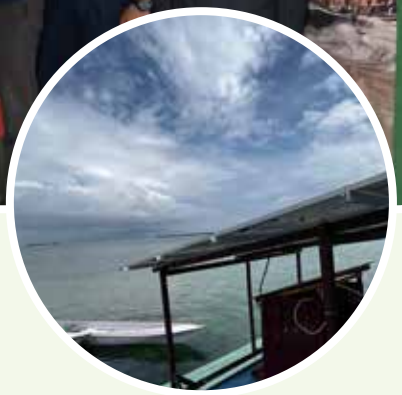


DEB Papua Community
MATA HATI MALASIGI

Desa Energi ini dikembangkan melalui program Mata Hati Malasigi yang merupakan binaana PEP Papua dan berlokasi di Distrik Klayili. Program ini mengusung pengembangan ekowisata minat khusus yang dikelola secara berkelanjutan oleh masyarakat setempat sebagai upaya pemanfaatan sumber daya hutan sekaligus peningkatan ekonomi lokal. Aktivitas ekowisata yang ditawarkan meliputi *homestay* komunitas, *bird watching*, wisata pemandian air panas, dan penelusuran goa. Untuk mendukung operasional homestay serta kegiatan pengolahan produk lokal seperti keripik pisang, praogram ini dilengkapi dengan Pembangkit Listrik Tenaga Surya (PLTS) berkapasitas 8,72 kWp. Sistem energi ini menggunakan lithium *battery* berkapasitas 10 kWh dan dilengkapi fitur pemantauan berbasis IoT melalui aplikasi Deye Cloud Monitoring untuk memastikan efisiensi pemanfaatan energi. Pemanfaatan EBT di DEB Papua Community – Mata Hati Malasigi berpotensi menurunkan biaya listrik sebesar Rp16 juta/tahun dan berpotensi mengurangi emisi karbon hingga 11,34 ton CO_2/tahun.

This Energy Village was developed through the Mata Hati Malasigi program, which is assisted by PEP Papua and is located in the Klayili District. This program promotes the development of special interest ecotourism that is managed sustainably by the local community as an effort to utilize forest resources while increasing the local economy. Ecotourism activities offered include community homestays, bird watching, hot spring tourism, and cave exploration. To support the operation of homestays and local product processing activities such as banana chips, this program is equipped with a Solar Power Plant (PLTS) with a capacity of 8.72 kWp. This energy system uses a 10 kWh lithium battery and is equipped with IoT-based monitoring features through the Deye Cloud Monitoring application to ensure efficient energy utilization. The use of EBT in the DEB Papua Community - Mata Hati Malasigi has the potential to reduce electricity costs by Rp16 million/year and has the potential to reduce carbon emissions by up to 11.34 tons of CO_2/year.





DEB Badak Community
MENARA MARINA

Desa Energi ini dikembangkan melalui program Menara Marina yang merupakan binaan Badak LNG dan berlokasi di Kota Bontang, Kalimantan Timur. Program ini hadir untuk mendukung pengembangan resto apung yang memanfaatkan potensi sumber daya laut seperti rumput laut, perikanan, dan pariwisata secara berkelanjutan guna meningkatkan perekonomian masyarakat pesisir. Sebagai bentuk dukungan terhadap operasional resto apung, telah dibangun sistem Pembangkit Listrik Tenaga Surya (PLTS) berkapasitas 4,4 kWp. Sistem ini dilengkapi dengan lithium *battery* berkapasitas 5 kWh serta pemantauan energi berbasis Internet of Things (IoT) melalui aplikasi Deye Cloud Monitoring untuk memastikan efisiensi penggunaan energi. Pemanfaatan EBT di DEB Badak Community – Menara Marina berpotensi menurunkan biaya listrik sebesar Rp8 juta/tahun dan berpotensi mengurangi emisi karbon hingga 5,72 ton CO_2/tahun.

This Energy Village was developed through the Menara Marina program which is assisted by Badak LNG and is located in Bontang City, East Kalimantan. This program is here to support the development of floating restaurants that utilize the potential of marine resources such as seaweed, fisheries, and tourism sustainably to improve the economy of coastal communities. As a form of support for the operation of the floating restaurant, a Solar Power Plant (PLTS) system with a capacity of 4.4 kWp has been built. This system is equipped with a 5 kWh lithium battery and Internet of Things (IoT)-based energy monitoring through the Deye Cloud Monitoring application to ensure efficient energy use. The use of EBT at DEB Badak Community - Menara Marina has the potential to reduce electricity costs by Rp8 million/year and has the potential to reduce carbon emissions by up to 5.72 tons of CO_2/year.

PEMBERDAYAAN MASYARAKAT KOMUNITAS ADAT
EMPOWERMENT OF INDIGENOUS COMMUNITIES

[GRI 3-3, 411] [SASB EM-EP-210a.3]



Dengan tersebarnya wilayah kerja di berbagai daerah di Indonesia, PHE Subholding Upstream turut melibatkan dan memberdayakan masyarakat adat yang ada di sekitar wilayah kerja perusahaan. Seperti masyarakat adat Suku Sakai, Ogan, Suku Anak Dalam, Suku Dayak, Suku Kutai, Suku Togong Tanga dan suku lainnya yang masuk ke dalam lingkup wilayah kerja perusahaan. Selama tahun 2024, perusahaan telah memberikan manfaat kepada masyarakat adat dan lingkungan dengan berbagai program yang melibatkan dan memberdayakan masyarakat adat tersebut. Seperti PT Pertamina Hulu Rokan yang memiliki wilayah kerja di Rokan dan beririsan dengan masyarakat Suku Sakai. Perusahaan telah berkomitmen bersama Suku Sakai yang salah satunya adalah memberikan akses pendidikan jenjang S1 kepada 83 orang dengan harapan dapat menjadikan generasi penerus yang maju serta tidak lupa melestarikan budaya dan adat istiadat Suku Sakai itu sendiri.

Program Beasiswa Masyarakat Adat Sobat Bumi (MASOBI) sendiri merupakan salah satu program CID *(Community Involvement & Development)* atau program pengembangan masyarakat PHE hasil kolaborasi dengan PT Pertamina (Persero), Pertamina Foundation (PF), dan Universitas Pertamina yang berfokus pada pengembangan masyarakat adat melalui beasiswa pendidikan perguruan tinggi. Program ini dilatarbelakangi oleh upaya PHE dalam mengimplementasikan aspek Sosial dalam ESG Perusahaan untuk menghormati hak-hak masyarakat adat, salah satunya hak untuk mendapatkan pendidikan yang layak. Hal ini juga bagian dari dukungan terhadap pencapaian Tujuan 4 pada SDGs yaitu Pendidikan Berkualitas khususnya bagi masyarakat adat di wilayah kerja Perusahaan. Beasiswa MASOBI memberikan kesempatan kepada 7 putra-putri masyarakat adat di pula Jawa, Kalimantan, dan Papua untuk menempuh pendidikan Strata 1 di Universitas Pertamina. [GRI 411-1, 413-2]

With the spread of working areas in various regions in Indonesia, PHE Subholding Upstream also involves and empowers indigenous communities around the company's working areas. Such as the indigenous communities of Sakai, Ogan, Anak Dalam, Dayak, Kutai, Togong Tanga and other tribes within the scope of the company's working areas. During 2024, the company has provided benefits to indigenous communities and the environment with various programs that involve and empower these indigenous communities. Such as PT Pertamina Hulu Rokan which has a working area in Rokan and overlaps with Sakai community. The company has made a commitment with Sakai Tribe, one of which is to provide access to undergraduate education to 83 people in the hope of becoming the next generation who are advanced and not forgetting to preserve the culture and customs of Sakai Tribe itself.

The Sobat Bumi Indigenous Community Scholarship Program (MASOBI) itself is one of PHE's CID (Community Involvement & Development) or community development programs resulting from collaboration with PT Pertamina (Persero), Pertamina Foundation (PF), and Pertamina University which focuses on developing indigenous communities through higher education scholarships. This program is motivated by PHE's efforts to implement the Social aspect in the Company's ESG to respect the rights of indigenous peoples, one of which is the right to receive a decent education. This is also a part of the support for achieving Goal 4 of the SDGs, namely Quality Education, especially for indigenous peoples in the Company's working areas. The MASOBI Scholarship provides an opportunity for 7 sons and daughters of indigenous peoples in Java, Kalimantan, and Papua islands to pursue a Bachelor's degree at Pertamina University. [GRI 411-1, 413-2]

PEMBERDAYAAN USAHA MIKRO KECIL DAN MENENGAH (UMKM)
EMPOWERMENT OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSMES)

Program pemberdayaan Usaha Mikro, Kecil, dan Menengah yang dicanangkan oleh PHE Subholding Upstream memiliki tujuan untuk meningkatkan kemampuan bersaing usaha masyarakat agar menjadi tangguh dan mandiri, juga dapat meningkatkan kesejahteraan masyarakat. Sepanjang tahun 2024, tercatat sedikitnya >370 UMKM dan 560 Mitra Binaan yang tersebar di seluh daerah sekitar wilayah kerja PHE Subholding Upstream, dan termasuk di dalamnya masyarakat lokal yang berada di daerah terpencil. Masyarakat yang berada di daerah terpencil ini juga mendapatkan pembinaan, pelatihan, dan juga pendampingan. Komitmen perusahaan dalam meningkatkan kemampuan dan kesempatan bagi semua pelaku UMKM ini selaras dengan pemenuhan target-target dari Tujuan Pembangunan Berkelanjutan (TPB) secara nasional.

The Micro, Small, and Medium Enterprises empowerment program initiated by PHE Subholding Upstream aims to improve the competitiveness of community businesses to become resilient and independent, and to improve community welfare. Throughout 2024, there were at least >370 MSMEs and 560 Assisted Partners spread across all areas around the working areas of PHE Subholding Upstream, including local communities in remote areas. Communities in remote areas also receive coaching, training, and assistance. The company's commitment to improving the capabilities and opportunities for all MSMEs actors is in line with the fulfillment of the targets of the Sustainable Development Goals (TPB) nationally.

BIAYA TANGGUNG JAWAB SOSIAL - INVESTASI SOSIAL
SOCIAL RESPONSIBILITY COSTS - SOCIAL INVESTMENT

Selama tahun 2024, PHE Subholding Upstream telah berinvestasi secara sosial masyarakat yang jumlahnya mencapai Rp347,54 miliar atau sekitar USD23,16 juta. Jumlah ini didapatkan dari realisasi anggaran program pemberdayaan masyarakat secara langsung, donasi, pembangunan infrastruktur, maupun program pendukung lainnya di daerah sekitar wilayah kerja perusahaan. Realisasi ini mengalami peningkatan sebanyak 57,18% dari tahun sebelumnya.

During 2024, PHE Subholding Upstream has invested socially in the community amounting to Rp347.54 billion or around USD23.16 million. This amount was obtained from the realization of the direct budget of community empowerment program, donations, infrastructure development, and other supporting programs in the areas around the company's working areas. This realization increased by 57.18% from the previous year.

