

ENSURING TRANSITION ENERGIZING THE NATION

Laporan Keberlanjutan **2023** Sustainability Report



Pernyataan

Laporan Keberlanjutan ini berisikan pernyataan-pernyataan kinerja ekonomi, lingkungan, sosial, dan tata kelola, serta strategi Perseroan, yang digolongkan sebagai pernyataan ke depan dalam pengertian perundang-undangan yang berlaku, kecuali hal-hal yang bersifat historis. Pernyataan-pernyataan tersebut bersifat prospektif yang memiliki risiko dan ketidakpastian, serta dapat mengakibatkan perkembangan aktual secara material berbeda dari yang tertulis dalam pernyataan-pernyataan tersebut.

Pernyataan prospektif dalam Laporan Keberlanjutan ini dibuat berdasarkan berbagai asumsi mengenai kondisi terkini dan kondisi mendatang dari Perseroan, serta lingkungan bisnis, tempat Perseroan menjalankan kegiatan usaha. Perseroan tidak menjamin bahwa segala tindakan yang telah diambil untuk memastikan keabsahan dokumen ini akan membawa hasil-hasil tertentu sesuai harapan. Penulisan angka-angka pada seluruh tabel dan grafik menggunakan notasi Bahasa Inggris.

Disclaimer

This Sustainability Report contains statements about the Company's economic, environmental, social, and governance performance and its strategy, which are classified as forward-looking statements under applicable laws and regulations, except for historical information. These are forward-looking statements that involve risks and uncertainties and may result in actual developments that differ materially from those stated in the statements.

The forward-looking statements in this Sustainability Report are based on a variety of assumptions regarding the Company's current and future operating conditions, as well as the business environment in which the Company operates. The Company makes no guarantee that any action taken to ensure the validity of this document will result in the expected results. All tables and graphs presenting numerical data use the English standard.



Ensuring Transition, Energizing the Nation

Sebagai Perusahaan Energi Nasional, PT Pertamina (Persero) memiliki peran penting dalam memimpin dan memastikan transisi industri energi Indonesia ke dalam target bauran energi dan pengurangan emisi dalam memastikan keberlanjutan. Aspirasi kami dalam penerapan energi hijau dan berkelanjutan diterjemahkan ke dalam pilar transisi energi, yaitu meningkatkan kilang PERTAMINA untuk menghasilkan bahan bakar ramah lingkungan, pengembangan lebih lanjut bioenergi dalam bentuk biomassa dan bioetanol, mengoptimalkan potensi dan meningkatkan kapasitas panas bumi terpasang serta komersialisasi hidrogen.

PERTAMINA akan selalu hadir untuk Indonesia dalam memberikan energi untuk bangsa serta mendukung terwujudnya ketahanan energi nasional yang inklusif dengan mengacu pada lima prinsip utama, yaitu *availability*, *accessibility*, *affordability*, *acceptability*, dan *sustainability*.

As a National Energy Company, PT Pertamina (Persero) play a significant role in leading and ensuring Indonesia's transitioning its energy industry into energy mix target and emission reduction to affirm sustainability. Our aspiration in implementing green and sustainable energy is translated into energy transition pillars, namely improving PERTAMINA's refineries to generate eco-friendly fuel, further developing bioenergy into biomass and bioethanol, optimizing potentials, as well as increasing installed geothermal capacity and hydrogen commercialization.

PERTAMINA is unwavering in supplying energy for Indonesia and supporting the realization of inclusive national energy resilience by referring to the five main principles, namely *availability*, *accessibility*, *affordability*, *acceptability*, and *sustainability*.



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Tentang Laporan Keberlanjutan

About the Sustainability Report

Tujuan dan Standar Pelaporan [CDSB REQ-08][CDSB REQ-11]

Reporting Objectives and Standards

PT Pertamina (Persero) atau PERTAMINA menyusun dan menerbitkan Laporan Keberlanjutan sebagai dokumen untuk mengomunikasikan kinerja Perseroan mengelola dampak operasi terhadap lingkungan, sosial, dan tata kelola (LST/ESG), serta dukungan pada Tujuan Pembangunan Berkelanjutan (TPB/SDGs). Standar acuan penyusunan laporan:

- Peraturan Otoritas Jasa Keuangan (POJK) Nomor 51/POJK.03/2017 tentang Penerapan Keuangan Berkelanjutan Bagi Lembaga Jasa Keuangan, Emiten, dan Perusahaan Publik, beserta turunannya yaitu Surat Edaran Otoritas Jasa Keuangan Republik Indonesia Nomor 16/SEOJK.04/2021 tentang Bentuk dan Isi Laporan Tahunan Emiten atau Perusahaan Publik;
- Consolidated GRI Standards 2021, dengan pemenuhan: sesuai dengan (*in accordance with*);
- GRI 11 Oil & Gas Sector 2021;
- Sustainability Accounting Standards Board (SASB) – Oil & Gas;
- Standar yang dikeluarkan oleh International Petroleum Industry Environmental Conservation Association (IPIECA), SGXST Listing Rules, Practice Note 7.6 – Sustainability Reporting Guideline, American Petroleum Institute (API) and the International Association of Oil & Gas Producers (IOGP);
- Adopsi awal Internasional Financial Reporting Standard (IFRS) Sustainability/S1 (General Disclosure), serta S2 (Climate-related Disclosure), yang telah terkonsolidasi dengan Climate Disclosure Standards Board (CDSB) dan Task Force for Climate-related Financial Disclosures (TCFD).

PT Pertamina (Persero), or PERTAMINA, prepares and publishes a Sustainability Report as a document that communicates the Company's performance in managing operational impacts on environment, social, and governance (ESG) as well as supporting the Sustainable Development Goals (SDGs). References standards used for preparing the report are as follows:

- Financial Services Authority Regulation (POJK) Number 51/POJK.03/2017 on the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies, along with its derivatives, namely Circular Letter of the Financial Services Authority of the Republic of Indonesia Number 16/SEOJK.04/2021 concerning the Form and Content of the Annual Report of Issuers or Public Companies;
- Consolidated GRI Standards 2021, with the fulfillment of: in accordance with;
- GRI 11 Oil & Gas Sector 2021;
- Sustainability Accounting Standards Board (SASB) – Oil & Gas;
- Standards issued by the International Petroleum Industry Environmental Conservation Association (IPIECA), SGXST Listing Rules, Practice Note 7.6 – Sustainability Reporting Guideline, American Petroleum Institute (API) and the International Association of Oil & Gas Producers (IOGP);
- Early adoption of International Financial Reporting Standards (IFRS) Sustainability/S1 (General Disclosures), and S2 (Climate-related Disclosures), which have been consolidated with the Climate Disclosure Standards Board (CDSB) and the Task Force for Climate-related Financial Disclosures (TCFD).

Entitas dalam Pelaporan [GRI 2-2][CDSB REQ-07]

Entities in Reporting

Entitas dalam Laporan Keberlanjutan ini meliputi 12 entitas anak, yang terintegrasi dari hulu hingga hilir. Entitas anak dikelompokkan ke dalam enam *subholding*, dan enam entitas jasa/portofolio. Tidak terdapat perbedaan daftar entitas di dalam Laporan Keberlanjutan dengan Laporan Keuangan Perseroan, dan daftar entitas anak dalam Catatan atas Laporan Keuangan Konsolidasian PT Pertamina (Persero) 2023. Pada beberapa topik material tertentu, lingkup pelaporan dan pendekatan disesuaikan dengan pengungkapan informasi yang dibutuhkan sehingga tidak meliputi seluruh entitas anak.

Entities in this Sustainability Reporting refer to 12 subsidiaries, integrated from upstream to downstream. These subsidiaries are grouped into six subholdings and six service entities/portfolios. There is no discrepancy in the list of entities in the Notes to the 2023 Consolidated Financial Statements of PT Pertamina (Persero). On several material topics, the scope of the reporting and approach is adjusted with the necessary information disclosure so that it does not encompass all subsidiaries.

Periode, Frekuensi, dan Kontak Pelaporan [GRI 2-3][CDSB REQ-09]

Period, Frequency, and Reporting Contact Information

PERTAMINA menyusun dan menerbitkan Laporan Keberlanjutan satu kali dalam setiap tahun. Laporan periode sebelumnya diterbitkan pada 31 Mei 2023. Periode Laporan Keberlanjutan 2023 adalah 1 Januari – 31 Desember 2023, sesuai periode Laporan Keuangan Konsolidasian Perseroan yang telah diaudit Kantor Akuntan Publik.

PERTAMINA prepares and publishes a Sustainability Report once every year. The previous report was published on 31 May 2023. The 2023 Sustainability Report is in the period of 1 January – 31 December 2023 in accordance with the Company's Consolidated Financial Statements, which has been audited by the Public Accounting Firm.

Kontak terkait Laporan:

Contact Information on the Reporting:

Fungsi Sustainability PT Pertamina (Persero)

Sustainability Function PT Pertamina (Persero)

Jl. Medan Merdeka Timur No. 11-13. Jakarta Pusat 10110

PERTAMINA Contact Center 135

Telepon | Phone: (021) 3815111, 3816111

E-mail: pcc135@pertamina.com

Website: www.pertamina.com



Pernyataan Kembali dan Referensi Silang [GRI 2-4][CDSB REQ-10]

Restatements and Cross-References

Pada Laporan Keberlanjutan 2023 ini ada pernyataan kembali. Setiap pernyataan kembali diberikan keterangan pada paragraf maupun tabel yang disampaikan.

This 2023 Sustainability Report contains restatements. Each restatement is provided with a description on the paragraphs or tables reported.

Verifikasi Laporan dan Penjaminan Eksternal [OJK G.1][GRI 2-5][CDSB REQ-12]

Report Verification and External Assurance

Laporan ini telah diverifikasi melalui proses penjaminan lembaga independen eksternal. Proses penjaminan dilaksanakan oleh SR Asia Indonesia. Penentuan lembaga independen dilakukan melalui proses pengadaan dan telah disetujui oleh Vice President Sustainability.

This report has been verified through an assurance process by an external independent body. The assurance process was led by SR Asia Indonesia. The appointment of an independent organization to perform external assurance done through procurement process and has been approved by Vice President Sustainability.

Lembar Umpan Balik dan Tanggapan atas Umpan Balik [OJK G.2][OJK G.3]

[CDSB REQ-12]

Feedback Form and Responses to Feedback

Laporan dilengkapi Lembar Umpan Balik yang bisa digunakan pemangku kepentingan untuk menyampaikan pendapat, saran maupun kritik atas Laporan ini. PERTAMINA mengucapkan terima kasih atas tanggapan terhadap laporan tahun sebelumnya. Seluruh kritik, masukan, dan saran telah ditindaklanjuti Perseroan, serta disampaikan dalam Laporan ini.

The report is complemented by a Feedback Sheet which can be used by stakeholders to communicate their opinions, suggestions, and critiques over the previous report. PERTAMINA would like to thank stakeholders for their responses to the previous year's report. These critiques, feedback, and suggestions have been followed up by the Company and reported in this Report.

Topik Material [GRI 3-1, 3-2][GOV 1.C4]

Material Topics

Tidak terjadi perubahan topik material dibandingkan tahun 2022, namun topik material pada Laporan Keberlanjutan 2023 dikelompokkan menjadi 8 topik, yaitu kinerja ekonomi, transisi energi, pengelolaan dampak lingkungan, kesehatan dan keselamatan kerja, pengelolaan SDM, komunitas lokal, praktik bisnis yang beretika, riset, dan inovasi. Proses penentuan topik material dilakukan melibatkan pemangku kepentingan melalui survei kuesioner topik material. Selanjutnya, hasil survei didiskusikan secara internal oleh manajemen PERTAMINA, melalui Fungsi Sustainability dalam *focus group discussion* (FGD) untuk menentukan prioritas topik material. FGD difasilitasi pihak independen sebagai tim ahli.

There were no changes in material topics compared to 2022, but the material topics in the 2023 Sustainability Report are grouped into 8 topics, namely economic performance, energy transition, environmental impact management, occupational health and safety, human capital management, local community, ethical business practices, research and innovation. Furthermore, the survey results were discussed internally by PERTAMINA management, through the Sustainability Function in a focus group discussion (FGD) to determine the priority of material topics. FGDs are facilitated by independent parties as a team of experts.

Topik Material Material Topic	Isu-isu Keberlanjutan Sustainability Issues
Ekonomi Economic	
Kinerja Ekonomi Economic Performance	Implikasi Finansial dari Risiko dan Peluang Karena Perubahan Iklim Financial Implications from Risks and Opportunities Due to Climate Change
	Perbandingan Target dan Kinerja Portofolio, Target Pembiayaan atau Investasi pada Instrumen Keuangan atau Proyek yang Sejalan dengan Keberlanjutan Comparison of Portfolio Targets and Performance, Financing Targets or Investments in Financial Instruments or Projects in Line with Sustainability
Lingkungan Environmental	
Transisi Energi Energy Transition	Respon dan Mitigasi terhadap Perubahan Iklim Responses and Mitigations to Climate Change
	Transisi Energi dan Pengembangan Energi Baru dan Terbarukan Energy Transition and New and Renewable Energy Development
Pengelolaan Dampak Lingkungan Environmental Impact Management	Dekarbonisasi dan Reduksi Emisi Decarbonization and Emission Reduction
	Konservasi Sumber Daya Air Conservation of Water Resources
	Pengelolaan Limbah, Efluen, dan Beban Pencemar Air Waste, Effluent, and Water Pollutants Load Management
	Perlindungan dan Konservasi Keanekaragaman Hayati Biodiversity Safeguarding and Conservation

Topik Material Material Topic	Isu-isu Keberlanjutan Sustainability Issues
Sosial Social	
Kesehatan dan Keselamatan Kerja Occupational Health and Safety	Penerapan Sistem Manajemen K3 dan Keselamatan Proses Implementation of OHS Management System and Process Safety
	Menjaga Integritas Aset Protecting Asset Integrity
	Keselamatan Proses, Pencegahan Insiden Skala Besar, dan Keamanan Produk Process Safety, Prevention of Large-Scale Incidents, and Product Safety
	Keselamatan Proses pada Rantai Pasok Process Safety in Supply Chain
Pengelolaan SDM Human Capital Management	Pengelolaan Talenta dan Keterikatan Pekerja Talent Management and Employee Engagement
	Pelatihan dan Pengembangan Kapabilitas Pekerja Training and Capacity Building for Employees
	Hak Asasi Manusia, Pemberdayaan Perempuan, Keberagaman dan Inklusivitas Human Rights, Women Empowerment, Diversity, and Inclusivity
Komunitas Lokal Local Community	Pengelolaan Dampak Negatif Kegiatan Operasi Negative Impacts Management in Operations
	Pemasok, Pekerja Lokal, dan Tingkat Komponen Dalam Negeri (TKDN) Local Suppliers, Local Employees, and The Local Content Level (TKDN)
	Pengembangan dan Pemberdayaan Masyarakat (Usaha Mikro dan Kecil/(UMK), serta Pemenuhan Tanggung Jawab Sosial dan Lingkungan (TJSL) Community Development and Empowerment (Micro and Small Enterprises/MSEs)/ Corporate Social Responsibility (CSR) Fulfillment
	Pemenuhan Hak Penduduk Asli/Masyarakat Adat Fulfillment of the Rights of Indigenous People
	Pengaduan Masyarakat Public Grievance
Tata Kelola Keberlanjutan Sustainability Governance	
Praktik Bisnis yang Beretika Ethical Business Practices	Kepatuhan Hukum dan Persaingan Usaha Sehat Legal Compliance and Healthy Business Competition
	Etika Perusahaan dan Pencegahan Benturan Kepentingan Corporate Ethics and Prevention of Conflict of Interest
	Komunikasi Hal-Hal Kritis Communication on Critical Affairs
	Dukungan pada Antikorupsi Supporting Anti-corruption
Riset dan Inovasi Research and Innovation	Riset, Inovasi, dan Pengembangan Produk Ramah Lingkungan Research, Innovation, and Development of Eco-Friendly Products
	Penggunaan Teknologi Operasi Ramah Lingkungan Use of Eco-Friendly Operational Technology
	Pengembangan Teknologi Informasi dan Perlindungan Data Development of Information Technology and Data Protection

Topik Material, Dampak terhadap Pemangku Kepentingan dan Pengelolaannya [GRI 3-3]

Material Topics and their Impacts on Stakeholders and the Management

Topik Material | Material Topic**Ekonomi | Economic****Kinerja Ekonomi | Economic Performance [OG 11.12.1]****Dampak dan Pengelolaan Topik Material | Impacts and Management of Material Topics**

Perubahan iklim memberikan pengaruh terhadap kesinambungan operasional, yang dapat mempengaruhi finansial PERTAMINA termasuk dalam hal investasi yang sejalan dengan keberlanjutan. Pengelolaan finansial Perseroan menjadi tanggung jawab Fungsi Keuangan, dan dilakukan dengan menerapkan manajemen risiko, yang melibatkan pekerja, kontraktor/pemasok, pemegang saham, dan pemerintah/regulator. Selama tahun 2023 Perseroan melakukan berbagai inisiatif yang mendukung transisi energi dan dekarbonisasi, guna meminimalkan pengaruh terhadap finansial Perseroan. Secara berkala pelaksanaan inisiatif dievaluasi melalui mekanisme pelaporan, dan disampaikan kepada Direksi, pemegang saham/regulator, dan pihak berwenang lain.

Climate change affects operational continuity which then can influence PERTAMINA's financial, including investments that align with sustainability. The Company's financial management is under the responsibility of Financial Function, and it is conducted by implementing risk management, involving employees, contractors/suppliers, shareholders, and government/regulators. In 2023, various initiatives were exercised to back energy transition and decarbonization to minimize the influences against the Company's financial. These initiatives were periodically evaluated through a reporting mechanism and reported to the Board of Directors, shareholders/regulators, and other authorities.

Topik Material, Dampak terhadap Pemangku Kepentingan dan Pengelolaannya [GRI 3-3]

Material Topics and their Impacts on Stakeholders and the Management

Topik Material | Material Topic**Lingkungan | Environmental****Transisi Energi | Energy Transition****Dampak dan Pengelolaan Topik Material | Impacts and Management of Material Topics**

Kegiatan operasional PERTAMINA berdampak pada perubahan iklim, sehingga Perseroan turut serta mendukung upaya Pemerintah dalam merespons perubahan iklim bersama masyarakat internasional. Komitmen tersebut diwujudkan dengan adanya kebijakan transisi energi PERTAMINA, inisiatif menurunkan emisi GRK, pengembangan energi terbarukan, serta produk bersih dan ramah lingkungan. Pengelolaan perubahan iklim di Perseroan menjadi tanggung jawab Fungsi HSSE, dan inisiatif yang dilakukan melibatkan seluruh pemangku kepentingan. Evaluasi dilakukan secara berkala melalui mekanisme pelaporan kinerja kepada Direksi, pemegang saham, pemerintah/regulator maupun pihak berwenang lain. Sesuai target yang telah ditentukan, realisasi *Milestone NRE Development* pada tahun 2023 mencapai 22,6% atau setara dengan 16,2 MW.

PERTAMINA's operational activities have an impact on climate change, so the Company participates in supporting the Government's efforts to respond to climate change with the international community. This commitment is realized with the PERTAMINA energy transition policy, initiatives on GHG emission reduction, renewable energy development, and clean and eco-friendly products. Climate change management in the Company is under the responsibility of HSSE Function, and the initiatives implemented involve the entire stakeholders. Evaluations are periodically conducted through a performance reporting mechanism, involving the Board of Directors, shareholders, government/regulators and other authorities. In accordance with the predetermined target, the realization of *Milestone NRE Development* in 2023 reached 22.6% or equivalent to 16.2 MW.

Pengelolaan Dampak Lingkungan | Environmental Impacts Management**Dampak dan Pengelolaan Topik Material | Impacts and Management of Material Topics**

PERTAMINA menyadari kegiatan operasi yang dilakukan berpotensi menimbulkan dampak terhadap lingkungan, sehingga harus dikelola dengan baik. Perseroan berkomitmen meminimalkan dampak terhadap lingkungan dengan melakukan upaya pencegahan, minimalisasi dan mitigasi risiko terhadap lingkungan sepanjang bisnis Perseroan. Komitmen tersebut kami buktikan melalui penetapan target 100% lokasi yang beroperasi di area dengan dampak yang signifikan bersertifikat ISO 14001, pengurangan efluen, konsumsi air, dan beban non-GRK, serta tidak adanya tumpahan minyak skala besar. Seluruh inisiatif tersebut dilaksanakan dengan melibatkan seluruh pemangku kepentingan, serta dievaluasi melalui mekanisme penilaian kinerja dan pelaporan berkala kepada Direksi, pemerintah/regulator maupun pihak berwenang lain. Pengelolaan dampak lingkungan di Perseroan menjadi tanggung jawab Fungsi HSSE.

PERTAMINA realizes that the operations can potentially impact the environment, thus they must be well-maintained. The Company is committed to minimizing environmental impacts by performing preventive measures, environmental risk minimization while running its business. Our commitment is evidenced through setting a target of 100% of sites operating in areas with significant impacts being ISO 14001 certified, reductions in effluent, water consumption and non-GHG loads, and the absence of large-scale oil spills. These initiatives involve all stakeholders and are evaluated through performance assessment and periodic reporting to the Board of Directors, government/regulations, and other authorities. Environmental Impacts Management in the Company is under the responsibility of HSSE Function.

Topik Material, Dampak terhadap Pemangku Kepentingan dan Pengelolaannya [GRI 3-3]

Material Topics and their Impacts on Stakeholders and the Management

Topik Material | Material Topic**Sosial | Social****Kesehatan dan Keselamatan Kerja | Occupational Health and Safety****Dampak dan Pengelolaan Topik Material | Impacts and Management of Material Topics**

PERTAMINA terus konsisten menerapkan kesehatan dan keselamatan kerja (K3), serta keselamatan proses di seluruh proses bisnis yang dijalankan. Pengelolaan K3 dan keselamatan proses menjadi tanggung jawab Fungsi HSSE, dan dijalankan dengan melibatkan seluruh pemangku kepentingan. Perseroan melakukan berbagai inisiatif untuk memastikan pengoptimalan penerapan K3 dan keselamatan proses, di antaranya pelatihan dan peningkatan kompetensi, serta sosialisasi budaya K3. Evaluasi dilaksanakan berkala melalui penilaian kinerja, audit, maupun pelaporan, dan hasilnya dilaporkan kepada Direksi, pemegang saham maupun pihak berwenang lainnya. Topik K3 dinilai bersifat material karena tanpa pengendalian yang baik maka dapat berpotensi pada risiko tingginya tingkat kecelakaan kerja, mengingat *business nature* Pertamina.

PERTAMINA consistently implements occupational health and safety (OHS) as well as process safety in all of its business processes. The management of OHS and process safety is under the responsibility of HSSE Function, and it involves all stakeholders. There are various initiatives to optimize the implementation of OHS and process safety, among which are training and competency enhancement as well as OHS culture socialization. Periodic evaluation takes place through performance assessment, audit, and reporting, in which the results are reported to the Board of Directors, shareholders, and other authorities. The OHS topic is considered to be material because without good control it could potentially lead to a high risk of work accidents, considering the nature of Pertamina's business.

Pengelolaan SDM | Human Capital Management [OG 11.9.1, 11.10.1, 11.11.1]**Dampak dan Pengelolaan Topik Material | Impacts and Management of Material Topics**

Kinerja PERTAMINA sebagai perusahaan energi yang berkelanjutan, tak terlepas dari dukungan pekerja. Perseroan terus mengembangkan sumber daya manusia (SDM) melalui berbagai inisiatif yang ditujukan untuk menjadi pekerja sebagai aset Perseroan. Inisiatif yang dilakukan Perseroan, di antaranya program *Agent of Change*, penerapan *Respectful Workplace Policy* dan pemenuhan hak asasi manusia (HAM). Pengelolaan SDM menjadi tanggung jawab Fungsi Human Capital dengan melibatkan seluruh karyawan. Evaluasi pengelolaan SDM dilakukan melalui penilaian maupun pelaporan berkala kepada Direksi, pemegang saham, pemerintah/regulator, dan pihak berwenang lain. Pengelolaan SDM sifatnya penting dalam mencegah tingginya *turnover rate* dan memperhatikan kesejahteraan para pekerja. Tanpa memperhatikan aspek tersebut, pekerja berisiko menjadi kurang sejahtera.

PERTAMINA's performance as a sustainable energy company is inseparable from employees' support. The Company continuously cultivates its human capital through many initiatives that help them to be the Company's assets. Some initiatives conducted are Agent of Change, Respectful Workplace Policy, and fulfillment of human rights. Human Capital Function is responsible for managing the human capital, involving all employees. Evaluation of human capital management is conducted through periodic assessments and reporting to the Board of Directors, shareholders, government/regulators, and other authorities. Human capital management is important in preventing high turnover rates and paying attention to the welfare of workers. Without paying attention to these aspects, workers are at risk of becoming less prosperous.

Komunitas Lokal | Local Community [OG 11.15.1, 11.17.1]**Dampak dan Pengelolaan Topik Material | Impacts and Management of Material Topics**

PERTAMINA memahami dukungan masyarakat menjadi penting untuk kegiatan operasi, sehingga berkomitmen meningkatkan kesejahteraan masyarakat di wilayah operasi. Inisiatif yang dilakukan Perseroan adalah melakukan berbagai program/kegiatan pengembangan dan pemberdayaan, yang melibatkan masyarakat setempat sebagai penerima manfaat. Pengelolaan pengembangan dan pemberdayaan masyarakat menjadi tanggung jawab Fungsi Corporate Secretary. Evaluasi dilakukan melalui pemantauan dan pelaporan berkala kepada Direksi, pemegang saham pemerintah/regulator, maupun pihak berwenang lain. Komunitas lokal merupakan topik material penting mengingat operasional PERTAMINA yang berada di berbagai daerah di Indonesia, sehingga banyak masyarakat daerah yang terdampak dari operasional bisnis perusahaan. Melalui pengelolaan yang menyeluruh, PERTAMINA juga dapat menjaga kapital sosial di seluruh area operasionalnya.

PERTAMINA understands the importance of community's support for its operations so much so that it is committed to increasing the people's welfare residing in the operational areas. The Company's initiative is to conduct various development and empowerment programs/activities, which involve local communities as beneficiaries. Corporate Secretary oversees community development and empowerment. Evaluation is carried out through regular monitoring and reporting to the Board of Directors, government/regulatory shareholders, and other authorities. Local communities are an important material topic considering that PERTAMINA's operations are located in various regions in Indonesia, so that many regional communities are affected by the company's business operations. Through comprehensive management, PERTAMINA can also maintain social capital in all its operational areas.

Topik Material, Dampak terhadap Pemangku Kepentingan dan Pengelolaannya [GRI 3-3]
Material Topics and their Impacts on Stakeholders and the Management

Topik Material | Material Topic

Tata Kelola | Governance

Praktik Bisnis yang Beretika | Ethical Business Practices

Dampak dan Pengelolaan Topik Material | Impacts and Management of Material Topics

PERTAMINA memahami praktik bisnis yang beretika di seluruh area dan operasi perusahaan untuk meningkatkan daya saing, menurunkan risiko bisnis, meningkatkan kesejahteraan karyawan, meningkatkan reputasi perusahaan dan memberikan akses permodalan yang kompetitif. Kepatuhan dan penerapan GCG Perseroan menjadi tanggung jawab Fungsi Legal Counsel. Selama tahun 2023, PERTAMINA melakukan berbagai inisiatif untuk meningkatkan kepatuhan yang dapat dilihat pada bagian inisiatif LST PERTAMINA. Evaluasi kepatuhan dilakukan melalui mekanisme penilaian oleh pihak eksternal maupun internal, dan hasilnya dilaporkan kepada Direksi, pemegang saham, dan pihak berwenang lain.

PERTAMINA is aware that ethical business practices are paramount to amplify competitiveness, reduce business risks, increase employees' welfare, boost company's reputation, and give access to competitive capital. The Company's compliance and GCG implementation are under the responsibility of the Legal Counsel Function. In 2023, PERTAMINA performed various initiatives to strengthen compliance which can be seen in the PERTAMINA ESG initiative section. Compliance evaluation undergoes an assessment mechanism by both external and internal parties, and the results are reported to the Board of Directors, shareholders, and other authorities.

Riset dan Inovasi | Research and Innovation

Dampak dan Pengelolaan Topik Material | Impacts and Management of Material Topics

PERTAMINA terus mengembangkan inovasi teknologi untuk mendukung kesinambungan operasi dan usaha. Pengembangan inovasi dan teknologi menjadi tanggung jawab Fungsi Research Technology and Innovation PERTAMINA. Selama periode pelaporan Perseroan berinisiatif meluncurkan 9 inovasi teknologi, yang ditujukan untuk mendukung dekarbonisasi operasional dan transisi energi di Indonesia. Inovasi serta pengembangan produk melibatkan seluruh karyawan melalui berbagai mekanisme, dan dievaluasi melalui penilaian oleh pihak internal maupun eksternal. Hasil evaluasi dilaporkan kepada Direksi, pemegang saham, pemerintah/regulator, dan pihak berwenang lain.

PERTAMINA continuously designs technological innovations to maintain the operations and business continuity. Innovation and technology developments are handled by PERTAMINA's Research Technology and Innovation Function. During the reporting period, the Company launched 9 technological innovations, which were aimed to support operational decarbonization and energy transition in Indonesia. Product innovations and developments involve all employees through diverse mechanisms, and are evaluated by an internal and an external party. Results are reported to the Board of Directors, shareholders, government/regulators, and other authorities.



Pengelolaan topik material juga berkontribusi dalam mendukung Tujuan Pembangunan Berkelanjutan sesuai Metadata TPB Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional (PPN/Bappenas). Pengungkapan kontribusi dukungan pada TPB yang lebih spesifik yang selaras dengan topik material disampaikan dalam Bab Kinerja Keberlanjutan.

The management of material topics also contributes to supporting the Sustainable Development Goals as per the SDG Metadata of the Ministry of National Development Planning/National Development Planning Agency (PPN/Bappenas). Disclosure of more specific SDG support contributions aligned with material topics is provided in the Sustainability Performance Chapter.

Informasi Lain pada Situs Badan Other Information on Website

Informasi lain yang berkaitan dengan kebijakan keberlanjutan dapat diakses pada <https://www.pertamina.com>. Untuk informasi lain terkait profil perusahaan dan tata kelola dapat diakses pada Laporan Tahunan PT Pertamina (Persero) 2023.

Other information related to the sustainability policy can be accessed at <https://www.pertamina.com>. As for company profile and governance, related information can be viewed in the 2023 Annual Report of PT Pertamina (Persero).

Prioritas Dukungan terhadap Tujuan Pembangunan Berkelanjutan (TPB) 12

Priority Support for the Sustainable Development Goal (SDG) 12

PERTAMINA mempublikasikan Laporan Keberlanjutan setiap tahun sebagai dukungan pada pencapaian TPB 12: Konsumsi dan Produksi yang Bertanggung Jawab.

PERTAMINA publishes a Sustainability Report every year to show support for the achievement of SDG 12: Responsible Consumption and Production.

Tujuan 12: Konsumsi dan Produksi yang Bertanggung Jawab Goal 12: Responsible Consumption and Production


Metadata TPB Kementerian PPN/Bappenas SDGs Metadata of Ministry of PPN/Bappenas		Dukungan PERTAMINA PERTAMINA's Support	
Target Target	Indikator Indicator	Realisasi 2023 2023 Realization	Target 2024 2024 Target
<p>12.6</p> <p>Mendorong perusahaan, terutama perusahaan besar dan transnasional, untuk mengadopsi praktik-praktik berkelanjutan dan mengintegrasikan informasi keberlanjutan dalam siklus pelaporan mereka</p> <p>Encouraging companies, mainly large-scale and transnational companies, to adopt sustainable practices and integrate sustainability information into their cyclical reporting.</p>	<p>12.6.1</p> <p>Jumlah perusahaan yang mempublikasi laporan keberlanjutannya</p> <p>Number of companies publishing their sustainability reports.</p>	<p>PERTAMINA telah menerbitkan Laporan Keberlanjutan sejak tahun 2011 dan mempublikasikannya melalui situs web.</p> <p>PERTAMINA has issued its Sustainability Reports since 2011 and published them through the Company's website.</p>	<p>Meningkatkan kualitas pelaporan, dengan fokus pengungkapan informasi terkait kinerja pengelolaan lingkungan, sosial, dan tata kelola keberlanjutan (LST/ESG).</p> <p>Amplifying the quality of reporting with information disclosure focusing on environmental, social, and sustainability governance (ESG) management performance.</p>

Pernyataan Dewan Komisaris dan Direksi tentang Tanggung Jawab atas Laporan Keberlanjutan 2023

Statement of the Board of Commissioners' and the Board of Directors' Responsibility on the 2023 Sustainability Report

Dewan Komisaris PT Pertamina (Persero) Board of Commissioners of PT Pertamina (Persero)

Jakarta, Mei | May 2024



Basuki Tjahaja Purnama
Komisaris Utama/Komisaris Independen
President Commissioner/Independent
Commissioner



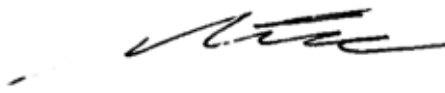
Alexander Lay
Komisaris Independen
Independent Commissioner



Bambang Suswanto
Komisaris
Commissioner



Heru Pambudi
Komisaris
Commissioner



Ahmad Fikri Assegaf
Komisaris Independen
Independent Commissioner



Iggi Haruman Achsien
Komisaris Independen
Independent Commissioner



Pahala Nugraha Mansury
Wakil Komisaris Utama
Vice President Commissioner
(Periode 1 Januari – 25 Juli 2023)
(Period of 1 January – 25 July 2023)



Rosan Perkasa Roeslani
Wakil Komisaris Utama
Vice President Commissioner
(Periode 25 Juli – 25 Oktober 2023)
(Period of 25 July – 25 October 2023)



Rida Mulyana
Komisaris
Commissioner
(Periode 1 Januari – 22 September 2023)
(Period of 1 January – 22 September 2023)

Kami menyatakan bertanggung jawab penuh atas kebenaran isi Laporan Keberlanjutan Tahun PT Pertamina (Persero) 2023.

We are fully accountable for the accuracy of the entire content of the 2023 Sustainability Report of PT Pertamina (Persero).