TANGGUNG JAWAB PRODUK DAN PENGEMBANGAN
PRODUCT AND DEVELOPMENT RESPONSIBILITY

EVALUASI KEAMANAN PRODUK DAN PENGELOLAAN DAMPAK DARI PRODUK [OJK F.27, F.28] [GRI 3-3, 416]

Demi memastikan keamanan berjalannya kerja perusahaan dari mulai proses operasi hingga produk diterima konsumen, PHE Subholding Upstream menerapkan *Sustainability PERTAMINA Expectations for HSSE Management Excellence* (SUPREME) untuk mengelola faktor risiko keselamatan yang mungkin terjadi. Prosedur yang menjadi pedoman PHE Subholding Upstream diambil dari standar prosedur operasi yang berlaku di PT Pertamina (Persero), seperti prosedur pengelolaan dampak dari produk apabila terjadi kebocoran minyak mentah atau gas bumi. Tercatat sepanjang tahun 2024 tidak ada kebocoran minyak mentah maupun gas bumi yang dapat membahayakan keamanan dan keselamatan masyarakat maupun lingkungan. [GRI 416-1, 416-2]

LAYANAN ATAS PRODUK DAN/ATAU JASA YANG SETARA KEPADA KONSUMEN [OJK F.17]

Komitmen PHE Subholding Upstream dalam melibatkan dan memberdayakan masyarakat ini termasuk di dalamnya memfasilitasi masyarakat dengan pelayanan yang sama, tanpa diskriminasi, memandang latar belakang, status sosial, atau karakteristik lainnya. Perusahaan memberikan layanan yang adil dan setara kepada semua masyarakat yang menjadi konsumen, tanpa membeda-bedakan di antara mereka, dan memastikan bahwa produk juga jasa yang tersedia dapat diakses dengan mudah oleh seluruh masyarakat atau konsumen. Perusahaan juga berkomitmen untuk menyediakan layanan pelanggan yang informatif, ramah, dan responsif kepada seluruh konsumen. Seperti memberikan informasi yang dibutuhan, memberikan respon yang cepat atas pertanyaan ataupun keluhan yang diterima, juga memberi bantuan jika diperlukan. Layanan yang diberikan berupa produk maupun jasa juga memiliki kualitas yang sama, setara, dan adil, tidak tergantung pada karakteristik pribadi, status sosial, atau hal lainnya. Perusahaan berkomitmen untuk memberikan semua konsumen produk dan jasa yang sama, dengan standar kualitas yang terjaga.

INDEKS KEPUASAN PELANGGAN DAN PENARIKAN PRODUK [OJK F.29, F.30]

Setiap tahunnya, PHE Subholding Upstream melakukan survey kepuasan pelanggan sebagai praktik *monitoring* dan evaluasi guna memahami persepsi, kebutuhan, serta tanggapan

PRODUCT SAFETY EVALUATION AND PRODUCT IMPACT MANAGEMENT
[OJK F.27, F.28] [GRI 3-3, 416]

In order to ensure the safety of the company's work starting from the operational process until the product is received by consumers, PHE Subholding Upstream implements Sustainability PERTAMINA Expectations for HSSE Management Excellence (SUPREME) to manage potential safety risk factors. The procedures that serve as guidelines for PHE Subholding Upstream are taken from the standard operating procedures applicable at PT Pertamina (Persero), such as procedures for managing the impact of products in the event of a crude oil or natural gas leak. It was recorded that throughout 2024 there were no crude oil or natural gas leaks that could endanger the safety and security of the community or the environment. [GRI 416-1, 416-2]

EQUAL SERVICES FOR PRODUCTS AND/OR SERVICES FOR CONSUMERS [OJK F.17]

PHE Subholding Upstream's commitment to involving and empowering the community includes facilitating the community with the same service, without discrimination, considering background, social status, or other characteristics. The company provides fair and equal services for all consumers, without discriminating them, and ensures that the products and services available can be easily accessed by all people or consumers. The company is also committed to providing informative, friendly, and responsive customer service to all consumers. Such as providing the information needed, providing a quick response to questions or complaints received, and also providing assistance if needed. The services provided in the form of products or services also have the same quality, are equal, and fair, regardless of personal characteristics, social status, or other things. The company is committed to providing all consumers with the same products and services, with maintained quality standards.

CUSTOMER SATISFACTION INDEX AND PRODUCT RECALLS [OJK F.29, F.30]

Every year, PHE Subholding Upstream conducts a customer satisfaction survey as a monitoring and evaluation practice to understand perceptions, needs, and satisfaction responses to

kepuasan terhadap produk maupun layanan yang diberikan. Pada tahun 2024 ini hasil survey menyatakan rata-rata Indeks Kepuasan Pelanggan yang didapatkan sebesar 4,54 dari skala 5,00. Hasil survey ini menunjukkan peningkatan dari rata-rata IKP tahun sebelumnya sebesar 4,51. Hal ini dapat membuktikan konsistensi dari komitmen PHE Subholding Upstream dalam membenahi masalah sehingga pernyataan puas dari konsumen terhadap layanan dan kualitas produk yang dihasilkan terus meningkat. [OJK F.30]

the products and services provided. In 2024, the survey results stated that the average Customer Satisfaction Index obtained was 4.54 from a scale of 5.00. The results of this survey show an increase from the previous year's IKP average of 4.51. This can prove the consistency of PHE Subholding Upstream's commitment to fixing problems so that consumer satisfaction statements regarding the services and quality of products produced continue to increase. [OJK F.30]

» Indeks Kepuasan Pelanggan
Customer Satisfaction Index

Kategori Category	2024	2023	2022
Kuantitas Produk Product Quantity	4,57	4,46	4,31
Kualitas Produk Product Quality	4,46	4,47	4,30
Kualitas Layanan Service Quality	4,59	4,57	4,29
Rata-Rata Average	4,54	4,51	4,30

Berbagai kategori yang diulas oleh konsumen seperti Kuantitas Produk, Kualitas Produk, Kualitas Layanan, memiliki peningkatan yang signifikan. Hal ini menunjukkan bahwa terdapat perbaikan dari tahun sebelumnya dan ditanggapi dengan serius oleh perusahaan demi kepuasan konsumen. Rata-rata, konsumen menyatakan puas dengan kesesuaian volume gas, kesesuaian kualitas pasokan gas, kemudahan koordinasi yang termasuk di dalamnya penanganan keluhan pelanggan. Pada tahun 2024 pun tidak ada penarikan produk oleh pelanggan yang berlandaskan ketidakpuasan. [OJK F.29]

Various categories reviewed by consumers such as Product Quantity, Product Quality, Service Quality, have significant increases. This shows that there has been an improvement from the previous year and is taken seriously by the company for consumer satisfaction. On average, consumers expressed satisfaction with the suitability of gas volume, suitability of gas supply quality, ease of coordination including handling customer complaints. In 2024, there were no product recalls by customers based on dissatisfaction. [OJK F.29]

Dalam rangka menjaga hubungan yang baik dan meningkatkan kepuasan para pelanggan Subholding Upstream Pertamina, perusahaan senantiasa berkomitmen untuk meningkatkan pelayanan dan perlindungan pelanggan. Peningkatan pelayanan kepada pelanggan dilakukan melalui program *Customer Day* dan forum koordinasi dengan pelanggan yang diadakan secara berkala dimana para pelanggan dapat menyampaikan apresiasi, kritik maupun saran secara langsung kepada manajemen perusahaan. Komitmen perusahaan untuk perlindungan pelanggan direfleksikan dengan dilakukannya resertifikasi tahunan *meter custody* untuk menjamin kesesuaian kuantitas pasokan kepada pelanggan. Pada tahun 2024, Perusahaan mengeluarkan biaya sebesar Rp501 juta untuk resertifikasi 12 *meter custody* pada wilayah kerja ONWJ. Biaya resertifikasi *meter custody* ini juga dikeluarkan di berbagai wilayah kerja dan lapangan yang dikelola oleh Perusahaan.

In order to maintain good relations and increase customer satisfaction of Pertamina Upstream Subholding, the company is always committed to improving customer service and protection. Improvement of customer service is carried out through the Customer Day program and coordination forums with customers which are held periodically where customers can convey appreciation, criticism or suggestions directly to the company's management. The company's commitment to customer protection is reflected in the annual recertification of meter custody to ensure the suitability of the quantity of supply to customers. In 2024, the Company spent Rp501 million for recertification of 12 meter custody in the ONWJ work area. The cost of recertification of meter custody is also incurred in various work areas and fields managed by the Company.

INOVASI UNTUK KEBERLANJUTAN [OJK F.26]

Dalam menghadapi tantangan untuk pemenuhan kebutuhan energi nasional, PHE Subholding Upstream selalu berupaya melakukan inovasi keberlanjutan. Pengelolaan inovasi keberlanjutan ini dilakukan dalam mempertimbangkan beberapa hal:

a. Keberlanjutan dalam mengelola Upstream *oil and gas innovation dengan fokus quality & knowledge management, oil & gas exploration, oil & gas development* dan production, HSSE, serta bidang lain yang terkait dalam pengelolaan dan penciptaan inovasi teknologi minyak dan gas bumi;
b. Menjalankan prinsip *continuous improvement* dalam pengelolaan inovasi teknologi;
c. Memiliki commercial aspect, baik secara internal maupun eksternal;
d. Memastikan bahwa seluruh kegiatan pengelolaan inovasi teknologi berjalan sesuai dengan fokus bisnis, strategi, dan target dalam pengurangan emisi.

Usaha selanjutnya yang dilakukan PHE Subholding Upstream adalah dengan melakukan kerja sama antara Fungsi *Upstream Innovation* dengan Fungsi *Human Capital* melalui Subfungsi *Quality Management Subholding Upstream* untuk melakukan implementasi Pengelolaan Kekayaan Intelektual (KI). Pengelolaan KI ini dinilai efektif untuk melindungi inovasi perusahaan. Melalui aset-aset intelektual tersebut, perusahaan dapat keunggulan kompetitif untuk keberlanjutan, serta mencegah penyalahgunaan dari pihak lain.

Inovasi berkelanjutan lainnya adalah mengenai program reduksi emisi, yang dilakukan melalui inovasi *Carbon Capture & Storage* (CCS) dan studi *Carbon Capture, Utilization and Storage* (CCUS). Pengembangan inovasi ini terus dilakukan guna mendorong transformasi bisnis ke arah green economy dan ekonomi rendah karbon. PHE Subholding Upstream terus melakukan kajian terkait potensi dekarbonisasi yang tersebar di berbagai wilayah kerja, seperti di studi CCS Central Sumatra Basin, CCS South Sumatra Basin, CCS Hubs Asri Basin, CCS Gundih Field, CCS East Kalimantan Basin, CCS Central Sulawesi Basin, CCS Subang, CCUS CO_2 EOR Ramba, CCUS CO_2 EOR Jatibarang, dan CCUS CO_2 EOR Sukowati. Hingga kini, reduksi emisi dari CCUS untuk dekarbonisasi di seluruh wilayah kerja PHE Subholding Upstream telah mencapai 5.761 ton karbon ekuivalen, dan diharapkan dapat terus bertambah.

INNOVATION FOR SUSTAINABILITY [OJK F.26]

In facing the challenges to fulfill national energy needs, PHE Subholding Upstream always strives to make sustainability innovations. The management of this sustainability innovation is conducted by considering several things:

a. Sustainability in managing Upstream oil and gas innovation with a focus on quality & knowledge management, oil & gas exploration, oil & gas development and production, HSSE, and other fields related to the management and creation of oil and gas technology innovation;
b. Implementing the principle of continuous improvement in managing technological innovation;
c. Having commercial aspects, both internally and externally;
d. Ensuring that all technological innovation management activities are conducted in accordance with business focus, strategy and targets in reducing emissions.

The next effort made by PHE Subholding Upstream is to collaborate between the Upstream Innovation Function and the Human Capital Function through the Quality Management Subfunction of the Subholding Upstream to implement Intellectual Property (IP) Management. This IP management is considered effective in protecting the company's innovation. Through these intellectual assets, the company can gain a competitive advantage for sustainability, as well as prevent misuse by other parties.

Another sustainable innovation is regarding the emission reduction program, which is conducted through the Carbon Capture & Storage (CCS) innovation and the Carbon Capture, Utilization and Storage (CCUS) study. The development of this innovation continues to be conducted to encourage business transformation towards a green economy and low-carbon economy. PHE Subholding Upstream continues to conduct studies related to the potential for decarbonization spread across various working areas, such as in the studies in CCS Central Sumatra Basin, CCS South Sumatra Basin, CCS Hubs Asri Basin, CCS Gundih Field, CCS East Kalimantan Basin, CCS Central Sulawesi Basin, CCS Subang, CCUS CO_2 EOR Ramba, CCUS CO_2 EOR Jatibarang, and CCUS CO_2 EOR Sukowati. Until now, emission reduction from CCUS for decarbonization throughout the working areas of PHE Subholding Upstream has reached 5,761 tons of carbon equivalent, and is expected to continue to increase.

Program	CO_2 *Capture Potential*	*Study Partner*
CCUS CO_2 EOR Jatibarang	0.146 juta ton CO_2e/ million ton CO_2e	JX/JOGMEC
CCUS CO_2 EOR Sukowati	1 juta ton CO_2e/ million ton CO_2e	LEMIGAS, JAPEX

Usaha berkelanjutan lainnya adalah untuk memperkuat infrastruktur gas dengan LPG *Booster System* di Kilang LNG Badak di Bontang, Kalimantan Timur. Teknologi ini diyakini dapat meningkatkan produksi LPG di wilayah Bontang hingga 323% sebesar 575 m^3 per hari. LPG *Booster System* ini diproyeksi dapat menambah produksi LPG sebesar 1,56 juta m^3 atau 780.000 Metrik Ton selama periode 2022-2027. Inovasi ini

Another ongoing effort is to strengthen the gas infrastructure with the LPG Booster System at the Plant of Badak LNG in Bontang, East Kalimantan. This technology is believed to be able to increase LPG production in Bontang area by 323% of 575 m^3 per day. The LPG Booster System is projected to increase LPG production by 1.56 million m^3 or 780,000 Metric Tons during the period of 2022-2027. This innovation is

dilakukan guna menghasilkan tambahan produksi LPG nasional hingga dapat mengurangi impor LPG, juga untuk memperkuat kontribusi gas pada transisi energi.

PHE Subholding Upstream akan terus berinovasi dalam pengelolaan operasi yang *prudent* dan *excellent* di dalam dan luar negeri secara professional, untuk mewujudkan pencapaian menjadi perusahaan minyak dan gas bumi kelas dunia yang *Environmental Friendly, Societal Responsible Company* dan *Good Governance.*

conducted to produce additional national LPG production to reduce LPG imports, as well as to strengthen gas contribution to the energy transition.

PHE Subholding Upstream will continue to make innovations in managing prudent and excellent operations at home and abroad in a professional manner, to realize the achievement of becoming a world-class oil and gas company that is Environmentally Friendly, Societal Responsible Company and Good Governance.

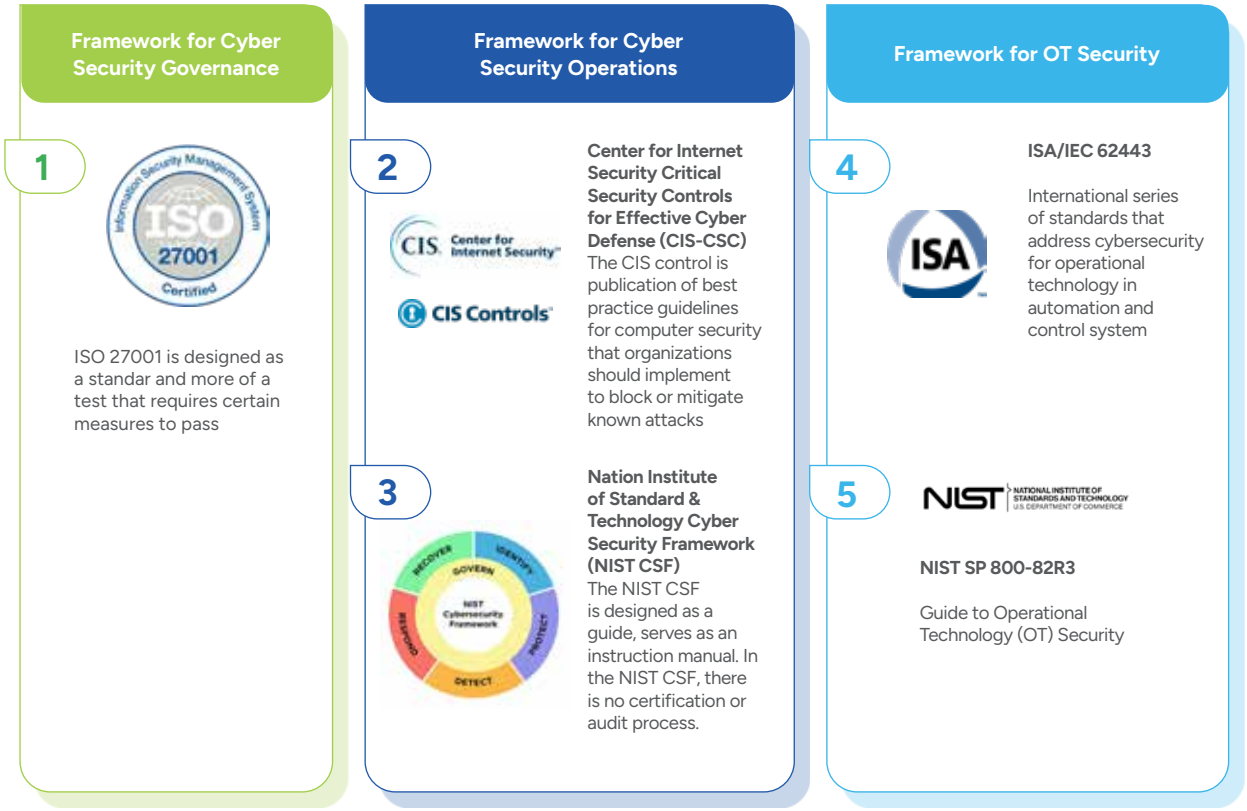
KEAMANAN INFORMASI
INFORMATION SECURITY [GRI 418]

Sebagai perusahaan BUMN yang mengelola aset negara, keamanan informasi tentu menjadi hal yang krusial bagi PHE Subholding Upstream. Sistem perlindungan informasi harus dirancang sedemikian rupa agar dapat memitigasi risiko keamanan informasi, menjaga operasional, dan memenuhi tuntutan keamanan yang semakin kompleks. PT. PHE menekankan pada aspek *People, Process, dan Technology* yang terintegrasi untuk mencapai tujuan. PHE Subholding Upstream berkomitmen untuk terus melakukan pembaruan dan peningkatan keamanan informasi melalui strategi sebagai berikut yang akan dijelaskan lebih lanjut secara mendetail di bawah ini:

As a state-owned company that manages state assets, information security is certainly crucial for PHE Subholding Upstream. The information protection system must be designed in such a way so as to mitigate information security risks, maintain operations, and meet increasingly complex security demands. PT. PHE emphasizes the integrated aspects of People, Process, and Technology to achieve its goals. PHE Subholding Upstream is committed to continuously updating and improving information security through the following strategies which will be explained in more detail below:

1. ***Information Security Governance***
   Tata Kelola Keamanan Informasi merupakan kerangka kerja yang memastikan bahwa keamanan informasi dikelola secara strategis dan terintegrasi dalam seluruh proses bisnis organisasi. Di tengah pesatnya perkembangan teknologi dan meningkatnya ancaman siber, penerapan tata kelola yang baik menjadi kunci dalam melindungi aset informasi, menjaga kepatuhan terhadap regulasi, serta membangun kepercayaan pelanggan dan mitra bisnis. Dengan pendekatan yang sistematis dan berbasis risiko, tata kelola keamanan informasi membantu organisasi dalam mencapai keseimbangan antara perlindungan data dan kelangsungan operasional.
   a. ***Information Security Framework***
      Perusahaan menggunakan kerangka kerja dan praktik terbaik yang dikenal secara internasional sebagai berikut:
      i. ISO 27001:2022 Information Security Management
      ii. Center for Internet Security Critical Security Controls for Effective Cyber Defense (CIS-CSC)
      iii. National Institute of Standard & Technology Cyber Security Framework (NIST CSF)
      iv. International Series of Standard for Operational Technology in Automation and control system (ISA/IEC 62443)
      v. National Institute of Standards and Technology Guide to Operational Technology (OT) Security (NIST SP 800-82 R3)

1. **Information Security Governance**
   Information Security Governance is a framework that ensures that information security is managed strategically and integrated into all of business processes of the organization. Amidst the rapid development of technology and increasing cyber threats, implementing good governance is key to protecting information assets, maintaining regulatory compliance, and building trust with customers and business partners. With a systematic and risk-based approach, information security governance helps organizations achieve a balance between data protection and operational continuity.
   a. **Information Security Framework**
      The company uses the following internationally recognized frameworks and best practices:
      i. ISO 27001:2022 Information Security Management
      ii. Center for Internet Security Critical Security Controls for Effective Cyber Defense (CIS-CSC)
      iii. National Institute of Standard & Technology Cyber Security Framework (NIST CSF)
      iv. International Series of Standard for Operational Technology in Automation and control system (ISA/IEC 62443)
      v. National Institute of Standards and Technology Guide to Operational Technology (OT) Security (NIST SP 800-82 R3)



b. *Information Security Policy*

PT Pertamina Hulu Energi menggunakan kerangka berbasis ISO 27001:2022 (*Information Security Management Systems* (ISMS)) dalam pengaturan Tata Kelola Kelola Keamanan Informasi. PHE Subholding Upstream telah memiliki sistem Tata Kelola Keamanan Informasi yaitu berupa Pedoman dan Tata Kelola Organisasi (TKO) yang berstandard internasional ISO 27001:2022 Sistem Manajemen Keamanan Informasi.

c. *Enterprise Security Architecture (ESA, CS Fabric)*

i. *Enterprise Security Architecture*

Pertamina Hulu Energi telah mengembangkan *Enterprise Cybersecurity Architecture* yang komprehensif berdasarkan pada SABSA *Framework*, sebuah metodologi keamanan informasi yang terstruktur dan berlapis. Implementasi *framework* ini memungkinkan perusahaan untuk menyelaraskan strategi keamanan siber dengan tujuan bisnis dan kebutuhan operasional secara holistik. Melalui pendekatan ini, Pertamina Hulu Energi dapat memastikan bahwa kontrol keamanan diterapkan secara konsisten di seluruh organisasi, dengan mempertimbangkan aspek bisnis, risiko, teknologi, dan manusia. *Enterprise Cybersecurity Architecture* ini menjadi fondasi yang memperkuat postur keamanan siber perusahaan dan meningkatkan ketahanan terhadap ancaman yang terus berkembang dalam lanskap digital yang kompleks.

b. Information Security Policy

PT Pertamina Hulu Energi uses a framework based on ISO 27001:2022 (Information Security Management Systems (ISMS)) in the arrangement of Information Security Governance Management. PHE Subholding Upstream has an Information Security Governance system in the form of Guidelines and Organizational Governance (TKO) which meets the international standard ISO 27001:2022 Information Security Management System.