Direksi PT Pertamina (Persero)
Board of Directors of PT Pertamina (Persero)

Jakarta, Mei | May 2024



Nicke Widyawati
Direktur Utama
President Director & CEO



A. Salyadi Saputra
Direktur Strategi, Portofolio, dan Pengembangan Usaha
Director of Strategy, Portfolio, and New Ventures



Emma Sri Martini
Direktur Keuangan
Director of Finance



M. Erry Sugiharto
Direktur Sumber Daya Manusia
Director of Human Capital



Alfian Nasution
Direktur Logistik & Infrastruktur
Director of Logistics & Infrastructure



Erry Widiastono
Direktur Penunjang Bisnis
Director of Corporate Services



Dedi Sunardi
Direktur Penunjang Bisnis
Director of Corporate Services
(Periode 1 Januari – 8 Maret 2023)
(Period of 1 January – 8 March 2023)

Ikhtisar Kinerja Keberlanjutan [OJK B] Sustainability Performance Highlights



Kinerja Keberlanjutan Pengelolaan Ekonomi: Finansial (dalam Jutaan USD) [OJK B.1] Sustainability Performance in Economic Management: Financial (in Million USD)

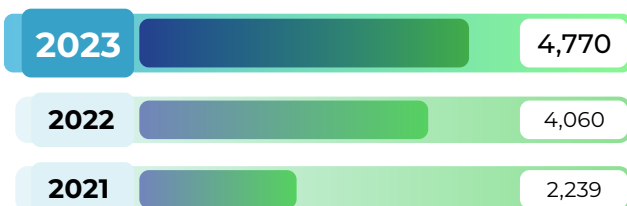
Penjualan dan Pendapatan Usaha Lainnya [OJK B.1b]
Sales and Other Operating Revenues



EBITDA



Laba Tahun Berjalan [OJK B.1c]
Profit for the Year



Sustainability Budget Tagging (SBT)



Kinerja Keberlanjutan Pengelolaan Ekonomi: Produksi dan Distribusi [OJK-B.1a] [SASB EM-EP-000.A]
Sustainability Performance in Economic Management: Production and Distribution

Produksi Migas
Oil and Gas Production



Kapasitas Pengolahan
Refining Capacity



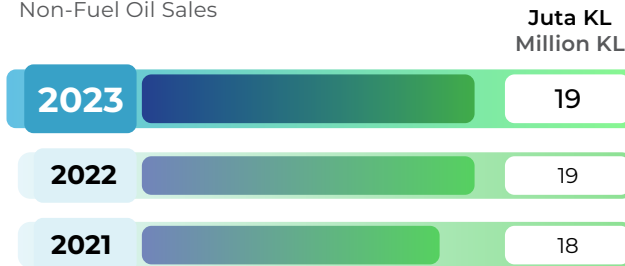
Pengolahan Minyak Mentah, Gas, & Intermediate (Intake)
Crude Oil, Gas, & Intermediate Refinery (Intake)



Penjualan BBM
Fuel Oil Sales

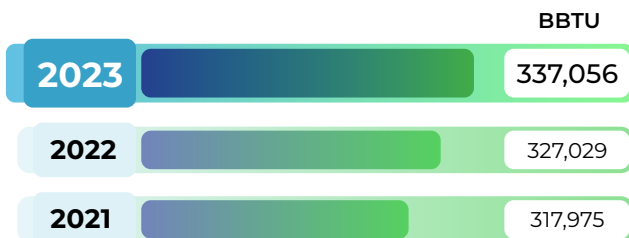


Penjualan Non-BBM
Non-Fuel Oil Sales

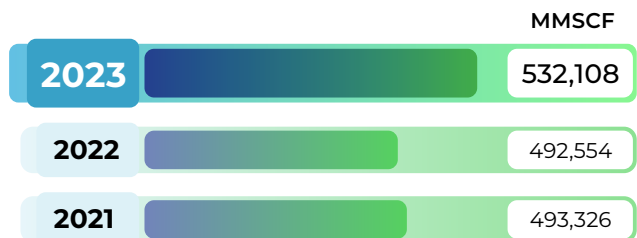


Material dan Produk Ramah Lingkungan [OJK B.1d]
Eco-Friendly Materials and Products

Volume Penjualan Gas*
Gas Sales Volume



Volume Transportasi Gas
Gas Transportation Volume

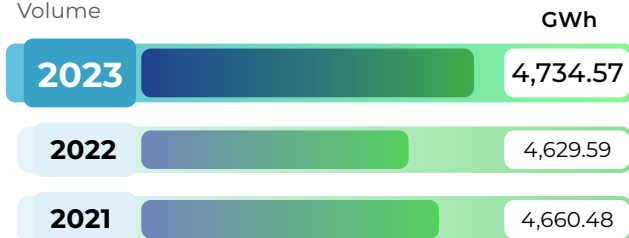


Keterangan | Note:

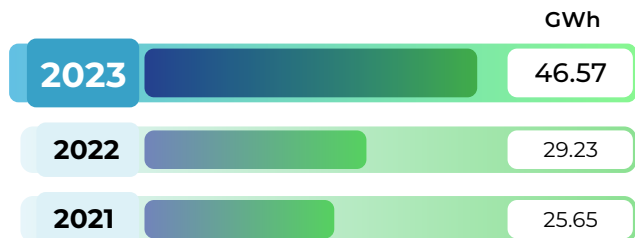
* Volume penjualan gas hanya mencakup penjualan gas niaga tanpa memperhitungkan volume dari terminal usage agreement.
Gas sales volume only includes commercial gas sales without taking into account the volume from terminal usage agreements.

Material dan Produk Ramah Lingkungan [OJK B.1d]
Eco-Friendly Materials and Products

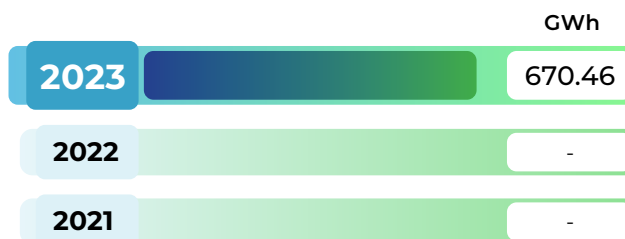
Volume Produksi Uap dan Listrik dari Panas Bumi
Steam and Electricity from Geothermal Production
Volume



Volume Produksi Listrik EBT (Non-Panas Bumi)
NRE Electricity Production Volume

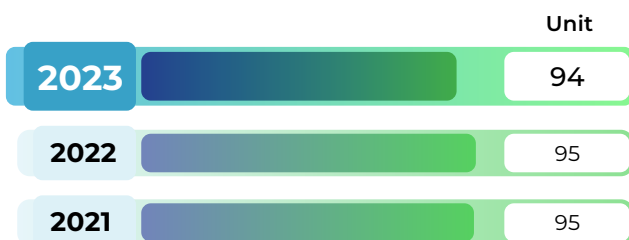


Volume Produksi Listrik Low Carbon
Low Carbon Electricity Production Volume

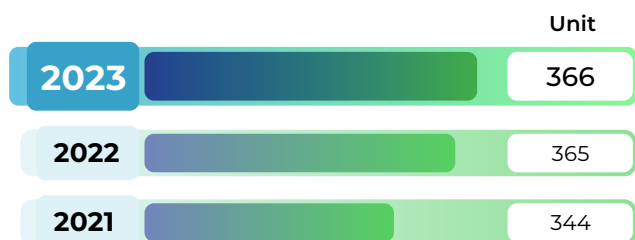


Jumlah Armada Kapal
Number of Fleets

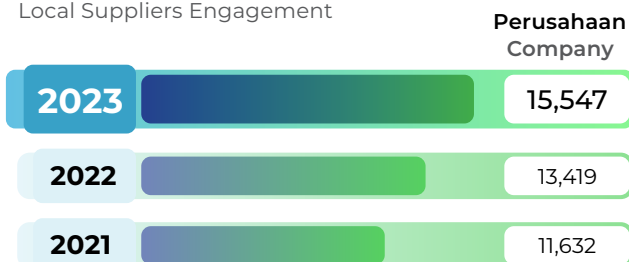
Tanker
Tanker



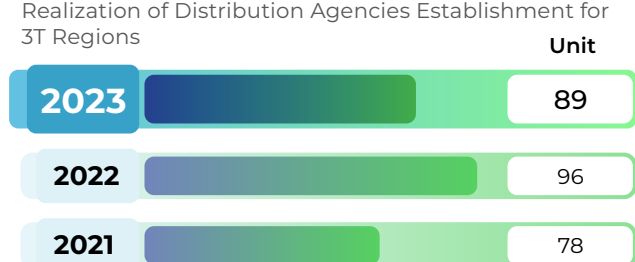
Layanan Kelautan dan Dukungan Lepas Pantai
Marine and Offshore Support Services



Pelibatan Pemasok Lokal [OJK B.1e]
Local Suppliers Engagement



Realisasi Pendirian Lembaga Penyalur Wilayah 3T
Realization of Distribution Agencies Establishment for 3T Regions



Kinerja Keberlanjutan Pengelolaan Lingkungan [OJK-B2] Sustainability Performance in Environmental Management

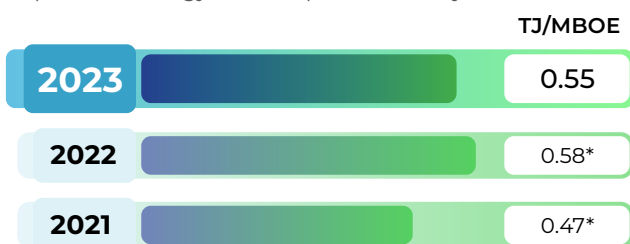
Konsumsi Air Water Consumption



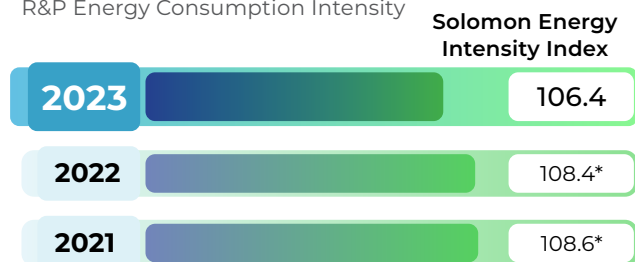
Penggunaan Energi [OJK B.2a] Energy Use



Intensitas Konsumsi Energi Upstream [OJK B.2a] Upstream Energy Consumption Intensity

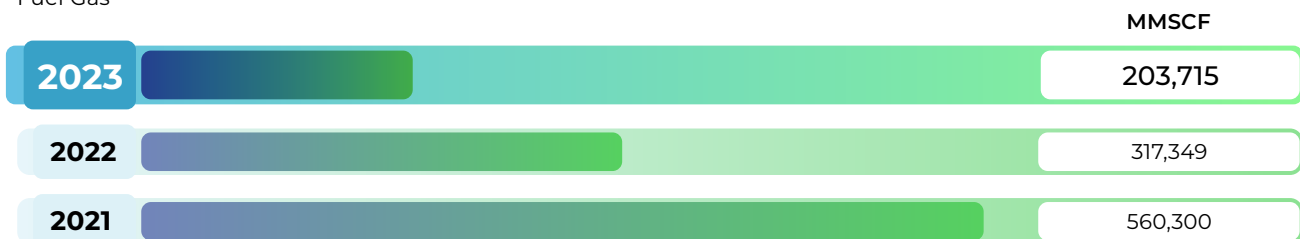


Intensitas Konsumsi Energi R&P [OJK B.2a] R&P Energy Consumption Intensity



Konsumsi Bahan Bakar dari Sumber Energi Tidak Bergerak [EM-SV-110a.1] Fuel Consumption from Stationary Energy Sources

Fuel Gas

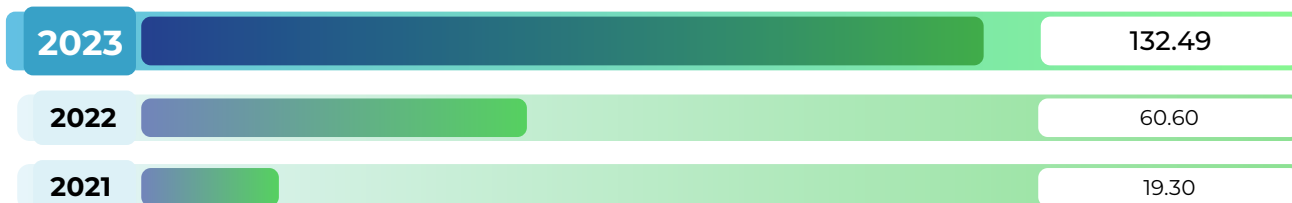


Fuel Oil



Konsumsi Bahan Bakar dari Sumber Energi Tidak Bergerak [EM-SV-110a.1] Fuel Consumption from Stationary Energy Sources

Gasoline

 m^3 

Diesel

 m^3 

Konsumsi Bahan Bakar dari Sumber Bergerak [EM-SV-110a.1] Fuel Consumption from Non-stationary Sources

Diesel/Solar

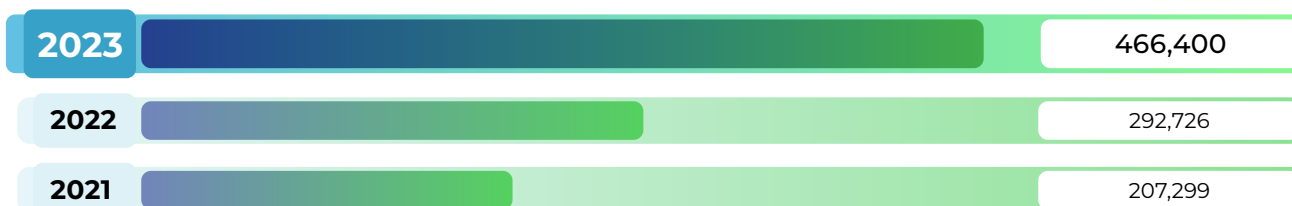
MMSCF



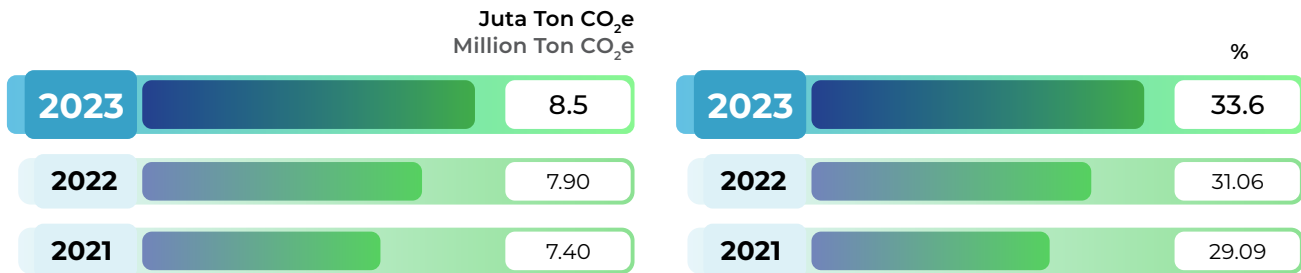
Gasoline

 m^3 

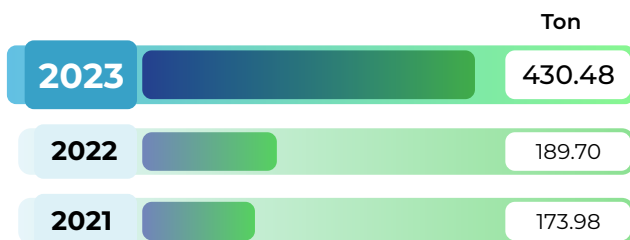
Marine Fuel

 m^3 

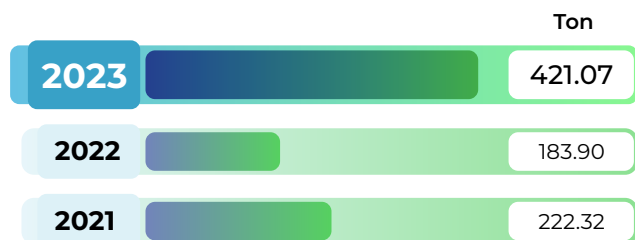
Realisasi Reduksi Emisi terhadap Skenario *Baseline* BAU Tahun 2010 [OJK B.2b]
Realization of Emission Reduction against BAU Baseline Scenario in 2010



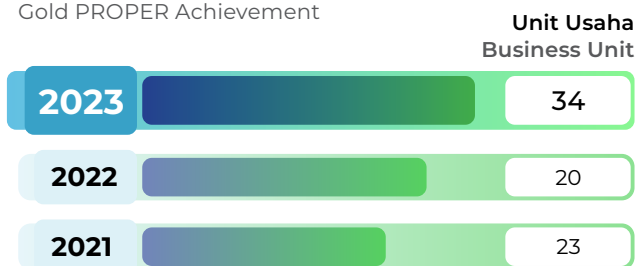
Pengurangan Limbah Non-B3 [OJK B.2c]
Non-hazardous & Toxic Waste Reduction



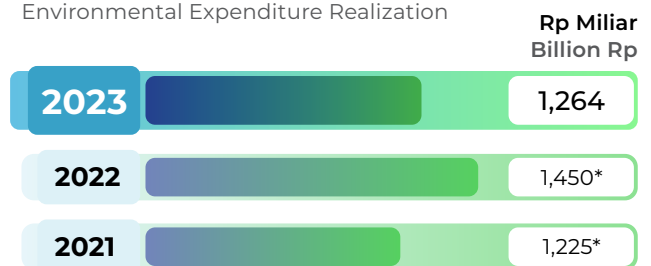
Pengurangan Limbah B3 [OJK B.2c]
Hazardous & Toxic Waste Reduction



Pencapaian PROPER Emas
Gold PROPER Achievement



Realisasi Belanja Lingkungan
Environmental Expenditure Realization



Luasan Wilayah Konservasi di Wilayah Operasi [OJK B.2d]
Conservation Area in Operational Areas



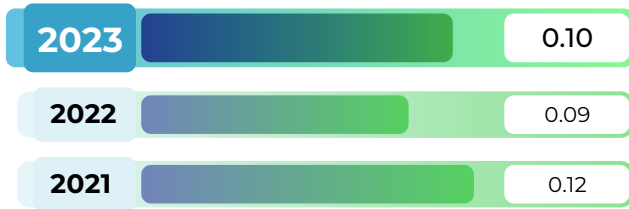
* Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu penambahan perhitungan pembuangan air dari reservoir dan air laut. [GRI 2-4]
Restatement due to change in reporting scope, i.e. addition of accounting for water discharge from reservoirs and seawater.

** Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu dengan dilakukannya *exclude non-operated asset dan non-leased asset* sesuai standar GHG Protocol. [GRI 2-4]
Restatement of information due to changes in the scope of reporting, namely by excluding non-operated assets and non-leased assets in accordance with the GHG Protocol standard.