c. Enterprise Security Architecture (ESA, CS Fabric)

i. Enterprise Security Architecture

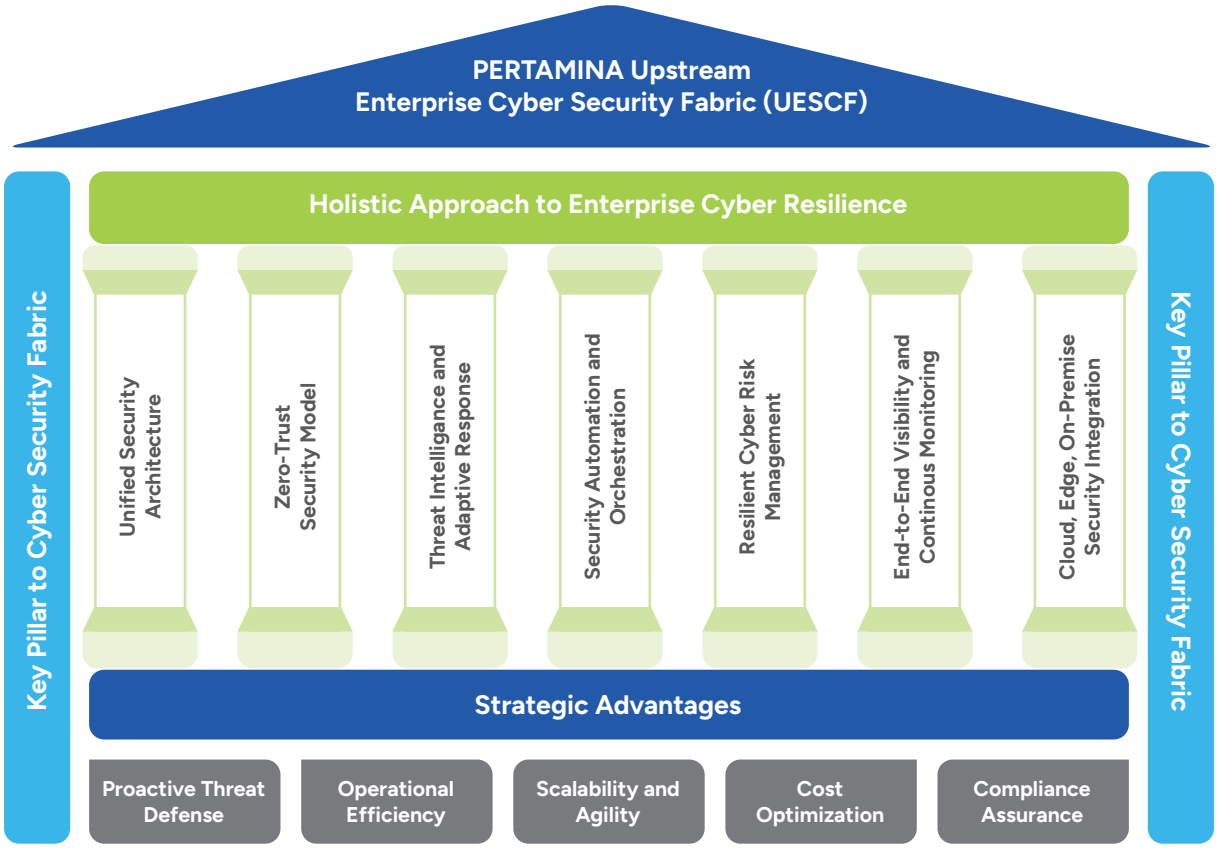
Pertamina Hulu Energi has developed a comprehensive Enterprise Cybersecurity Architecture based on the SABSA Framework, a structured and layered information security methodology. The implementation of this framework allows the company to align cybersecurity strategies with business objectives and operational needs holistically. Through this approach, Pertamina Hulu Energi can ensure that security controls are applied consistently across the organization, taking into account business, risk, technology, and human aspects. This Enterprise Cybersecurity Architecture is the foundation that strengthens the company's cybersecurity posture and increases resilience to evolving threats in a complex digital landscape.

ii. PERTAMINA Upstream Enterprise Cyber Security Fabric (UECSF)

Dalam era di mana transformasi digital mempercepat operasional bisnis, organisasi menghadapi lanskap ancaman yang semakin kompleks dan terus berkembang. Untuk mengatasi tantangan ini, perusahaan harus mengadopsi *Cyber Security Fabric* sebuah arsitektur yang *cohesive*, *adaptive*, dan *resilient* yang dirancang untuk mengintegrasikan kontrol keamanan di seluruh ekosistem digital organisasi.

ii. PERTAMINA Upstream Enterprise Cyber Security Fabric (UECSF)

In an era where digital transformation is accelerating business operations, organizations face an increasingly complex and evolving threat landscape. To address these challenges, enterprises must adopt a Cybersecurity Fabric a cohesive, adaptive, and resilient designed to integrate security controls across the digital ecosystem of the organization.



Enterprise Cyber Security Fabric adalah kerangka strategis yang menghubungkan berbagai kapabilitas keamanan, teknologi, dan intelijen ancaman ke dalam arsitektur keamanan yang terpadu. Pendekatan ini memastikan perlindungan yang menyeluruh, visibilitas berkelanjutan, serta respons ancaman yang adaptif di lingkungan *on-premises, cloud, hybrid,* dan *edge*. Dengan mendorong interoperabilitas dan otomatisasi, Cyber Security Fabric meningkatkan penerapan *zero-trust*, mitigasi risiko, serta kepatuhan terhadap regulasi di seluruh perusahaan.

Enterprise Cybersecurity Fabric is a strategic framework that connects security capabilities, technologies, and threat intelligence into a unified security architecture. This approach ensures comprehensive protection, continuous visibility, and adaptive threat response across on-premises, cloud, hybrid, and edge environments. By driving interoperability and automation, Cybersecurity Fabric enhances zero-trust deployments, risk mitigation, and regulatory compliance across the enterprise.

d. *Information Security Audit* (ISO 27001)

PT Pertamina Hulu Energi (PHE) memperoleh sertifikasi ISO 27001:2013 pada 7 Januari 2021, yang berlaku hingga 6 Januari 2023. Pada tahun 2023, PHE meningkatkan versi sertifikasinya ke ISO 27001:2022, dan sertifikasi terbaru ini berhasil diperoleh pada 14 Februari 2024. Selanjutnya, surveillance audit pertama untuk sertifikasi ISO 27001:2022 dilaksanakan pada November 2024, di mana PHE berhasil mempertahankan status sertifikasi, menunjukkan komitmen Perusahaan dalam menerapkan standar keamanan informasi yang sesuai dengan regulasi dan praktik terbaik.

d. Information Security Audit (ISO 27001)

PT Pertamina Hulu Energi (PHE) obtained ISO 27001:2013 certification on January 7, 2021, which is valid until January 6, 2023. In 2023, PHE upgraded its certification to ISO 27001:2022, and this latest certification was successfully obtained on February 14, 2024. Furthermore, the first surveillance audit for ISO 27001:2022 certification was conducted in November 2024, where PHE successfully maintained its certification status, demonstrating the Company's commitment to implementing information security standards in accordance with regulations and best practices.



bsi.

Certificate of Registration

INFORMATION SECURITY MANAGEMENT SYSTEM - ISO/IEC 27001:2022

This is to certify that:

PT Pertamina Hulu Energi
PHE Tower, 20th Floor
Jl. Let. Jen. TB Simatupang Kav. 99
Kebagusan, Pasar Minggu,
Jakarta Selatan
Indonesia 12520

Holds Certificate No: **IS 733704**

and operates an Information Security Management System which complies with the requirements of ISO/IEC 27001:2022 for the following scope:

Information Security Management Systems (ISMS) applies to the Provision of Information Protection, Cyber Security and Digital Defense Services in Upstream Oil and Gas Business Activities consisting of Perimeter Security Services, Web Security Services, Endpoint Security Services, Remote Working Security Services, Activity Monitoring Services and Data Security Services provided to Internal Users at Head Office managed by the Information Technology Subdirectorate of PT Pertamina Hulu Energi Subholding Upstream. This is in accordance with the Statement of Applicability No: SMKI-002/PHE53000/2023-S0 rev.0 dated 18 July 2023.

Previous certificate expires on 06/01/2024
Recertification audit ended 13/12/2023

For and on behalf of BSI:

Emmanuel Herve, Managing Director, ASEAN

Original Registration Date: 2021-01-07
Latest Revision Date: 2024-02-14
Effective Date: 2024-02-14
Expiry Date: 2027-01-06

e. *Independent Assessment*

Bagian dari kepatuhan PT. PHE atas Peraturan Presiden (Perpres) No. 82 Tahun 2022 tentang Perlindungan Infrastruktur Informasi Vital (IIV) yang mengatur perihal pengukuran maturitas keamanan informasi, PT. PHE secara rutin melakukan pengukuran maturitas Cyber Security yaitu Cyber Security Maturity (CSM) dan pengukuran Tingkat Maturitas Penanganan Insiden (TMPI).

Berikut adalah hasil atas Assessment Maturitas Keamanan Informasi yang dilakukan oleh Fungsi IT PT. PHE antara lain:

i. CSM (Cyber Security Maturity)
   PT Pertamina Hulu Energi (PHE) melaksanakan penilaian Cyber Security Maturity (CSM) untuk mengukur tingkat kematangan keamanan siber perusahaan menggunakan kerangka kerja yang dikembangkan oleh Badan Siber dan Sandi Negara (BSSN) Indonesia. Penilaian ini mencakup lima

e. Independent Assessment

As a part of PT. PHE's compliance with Presidential Regulation (Perpres) No. 82 of 2022 concerning Protection of Vital Information Infrastructure (IIV) which regulates the measurement of information security maturity, PT. PHE regularly conducts Cybersecurity maturity measurements, namely Cybersecurity Maturity (CSM) and Incident Management Maturity Level (IMML) measurements.

The following are the results of the Information Security Maturity Assessment conducted by the IT Function of PT. PHE, including:

i. CSM (Cyber Security Maturity)
   PT Pertamina Hulu Energi (PHE) conducted a Cybersecurity Maturity (CSM) assessment to measure the company's cybersecurity maturity level using a framework developed by the National Cyber and Crypto Agency (BSSN) of Indonesia. This assessment covers five main aspects: Governance

aspek utama: Tata Kelola (kesadaran, audit, kontrol, pemenuhan, kebijakan, dan proses), Identifikasi (manajemen aset, inventaris, manajemen risiko, prioritas, pelaporan, dan klasifikasi), Proteksi (keamanan jaringan, aplikasi, pengguna, manajemen identitas dan akses, cloud, dan data), Deteksi (manajemen perubahan, pemantauan, sistem peringatan, notifikasi, intelijen, dan pelaporan), serta Respon (strategi penahanan, prosedur penanggulangan, proses pemulihan, kegiatan pasca-insiden, dan mekanisme pelaporan). Melalui penilaian komprehensif ini, PHE dapat mengidentifikasi kekuatan dan area yang perlu ditingkatkan dalam postur keamanan sibernya, sekaligus memastikan kepatuhan terhadap standar keamanan nasional.

Berdasarkan pengukuran instrumen CSM tersebut diperoleh Total Nilai Indeks Kematangan PT. PHE adalah **4,61**, yang berada pada level **Indeks Kematangan Level 5 (Implementasi Optimal)**.

Dengan demikian, secara kualitatif dapat digambarkan bahwa penerapan keamanan siber dan penanganan insiden siber di PHE telah memiliki proses yang sudah terorganisir dengan baik, terotomasi, bersifat formal, dilakukan dan direviu secara konsisten, dengan perbaikan berkelanjutan.

ii. TMPI (Tingkat Maturitas Penanganan Insiden)
Tingkat Maturitas Penanganan Insiden (TMPI) merupakan indikator penting dalam mengukur kesiapan suatu organisasi dalam merespons, mengelola, dan memitigasi insiden keamanan siber. Seiring dengan meningkatnya ancaman siber yang semakin kompleks, organisasi dituntut untuk memiliki mekanisme deteksi dan penanganan insiden yang efektif guna memastikan keberlanjutan operasional serta melindungi aset informasi. Dengan memahami tingkat maturitas dalam penanganan insiden, organisasi dapat mengevaluasi kapabilitas yang dimiliki, mengidentifikasi area yang perlu ditingkatkan, serta menerapkan strategi yang lebih proaktif dalam menghadapi ancaman siber.

Berdasarkan hasil penilaian instrumen TMPI, PT Pertamina Hulu Energi memiliki indeks kematangan penanganan insiden di nilai **4,61** atau berada pada **level kematangan 5 (optimize)** yang dikeluarkan oleh **Badan Siber dan Sandi Negara (BSSN) Indonesia.**

(awareness, audit, control, compliance, policies, and processes), Identification (asset management, inventory, risk management, prioritization, reporting, and classification), Protection (network security, applications, users, identity and access management, cloud, and data), Detection (change management, monitoring, alert systems, notifications, intelligence, and reporting), and Response (containment strategies, response procedures, recovery processes, post-incident activities, and reporting mechanism). Through this comprehensive assessment, PHE can identify strengths and areas of improvement in its cybersecurity posture, while ensuring compliance with national security standards.

Based on the measurement of the CSM instrument, the Total Value of PT. PHE's Maturity Index is **4.61**, which is at the **Maturity Index Level 5 (Optimal Implementation)**.

Thus, qualitatively, it can be described that the implementation of cybersecurity and cyber incident handling at PHE has been well-organized, automated, formalized, consistently executed and reviewed, with ongoing continuous improvement.

ii. IMML (Tingkat Maturitas Penanganan Insiden)
Incident Management Maturity Level (IMML) is an important indicator in measuring an organization's readiness to respond, manage, and mitigate cybersecurity incidents. As cyber threats become more complex, the organization is required to have effective incident detection and handling mechanisms to ensure operational continuity and protect information assets. By understanding the level of maturity in incident management, the organization can evaluate its capabilities, identify areas that need to be improved, and implement more proactive strategies in dealing with cyber threats.

Based on the results of the IMML instrument assessment, PT Pertamina Hulu Energi has an incident management maturity index of **4.61** or is at **maturity level 5 (optimize)** issued by the **Indonesian National Cyber and Crypto Agency (BSSN)**.

2. *Organizational Security*

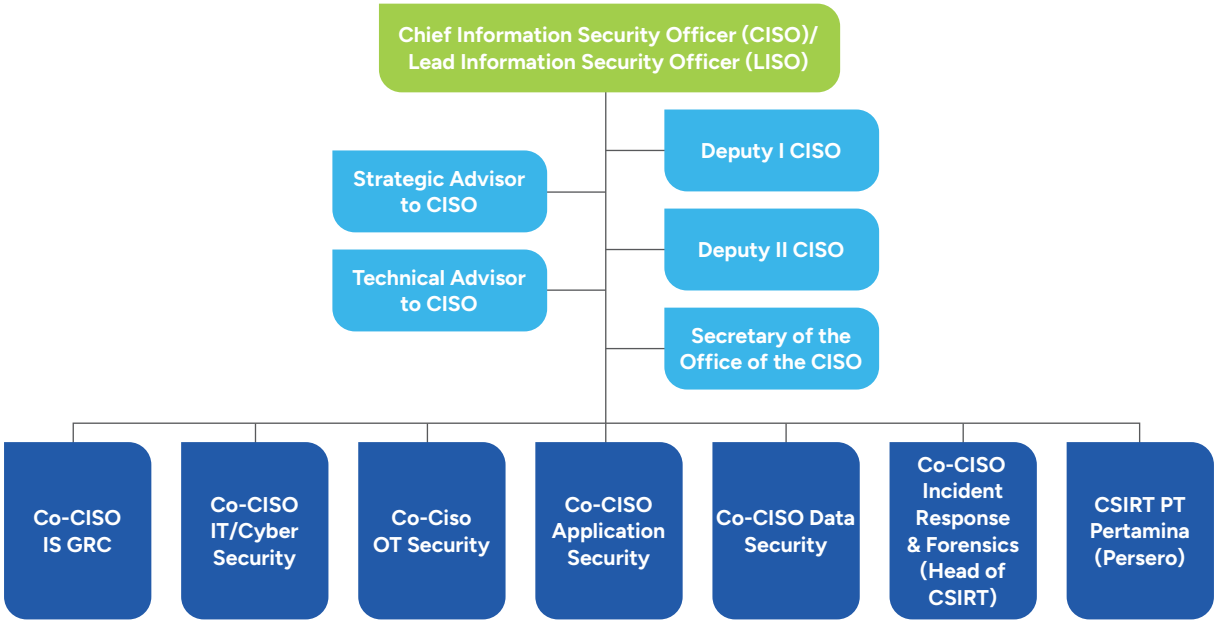
a. **CISO (*Chief Information Security Officer*)**

Menimbang bahwasannya untuk pelaksanaan kegiatan bisnis dan transformasi digital di proses bisnis di lingkungan Subholding Upstream Group harus dilakukan secara aman, efektif dan efisien dengan memprioritaskan aspek Keamanan Informasi (*Availability*, *Integrity*, *Confidentiallity* dan *Proof*) maka Penunjukan dan Penetapan Kepala Keamanan Informasi (Chief/ Lead Information Security Officer (CISO/ LISO) telah ditetapkan oleh PT. PHE pada Agustus tahun 2024.

2. Organizational Security

a. **CISO (Chief Information Security Officer)**

Considering that the implementation of business activities and digital transformation in business processes within the Subholding Upstream Group must be conducted safely, effectively and efficiently by prioritizing aspects of Information Security (Availability, Integrity, Confidentiality and Proof), the Appointment and Determination of the Chief/Lead Information Security Officer (CISO/LISO) was determined by PT. PHE in August 2024.

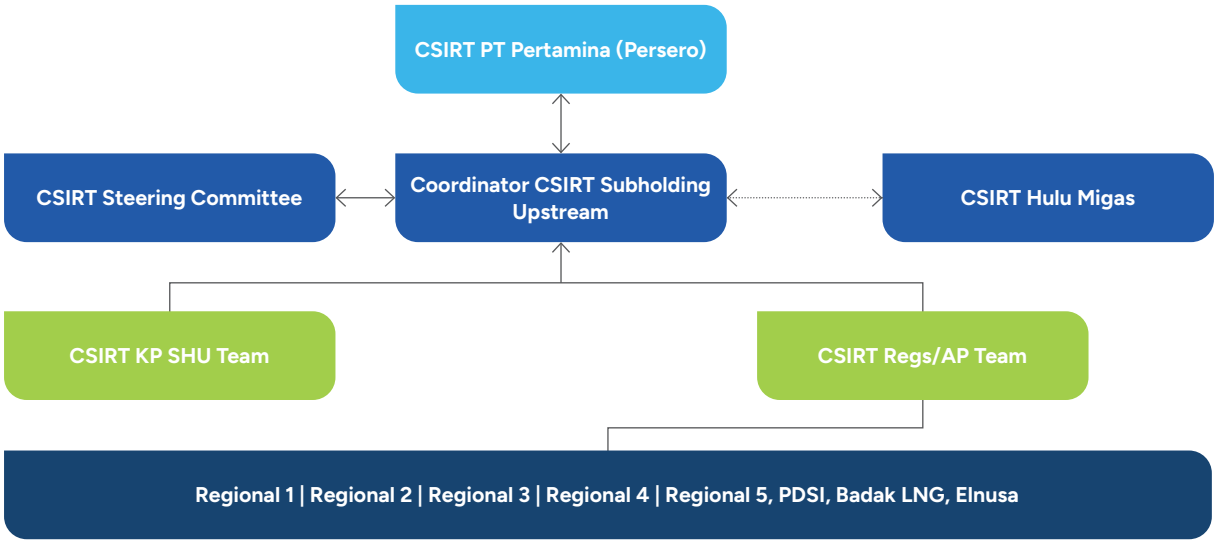


b. **CSIRT *Cyber Security Incident Response Team (CSIRT)***

Dalam menunjang kesinambungan bisnis dan memperkecil kemungkinan ancaman terhadap proses bisnis, Perusahaan harus menjamin ketersediaan, integritas dan kerahasiaan informasi (CIA Triad), kondisi ini memerlukan koordinasi dan komunikasi seluruh kegiatan teknologi informasi yang efektif dan efisien agar dapat memberikan sebesar-besarnya bagi *Subholding Upstream*. Oleh karena itu agar koordinasi tindak lanjut penanganan insiden keamanan informasi dapat berjalan efektif, di perlukan Satuan Tugas Tim Penanganan Insiden Keamanan Siber (*Cyber Security Incident Response Team Taskforce*. PT PHE membentuk *Cyber Security Incident Response Team* (CSIRT) sebagai Tim Tanggap Insiden Keamanan Siber (TTIS) di lingkungan Pertamina Subholding Upstream Group, dibentuk pada tanggal 1 Maret 2024. Tim CSIRT Subholding Upstream Group telah didaftarkan ke Badan Siber dan Sandi Negara (BSSN) pada tanggal 13 Mei 2024.

b. **CSIRT Cyber Security Incident Response Team (CSIRT)**

In supporting business continuity and minimizing the possibility of threats to business processes, the Company must ensure the availability, integrity and confidentiality of information (CIA Triad), this condition requires effective and efficient coordination and communication of all information technology activities in order to provide the greatest benefit to the Subholding Upstream. Therefore, in order for coordination of follow-up of information security incident management to run effectively, a Cybersecurity Incident Response Team Taskforce is needed. PT PHE formed a Cybersecurity Incident Response Team (CSIRT) as a Cybersecurity Incident Response Team (TTIS) within Pertamina Subholding Upstream Group, formed on March 1, 2024. The CSIRT Team of the Subholding Upstream Group was registered with the National Cyber and Crypto Agency (BSSN) on May 13, 2024.



3. ***People Security (awareness, training)***

   PT Pertamina Hulu Energi memposisikan sumber daya manusia sebagai komponen kritis dalam strategi keamanan sibernya, mengembangkan konsep "*Human Firewall*" sebagai lapisan pertahanan utama. Perusahaan melaksanakan program kesadaran keamanan informasi secara berkala yang mencakup simulasi *phishing*, pelatihan penanganan data sensitif, dan sosialisasi kebijakan keamanan informasi. Untuk meningkatkan kompetensi, personel keamanan siber difasilitasi dengan pelatihan persiapan sertifikasi *Certified in Risk & Information Systems Control* (CRISC) dari ISACA yang berfokus pada manajemen risiko perusahaan. Fungsi IT juga menyelenggarakan Security Leadership Forum 2024 bertema "*Executive Leader Forum on Cybersecurity* 1.0" yang berhasil digelar pada 2 September 2024 di PHE Tower Jakarta, menghadirkan para pakar keamanan siber untuk memberikan wawasan kepada para pemimpin tentang ancaman siber terkait IoT, AI, dan *cloud computing*.

   Keterlibatan Top Management Subholding Upstream dalam forum ini menegaskan komitmen kepemimpinan sebagai *role model* dalam menjaga keamanan informasi.

4. ***Technologycal / Operational Security***

   a. ***Security Infrastructure***

      Perusahaan melakukan inisiatif strategis keamanan informasi perusahaan dengan membangun dan mengembangkan sistem perlindungan informasi yang terintegrasi dengan seluruh Anak Perusahaan contohnya dengan Implementasi *Integrated Security Operation Center* (SOC) Subholding Upstream yang mencakup seluruh Regional (Regional 1 sampai 5) dan Anak Perusahaan (Elnusa, PDSI dan Badak NGL) yang mulai dilakukan di awal tahun 2025.

3. **People Security (awareness, training)**

   PT Pertamina Hulu Energi positions human resources as a critical component in its cybersecurity strategy, developing the concept of "Human Firewall" as the main layer of defense. The company regularly implements information security awareness programs that include phishing simulations, sensitive data handling training, and dissemination of information security policies. To improve competence, cybersecurity personnel are facilitated with ISACA's Certified in Risk & Information Systems Control (CRISC) certification preparation training that focuses on enterprise risk management. The IT function also held the Security Leadership Forum of 2024 with the theme "Executive Leader Forum on Cybersecurity 1.0" which was successfully held on September 2, 2024 at PHE Tower Jakarta, presenting cybersecurity experts to provide insights to leaders on cyber threats related to IoT, AI, and cloud computing.

   The involvement of Top Management of the Subholding Upstream in this forum confirms the leadership's commitment as a role model to maintaining information security.

4. **Technologycal / Operational Security**

   a. **Security Infrastructure**

      The Company undertakes strategic corporate information security initiatives by building and developing an integrated information protection system with all Subsidiaries, for example by implementing the Integrated Security Operation Center (SOC) of the Subholding Upstream which covers all Regions (Region 1 to 5) and Subsidiaries (Elnusa, PDSI and Badak NGL) which began in the beginning of 2025.