Kinerja Keberlanjutan Pengelolaan Sosial [OJK B.3] Sustainability Performance in Social Management

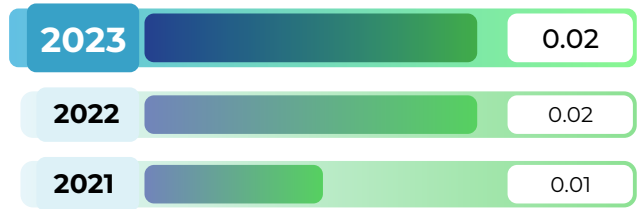
Total Recordable Incident Rate (TRIR)

Per 1 Million Work Hour



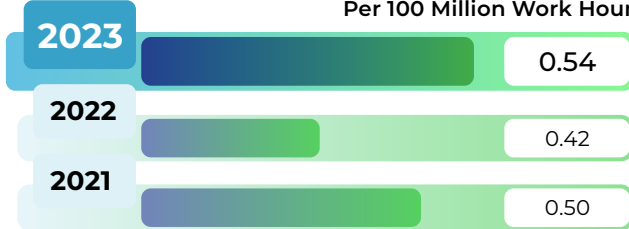
Lost Time Incident Rate (LTIR)

Per 1 Million Work Hour



Fatal Accident Rate (FAR)

Per 100 Million Work Hour



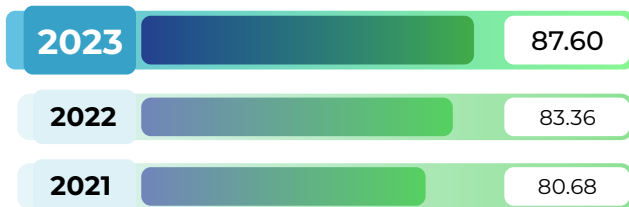
Employee Turnover

%



Employee Engagement

%



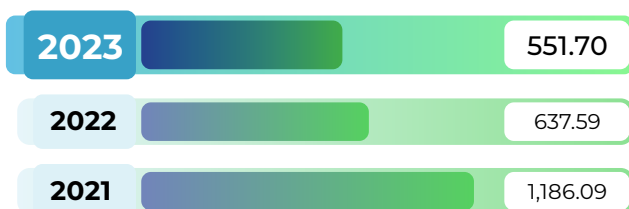
Survei Kepuasan Pelanggan Customer Satisfaction

Skala Likert
Likert Scale



Biaya TJSL Disalurkan Disbursed Corporate Social & Environmental Responsibility (CSR) Cost

Rp Miliar
Billion Rp



Realisasi TKDN Local Content Realization

%



Kinerja Keberlanjutan Tata Kelola Governance Sustainability Performance

Hasil Penilaian Penerapan GCG
GCG Implementation Assessment Results



Sertifikasi dan Standardisasi Manajemen [GOV 2.C3]	Management's Certification and Standardization
ISO 37001:2016 Sistem Manajemen Anti Penyuapan	ISO 37001:2016 Anti-Bribery Management System
ISO 27001:2013 Sistem Manajemen Keamanan Informasi	ISO 27001:2013 Information Security Management System
ISO 50001:2018 Sistem Manajemen Energi	ISO 50001:2018 Energy Management System
ISO 9001:2015 Sistem Manajemen Mutu	ISO 9001:2015 Quality Management System
ISO 14001:2015 Sistem Manajemen Lingkungan	ISO 14001:2015 Environmental Management System
ISO 45001:2018 Sistem Manajemen Keselamatan dan Kesehatan Kerja	ISO 45001:2018 Occupational Safety and Health Management System
ISO 17025:2017 Laboratorium Pengujian dan Kalibrasi	ISO 17025:2017 Testing and Calibration Laboratories
ISO 22301:2019 Keberlanjutan Bisnis	ISO 22301:2019 Business Continuity
ISO 20000-1:2018 Manajemen Pelayanan Teknologi Informasi	ISO 20000-1:2018 Information Technology Services Management
PAS 99:2012 Sistem Manajemen Terintegrasi	PAS 99:2012 Integrated Management System
API Q1 Quality Management System	API Q1 Quality Management System
Sistem Manajemen Pengamanan (SMP)	Security Management System (SMP)
ISO 21500:2021 Sistem Manajemen Proyek	ISO 21500:2021 Project Management System
ISO 55001:2014 Sistem Manajemen Aset	ISO 55001:2014 Asset Management System
ISO 56002 Pedoman untuk Inovasi Perusahaan	ISO 56002 Guidance Standard for Company's Innovation

Penjelasan Direksi [OJK D.1][GRI 2-14] Board of Director's Report



Nicke Widyawati

Direktur Utama
President Director & CEO

Para pemangku kepentingan yang terhormat,

Puji syukur kita panjatkan ke hadirat Allah SWT, Tuhan yang Maha Esa, karena atas rida-Nya, PT Pertamina (Persero) dapat melewati tahun 2023 yang dihadapkan pada tantangan ketidakpastian makro ekonomi dan geopolitik yang masih membayangi perekonomian global. Kondisi tersebut tentu saja mempengaruhi kinerja PERTAMINA terutama dalam realisasi transisi energi serta dukungan pada target *net zero emission* (NZE) tahun 2060 atau lebih cepat, melalui pengelolaan lingkungan (*environmental*), sosial (*social*) dan tata kelola (*governance*) (LST/ESG) di seluruh proses bisnis Perseroan.

Kebijakan untuk Merespons Tantangan dan Pelaksanaan Strategi Keberlanjutan [OJK D.1a]

Ketidakpastian makro ekonomi dan geopolitik memberikan pengaruh pada tiga isu strategis terkait energi atau trilema energi yakni *Energy Security* (Ketahanan Energi), *Energy Affordability* (Keterjangkauan Biaya Energi), dan *Environmental Sustainability* (Keberlanjutan Lingkungan). Kemampuan setiap negara di dunia mengelola trilema energi akan turut menentukan pencapaian NZE secara global. Demikian pula dengan Indonesia, yang menempatkan PERTAMINA sebagai ujung tombak Pemerintah menjalankan transisi energi dan mencapai NZE tahun 2060 atau lebih cepat.

Dear respected stakeholders,

We would like to praise and express our gratitude to God Almighty for the blessings as PT Pertamina (Persero) was able to surpass 2023 despite the challenging macroeconomic and geopolitical uncertainties that overshadowed the global economy. Because of this, PERTAMINA's performance was affected, especially in energy transition realization and support for the 2060 net zero emission or sooner, through environmental, social, and governance (ESG) management across the Company's business processes.

Policy to Respond to Challenges and Implementation of Sustainability Strategy

[OJK D.1a]

The macroeconomic and geopolitical uncertainties influence the three strategic issues related to energy, or energy trilemma, such as Energy Security, Energy Affordability, and Environmental Sustainability. The capacity of each country worldwide to manage the energy trilemma will determine the achievement of NZE globally. Likewise, Indonesia made PERTAMINA the government's leader in running the energy transition and realizing the 2060 NZE or sooner.

Menghadapi tantangan trilema energi, PERTAMINA memiliki tiga strategi dalam mengelola keberlanjutan. Pertama, PERTAMINA mempertahankan bisnis utama yakni minyak dan gas (migas), karena Pemerintah Indonesia memiliki target meningkatkan produksi migas dari 700 ribu barel per hari (BPH) menjadi 1 juta BPH pada tahun 2030. Namun target tersebut harus bisa dipenuhi dengan menjalankan proses bisnis ramah lingkungan (*green operation*).

Strategi kedua, mengembangkan produk rendah karbon dengan memproduksi *biofuel*, *biogasoline*, serta mengembangkan bahan bakar jet berkelanjutan yang dicampur minyak sawit. Strategi ketiga, yakni pengimbangan karbon melalui pengurangan emisi dengan mempersiapkan *Carbon Capture, Utilization, and Storage* (CCUS), serta *Natural Base Solution* (NBS) dengan hutan yang dimiliki Indonesia.

Kami memahami bahwa pelaksanaan ketiga strategi tersebut tak bisa hanya mengandalkan PERTAMINA, dan membutuhkan kerja sama guna mendukung transisi energi. Untuk itu Perseroan terus mendorong semua pihak di tataran nasional maupun global untuk berkolaborasi dalam menginisiasi pemanfaatan sumber energi, sehingga memberi nilai tambah sekaligus mendapatkan solusi dari tingginya permintaan energi terbarukan dan bahan bakar rendah karbon guna mengurangi emisi GRK.

Penerapan dan Kinerja Keberlanjutan [OJK D.1b]

Kesungguhan PERTAMINA menerapkan keberlanjutan selama tahun 2023, memberikan catatan positif pada kinerja Perseroan. Salah satunya, kami kembali menjadi satu-satunya perusahaan Indonesia yang masuk daftar Fortune Global 500. Di 2023, PERTAMINA juga menduduki peringkat #141, mengalami kenaikan 82 peringkat dari tahun 2022 yang berada di posisi #223.

Bracing the energy trilemma, PERTAMINA has three strategies to manage sustainability. First, preserve the core business, namely oil and gas as the Government of Indonesia is targeting to increase oil and gas production from 700 thousand barrels per day (BPD) to 1 million BPD by 2030. This target must be met through environmentally friendly business process (*green operation*).

Second, develop low-carbon products by producing biofuel and biogasoline, and establish sustainable palm oil-mixed jet fuel. Third, carbon offset by reducing emissions and preparing Carbon Capture, Utilization, and Storage (CCUS) and Natural Base Solution (NBS) with Indonesia-owned forests.

We understand that to implement the three strategies, not only we rely on PERTAMINA but also on cooperation to support the energy transition. Hence, the Company strongly encourages all parties at the national and global level to collaborate in harnessing energy sources, so that it can give added value and obtain solutions from the high demand for renewable energy and low-carbon fuel to reduce GHG emissions.

Implementing Sustainability and its Performance [OJK D.1b]

PERTAMINA seriousness in implementing sustainability in 2023 resulted in a positive performance, such as PERTAMINA's comeback as the only Indonesian company that made the list of Fortune Global 500. In 2023, PERTAMINA was ranked 141st and went up by 82 ranks from 223rd in 2022.

Dalam hal kinerja Keuangan, Perseroan mencatatkan laba bersih Perseroan sebesar USD4,77 juta yang dapat diatribusikan kepada pemilik entitas induk mencapai USD4.441 juta serta kepada entitas nonpengendali sebesar USD0,33 juta. Pendapatan PERTAMINA tahun 2023 mencapai USD75,79 miliar (Rp1.156,15 triliun), turun 10,72% dari tahun 2022 sebesar USD84,89 miliar (Rp1,26 triliun). PERTAMINA juga mencatatkan pencapaian Tingkat Komponen Dalam Negeri (TKDN) sebesar 73,2% pada tahun 2023, lebih tinggi dari tahun 2022 sebesar 60,6%, dengan nilai komponen dalam negeri mencapai USD1,20 miliar, sehingga menjadi daya dorong bagi pertumbuhan ekonomi nasional.

Dalam pengelolaan ESG, pada tahun 2023, PERTAMINA telah menjalankan serangkaian program reduksi emisi dari aktivitas operasi dan berhasil mencatatkan reduksi emisi sebesar 1.135 juta ton CO₂e. Dengan pencapaian tersebut maka secara keseluruhan sejak 2010 sampai dengan akhir 2023, PERTAMINA telah berkontribusi mengurangi jejak karbon emisi sebesar 8,5 juta ton CO₂e dari *baseline* emisi tahun 2010. Penjualan produk biodiesel B35 telah berhasil menurunkan emisi sekitar 28 juta ton CO₂e per tahunnya. PERTAMINA juga melakukan pengembangan pengelolaan emisi gas metana (CH₄) dan upaya dekarbonisasi yang telah dilakukan juga berkontribusi terhadap penurunan gas metana (CH₄).

Capaian ESG tahun 2023 juga ditandai dengan kenaikan peringkat ESG PERTAMINA, yang menempatkan Perseroan di posisi pertama pada subsektor minyak dan gas terintegrasi dari 61 perusahaan dunia. Capaian tersebut berdasarkan peringkat dari lembaga ESG Rating Sustainalytics. Skor ESG *Risk Rating* PERTAMINA akhir tahun 2023 turun menjadi 20,7 (*Medium Risk*) dari sebelumnya 22,1. Skor Sustainalytics ini mencerminkan tingkat risiko yang lebih baik.

In terms of financial performance, the Company recorded a net profit of USD4.77 million which can be attributed to the owners of the parent entity amounting to USD4,441 million and to non-controlling entities amounting to USD0.33 million. The Company's Revenue in 2023 reached USD75.79 billion (Rp1,156.15 trillion), down by 10.72% from USD84.89 billion (Rp1.26 trillion) in 2022. PERTAMINA also achieved 73.2% for Local Content Level (TKDN) in 2023, 60.6% higher than in 2022 which reached a value of USD1.20 billion, making it a driving force for national economic growth.

In ESG management, in 2023, PERTAMINA implemented a series of emission reduction programs from operational activities and successfully recorded a reduction in emissions of 1,135 million tons of CO₂e. With this achievement, overall from 2010 until the end of 2023, PERTAMINA has contributed to reducing carbon emissions by 8.5 million tons of CO₂e from the 2010 emission baseline. The sale of B35 biodiesel managed to lower emissions by 28 million tons CO₂e per year. PERTAMINA also develops methane gas (CH₄) emissions management and decarbonization efforts, contributing to methane gas (CH₄) reduction.

The 2023 ESG achievement was also marked by an increase in PERTAMINA's ESG rating, putting the Company in first place out of 61 companies worldwide in the integrated oil and gas subsector. This rating is based on the ESG Rating Sustainalytics. PERTAMINA's ESG Risk Rating scored at 20.7 (Medium Risk) at the end of 2023 from previously 22.1. This Sustainalytics's score reflects a better level of risk.

Pencapaian kinerja pengelolaan ESG tidak terlepas dari upaya dekarbonisasi PERTAMINA yang tidak berhenti pada Cakupan 1 & 2, namun termasuk Cakupan 3 yang dijalankan melalui penyaluran B35 di 119 lokasi Terminal BBM di seluruh Indonesia. PERTAMINA mendukung program Pemerintah terkait implementasi biodiesel B35, sesuai Kepmen ESDM No.1.K/EK.01/MEM.E/202 tentang Perubahan atas Keputusan Menteri Energi dan Sumber Daya Mineral Nomor 295.K/EK/01/MEM/E/2022 tentang Penahapan Pemanfaatan Bahan Bakar Nabati Jenis Biodiesel sebagai Campuran Bahan Bakar Minyak Jenis Minyak Solar dalam Kerangka Pembiayaan oleh Badan Pengelola Dana Perkebunan Kelapa Sawit. Dalam mempercepat transisi energi, PERTAMINA juga mengoperasikan infrastruktur hilir kendaraan listrik berupa Stasiun Penukaran Baterai Kendaraan Listrik Umum (SPBKLU) atau *Battery Swapping Station* (BSS) yang terdapat 46 unit SPBKLU di Jabodetabek.

Kesungguhan kami mengelola lingkungan dikuatkan apresiasi dari berbagai pihak, di antaranya Kementerian Lingkungan Hidup dan Kehutanan (KLHK). Pada tahun 2023, Perseroan mendapatkan 34 penghargaan PROPER Emas, dan 76 PROPER Hijau untuk berbagai unit operasi PERTAMINA. Direktur Utama PERTAMINA, Nicke Widyawati juga mendapatkan penghargaan *Green Leadership* Utama sebagai pimpinan tertinggi perusahaan yang memperoleh peringkat emas. PERTAMINA juga mendapatkan tiga penghargaan *Green Leadership* Madya yang diraih para pimpinan Subholding dan Anak Perusahaan.

Dalam pengelolaan sosial, salah satu fokus kami adalah penguatan sumber daya manusia (SDM). Hal ini penting mengingat saat ini 68% pegawai PERTAMINA merupakan generasi Y & Z, artinya dalam beberapa tahun mendatang mereka akan menjalankan roda kepemimpinan PERTAMINA. Langkah yang kami lakukan adalah menyelenggarakan berbagai program pengembangan SDM di antaranya *Agent of*

The achievements in ESG management performance could be materialized due to PERTAMINA's decarbonization efforts to the Scope 1, 2, and 3 through B35 distribution in 119 Fuel Terminals across Indonesia. PERTAMINA supports the Government's program on the implementation of biodiesel B35 in accordance with the Minister of Energy and Mineral Resources Decree No. 1.K/EK.01/MEM.E/202 for the Amendment of the Minister of Energy and Mineral Resources No. 295.K/EK/01/MEM/E/2022 on the Stages of Biodiesel-Type Biouel as a Mix for Diesel Fuel in the Financing Framework by the Oil Palm Plantation Fund Management Agency. To accelerate energy transition, PERTAMINA also operates downstream infrastructure for electric vehicles in the form of EV Battery Swapping Stations (BSS) of which there are 46 BSS units in Jabodetabek.

Our determination in environmental management grows stronger by being appreciated by various parties, such as the Ministry of Environment and Forestry (KLHK). In 2023, the Company received 34 Gold PROPER and 76 Green PROPER awards for its many operating units. PERTAMINA's President Director & CEO, Nicke Widyawati, was awarded Green Leadership Utama as the highest leader of a gold-ranked company. The Company also received three Green Leadership Madya awards, which were given to the leaders of Subholding and Subsidiaries.