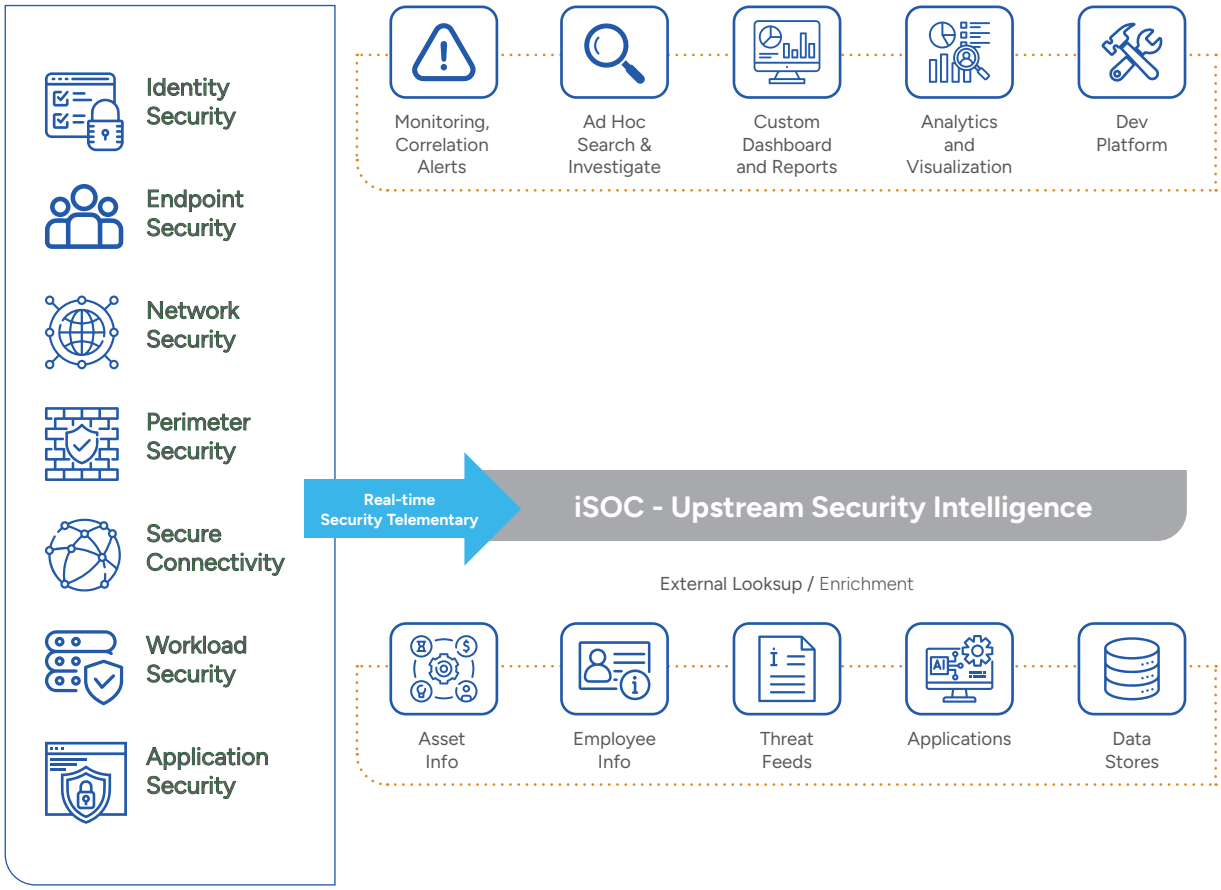


b. *Blue Team (Defensive)*

Dalam upaya meningkatkan postur keamanan siber, PT Pertamina Hulu Energi (PHE) telah mengembangkan *Integrated Security Operation Center* (iSOC) sebagai pusat *monitoring*, deteksi, dan respons ancaman keamanan siber. iSOC berperan sebagai pusat kendali *Blue Team* yang memungkinkan deteksi ancaman secara *real-time*, analisis insiden, serta respons otomatis terhadap serangan yang dapat mengganggu operasional bisnis.

b. Blue Team (Defensive)

In an effort to improve cybersecurity posture, PT Pertamina Hulu Energi (PHE) has developed the Integrated Security Operation Center (iSOC) as a center for monitoring, detecting, and responding to cybersecurity threats. iSOC acts as a Blue Team control center that enables real-time threat detection, incident analysis, and automated response to attacks that can disrupt business operations.



PT Pertamina Hulu Energi mengimplementasikan strategi *Blue Team* melalui iSOC (*integrated Security Operations Center*) yang berfungsi sebagai pusat operasi keamanan siber terintegrasi. Arsitektur ini dibangun secara berlapis untuk memberikan pertahanan komprehensif terhadap ancaman siber.

Fondasi sistem keamanan terdiri dari tujuh pilar utama: Identity Security dengan MFA, *Endpoint Security* dengan User EDR, *Network Security* (NAC dan VPN), *Perimeter Security* (*Firewall*), *Secure Connectivity* (SD-WAN), *Workload Security* (Server EDR), dan *Application Security* (WAF). Lapisan ini mengirimkan data telemetri keamanan secara *real-time* ke iSOC untuk analisis dan respons.

iSOC mengoperasikan tiga layanan keamanan terpadu: MDR Services untuk deteksi dan respons terhadap ancaman aktif, MVM *Services* untuk pengelolaan kerentanan berkelanjutan, dan MAS Services untuk keamanan aplikasi. Layanan-layanan ini diperkuat dengan teknologi canggih seperti *Security Analytics*, SOAR (*Security Orchestration, Automation, and Response*), UEBA (*User & Entity Behavior Analytics*), dan *Threat Intelligence Platform*.

PT Pertamina Hulu Energi implements the Blue Team strategy through iSOC (Integrated Security Operations Center) which functions as an integrated cybersecurity operations center. This architecture is built in layers to provide comprehensive defense against cyber threats.

The foundation of the security system consists of seven main pillars: Identity Security with MFA, Endpoint Security with User EDR, Network Security (NAC and VPN), Perimeter Security (Firewall), Secure Connectivity (SD-WAN), Workload Security (Server EDR), and Application Security (WAF). This layer sends real-time security telemetry data to the iSOC for analysis and response.

iSOC operates three integrated security services: MDR Services for active threat detection and response, MVM Services for continuous vulnerability management, and MAS Services for application security. These services are enhanced by advanced technologies such as Security Analytics, SOAR (Security Orchestration, Automation, and Response), UEBA (User & Entity Behavior Analytics), and Threat Intelligence Platform.

Seluruh ekosistem *Blue Team* ini dilengkapi dengan kemampuan *monitoring*, korelasi, investigasi, dan visualisasi data keamanan yang komprehensif. Sistem juga terintegrasi dengan sumber informasi eksternal seperti data aset, informasi karyawan, dan *feed* ancaman terkini. Pendekatan terpadu ini memungkinkan tim keamanan untuk secara proaktif mendeteksi, merespons, dan memulihkan dari serangan siber, menjadi elemen krusial dalam strategi pertahanan siber berlapis Pertamina Hulu Energi.

c. ***Red Team (Offensive)***

PT Pertamina Hulu Energi mengembangkan kemampuan *Cyber Threat Exposure Management* (CTEM) yang komprehensif sebagai bagian dari implementasi strategi *Red Team* untuk meningkatkan ketahanan keamanan informasi perusahaan. Proyek ini bertujuan untuk menganalisis dan menetapkan pendekatan sistematis dalam mengelola eksposur ancaman siber secara efektif.

Implementasi *Red Team* ini berpusat pada *Continuous Automated Red Teaming* (CART), sebuah simulasi berkelanjutan dan otomatis dari serangan siber dunia nyata untuk mengidentifikasi dan memitigasi kerentanan keamanan. CART didukung oleh tiga kapabilitas pendukung yang terintegrasi: *Breach & Attack Simulator* (BAS) yang menguji pertahanan keamanan organisasi melalui simulasi serangan, *Exposure Analytics* (EA) yang menganalisis risiko eksposur keamanan di seluruh aset digital, dan *Attack Surface Management* (ASM) yang berfokus pada proses penemuan, pemantauan, dan pengamanan permukaan serangan eksternal organisasi.

Melalui pendekatan *Red Team* yang sistematis ini, Pertamina Hulu Energi dapat secara proaktif mengidentifikasi celah keamanan, memperkuat pertahanan siber, dan meningkatkan respons terhadap ancaman potensial sebelum dieksploitasi oleh penyerang yang sebenarnya. Inisiatif ini menunjukkan komitmen perusahaan dalam menerapkan praktik keamanan siber terdepan untuk melindungi infrastruktur kritisnya.

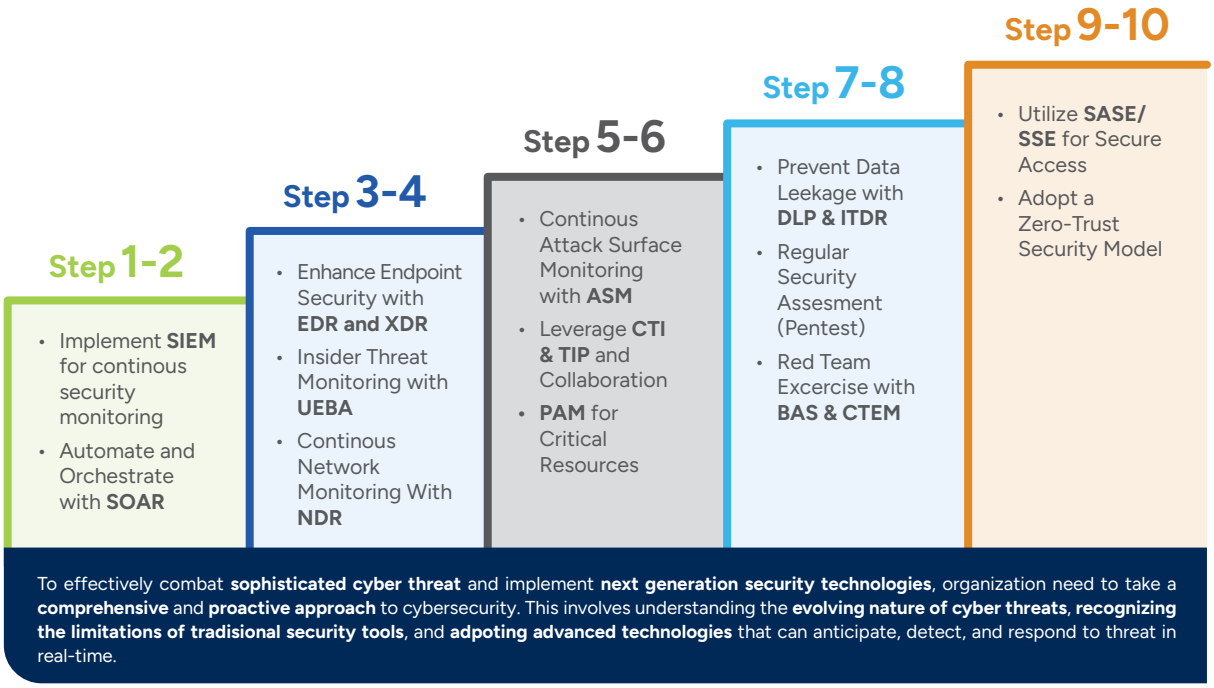
The entire Blue Team ecosystem is equipped with comprehensive security data monitoring, correlation, investigation, and visualization capabilities. The system is also integrated with external sources of information such as asset data, employee information, and current threat feeds. This integrated approach allows the security team to proactively detect, respond to, and recover from cyberattacks, becoming a crucial element in Pertamina Hulu Energi's multi-layered cyber defense strategy.

c. **Red Team (Offensive)**

PT Pertamina Hulu Energi developed a comprehensive Cyber Threat Exposure Management (CTEM) capability as a part of the implementation of the Red Team's strategy to improve the company's information security resilience. The project aims to analyze and establish a systematic approach to effectively managing cyber threat exposure.

The implementation of the Red Team is centered around Continuous Automated Red Teaming (CART), a continuous and automated simulation of real-world cyberattacks to identify and mitigate security vulnerabilities. CART is supported by three integrated supporting capabilities: the Breach & Attack Simulator (BAS) that tests the organization's security defenses through simulated attacks, Exposure Analytics (EA) that analyzes security exposure risks across digital assets, and Attack Surface Management (ASM) that focuses on the process of discovering, monitoring, and securing an organization's external attack surface.

Through this systematic approach of the Red Team, Pertamina Hulu Energi can proactively identify security gaps, strengthen cyber defenses, and improve response to potential threats before they are exploited by actual attackers. This initiative demonstrates the company's commitment to implementing leading cybersecurity practices to protect its critical infrastructure.