In social management, one of our focus is human capital reinforcement. This is important as the Y and Z generations make up 68% of PERTAMINA's employees and they will become the force behind the Company's leadership. We then held various HC development programs, such as Agent of Change (AOC). Moreover, the Respectful Workplace Policy and Human Rights Policy, including adopting Voluntary Principles on Security and Human

Change (AOC). Kami juga menerapkan kebijakan *Respectful Workplace Policy* dan *Human Right Policy*, termasuk mengadopsi *Voluntary Principles on Security and Human Rights (VPSHR)* untuk mendorong pemenuhan HAM melalui keberagaman dan inklusi, meningkatkan *employee engagement rate*, mengembangkan kompetensi dan mendukung penuh kesetaraan gender dengan memberi ruang dan potensi kepada pekerja perempuan yang saat ini jumlahnya di Grup PERTAMINA mencapai 19,4% dari total pekerja. Perseroan juga mendukung pemberdayaan disabilitas untuk mendapatkan kesempatan bekerja di PERTAMINA, dan hingga akhir tahun 2023 tercatat ada 57 pegawai disabilitas, bertambah 22% dari tahun 2022 sebanyak 49 orang.

Fokus lain kami yaitu menerapkan keselamatan dan kesehatan kerja (K3), serta keselamatan proses, mengingat pada tahun 2023 ada beberapa insiden skala besar yang menuntut perbaikan. Insiden tersebut di antaranya, kebakaran Depo Plumpang di Koja, Jakarta Utara yang menyebabkan 38 warga meninggal dunia dan ribuan rumah warga terbakar. Selain itu juga terjadinya kebakaran di Kilang Dumai, Riau yang menyebabkan beberapa bangunan rumah warga mengalami kerusakan.

Seluruh insiden tersebut telah ditindaklanjuti PERTAMINA. Dari aspek sosial kemasyarakatan, kami telah membayarkan kompensasi dan memberikan bantuan sehingga mereka yang terdampak bisa bangkit serta berdaya kembali. Adapun dari aspek K3 dan keselamatan proses, Perseroan telah melakukan investigasi dan langkah perbaikan untuk mencegah terulangnya insiden, di antaranya implementasi inisiatif peningkatan kinerja HSSE, mengintegrasikan budaya HSSE dengan operasional Perseroan, serta memperkuat implementasi *Process Safety & Asset Integrity Management (PSAIM)*.

Rights (VPSHR) are in effect, promoting the fulfillment of human rights through diversity and inclusion, increasing employee engagement rate, developing competency, and fully supporting gender equality by providing space and potential to female employees, who currently make up 19.4% of the total employees in PERTAMINA Group. Empowerment for people with disabilities exists so that they can get working opportunities in PERTAMINA and, as of the end of 2023, there were 57 employees with disabilities, growing by 22% from 49 people in 2022.

Our other focus is to implement occupational health and safety (OHS), as well as process safety, considering that in 2023 there were several large-scale incidents that demanded improvement. These incidents include the Plumpang depot fire in Koja, North Jakarta, which caused the death of 38 residents and burned thousands of houses. In addition, there was also a fire at the Dumai Refinery, Riau, which caused damage to several residential buildings.

PERTAMINA have followed up all of the incidents. Of the social community aspect, both compensation and assistance have been provided to help empower the affected community. On the OHS and process safety aspect, the Company has investigated and conducted repair to prevent the incident to reoccur, including improving HSSE performance, integrating HSSE culture with the Company's operations, and strengthening the implementation of *Process Safety & Asset Integrity Management (PSAIM)*.

Fokus lain pengelolaan sosial adalah pemberdayaan masyarakat, di antaranya dengan mengenalkan pemanfaatan energi transisi kepada masyarakat melalui inovasi energi bersih berbasis desa pada Program Desa Energi Berdikari (DEB). Hingga akhir 2023, PERTAMINA telah mengembangkan 85 DEB di seluruh Indonesia, sehingga masyarakat di desa tersebut dapat menggunakan energi bersih sebagai sumber penggerak aktivitas mereka dan juga perekonomian desa, serta mengurangi emisi GRK.

Kelompok lain yang menjadi target pemberdayaan adalah pelaku usaha mikro kecil melalui Program Pendanaan Usaha Mikro Kecil (PUMK). Selama tahun 2023 realisasi penyaluran dana bergulir mencapai Rp141,9 miliar untuk 5.116 pelaku usaha mikro dan kecil (UMK) binaan. Selain pendanaan, PERTAMINA menjalankan program pembinaan mulai dari level regional, nasional, hingga internasional. Kegiatan pembinaan UMK yang dijalankan meliputi pameran, pelatihan dan *workshop*, pelatihan *e-learning*, *short course*, pendampingan dan *coaching*, *marketplace online*, sertifikasi, *business matching*, dan bentuk pembinaan lainnya. Melalui UMK Academy, PERTAMINA mengantar 573 UMK lulus dan naik kelas dalam program yang diselenggarakan tahun 2023, meningkat dari tahun 2022 sebanyak 511 UMK. UMK lulus dan naik kelas di tahun 2023 terdiri 178 UMK *Go Modern*, 240 UMK *Go Digital*, 91 UMK *Go Online*, dan 64 UMK *Go Global*.

Para pemangku kepentingan yang terhormat, Kesungguhan PERTAMINA dalam tata kelola mendukung keberlanjutan, dijalankan dengan melakukan asesmen untuk memastikan penerapan tata kelola telah berjalan dengan baik. Berdasarkan hasil asesmen tahun 2023, diperoleh hasil skor tata kelola perusahaan yang baik (GCG) mencapai 95,25% dengan predikat 'Sangat Baik', meningkat dari skor tahun buku 2022 sebesar 95,06% dengan predikat 'Sangat Baik'.

Another means for social management is through community empowerment where the utilization of energy transition is introduced to the community through a clean energy-based village in a program called Independent Energy Village (DEB). By the end of 2023, PERTAMINA has established 85 DEB throughout Indonesia, helping the village people using clean energy as their driving force for their activities and the village economy as well as reducing the GHG emissions.

Micro small enterprises are also a target for empowerment through the Micro Small Business Funding Program (PUMK). During 2023, the distributed revolving funds reached Rp141.9 billion for 5,116 fostered microsmall enterprises (MSE). Aside from funding, PERTAMINA performed a guidance program at regional, national to international levels. The activities included exhibitions, training and workshops, e-learning training, short courses, assistance and coaching, an online marketplace, certification, business matching, and other forms of guidance. PERTAMINA assisted 573 MSE to pass and upgrade in 2023 through UMK Academy, and this number increased from 511 MSE in 2022. The total 573 MSE consisted of 178 MSE Go Modern, 240 MSE Go Digital, 91 MSE Go Online, and 64 MSE Go Global.

Dear respected stakeholders, PERTAMINA's tenacity in upholding sustainability governance is shown by taking up an assessment to ensure the governance has been implemented well. According to the 2023 assessment results, the good corporate governance (GCG) score reached 95.25% with a 'Very Good' predicate, increasing from 95.06% in the 2022 fiscal year with a 'Very Good' predicate.

Sejalan dengan penerapan GCG, PERTAMINA memperkuat digitalisasi di seluruh lini bisnisnya, mulai dari hulu, pengolahan hingga pemasaran. Di sektor hulu, pemanfaatan teknologi digital dilakukan pada alur bisnis sejak awal hingga akhir (*end-to-end process*) dengan tujuan meningkatkan *lifting* migas, memitigasi *unplanned shutdown* dan *loss production*. Di sektor pengolahan dan petrokimia, peran digitalisasi dimanfaatkan untuk manajemen infrastruktur proyek, pengelolaan minyak mentah, pengelolaan produk, dan pengelolaan kilang. Adapun untuk sektor pemasaran dan distribusi, PERTAMINA telah menjalankan digitalisasi SPBU, melakukan otomasi pemesanan dan pemantauan pengiriman BBM sehingga ketersediaan stok BBM di SPBU lebih terjamin. Transformasi digital juga diterapkan di aspek terkecil seperti pengaturan dinas, sehingga aktivitas perjalanan dinas untuk 35 ribu pekerja Grup PERTAMINA dapat dipantau secara waktu nyata oleh Manajemen menggunakan aplikasi *digital travel management*, sehingga terlihat transparansi dari aktivitas masing-masing pekerja.

Strategi Pencapaian Target [OJK D.1c]

Pencapaian kinerja keberlanjutan selama tahun 2023 merupakan hasil dari pondasi yang semakin kuat setelah restrukturisasi melalui pembentukan *holding* dan *subholding*, serta dukungan seluruh pemangku kepentingan termasuk Pemerintah. Kondisi ini mendorong PERTAMINA merumuskan strategi sampai dengan tahun 2060 melalui *maintaining business legacy*, upaya dekarbonisasi, dan membangun bisnis hijau yang baru.

Strategi tersebut diterjemahkan melalui Fokus Keberlanjutan PERTAMINA yang meliputi dekarbonisasi; bisnis karbon; program air dan limbah; pengembangan EBT; *energizing community*; produk dan layanan keberlanjutan, implementasi B35 dan Stasiun Penukaran Baterai Kendaraan Listrik Umum (SPBKLU); implementasi keuangan ESG; penandaan anggaran

Aligning with the GCG implementation, PERTAMINA bolstered its digitalization throughout the business lines from the upstream, processing up to marketing. In the upstream sector, digital technology is applied to the business flow through end-to-end processes to increase oil and gas lifting and mitigate unplanned shutdown and loss production. In the processing and petrochemical sector, digitalization benefits the project's infrastructure management, crude oil management, product management, and refinery management. In the marketing and distribution sector, PERTAMINA has digitized Gas Stations (SPBU), automating the fuel ordering and delivery monitoring process, so that the fuel supply at SPBU is more secure. Digital transformation is also implemented in the smallest aspect, such as service arrangements, allowing the business trips of 35 thousand employees of PERTAMINA Grup to be monitored in real-time by the Management using a digital travel management application, making the employees' activities transparent.

Strategies for Target Achievement [OJK D.1c]

Achievements of sustainability performance in 2023 were a result of a stronger groundwork after a restructuring through holding and subholding establishment and due to the support given by all stakeholders, including the government. This encouraged PERTAMINA to formulate a strategy up to 2060 by maintaining business legacy, decarbonizing, and constructing new green business.

The strategy then was translated through PERTAMINA's Sustainability Focus, which includes decarbonization; carbon business; water and waste program; new and renewable energy development; energizing community; sustainability products and services, B35 implementation and EV Battery Swapping Station (SPBKLU); ESG finance implementation; sustainability budget tagging;

berkelanjutan; *integrated CCUS/CCS Strategy Road Map*; serta menghargai dan memberdayakan pekerja untuk bisnis berkelanjutan, prinsip sukarela tentang keamanan dan HAM.

Kami mengembangkan tiga skenario untuk memperhitungkan ketidakpastian tingkat pertumbuhan ekonomi dan laju transisi energi yaitu melalui skenario *Ordinary State*, *Appropriate Sustainability*, dan *Economic Renaissance*. Skenario *Ordinary State* merupakan skenario pada kondisi pertumbuhan ekonomi tidak terlalu jauh dari tren historis masa lalu Indonesia, di mana masih dibutuhkan perubahan struktural untuk bisa meningkatkan statusnya dari negara berpendapatan menengah. *Appropriate Sustainability*, adalah skenario dengan Indonesia tetap meneruskan komitmen untuk melakukan transisi energi dengan implementasi energi hijau dan transisi energi yang sejalan dengan pertumbuhan ekonomi. Terakhir, skenario *Economic Renaissance*, ketika Indonesia berhasil menjadi negara berpendapatan tinggi dengan produk domestik bruto tinggi sehingga berpengaruh terhadap permintaan energi dan mendapat dukungan terobosan teknologi yang mampu menurunkan emisi secara signifikan.

Ketiga skenario tersebut dibangun berdasarkan tingkatannya, di mana *Economic Renaissance* masuk ke dalam *high scenario*, sedangkan *Ordinary State* dan *Appropriate Sustainability* masuk dalam *low scenario*. *Outlook* energi Pertamina juga memperhitungkan implikasi bauran energi Indonesia jelang tahun 2060 seperti pengembangan batu bara, minyak, gas, dan energi terbarukan.

integrated CCUS/CCS Strategy Road Map; as well as honoring and empowering employees for sustainable business, volunteering principles on security and human rights.

Three scenarios were developed to determine the level of uncertainty of economic growth and energy transition rate, namely *Ordinary State*, *Appropriate Sustainability*, and *Economic Renaissance*. The *Ordinary State* is a scenario of an economic growth condition that closely depicts Indonesia's past historic trend where structural changes are needed to improve the country's mid-level income status. The *Appropriate Sustainability* is a scenario in which Indonesia is continuously committed to performing energy transition by implementing green energy and energy transition that agree with economic growth. Lastly, the *Economic Renaissance* refers to a time when Indonesia succeeded in becoming a state with high-earning income and a high level of GDP, which may contribute to energy demand and support in technology breakthroughs that can significantly reduce emissions.

The founding of these scenarios is level-based, wherein the *Economic Renaissance* falls under the high-scenario level, whereas the *Ordinary State* and the *Appropriate Sustainability* are categorized as the low-scenario level. Pertamina's energy outlook also calculates the implications of the energy mix in Indonesia by 2060, such as developments in coal, oil, gas, and renewable energy.

Penutup

Mengakhiri penjelasan ini, izinkan kami mewakili PERTAMINA menyampaikan terima kasih atas dukungan yang telah diberikan selama tahun 2023. Tentu saja kami berharap, dukungan tersebut akan selalu diberikan untuk memastikan kinerja keberlanjutan PERTAMINA akan terus berkelanjutan. Dukungan dari segenap pemangku kepentingan sangat dibutuhkan mengingat pada tahun-tahun mendatang, Perseroan dihadapkan pada tantangan dan dinamika yang lebih kompleks.

Closing

On behalf of PERTAMINA, we would like to say thank you for all the support that has been given throughout 2023. We hope that we will always be supported to ensure the sustainability performance will continue. Support from stakeholders is imperative, considering the Company will encounter more complex challenges and dynamics in years to come.

Jakarta, Mei | May 2024



Nicke Widyawati

Direktur Utama
President Director & CEO

Tentang PERTAMINA

Peringkat 141 Fortune Global 500

About PERTAMINA

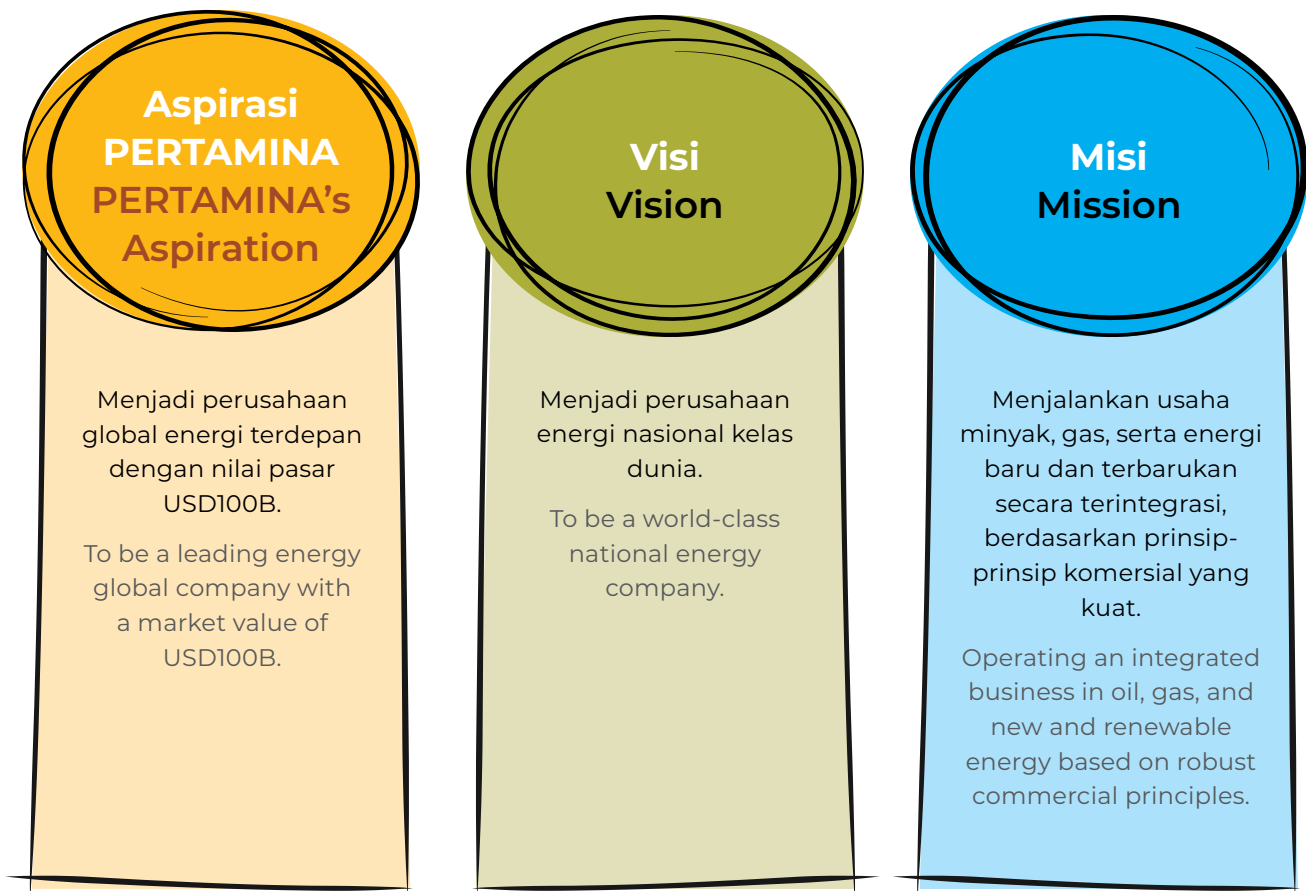
Ranked 141st of the Fortune Global 500

PT Pertamina (Persero) terus mengukuhkan diri sebagai perusahaan energi kelas dunia. Perseroan menduduki peringkat 141 Fortune Global 500 tahun 2023. PERTAMINA menjadi satu-satunya perusahaan Indonesia dan satu-satunya Badan Usaha Milik Negara (BUMN) dalam daftar Fortune Global 500 tahun 2023. Posisi tahun 2023 naik 82 peringkat dari urutan ke-223 pada tahun 2022.