Pelindungan Data Pribadi (PDP)

PT Pertamina Hulu Energi patuh terhadap perundang-undangan Republik Indonesia dan memperhatikan aspek kepatuhan yang tertuang dalam Undang-Undang Nomor 27 Tahun 2022 tentang Pelindungan Data Pribadi (UU PDP) adalah regulasi yang mengatur perlindungan data pribadi di Indonesia. Pada tahun 2024, Fungsi IT memulai dengan melakukan kajian/ *assessment* kepatuhan atas regulasi UU PDP, melakukan *assessment* terhadap *checklist* yang diberikan PT Pertamina (Persero), kajian kebijakan dan pengenalan/sosialisasi *Record of Processing Activities* (ROPA).

Selain itu, Fungsi IT juga membantu memfasilitasi untuk mengenalkan ROPA (*Record of Processing Activities*) adalah catatan yang berisi dokumentasi tentang bagaimana suatu organisasi memproses data pribadi. ROPA merupakan persyaratan dalam regulasi perlindungan data, termasuk dalam *General Data Protection Regulation* (GDPR) di Uni Eropa dan Undang-Undang Perlindungan Data Pribadi (UU PDP) di Indonesia. Sosialisasi ROPA kepada setiap fungsi diadakan di PHE Tower Jakarta pada tanggal 24 Oktober 2024.

Saat ini, PT Pertamina Hulu Energi masih mempersiapkan tata kelola PDP dan arahan dari PT Pertamina (Persero) untuk memastikan keselarasan di Pertamina Group. IT Subholding Upstream tetap konsisten dalam menjaga komitmennya untuk melindungi aset informasi perusahaan dan mengelola keamanan informasi Perusahaan sebagai Objek Vital Nasional dari sektor Migas, guna memastikan keberlanjutan bisnis. Upaya ini senantiasa selaras dengan strategi bisnis yang berlandaskan pada transformasi digital, sehingga mampu mendukung pertumbuhan dan inovasi perusahaan secara berkelanjutan. Selama periode pelaporan, tidak ada pengaduan yang diterima perusahaan mengenai pelanggaran terhadap privasi pelanggan ataupun hilangnya data pelanggan. [GRI 418-1]

Personal Data Protection (PDP)

PT Pertamina Hulu Energi complies with the laws of the Republic of Indonesia and pays attention to the compliance aspects contained in Law Number 27 of 2022 concerning Personal Data Protection (UU PDP) which is a regulation that governs the protection of personal data in Indonesia. In 2024, the IT Function began by conducting a compliance study/ assessment of regulations under the PDP Law, conducting an assessment of the checklist provided by PT Pertamina (Persero), policy reviews and introduction/dissemination of the Record of Processing Activities (ROPA).

In addition, the IT function also helps facilitate the introduction of ROPA (Record of Processing Activities) which is a record containing documentation on how the organization processes personal data. ROPA is a requirement in data protection regulations, including the General Data Protection Regulation (GDPR) in the European Union and the Personal Data Protection Act (UU PDP) in Indonesia. The dissemination of ROPA to each function was held at PHE Tower Jakarta on October 24, 2024.

Currently, PT Pertamina Hulu Energi is still preparing PDP governance and direction from PT Pertamina (Persero) to ensure alignment in Pertamina Group. The IT of the Subholding Upstream remains consistent in maintaining its commitment to protecting the company's information assets and managing the Company's information security as a National Vital Object from the Oil and Gas sector, in order to ensure business sustainability. This effort is always in line with the business strategy based on digital transformation, so as to support the company's growth and innovation in a sustainable manner. During the reporting period, the company received no complaints regarding violations of customer privacy or loss of customer data. [GRI 418-1]



11

PERNYATAAN ASURANS, INDEKS REFERENSI SILANG DAN LEMBAR UMPAN BALIK

Assurance Statement, Cross-Reference Index, and Feedback Form


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Completeness Rate
Jan 2021

Independent Assurance Statement

No. 1100/KSP-VI/2025

To the management and stakeholders of PT Pertamina Hulu Energi,

We were engaged by PT Pertamina Hulu Energi (PHE) to provide assurance regarding its Sustainability Report 2024 ('the Report'). The assurance engagement was conducted by our assurance team, which possesses extensive relevant professional and technical competencies and experience. The team comprised certified sustainability reporting specialists and certified sustainability reporting assurers to ensure a high level of competency in executing the engagement.

Independence

We carried out all assurance undertakings with independence and autonomy, having not been involved in the preparation of any key part of the Report, nor did we provide any services to PT Pertamina Hulu Energi during 2024 that could conflict with the independence of the assurance engagement.

Assurance Standards, Levels, and Criteria

Our work was carried out in accordance with AA1000 Assurance Standards v3 (AA1000AS v3) issued by AccountAbility and International Standard on Assurance Engagements ISAE 3000 (Revised), 'Assurance Engagements other than Audits or Reviews of Historical Financial Information,' issued by the International Auditing and Assurance Standards Board.

By designing our evidence-gathering procedures to obtain a moderate level of assurance as set out in AA1000AS v3, readers of the report can be confident that all risks or errors have been reduced to a very low level, although not necessarily to zero. Moreover, PT Pertamina Hulu Energi adherence to the AccountAbility Principles (AP) was evaluated in accordance with the criteria of AA1000AP (2018) on Inclusivity, Materiality, Responsiveness, and Impact. In addition, the Report, within the agreed scope, has been assessed according to the GRI Standards criteria.

Limitations

Our scope of work was limited to a review of the accuracy and reliability of specified data and interviews with data providers, persons in charge of data collection and processing, as well as persons in charge of sustainability performance-related information.

Responsibility

PT Pertamina Hulu Energi is responsible for the preparation of the report and all information and claims therein, which include establishing sustainability management targets, performance management, data collection, and other performance actions.

In performing this engagement, meanwhile, our responsibility to the management of PT Pertamina Hulu Energi is solely for the purpose of verifying the statements it has made in relation to its sustainability performance, specifically as described in the agreed scope, and expressing our opinion on the conclusions reached.

Methodology

In order to assess the veracity of certain assertions and specified data sets included within the Report, as well as the systems and processes used to manage and report them, the following methods were employed during the engagement process:

Reviews were conducted on the Report, internal policies, documentation, management and information systems, and included interviews with relevant staff in sustainability-related management and reporting. This also involved following data trails to the initial aggregated source and checking data samples in greater depth.

Scope of Assurance

We provided a Type 2 assurance engagement under AA1000AS v3. This involved:

1) Assessment of PT Pertamina Hulu Energi adherence to the AA1000AP (2018); and
2) Assessment of the accuracy and quality of the specified sustainability performance information contained within the Report, in relation to the agreed scope of GRI Standards:

   201. Economic Performance
   302. Energy
   305. Emissions
   413. Local Communities

Conclusions

PT Pertamina Hulu Energi adherence to the AA1000 AP (2018) principles of Inclusivity, Materiality, Responsiveness, and Impact is assessed as follow:

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Inclusivity

PT Pertamina Hulu Energi has shown dedication to fostering an inclusive workplace through its efforts to advance diversity, equity, and fairness. The evaluation indicates that the company has implemented well-defined policies and procedures tailored to accommodate the varied needs and backgrounds of stakeholders. Additionally, PT Pertamina Hulu Energi has established effective communication channels and feedback mechanisms to gather input from stakeholders.

To further strengthen its inclusivity commitments, PT Pertamina Hulu Energi should consider developing targeted strategies to attract and retain a diverse workforce. This could involve reinforcing inclusive practices and revising current policies to better address inclusivity gaps and mitigate risks of bias or discrimination. It is also recommended that PT Pertamina Hulu Energi deepen stakeholder engagement and trust, which will contribute to enhanced business resilience and long-term sustainability.

Materiality

Our assessment found that the company has a strong understanding of material aspects affecting both stakeholders and business operations. PT Pertamina Hulu Energi has successfully identified key material issues relevant to its operations and incorporated them into its sustainability reporting process.

To advance its adherence to materiality principles, we recommend that PT Pertamina Hulu Energi conduct periodic assessments to systematically identify and prioritize sustainability-related factors that directly inform and strengthen strategic decision-making processes. This proactive approach will ensure alignment with evolving stakeholder expectations and enhance the robustness of its sustainability initiatives.

Responsiveness

PT Pertamina Hulu Energi has demonstrated a strong commitment to stakeholder engagement by addressing concerns transparently through structured mechanisms and ensuring timely follow-up. The evaluation indicated that the company's proactive approach in engaging stakeholders and local communities has fostered meaningful relationships and cultivated a culture of mutual trust and collaboration. Nonetheless, PT Pertamina Hulu Energi is encouraged to further enhance its responsiveness framework by fostering deeper stakeholder collaboration, including the integration of more inclusive dialogue platforms, aligning engagement strategies with evolving stakeholder expectations, and adopting best practices in conflict resolution. These efforts will strengthen accountability, boost stakeholder confidence, and support long-term resilience in addressing sustainability challenges.

Impact

PT Pertamina Hulu Energi has demonstrated a strong commitment to addressing stakeholder concerns and actively engaging with the local community. This proactive approach has contributed to PT Pertamina Hulu Energi positive reputation and cultivate trust-based relationships with stakeholders. To further enhance stakeholder engagement, we recommend to prioritizes the measurement and transparent reporting of social performance indicators, aiming to mitigate adverse effects while enhancing positive outcomes for communities and stakeholders.

To amplify its impact, PT Pertamina Hulu Energi is recommended to extend its sustainability initiatives to its supply chain partners. Strategic collaboration could drive reductions in carbon emissions, waste production, and ecosystem harm, aligning with broader environmental stewardship goals. Strengthening supply chain sustainability would further solidify the company's leadership in responsible business practices and contribute to systemic environmental improvements.

Conclusion on the accuracy and quality of the specified sustainability performance.

Based on our limited assurance engagement, nothing has come to our attention that causes us to believe the data of the Report, in relation to the agreed scope, has been materially misstated.

All key assurance findings are included herein, while detailed observations and follow-up recommendations have been submitted to PT Pertamina Hulu Energi management in a separate report.

Jakarta, June 23th, 2025
PT Sucofindo
Engagement Leader

AA1000
Licensed Report
000-432/V3-N7RFH

Syaeful Bahrie
Certified Assurance Practitioner No. 10024117
Certified Sustainability Reporting Assurer No. A-PK213-2501-008

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INDEKS SEOJK 16/2021 SESUAI PERATURAN OTORITAS JASA KEUANGAN NOMOR 51/POJK.03/2017

SEOJK INDEX 16/2021 IN ACCORDANCE WITH FINANCIAL SERVICES AUTHORITY REGULATION NUMBER 51/POJK.03/2017 [OJK G.4]

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INDEKS KONTEN GRI STANDARD 2021 YANG SESUAI

GRI STANDARD 2021 CONTENT INDEX IN ACCORDANCE

Pernyataan penggunaan **Statement of use**	PT Pertamina Hulu Energi telah melaporkan sesuai dengan Standar GRI untuk periode 1 Januari 2023 s.d. 31 Desember 2023. PT Pertamina Hulu Energi has reported according to GRI Standard peiod of January, 1st 2023 up to December, 31st 2023.
GRI 1 yang digunakan **GRI 1 used**	GRI 1: Landasan 2021 GRI 1 : Foundation 2021
Standar Sektor GRI yang berlaku **Applicable GRI Sector Standard(s)**	GRI 11: Sektor Minyak dan Gas Bumi 2021 GRI 11: Oil and Gas Sector 2021

Standar GRI/ Sumber Lain GRI Standard/ Other Source	Pengungkapan Disclosure	Lokasi Location	Yang Tidak Dicantumkan Ommission			No. Rujukan Standar Sektor GRI GRI Sector Standard Ref. No.	SDGs No.
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			Persyaratan yang Tidak Dicantumkan Requirement(s) Omitted	Alasan Reason	Penjelasan Explanation		
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Keamanan, Hak Asasi Manusia dan Hak Masyarakat Adat **Security, Human Rights, and Indigenous Peoples' Rights**		
EM-EP-210a.3	Pembahasan proses keterlibatan dan praktik uji tuntas dengan penghormatan terhadap hak asasi manusia, hak masyarakat adat, dan operasi di wilayah konflik Discussion of the engagement process and due diligence practices with respect to human rights, indigenous peoples' rights, and operations in conflict areas.	316