PT Pertamina (Persero) continuously affirms itself as a world-class energy company. The Company is ranked 141st in the 2023 Fortune Global 500. PERTAMINA becomes the only Indonesian company and state-owned enterprise (SOE) listed in the 2023 Fortune Global 500. In 2023, it made a jump of 82 positions from its 2022 ranking at 223rd.

Aspirasi, Visi, dan Misi [OJK C.1]

Aspiration, Vision, and Mission



Nilai Perusahaan | Corporate Values

A

Amanah
Trustworthy

Memegang teguh kepercayaan yang diberikan

To uphold the trust given

K

Kompeten
Competent

Terus belajar dan mengembangkan kapabilitas

To continuously learn and cultivate capabilities

H

Harmonis
Harmonious

Saling peduli dan menghargai perbedaan

To acknowledge and appreciate differences

L

Loyal
Loyal

Berdedikasi dan mengutamakan kepedulian bangsa & negara

To be dedicated and prioritize the interest of the nation and the country

A

Adaptif
Adaptive

Terus berinovasi dan antusias dalam menggerakkan ataupun menghadapi perubahan

To keep creating innovations and enthusiasm for adapting with changes

K

Kolaboratif
Collaborative

Membangun kerja sama yang sinergis

To establish synergized cooperation

Identitas Perusahaan

- Nama Perusahaan: PT Pertamina (Persero) [GRI 2-1][GRI 207-4]
- Status Perusahaan: Perseroan Terbatas (PT), Badan Usaha Milik Negara (BUMN) [GRI 2-1]
- Bidang Usaha: Energi [GRI 2-6a][GRI 207-4]
- Kepemilikan Saham: 100% Pemerintah Republik Indonesia [OJK C.3c][GRI 2-1]

Corporate Identity

- Company's Name: PT Pertamina (Persero) [GRI 2-1][GRI 207-4]
- Company's Status: Limited Liability Company (PT), State-Owned Enterprise (SOE) [GRI 2-1]
- Line of Business: Energy [GRI 2-6a][GRI 207-4]
- Share Ownership: 100% owned by the Government of Republic of Indonesia [OJK C.3c][GRI 2-1]

Alamat Kantor Pusat | Head Office Address [OJK C.2][GRI 2-1]



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@pertamina



Call Center: 135



<https://www.pertamina.com>

Skala Usaha [OJK C.3]

Business Scale

Uraian Description	Satuan Unit	2023	2022	2021
Jumlah Pekerja [GRI 2-7][GRI 207-4] Number of Employees				
Pegawai PERTAMINA PERTAMINA's Employees		40,415	43,666	45,312
Pekerja Lain Bukan Pegawai PERTAMINA Workers who are not PERTAMINA's Employees	Orang People	798	1,229	737
Jumlah Total		41,213	44,895	46,049
Volume Produksi Production Volume				
Produksi Migas Oil and Gas Production	MBOEPD	1,044	967	897
Produksi EBT (Selain Migas) New and Renewable Production (Aside from Oil and Gas)				
Volume Produksi Uap dan Listrik dari Panas Bumi Steam and Electricity from Geothermal Production Volume		4,734.57	4,629.59	4,660.48
Volume Produksi Listrik EBT (Non-Panas Bumi) NRE Electricity Production Volume (Non-Geothermal)	GWh	46.57	29.23	25.65
Volume Produksi Listrik Low Carbon Low Carbon Electricity Production Volume		670.46	-	-
Pendapatan Usaha Operating Revenue				
Total Penjualan dan Pendapatan Usaha Lain Total Sales and Other Operating Revenues	Juta USD Million USD	75,788	84,888	57,509
Laba Tahun Berjalan Profit for the Year		4,770	4,060	2,239
Total Kapitalisasi [OJK C.3a] Total Capitalization				
Total Liabilitas Total Liabilities		49,695	50,596	44,723
Total Ekuitas Total Equities	Juta USD Million USD	41,429	37,215	33,328
Total Aset Total Assets		91,124	87,811	78,051

Wilayah Operasi dan Pemasaran Luar Negeri

[OJK C.3d][GRI 2-1]

Pengungkapan informasi mengenai wilayah operasional, lokasi serta alamat kantor cabang dan kantor perwakilan, serta pemasaran luar negeri per 31 Desember 2023, disampaikan dalam Laporan Tahunan PT Pertamina (Persero) 2023.

Operational Areas and Overseas Marketing

[OJK C.3d][GRI 2-1]

Information disclosure on operational areas, locations, and addresses of branch offices and representative offices as well as overseas marketing as of 31 December 2023 is presented in the 2023 Annual Report of PT Pertamina (Persero).

Produk, Kegiatan Usaha, Rantai Nilai, dan Relasi Bisnis Lain [GRI C.4][GRI 2-6]

Products, Business Activities, Value Chain, and Other Business Relations

Sesuai Akta No. 22 tanggal 11 Agustus 2023, Perseroan melalui Entitas Anak dapat melaksanakan kegiatan usaha utama dan kegiatan usaha dalam rangka optimalisasi pemanfaatan sumber daya yang dimiliki. PERTAMINA menerima mandat dari Pemerintah terkait penugasan kewajiban pelayanan publik (*public service obligation*) penyediaan BBM tertentu. Dalam menjalankan kegiatan operasinya, Perseroan memiliki relasi bisnis dalam bentuk enam *joint venture* dan kerja sama pengelolaan hulu migas. Pengungkapan informasi tentang produk, layanan dan kegiatan usaha, serta bentuk relasi bisnis yang dijalankan dapat dilihat dalam Laporan Tahunan PT Pertamina (Persero) 2023.

Per Deed No. 22 of 11 August 2023, the Company, by way of its subsidiaries, has the capacity to carry out its main business activities to optimize the use of resources owned. PERTAMINA received a mandate from the Government related to the assignment of Public Service Obligation (PSO) to supply certain oil products. Running its operations, the Company is managing its business relations in six joint ventures and upstream oil and gas cooperation. Information disclosure on products, services, and business activities as well as various types of business relations run can be viewed in the 2023 Annual Report of PT Pertamina (Persero).

Para Pekerja [GRI 2-7, 2-8]

Employee

Pengungkapan informasi mengenai pekerja, baik pegawai PERTAMINA maupun bukan pegawai PERTAMINA, disampaikan pada bahasan Pengelolaan Ketenagakerjaan.

Information disclosure on employees, both PERTAMINA and non-PERTAMINA employees, is presented under the topic Labor Management.





Perubahan Signifikan [OJK-C.6] Significant Changes

Selama tahun 2023 terjadi perubahan signifikan di Perseroan, terkait perubahan anggota Dewan Komisaris dan Direksi. Pengungkapan informasi mengenai komposisi dan susunan Dewan Komisaris dan Direksi per 31 Desember 2023 disampaikan dalam Laporan Tahunan PT Pertamina (Persero) 2023.

Perubahan signifikan lain adalah pencatatan perdana saham atau *initial public offering* (IPO) PT Pertamina Geothermal Energy (PGE) di Bursa Efek Indonesia pada 24 Februari 2023, dengan kode saham PGEO. PGE merupakan Entitas Anak dari *Subholding* PERTAMINA *New and Renewable Energy* (NRE) yang mengelola 13 Wilayah Kerja Panas Bumi (WKP) dengan total kapasitas terpasang sebesar 1.877 MW, terdiri dari 672 MW dikelola langsung dan 1.205 MW melalui skema Kontrak Operasi Bersama (*Joint Operation Contract*). IPO merupakan langkah cepat PGE untuk melakukan ekspansi bisnis.

In 2023, a significant change took place in the Company, particularly among the members of the Board of Commissioners and Board of Directors. Information disclosure on the composition and organization of the Board of Commissioners and Board of Directors as of 31 December 2023 is elaborated in the 2023 Annual Report of PT Pertamina (Persero).

Another significant change was the listing of the initial public offering (IPO) of PT Pertamina Geothermal Energy (PGE) at Indonesia Stock Exchange on 24 February 2023 under the ticker PGEO. PGE is a subsidiary of PERTAMINA *New and Renewable Energy* (NRE) Subholding, which manages 13 Geothermal Work Areas (WKP) with total installed capacity of 1,877 MW, consisting of 672 from own operation and 1,205 MW from Joint Operation Contract scheme. IPO was PGE's quick action to perform business expansion.

Keanggotaan Asosiasi [OJK C.5][GRI 2-28][GOV-3.A2][GOV-5.A3]

Membership of Association

Melalui keanggotaan asosiasi, PERTAMINA turut berkontribusi pada kebijakan publik yang ditetapkan Pemerintah, termasuk untuk isu-isu keberlanjutan seperti perubahan iklim.

By being a member of associations, PERTAMINA contributes to public policies set by the Government, including sustainability issues, such as climate change.

Nasional | National

Anggota | Member



Internasional | International

Anggota | Member



01

Komitmen dan Strategi Keberlanjutan Mendukung Ambisi Keberlanjutan Indonesia

Commitment and Sustainability Strategy to Support Indonesia's Sustainability Ambitions

Guna mencapai target keberlanjutan, PERTAMINA telah merumuskan strategi sampai dengan tahun 2060 melalui *maintaining business legacy*, upaya dekarbonisasi, dan membangun bisnis hijau yang baru.

In order to achieve sustainability targets, PERTAMINA has formulated a strategy until 2060 through *maintaining business legacy*, decarbonization efforts, and building new green businesses.





PT Pertamina (Persero) menunjukkan komitmen kuat dan terus melanjutkan penerapan strategi pengelolaan lingkungan, sosial dan tata kelola (LST/ESG) di seluruh bisnis dan operasi Perseroan. Melalui pengelolaan LST/ESG, PERTAMINA mendukung ambisi Indonesia dalam komitmen berkelanjutan, dengan memainkan peran penting untuk memimpin transisi industri energi Indonesia ke dalam target bauran energi dan pengurangan emisi, serta terus berkontribusi dalam pencapaian Tujuan Pembangunan Berkelanjutan (TPB/SDGs).

PT Pertamina (Persero) shows strong commitment and continues implementing environmental, social, and governance (ESG) management in all business and operations of the Company. PERTAMINA supports the country's ambition related to sustainability commitment through ESG management by using its significant role to spearhead Indonesia's energy industry transition into energy mix target and emission reduction as well as contribute to the achievement of the Sustainable Development Goals (SDGs).

Visi, Misi, dan Nilai Keberlanjutan [OJK C.1] Vision, Mission, and Sustainability Values

Aspirasi Keberlanjutan

Ambisi Perseroan adalah menjadi Perusahaan energi global terkemuka serta diakui sebagai:

- *Environmentally Friendly Company*
- *Good Governance Company*
- *Socially Responsible Company*

Sustainability Aspiration

It is the Company's ambition to be a leading global energy company and to be acknowledged as:

- *Environmentally Friendly Company*
- *Good Governance Company*
- *Socially Responsible Company*

Nilai-nilai Keberlanjutan

Sustainability Values





Kebijakan Keberlanjutan Perseroan [GOV 1.C4][CDSB REQ-02] Company's Sustainability Policies

Perseroan memiliki kebijakan keberlanjutan untuk menciptakan nilai jangka panjang melalui pengembangan praktik-praktik keberlanjutan di seluruh bisnis *Holding* dan *Subholding*. Kebijakan keberlanjutan telah disosialisasikan kepada seluruh pemangku kepentingan melalui situs resmi Perseroan. Mekanisme untuk mengalokasikan tanggung jawab dalam implementasi kebijakan tersebut ditetapkan dalam Surat Keputusan Direksi, dan efektivitas pelaksanaannya dipantau serta dievaluasi berkala. Kebijakan keberlanjutan Perseroan meliputi:

The Company follows a sustainability policy to create long-term values through sustainability practices development in all Holding and Subholding businesses. The sustainability policy has been disseminated to all stakeholders through the Company's official website. Mechanism for allocating responsibility for the implementation of the policy is stipulated in the Board of Directors Decision Letter and is implemented effectively through periodic monitoring and evaluation. The Company's sustainability policies include:

 **ESG**

Kebijakan Keberlanjutan Pertamina

Pertamina's Sustainability Policy



Kebijakan ini merupakan kebijakan utama yang memayungi berbagai kebijakan keberlanjutan di *Holding* dan *Subholding* . Kebijakan ini mengintegrasikan strategi dan aktivitas Perseroan dalam konteks ESG.

This policy is the main policy that covers various sustainability policies in Holding and Subholding. This policy integrates the Company's strategy and activities in the context of ESG.

Guide Sustainability Budget Tagging (SBT)



Pedoman terkait pembiayaan dan anggaran bagi kegiatan operasional Perseroan yang diselaraskan dengan taksonomi hijau Indonesia, yang memuat 16 area tematik di bidang lingkungan, sosial dan tata kelola. Penerapan SBT dilakukan secara terukur ke dalam berbagai program dan aktivitas bisnis di Grup PERTAMINA.

Guidelines related to financing and budgeting for the Company's operational activities based on the Indonesian green taxonomy, which includes 16 thematic areas in the environmental, social and governance fields. The implementation of SBT is implemented in a measurable manner across various programs and business activities at Pertamina Group.

 **Lingkungan | Environment**

Komitmen Net Zero Emission

Net Zero Emission Commitment



Bentuk komitmen Perseroan untuk berkontribusi dalam target perubahan iklim, transisi energi dalam mencapai target *Net Zero Emission* . Kebijakan ini berlaku di *Holding* dan *Subholding* dengan implementasi dekarbonisasi, akselerasi *green business* , orientasi *green strategy* pengembangan kapabilitas SDM dan organisasi, optimalisasi *green financing* , implementasi *green operation* , akselerasi penggunaan teknologi hijau dan inovasi digital, pengembangan bisnis pasar karbon dan inovasi model bisnis.

The Company's commitment to contribute to the climate change target, the energy transition in achieving the Net Zero Emission target. This policy applies to Holding and SubHolding with the implementation of decarbonization, green business acceleration, green strategy orientation for HC and organizational capability development, optimization of green financing, implementation of green operations, acceleration of the use of green technology and digital innovation, development of carbon market business and business model innovation.

Kebijakan Green Procurement

Green Procurement Policy



Kebijakan yang berisi tentang komitmen Perseroan untuk menjadi perusahaan yang ramah lingkungan, bertanggung jawab sosial dan bertata kelola yang baik dalam pengadaan barang dan jasa.

A policy that contains the Company's commitment to becoming an environmentally friendly, socially responsible, and good corporate governance company in the procurement of goods and services.



Sosial | Social

Kebijakan Human Rights

Human Rights Policy



Kebijakan yang terkait dengan komitmen Perseroan untuk mendukung perlindungan dan penghormatan terhadap Hak Asasi Manusia baik di lingkungan internal sesuai dengan Peraturan Ketenagakerjaan Internasional (International Labour Organization) yang relevan dan lingkungan eksternal Perseroan.

Policies related to the Company's commitment to supporting the protection and respecting Human Rights both in the internal environment in accordance with the relevant International Labor Organization (ILO) regulations and the Company's external environment.

Kebijakan Health, Safety, Security dan Environment (HSSE)

Health, Safety, Security and Environment (HSSE) Policy



Kebijakan yang terkait dengan komitmen Perseroan untuk melaksanakan kegiatan operasi dengan memperhatikan Kesehatan dan keselamatan kerja, keamanan, perlindungan terhadap lingkungan dan masyarakat serta keselamatan proses dan *asset integrity* secara terus menerus.

The policy addressed the Company's commitment to carrying out operational activities with due regard to occupational health and safety, security, protection of the environment and community as well as process safety and asset integrity on an ongoing basis.

Kebijakan Sosial untuk Pemasok dan Kontraktor

Social Policy for Suppliers and Contractors



Kebijakan yang diperuntukkan bagi seluruh pemasok dan kontraktor agar memastikan implementasi prinsip-prinsip HAM kepada karyawan di seluruh lingkungan kerjanya.

The policy intended for all suppliers and contractors to ensure the implementation of human rights principles for employees in all working environments.

Kebijakan Respectful Workplace

Respectful Workplace Policy



Kebijakan Perseroan yang mencakup komitmen untuk menciptakan lingkungan kerja yang bebas diskriminasi, kekerasan dan pelecehan bagi seluruh karyawan dan mitra kerja.

The Company's policy includes a commitment to creating a work environment that is free from discrimination, violence and harassment for all employees and work partners.



Tata Kelola | Governance

Pedoman Perilaku dan Etika Bisnis

Code of Conduct



Pedoman terkait dengan hubungan dengan karyawan, mitra kerja, pelanggan, pemegang saham, dan pemangku kepentingan, sesuai dengan etika bisnis yang berlaku.

Guidelines related to relationships with employees, work partners, customers, shareholders and stakeholders, in accordance with applicable business ethics.

Pedoman Terkait Cyber Security

Guidelines related Cyber Security



Kebijakan untuk meningkatkan ketahanan perusahaan terhadap serangan *cyber* untuk memastikan keandalan kegiatan operasional Perseroan.

Policies to increase the company's resilience to cyber attacks to ensure the reliability of the Company's operational activities.

Penjelasan Strategi Keberlanjutan [OJK A.1][GRI 2-22] [EM-MD-160a.1][EM-EP-160a.1]

Explanation on Sustainability Strategy

Perseroan berkomitmen menerapkan strategi keberlanjutan didasarkan pada standar LST/ESG global, sejalan meningkatnya perhatian pemangku kepentingan terhadap pengelolaan LST/ESG. Penerapan strategi keberlanjutan bertujuan menjaga keberlangsungan bisnis, menciptakan nilai tambah dan mendukung tercapainya nilai perusahaan melalui tiga pilar utama dalam kerangka kerja LST/ESG, yakni penyusunan peta jalan, ambisi, inisiatif, dan target; implementasi strategi komunikasi dan publikasi; serta penyusunan ESG *Financing framework*.