Kode Code	Pengungkapan Disclosure	Halaman Page Number
Hubungan Masyarakat **Community Relations**		
EM-EP-210b.1	Diskusi proses untuk mengelola risiko dan peluang yang terkait dengan hak dan kepentingan masyarakat. Discussion of process to manage risks and opportunities associated with community rights and interests.	226, 277
EM-EP-210b.2	Jumlah dan durasi penundaan non-teknis. Number and duration of non-technical delays.	226
Kesehatan dan Keselamatan Tenaga Kerja **Workforce Health & Safety**		
EM-EP-320a.1	(1) Total tingkat insiden yang dapat direkam (TRIR), (2) tingkat kematian, (3) nyaris celaka tingkat frekuensi (NMFR), dan (4) rata-rata jam kesehatan, keselamatan, dan pelatihan tanggap darurat untuk (a) pekerja tetap, (b) kontrak pekerja, dan (c) pekerja jangka pendek. (1) Total recordable incident rate (TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training for (a) full-time employees, (b) contract employees, and (c) short-service employees.	261
EM-EP-320a.2	Pembahasan tentang sistem manajemen yang digunakan untuk mengintegrasikan budaya keselamatan sepanjang siklus hidup eksplorasi dan produksi. Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle.	267
Etika Bisnis dan Transparansi Pembayaran **Business Ethics and Payment Transparency**		
EM-EP-510a.2	Uraian tentang sistem manajemen pencegahan korupsi dan penyuapan di seluruh rantai nilai. Description of the anti-corruption and bribery management system across the entire value chain.	131
Manajemen Lingkungan Hukum dan Peraturan **Environmental Legal Management and Regulations**		
EM-EP-530a.1	Pembahasan posisi perusahaan terkait peraturan pemerintah dan/atau proposal kebijakan yang membahas faktor-faktor lingkungan dan sosial yang mempengaruhi industri. Discussion of the company's position regarding government regulations and/or policy proposals addressing environmental and social factors influencing the industry.	112
Manajemen Risiko Insiden Kritis **Critical Incident Risk Management**		
EM-EP-540a.1	Tingkat Kejadian Keselamatan Proses (PSE) untuk Loss of Primary Containment (LOPC) dari konsekuensi yang lebih besar (Tingkat 1). Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1).	265
EM-EP-540a.2	Deskripsi sistem manajemen yang digunakan untuk mengidentifikasi dan memitigasi risiko katastropik dan risiko akhir. Description of management systems used to identify and mitigate catastrophic and tail-end risks.	183, 256
Metrik Aktivitas **Activity Metric**		
EM-EP-000.A	Produksi: (1) minyak, (2) gas alam, (3) minyak sintetik, dan (4) gas sintetik. Production of: (1) oil, (2) natural gas, (3) synthetic oil, and (4) synthetic gas.	141

INDEKS *TASK FORCE ON CLIMATE RELATED FINANCIAL DISCLOSURES* (TCFD)

TASK FORCE ON CLIMATE RELATED FINANCIAL DISCLOSURES (TCFD) INDEX

TCFD Elemen Inti TCFD Core Element	Kode Code	Pengungkapan Disclosure	Halaman Page Number
Tata Kelola **Governance** Pengungkapan tata kelola organisasi mengenai risiko dan peluang terkait iklim. Disclosure of the organization's governance around climate-related risks and opportunities.	a.	Menggambarkan pengawasan dewan dari risiko terkait iklim dan peluang. Description of Executive Board's oversight of climate-related risks and opportunities.	162
	b.	Menggambarkan peran manajemen dalam menilai dan mengelola risiko dan peluang terkait iklim. Description of management's role in assessing and managing climate-related risks and opportunities.	162
Strategi **Strategy** Pengungkapan dampak aktual dan potensial dari risiko dan peluang terkait iklim pada bisnis, strategi, dan perencanaan keuangan organisasi di mana informasi tersebut bersifat material. Disclosure of the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	a.	Menjelaskan risiko terkait iklim dan peluang organisasi telah mengidentifikasi lebih pendek, menengah dan jangka panjang. Description of climate-related opportunities and risks. The Company has identified the short term, mid term, and long term.	166
	b.	Menjelaskan dampak risiko dan peluang terkait iklim pada bisnis, strategi, dan perencanaan keuangan organisasi. Description of impact of climate-related risks on the organization's businesses, strategy, and financial planning.	166
	c.	Menggambarkan ketahanan strategi organisasi dengan mempertimbangkan skenario yang terkait dengan iklim yang berbeda termasuk 2° C atau skenario yang lebih rendah. Description of the organizational resilience strategy through consideration scenario related to various climate including 2° C or lower temperature scenario.	166
Manajemen Risiko **Risk Management** Pengungkapan tentang bagaimana organisasi mengidentifikasi, menilai, dan mengelola risiko terkait iklim. Disclosure of how the organization identifies, assesses, and manages climate-related risks.	a.	Menggambarkan proses organisasi untuk mengidentifikasi dan menilai risiko yang berkaitan dengan iklim. Description of organization's processes for identifying and assessing climate-related risks.	183
	b.	Menggambarkan proses organisasi untuk mengelola risiko yang terkait dengan iklim. Description of organization's processes for managing climate-related risks.	183
	c.	Menggambarkan proses untuk mengidentifikasi, menilai, dan mengelola risiko terkait iklim diintegrasikan ke manajemen risiko organisasi secara keseluruhan. Description of integration of processes for identifying, assessing, and managing climate-related risks integrated into the organization's overall risk management.	183
Metrik dan Target **Metrics & Targets** Mengungkapkan metrik dan target yang digunakan untuk menilai dan mengelola risiko dan peluang terkait iklim yang relevan di mana informasi tersebut bersifat material. Disclosure the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	a.	Mengungkapkan metrik yang digunakan oleh organisasi untuk menilai risiko terkait iklim dan peluang sejalan dengan proses manajemen strategi dan risiko. Disclosure of metrics used by the organization to assess climate-related risks and opportunities in line with management the process of strategy management and risks.	186
	b.	Mengungkapkan Lingkup 1, Ruang Lingkup 2 dan jika sesuai, Ruang Lingkup 3 Gas Rumah Kaca (GRK), dan risiko terkait. Disclosure of Scope 1, Scope 2, and Scope 3 if applicable greenhouse gas (GHG)emissions, and related risk.	186
	c.	Menggambarkan target yang digunakan oleh organisasi untuk mengelola risiko terkait iklim dan peluang dan kinerja terhadap target. Description of targets used by the organization to manage climate-related risks and opportunities and the performance toward the target.	186

REFERENSI *INTERNATIONAL PETROLEUM INDUSTRY ENVIRONMENTAL CONSERVATION ASSOCIATION* (IPIECA)

REFERENCE OF INTERNATIONAL PETROLEUM INDUSTRY ENVIRONMENTAL CONSERVATION ASSOCIATION (IPIECA)

Kode Code	Pengungkapan Disclosure	Halaman Page Number
Perubahan Iklim dan Energi **Climate Change and Energy**		
CCE-4	Emisi gas rumah kaca (GRK) Greenhouse gas (GHG) emissions	191
CCE-6	Penggunaan energi Energy use	204, 205
CCE-7	Gas suar Flared gas	191
Lingkungan **Environment**		
ENV-1	Air tawar Freshwater	216
ENV-2	Debit air Discharges to water	215
ENV-3	Kebijakan dan Strategi Keanekaragaman Hayati Biodiversity Policy and Strategy	211
ENV-4	Kawasan lindung dan prioritas untuk konservasi keanekaragaman hayati Protected and priority areas for biodiversity conservation	211, 212, 213, 214
Keselamatan dan Kesehatan Kerja **Safety, Health, and Security**		
SHS-1	Keterlibatan keselamatan, kesehatan, dan keamanan Safety, health and security engagement	256
SHS-2	Tenaga kerja dan kesehatan masyarakat Workforce and community health	265
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Sosial **Social**		
SOC-9	Dampak dan keterlibatan komunitas Community impacts and engagement	277, 279

LEMBAR UMPAN BALIK
FEEDBACK SHEETS [OJK G.2]

Laporan Keberlanjutan 2024 PT Pertamina Hulu Energi memberikan informasi kinerja finansial dan keberlanjutan bagi pemangku kepentingan. Kami mengharapkan masukan, kritik, saran dari Bapak/Ibu/Saudara.
PT Pertamina Hulu Energi 2024 Sustainability Report provides on overview of the Company's financial and sustainability performance for stakeholders. We are looking forward to receiving your inputs, criticisms, and suggestions from Mr/Mrs/You.

Profil Anda/ Your Profile

Mohon berkenan untuk mengisi data diri anda/ Please kindly fill your personal details.

Nama Lengkap/ Full Name :
Pekerjaan/ Position :
Nama Institusi/Perusahaan/ Institution Name /Company :
Telepon/ Telephone :

Golongan Pemangku Kepentingan/ Stakeholders Category

- ☐ Pemegang Saham / Shareholder or Investor
- ☐ Serikat Pekerja / Labor Union
- ☐ Pelanggan / Customer
- ☐ Pekerja / Employee
- ☐ Pemasok / Supplier
- ☐ Organisasi Masyarakat/NGO / Community Organization/NGO
- ☐ Media / Media
- ☐ Pemerintah/OJK / Government/OJK
- ☐ Organisasi Bisnis / Business Organization
- ☐ Lainnya, ... / Others

	Tidak Setuju / Disagree	Netral / Neutral	Setuju / Agree
1. Bagaimana penilaian Anda mengenai Laporan Keberlanjutan Pertamina Hulu Energi/ How do you Rate Pertamina Hulu Energi Sustainability Report:			
Laporan ini mudah dimengerti/ The Report is easy to understand			
Laporan ini sudah menggambarkan informasi atas topik material Perusahaan/ The Report describe information on material topic of the Company			
Laporan ini bermanfaat/ The Report is useful			

	Tidak Signifikan / Insignificant	Biasa / Normal	Signifikan / Significant
2. Bagaimana penilaian Anda mengenai tingkat materialitas topik-topik di bawah/ How do you rate the materiality of topics below:			
Kinerja Ekonomi/ Economic Performance			
Keberadaan Pasar/ Market Presence			
Dampak Ekonomi Tidak Langsung/ Indirect Economic Impacts			
Praktik Pengadaan/ Procurement Practices			
Anti Korupsi/ Anti-corruption			
Penggunaan Energi dan Peningkatan Bauran Energi Terbarukan/ Energy Usage and Increasing Renewable Energy Mix			
Efisiensi Penggunaan Air dan Pengelolaan Limbah Air/ Efficient Water Usage and Wastewater Management			
Kelestarian Lingkungan melalui Perlindungan Keanekaragaman Hayati/ Environmental Sustainability through Biodiversity Protection			
Emisi Nol Bersih/ Net Zero Emission			
Pengelolaan Limbah/ Waste Management			
Sumber Daya Manusia (SDM) dan Praktik Ketenagakerjaan/ Human Resources (HR) and Labor Practices			
Kesehatan dan Keselamatan Kerja/ Occupational Health and Safety			
Pelatihan dan Pengembangan Pekerja/ Employee Training and Development			
Hubungan dengan Masyarakat Lokal/ Relations with Local Communities			
Masyarakat Adat/ Indigenous People			

3. Mohon berikan saran/komentar Anda atas Laporan Keberlanjutan Pertamina Hulu Energi
Please kindly provide your suggestion/comments on Pertamina Hulu Energi Sustainability Report
.....
.....
.....

Mohon kirimkan kembali Lembar Umpan Balik kepada/ Please kindly send back the Feedback Sheet to:
PT Pertamina Hulu Energi

Muhammad Lisanulhaq Roy
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2024

Laporan Keberlanjutan
Sustainability Report

PERTAMINA
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