Penyebaran LST/ESG dijalankan di tataran *Holding* dan *Subholding* di PERTAMINA, dengan menggunakan metode 4P yaitu Kebijakan & Strategi (*Policy & Strategy*), Pelaksanaan Program (*Program Execution*), Pengukuran & Pemantauan Kinerja (*Performance & Monitoring*); dan Publikasi dan Pemingkatan (*Publication & Rating*).

Penerapan strategi keberlanjutan menjadi dukungan dalam mewujudkan ambisi keberlanjutan PERTAMINA yang tertuang dalam 10 Fokus Keberlanjutan beserta target jangka panjang, dengan inisiatif dan realisasi yang disesuaikan untuk setiap tahunnya.

The Company's commitment to implementing sustainability strategy that adheres to the global ESG standards is in line with the increasing interest of stakeholders to ESG management. The implementation of sustainability strategy aims to maintain business continuity, create added value, and support the realization of corporate values through three main pillars in the ESG framework, namely the establishment of road map, ambition, initiatives and targets; implementation of communication strategy, and publication; and development of ESG *Financing framework*.

The distribution of ESG is executed at PERTAMINA's Holding and Subholding level by applying the 4Ps method, which are Policy & Strategy; Program Execution; Performance & Monitoring; and Publication & Rating.

Having the sustainability strategy implemented heightens PERTAMINA's ambition for sustainability, which is translated into 10 Sustainability Focus along with the long-term targets, initiatives, and realizations adjusted every year.



ESG Deployment in Pertamina

There are 4 main activities in deploying ESG within the organization, ranging from policy formulation to publication & rating.



No.	Fokus Keberlanjutan Sustainability Focus	Target yang Diukur untuk 2025 Measurable Targets for 2025	Target yang Diukur untuk 2030 Measurable Targets for 2030
1	Menangani perubahan iklim Addressing climate change		

Aspirasi:
Net Zero di tahun 2060.

Pengurangan emisi 23% dari Skenario BAU (~ 9,1 juta ton CO₂e) mengacu pada emisi *baseline* 2010 dan penghitungan emisi *rebaseline* 2021.




- Pengurangan emisi 32% dari *scenario* BAU (~21,4 juta ton CO₂e) mengacu pada emisi *baseline* 2010 dan perhitungan emisi *rebaseline* 2021.
- Pengurangan emisi gas metana sebesar 40% mengacu pada *baseline* 2021.
- Nihil RTF dalam 100% kegiatan operasional.
- 3% pendapatan dari Bisnis Hijau.
- 10.474 GWh listrik yang digunakan dari sumber rendah karbon.

Aspiration:
Net Zero by 2060.

23% emission reduction from BAU Scenario (~ 9.1 million ton CO₂e) refer to 2010 baseline emission and 2021 rebaseline emission calculation.


- 32% emission reduction from the BAU scenario (~21.4 million ton CO₂e) refer to 2010 baseline emission and 2021 rebaseline emission calculation.
- 40% methane emission reduction refer to 2021 baseline.
- Zero RTF in 100% operational activity.
- 3% revenue from Green Business.
- 10,474 GWh electricity used from low carbon sources.



No.	Fokus Keberlanjutan Sustainability Focus	Target yang Diukur untuk 2025 Measurable Targets for 2025	Target yang Diukur untuk 2030 Measurable Targets for 2030
2	<p>Mengurangi jejak lingkungan Reducing environmental footprint</p> 	<p>Aspirasi:</p> <ol style="list-style-type: none"> Melampaui Kepatuhan Limbah dan Air. Manajemen Dampak Air Positif Bersih. <p>Aspiration:</p> <ol style="list-style-type: none"> Beyond Compliance Waste and Water. Management Net Positive Water Impact. 	<ul style="list-style-type: none"> 100% lokasi yang beroperasi di area dengan dampak yang signifikan bersertifikat ISO 14001. Air: mengurangi konsumsi air bersih sebesar 10% di daerah yang kekurangan air. Air limbah/effluen: Membatasi kandungan HC dalam air limbah sebesar 30 mg/l (<i>off shore</i>) dan 10 mg/l (<i>on shore</i>). Non-GRK: Membatasi SO₂ untuk emisi mesin pembakaran internal di bawah 155 mg/Nm³. Tidak ada tumpahan minyak besar (kategori tumpahan minyak besar adalah >15 bbls). <p>100% sites operated in significant impact area certified with ISO 14001.</p> <ul style="list-style-type: none"> Water: Reduce freshwater consumption by 10% in water stressed area. Effluent: Limit HC content in wastewater at 30 mg/l (off shore) and 10 mg/l (on shore). Non-GHG: Limit SO₂ for internal combustion engine releases under 155 mg/Nm³. Zero major oil spill (major oil spill category is >15 bbls).
3	<p>Melindungi keanekaragaman hayati Protecting biodiversity</p> 	<p>Aspirasi:</p> <p>Dampak Positif Bersih (<i>Net Positive Impact/NPI</i>) pada Keanekaragaman Hayati.</p> <p>Aspiration:</p> <p>Net Positive Impact on Biodiversity.</p>	<p>50% NPI untuk fasilitas baru setelah 2022.</p> <p>100% NPI untuk fasilitas baru setelah 2022.</p> <p>50% NPI for new facilities after 2022.</p> <p>100% NPI for new facilities after 2022.</p>
4	<p>Meningkatkan Kesehatan dan Keselamatan Kerja (K3) Enhancing Occupational Health and Safety (OHS)</p> 	<p>Aspirasi:</p> <p>Nihil Kecelakaan, Nihil Fatalitas</p> <p>Aspiration:</p> <p>Zero Accidents, Zero Fatalities</p>	<ul style="list-style-type: none"> 100% lokasi dengan operasi berisiko tinggi memiliki sertifikasi ISO 45001. Hasil penilaian tanggap darurat medis, hijau/dapat dikelola 80%. 100% kepatuhan CSMS untuk kontrak berisiko tinggi (pemantauan pra-pekerjaan, pekerjaan audit yang sedang berjalan, evaluasi akhir). Sistem Manajemen 75% anak perusahaan mencapai kategori SUPREME "beroperasi dengan risiko terkendali" - SUPREME: Penilaian internal untuk HSSE. Zero Major Accident (Fatalitas, Tumpahan Minyak > 15 bbls, Kerusakan Properti >USD 1 juta). <p>100% location with high risk operation certified ISO 45001.</p> <ul style="list-style-type: none"> Medical emergency response assessment result, green/manageable 80%. 100% CSMS compliance for high risk contract (monitoring pre job, audit work in progress, final evaluation). Management System 75% of subsidiaries achieve "operate with manageable risk" SUPREME category – SUPREME: Internal assessment for HSSE. Zero Major Accident (Fatality, Oil Spill > 15 bbls, Property Damage >USD 1 million).

No.	Fokus Keberlanjutan Sustainability Focus	Target yang Diukur untuk 2025 Measurable Targets for 2025	Target yang Diukur untuk 2030 Measurable Targets for 2030
5	Pencegahan insiden skala besar Prevention of large-scale incidents		
<p>Aspirasi: Nihil <i>loss of primary containment</i>/tidak ada tinggi di PERTAMINA Group kebocoran di seluruh telah melaksanakan proses operasi, tidak ada <i>safety</i> audit. kecelakaan besar.</p> <p>Aspiration: Zero <i>loss of primary containment</i>/no leaks locations in PERTAMINA Group across operations, no have carried out process safety major accidents zero loss audits. of primary.</p> <ul style="list-style-type: none"> • Mempertahankan tingkat PSE Tier-1 di bawah 0,06 di PERTAMINA Group. • Mempertahankan tingkat PSE Tier-2 di bawah 0,16 di PERTAMINA Group. • 100% lokasi operasi berisiko tinggi di PERTAMINA Group telah melaksanakan Audit keselamatan proses. • Maintain PSE Tier-1 rate under 0.06 in PERTAMINA Group. • Maintain PSE Tier-2 rate under 0.16 in PERTAMINA Group. • 100% of high risk operation locations in PERTAMINA Group have carried out process safety audit. 			
6	Menghormati dan memberdayakan karyawan Respecting and empowering employees		
<p>Aspirasi: Tingkat <i>Turnover Rendah</i> (<3%), Nihil Pelecehan, Kesetaraan Gender.</p> <p>Aspiration: Low <i>Turnover Rate</i> (<3%), Zero Harassment, Gender Equality.</p> <ul style="list-style-type: none"> • 16,5% dari total karyawan <i>holding</i> dan <i>subholding</i> dengan modul pelatihan HAM <i>online</i>. • Minimal 17% keterwakilan perempuan pada posisi pimpinan di PERTAMINA Group (<i>holding, subholding, dan anak perusahaan</i>). • 16.5% of total employees at the holding and subholding level with an online human rights training module. • Minimum 17% of female representation in leader position at PERTAMINA Group (<i>holding, subholdings, and subsidiaries</i>). • Tingkat perputaran tenaga kerja maksimum 3% di tingkat <i>holding</i> dan <i>subholding</i>. • 33% dari total karyawan <i>holding</i> dan <i>subholding</i> dengan modul pelatihan HAM <i>online</i>. • Representasi perempuan minimal 22% pada posisi <i>leader</i> di PERTAMINA Group (<i>holding, subholding, dan anak perusahaan</i>). • Maximum 3% labor turnover rate at the holding and subholding level. • 33% of total employees at the holding and subholding level with an online human rights training module. • Minimum 22% female representation in leader position at PERTAMINA Group (<i>holding, subholdings, and subsidiaries</i>). 			
7	Reorientasi inovasi dan penelitian Innovation and research reorientation		
<p>Aspirasi: Teknologi dan Inovasi Rendah Karbon.</p> <p>Aspiration: Low Carbon Technology and Innovation.</p> <ul style="list-style-type: none"> • Minimal 30% dari realisasi investasi dan anggaran operasional untuk R&D difokuskan pada dekarbonisasi. • Minimal 44% dari realisasi investasi dan anggaran operasional untuk riset dan pengembangan difokuskan pada dekarbonisasi. • Minimum 30% of realized investment and operational budget for R&D focus on decarbonization. • Minimum 44% of realized investment and operational budget for R&D focus on decarbonization. 			

No.	Fokus Keberlanjutan Sustainability Focus	Target yang Diukur untuk 2025 Measurable Targets for 2025	Target yang Diukur untuk 2030 Measurable Targets for 2030
8	Memperluas keterlibatan dan dampak komunitas Expanding community engagement and impact		
	<p>Aspirasi: Peningkatan kesejahteraan, kehidupan yang baik, dan akses energi secara nasional.</p> <p>Aspiration: Improved welfare, wellbeing and access to energy nationwide.</p>	<ul style="list-style-type: none"> • Total kapasitas energi dari Desa Energi Berdikari (DEB). • Tenaga Matahari: 317.000 Watt Peak. • Biogas dan Biometana: 551.960 m³/tahun. • Mikrohidro Energi: 14.000 Watt. • Total energy capacity from Desa Energi Berdikari (DEB). • Solar Energy: 317,000 Watt Peak. • Biogas and Biomethane: 551,960 m³/year. • Micro Hydro Energy: 14,000 Watt. 	<ul style="list-style-type: none"> • Minimum 50.000 total penerima manfaat program unggulan. • Minimum 5,5 SROI berdasarkan program unggulan baru. • Total kapasitas energi dari Desa Energi Berdikari (DEB): <ul style="list-style-type: none"> a. Energi Matahari : 662.000 Watt Peak. b. Biogas dan Biometana: 663.560 m³/tahun. c. Mikrohidro Energi: 21.500 Watt. • Minimum 50,000 total flagship programs beneficiaries. • Minimum 5.5 SROI based on new flagship programs. • Total energy capacity from Desa Energi Berdikari (DEB). <ul style="list-style-type: none"> a. Solar Energy: 662,000 Watt Peak. b. Biogas and Biomethane: 663,560 m³/year. c. Micro Hydro Energy: 21,500 Watt.
9	Memperkuat Keamanan Digital Strengthening Digital Security		
	<p>Aspirasi: Nihil Serangan Cyber.</p> <p>Aspiration: Zero Cyber Attacks.</p>	<ul style="list-style-type: none"> • 100% PERTAMINA Group (Holding & Subholding) certified with ISO 27001. • Perolehan <i>cyber security maturity</i> BSSN Level 4 (Implementasi Terkelola) untuk Holding dan 2 Subholding, <i>Cyber Security Maturity</i> BSSN Level 3 (Implementasi Terdefinisi) untuk 4 Subholding. • <i>Phishing Prone</i> rate tetap terjaga di level kurang dari ≤5% sesuai standar IOC. • 100% PERTAMINA Group (Holding & Subholding) certified with ISO 27001. • Obtain <i>cyber security maturity</i> BSSN Level 4 (Managed Implementation) for Holding and 2 Subholdings, and <i>Cyber Security Maturity</i> BSSN Level 3 (Defined Implementation) for 4 Subholdings. • <i>Phishing Prone</i> rate is maintained at a level of less than ≤5% according to IOC standards. 	<ul style="list-style-type: none"> • 100% PERTAMINA Group (Holding, 6 Subholdings & 6 Subsidiaries certified with ISO 27001). • Perolehan <i>Cyber Security Maturity</i> BSSN Level 4 Implementasi Terkelola) untuk Holding dan 6 Subholding. • <i>Phishing Prone</i> rate tetap terjaga di level kurang dari 3,6%, atau angka acuan yang relevan untuk industri setara pada tahun tersebut. • 100% PERTAMINA Group (Holding, 6 Subholdings & 6 Subsidiaries certified with ISO 27001). • Obtain <i>Cyber Security Maturity</i> BSSN Level 4 Managed Implementation) for Holding and 6 Subholdings. • The <i>Phishing Prone</i> rate is maintained at less than 3.6%, or a relevant industry benchmark for the year.

No.	Fokus Keberlanjutan Sustainability Focus	Target yang Diukur untuk 2025 Measurable Targets for 2025	Target yang Diukur untuk 2030 Measurable Targets for 2030
10	Meningkatkan Etika Perusahaan Improving Corporate ethics	80% entitas di bawah PERTAMINA Group (<i>holding, subholding, dan anak perusahaan</i>) bersertifikat ISO 37001.	 <ul style="list-style-type: none"> • 100% Direksi dan Dewan Komisaris PT Pertamina (Persero) mengikuti sosialisasi anti korupsi. • 98% pekerja telah mengikuti sosialisasi anti penyuapan. • 100% vendor rekanan di PT Pertamina (Persero) telah mendapatkan sosialisasi anti <i>fraud</i>. • 85% kasus <i>whistleblowing</i> di PT Pertamina (Persero) ditindaklanjuti. • 95% entitas di bawah PERTAMINA Group (<i>holding, subholding, dan anak perusahaan</i>) bersertifikat ISO 37001.
	Aspirasi: Tidak ada toleransi terhadap <i>fraud</i> dan korupsi.	80% entitas di bawah PERTAMINA Group (<i>holding, subholding, dan anak perusahaan</i>) bersertifikat ISO 37001.	<ul style="list-style-type: none"> • 100% of BOD and BOC in PT Pertamina (Persero) attended anti-corruption socialization. • 98% of employees attended anti-bribery socialization. • 100% of contracted vendors in PT Pertamina (Persero) have been informed of anti-fraud awareness. • 85% whistleblowing cases in PT Pertamina (Persero) are followed up. • 95% of entities under PERTAMINA Group (<i>holding, subholdings, and subsidiaries</i>) are ISO 37001 certified.
	Aspiration: Zero tolerance on fraud and Corruption.	80% of entities under PERTAMINA Group (<i>holding, subholdings, and subsidiaries</i>) are ISO 37001 certified.	

Inisiatif LST PERTAMINA 2023
PERTAMINA's ESG Initiatives in 2023

Fokus Keberlanjutan Sustainability Focus	Program Programs	Realisasi Realization
<ul style="list-style-type: none"> • Menangani perubahan iklim • Mengurangi jejak lingkungan • Addressing climate change • Reducing environmental footprint 	<p>Dekarbonisasi 910.591 ton CO₂e</p> <p>Decarbonization of 910,591 tons of CO₂e</p>	<p>Dekarbonisasi 1.135.099 ton CO₂e, ref <i>rebaseline</i> emisi tahun 2021</p> <p>Decarbonization of 1,135,099 tons of CO₂e, ref <i>rebaseline</i> emissions in 2021</p>
<p>Mengurangi jejak lingkungan</p> <p>Reducing environmental footprint</p>	<ul style="list-style-type: none"> • Pedoman sosialisasi & penetapan target terkait Limbah & Air • Identifikasi program pengurangan Limbah & Air • Finalisasi Program Pengurangan Limbah & Air • Memantau program & hasil pengurangan Limbah & Air • Disseminating guidelines & target setting related Waste & Water • Identifying Waste & Water reduction program • Finalizing Waste & Water reduction Program • Monitoring Waste & Water reduction program & result 	<ul style="list-style-type: none"> • Sosialisasi telah dilakukan ke seluruh Subholding • Finalisasi PERTAMINA <i>Water Tools</i> • Sosialisasi Alat Penilaian Risiko Air kepada seluruh Subholding • Menerbitkan buku panduan Penanganan Sampah Domestik • Menyelesaikan instruksi SVP untuk Implementasi Ekonomi Sirkular • Lebih dari 70 unit operasi telah mengisi aplikasi tol air • Memantau program pengurangan air dan limbah serta pengumpulan data dari DRKPL • Dissemination has been performed to all Subholdings • Finalized PERTAMINA <i>Water Tools</i> • Socialization of Water Risk Assessment Tools for all Subholdings • Published Domestic Waste Handling handbook • Finalize SVP instruction for Circular Economy Implementation • More than 70 unit operation have completed the water tolls apps • Monitored water and waste reduction programs and data collection from DRKPL

Fokus Keberlanjutan Sustainability Focus	Program Programs	Realisasi Realization
<p>Pencegahan insiden skala besar Prevention of large-scale Incidents</p>	<ul style="list-style-type: none"> 3 unit proses melakukan audit oleh PSAIMS 100% unit proses melaporkan PSE Tier 1-4 80% proses mengidentifikasi SECE 7 unit proses melakukan Budaya Keselamatan Proses Menjalankan 100% Kebijakan AIM 3 process units to undergo an audit by PSAIMS 100% process units to report Tier 1-4 PSE 80% of the process identifies SECE 7 process units performs the Safety Process Culture Performing 100% AIM Policy 	<ul style="list-style-type: none"> Pelaksanaan 3 batch pelatihan PSAIMS, diikuti oleh seluruh perwakilan Subholding Pelaporan PSE Tier 1-4 telah dilakukan setiap bulan Identifikasi SECE disusun dan dimonitor oleh Dit. LI Pelaksanaan sosialisasi <i>Process Safety Fundamental</i> sudah dilakukan ke Subholding Gas dan Subholding Commercial & Trading Implementation of 3 batches of PSAIMS training, attended by all Subholding representatives Tier 1-4 PSE reporting has begun monthly SECE identification was prepared and monitored by Dit. LI Process Safety Fundamental has been disseminated to the Gas Subholding and Commercial & Trading Subholding
<ul style="list-style-type: none"> Menangani perubahan iklim Mengurangi jejak lingkungan Addressing climate change Reducing environmental footprint 	<p>Tambahan kapasitas terpasang dari energi baru terbarukan (EBT) 95 MW</p> <p>Additional installed capacity of 95 MW from new and renewable energy</p>	<p>Penambahan kapasitas dari EBT 16,2 MW</p> <p>Additional 16.2 MW capacity from new and renewable energy</p>
<ul style="list-style-type: none"> Menangani perubahan iklim Mengurangi jejak lingkungan Memperluas keterlibatan dan dampak komunitas Addressing climate change Reducing environmental footprint Expanding community engagement and impact 	<p>Melakukan kegiatan Energizing Community (Desa Energi Berdikari dan Hutan PERTAMINA) berupa:</p> <ul style="list-style-type: none"> Tambahan 19 DEB UMK Tenaga Surya 69 kWp Biogas 1,6 m³/tahun Mikrohidro 1.500 Watt Penanaman 2 juta pohon Mangrove Penanaman 1 juta pohon <p>Conducting Energizing Community activities (Independent Energy Village and PERTAMINA Forest) in the form of:</p> <ul style="list-style-type: none"> Additional 19 DEB MSE 69 kWp solar energy 1.6 m³/year of biogas 1,500 Watt of microhydro Planting 2 millions Mangrove trees Planting 1 million trees 	<ul style="list-style-type: none"> Tambahan 19 DEB UMK Penanaman 2 juta pohon Mangrove Penanaman 1 juta pohon Additional 19 DEB MSE Planted 2 millions Mangrove trees Planted 1 million trees
<ul style="list-style-type: none"> Menangani perubahan iklim Mengurangi jejak lingkungan Memperluas keterlibatan dan dampak komunitas Addressing climate change Reducing environmental footprint Expanding community engagement and impact 	<ul style="list-style-type: none"> Penjualan produk ramah lingkungan sebanyak 6.903.857 kilo liter Penambahan 23 unit SPBKLU 6,903,857 kilo liters sales of environmentally friendly products Additional 23 units of BSS 	<ul style="list-style-type: none"> Agustus 2023: 10.606.213,8 kL penjualan ramah lingkungan Penambahan 25 unit SPBKLU August 2023: 10,606,213.8 kL of environmentally friendly sales Additional 25 units of BSS

Fokus Keberlanjutan Sustainability Focus	Program Programs	Realisasi Realization
<p>Meningkatkan etika Perusahaan Improving Corporate ethics</p>	<ul style="list-style-type: none"> • 80% PERTAMINA Group tersertifikasi ISO 37001:2016 • 93% karyawan aktif di Compols (bagian dari laporan reguler) • 81% kasus WBS ditindaklanjuti • 100% mitra mendapat informasi tentang <i>fraud awareness</i> • 80% of PERTAMINA Group to be certified with ISO 37001:2016 • 93% of employees are active in Compols (a part of a regular report) • 81% of WBS cases are to be followed up • 100% of partners receive information on fraud awareness 	<ul style="list-style-type: none"> • 80% grup PERTAMINA sudah tersertifikasi ISO 37001:2016 • 93% karyawan aktif di Compols • 89,79% kasus WBS ditindaklanjuti • 100% Mitra mendapat informasi tentang <i>fraud awareness</i> • 80% of PERTAMINA Group has been certified with ISO 37001:2016 • 93% of employees are now active in Compols • 89.79% of WBS cases were followed up • 100% of partners have now received information on fraud awareness
<p>Menangani perubahan iklim Addressing climate change</p>	<ul style="list-style-type: none"> • Memulai penjaminan dan verifikasi emisi GRK • Sosialisasi Kalkulator Emisi GRK yang Ditingkatkan & Diperbarui • Sosialisasi pedoman proyek dekarbonisasi GRK • Laporan Data Inventarisasi Emisi GRK Cakupan 3 • Pembentukan organisasi akuntansi GRK & skema verifikasi internal • Membangun Perangkat TI untuk Akuntansi & Pengelolaan GRK (cakupan 1, 2, 3) • Hasil Penjaminan GRK Eksternal (pernyataan jaminan) • Kick-off of GHG emission assurance & verification • Socialization of Enhanced & Updated GHG Emission Calculator • Socialization of guidelines for GHG decarbonization project • Report of GHG Emission Scope 3 Inventory Data • Establishment of GHG accounting organization & internal verification scheme • Establish IT Tools for GHG Accounting & Management (scope 1, 2, 3) • External GHG Assurance result (assurance statement) 	<ul style="list-style-type: none"> • Kalkulator Emisi Peningkatan mengacu pada Standar Internasional & <i>best practice</i> • Manajemen Emisi melalui Aplikasi Synergi Life • Pengungkapan Emisi Jaminan pada SR 2022 reff Metodologi AA1000 • Perhitungan Cakupan Emisi 3 (cat. 1, 3, 11) • Menetapkan skema verifikasi Internal Penghitungan GRK • Enhancement Emission Calculator reff International Standard & Best Practices • Emission Management melalui Aplikasi Synergi Life • Assurance Emission Disclosure pada SR 2022 reff AA1000 Methodology • Emission Scope 3 Calculation (cat. 1, 3, 11) • Establish GHG Accounting Internal verification scheme
<p>Semua Fokus Keberlanjutan All Sustainability Focus</p>	<ul style="list-style-type: none"> • Dokumen ESG <i>Financing framework</i> PERTAMINA Group • Menerapkan pembiayaan ESG sebesar USD24,6 juta (JBIC) • A document of ESG Financing framework of PERTAMINA Group • Implementing the ESG financing of USD24.6 million (JBIC) 	<ul style="list-style-type: none"> • Memiliki dokumen ESG <i>financing framework</i> PERTAMINA Group • Menerapkan pembiayaan ESG sebesar USD24,6 juta (JBIC) • Obtained the ESG Financing framework document of PERTAMINA Group • Implemented the USD24.6 million (JBIC) ESG Financing

Fokus Keberlanjutan Sustainability Focus	Program Programs	Realisasi Realization
<p>Semua Fokus Keberlanjutan All Sustainability Focus</p>	<ul style="list-style-type: none"> • Penyampaian Anggaran Keberlanjutan dalam RKAP 2023 • Sistematisasikan Penandaan Anggaran Keberlanjutan untuk semua Pengguna • Evaluasi Pelaksanaan SBT • Submission the Sustainability Budget in RKAP 2023 • Systemizing the Sustainability Budget Tagging for all Users • SBT Implementation Evaluation 	<ul style="list-style-type: none"> • Telah dilaksanakan UAT Integrasi Data Dashboard Sustainability Budget Tagging (SBT) • Telah dilaksanakan FGD & sosialisasi lanjutan SBT • Dilakukan rekap real November 2023 • Telah dilakukan SBT Implementation Evaluation • UAT Dashboard Integration Data of Sustainability Budget Tagging (SBT) has been conducted • FGD & advanced SBT have been conducted • Real recap of November 2023 has been completed • SBT Implementation Evaluation has been conducted
<ul style="list-style-type: none"> • Menangani perubahan iklim • Mengurangi jejak lingkungan • Addressing climate change • Reducing environmental footprint 	<ul style="list-style-type: none"> • Laporan Studi CCS Coal to DME Tj. Enim dengan Chiyoda • Laporan CO₂ Huff & Puff Jatibarang • <i>Subsurface Study Report</i> CCS Donggi Matindok PAU – ITB • Laporan Studi CCS Hubs di Sumatra Tengah dengan Mitsui • Laporan Studi CCS Hubs di Asri/Sunda basin dengan Exxon • Laporan Studi Lanjutan CCUS Gundih • Laporan Studi Lanjutan CCUS EOR Sukowati (JSA fase 2) • A Study Report of CCS Coal to DME Tj. Enim with Chiyoda • CO₂ Report of Huff & Puff Jatibarang • <i>Subsurface Study Report</i> of CCS Donggi Matindok PAU-ITB • Study Report of CCS Hubs in Central Sumatera with Mitsui • Study Report of CCS Hubs in Asri/Sunda basin with Exxon • Advanced Study Report of CCUS Gundih • Advanced Study Report of CCUS EOR Sukowati (2nd phase of JSA) 	<ul style="list-style-type: none"> • CCS Hub di Sumatra Tengah dengan Mitsui • CCS Hubs di Asri Basin dengan ExxonMobil • CCS di Lapangan Gundih dengan Konsorsium Jepang (JGC, J-POWER, JANUS, ITB) JSA tahun 2021 sudah selesai dan akan dilanjutkan dengan partner (JGC, J-POWER, Jera, JOGMEC) • CO₂ Huff & Puff Lapangan Sukowati dengan JOGMEC dan Japex • CCUS-EOR di Lapangan Sukowati dengan Japex dan Lemigas • CCS Hub Kutai Basin dengan Chevron New Energies • <i>Blue Ammonia</i> dengan CCS di Blok Donggi-Matindok (Sulawesi Tengah) dengan JOGMEC, Mitsubishi, PAU, ITB • Pengembangan Pemanfaatan CO₂ menjadi <i>Precipitated Calcium Carbonate</i> (PCC) dari Skala Pilot menjadi <i>Demo Plant</i> dengan LPDP dan ITB • CCS Hub in Central Sumatera with Mitsui • CCS Hubs in Asri Basin with ExxonMobil • CCS in Gundih Field with Japan Consortium (JGC, J-POWER, JANUS, ITB) of JSA in 2021 has been completed and will be continued by partners (JGC, J-POWER, Jera, JOGMEC) • CO₂ of Huff & Puff in Sukowati Field with JOGMEC and Japex • CCUS-EOR in Sukowati Field with Japex and Lemigas • CCS Hub Kutai Basin with Chevron New Energies • Blue Ammonia with CCS in Donggi-Matindok Block (Central Sulawesi) with JOGMEC, Mitsubishi, PAU, ITB • Developments of CO₂ Use into Precipitated Calcium Carbonate (PCC) from a Pilot Scale to a Demo Plant with LPDP and ITB

Fokus Keberlanjutan Sustainability Focus	Program Programs	Realisasi Realization
<p>Memperkuat keamanan digital Strengthening digital security</p>	<ul style="list-style-type: none"> >20.000 karyawan mendapat pelatihan tentang kesadaran keamanan siber <10% <i>phishing prone</i> PERTAMINA Holding sertifikasi ISO 27001 <i>Cyber Security Academy: 2 Cyber Security Certification Training</i> >20,000 employees receive training on the awareness of cybersecurity <10% nof phishing prone PERTAMINA Holding with ISO 27001 certification Cyber Security Academy: 2 Cyber Security Certification Training 	<ul style="list-style-type: none"> <i>iSec awareness 35,026 user</i> <i>Phishing prone: 5,16%</i> <i>ISO 27001 Internal audit II and Certification Recommendation</i> iSEC awareness of 35,026 users Phising prone: 5.16% ISO 27001 Internal Audit II and Certification Recommendation
<p>Menghormati dan memberdayakan karyawan Respecting and empowering employees</p>	<ul style="list-style-type: none"> 15.000 peserta wajib mengikuti pelatihan <i>Respecting & Empowering People</i> (RWP) 50% Staf HC mendapatkan pelatihan terkait Hak Asasi Manusia (HAM) <i>Respecting Human Rights</i> (VPSHR) termasuk dalam Perjanjian Kerja Sama (PKS) Menyiapkan modul pelatihan VPSHR 15,000 participants must attend the Respecting & Empowering People (RWP) training 50% of HC Staff receive training on Human Rights Respecting Human Rights (VPSHR) is included in the Cooperation Agreement (PKS) Preparing the VPSHR training module 	<ul style="list-style-type: none"> 15.023 peserta mengikuti pelatihan RWP Memiliki modul pelatihan VPSHR VPSHR <i>workshop</i> sudah dilakukan untuk Holding dan Subholding 15,023 participants joined the RWP training Own the VPSHR training module VPSHR workshop has been held for the Holding and Subholding



Kegiatan Membangun Budaya Keberlanjutan [OJK F.1][GOV 2.C4][GOV 2.A31]

Activities for Building Sustainability Culture

PERTAMINA berkomitmen membangun budaya keberlanjutan, dengan mengadakan pelatihan terkait keberlanjutan. Pada tahun 2023 Perseroan mengadakan 54 pelatihan dengan tema HAM, HSSE, *fraud*, antikorupsi, dan *compliance* dengan total peserta 11.904. Beberapa jenis pelatihan terkait keberlanjutan antara lain *Awareness ISO 50001:2018 (Energy Management System)*; *ISO 26000 (Corporate Social Responsibility)*; *Workshop* tentang Laporan Keberlanjutan dan LST.

Selain itu, Perseroan juga mempersiapkan sumber daya manusia (SDM), serta memperkuat aspek riset dan pengembangan, dengan membangun *Sustainability Academy* dan *Sustainability Center*. Pada tahun 2023 Perseroan membentuk Tim Pelaksana Pembentukan *Sustainability Academy* dan *Sustainability Center*. Keberadaan *Sustainability Center* dan *Sustainability Academy* akan menjadi pusat studi, kajian, inovasi, riset, dan inovasi bisnis terkait keberlanjutan di PERTAMINA Group.

Perseroan juga membangun budaya keberlanjutan dengan terus mengomunikasikan pengelolaan LST di seluruh PERTAMINA dan pemangku kepentingan eksternal. Sepanjang tahun 2023, program komunikasi pengelolaan LST merealisasikan jumlah pemberitaan sebanyak 43.136 artikel, dengan nada pemberitaan positif mencapai 100%.

PERTAMINA is committed to building sustainability culture through training related to sustainability. In 2023, the Company conducted 54 trainings with the themes of human rights, HSSE, fraud, anti-corruption, and compliance with a total of 11,904 participants. Several trainings on sustainability included the Awareness of ISO 50001:2018 (Energy Management System); ISO 26000 (Corporate Social Responsibility); and Workshop on Sustainability Report and ESG.

In addition, the Company has its human resources ready and strengthens its research and development by establishing a Sustainability Academy and Sustainability Center. In 2023, the Company founded a Management Team for the Establishment of Sustainability Academy and Sustainability Center. These two entities will serve as a center of studies, innovations, researches, and business innovations related to sustainability in PERTAMINA Group.

The Company created the sustainability culture by continuously communicating the ESG management in PERTAMINA and external stakeholders. Throughout 2023, the ESG management communication program realized a total of 43,136 news articles, with a positive news tone reaching 100%.



02

Kinerja Ekonomi
Economic Performance

Bersama Membangun Kolaborasi untuk Energi Transisi

Together Collaborating
for Energy Transition

Di 2023, PERTAMINA mencatatkan pencapaian Laba Bersih tertinggi sepanjang sejarah Perseroan sehingga dapat kembali memberikan nilai tambah kepada pemegang saham, pemangku kepentingan, dan lingkungan. Capaian kinerja ekonomi ini merupakan dampak positif dari penerapan praktik keberlanjutan.

In 2023, PERTAMINA recorded the highest Net Profit achievement in the Company's history so that it can again provide added value to shareholders, stakeholders and the environment. This economic performance achievement is a positive impact of the implementation of sustainability practices.





Selama tahun 2023, PT Pertamina (Persero) mencatatkan kinerja positif, baik kinerja keuangan maupun pengelolaan lingkungan, sosial, dan tata kelola (LST). Perseroan mencatatkan laba bersih Perseroan (laba tahun berjalan yang dapat diatribusikan kepada pemilik entitas induk) mencapai USD4.441 juta; dan menjadi peringkat satu dunia dalam sub-industri *Integrated Oil and Gas* untuk ESG Risk Rating dari Sustainalytics.

In 2023, PT Pertamina (Persero) posted positive performance in financial performance and environmental, social, and governance (ESG) management. The Company's net profit (current year profit attributable to owners of the parent entity) reached USD4,441 million; and ranked first in the world for the Integrated Oil and Gas sub-industry for Sustainalytics' ESG Risk Rating.

Implikasi Finansial dari Perubahan Iklim [GRI 201-2][OG 11.2.2] [FR]

Financial Implications due to Climate Change

PERTAMINA berkomitmen melaksanakan energi transisi dan mendukung pencapaian *net zero emission* (NZE) yang digagas Pemerintah. Komitmen tersebut dituangkan dalam Peta Jalan NZE yang dijalankan dengan strategi inisiatif dekarbonisasi kegiatan bisnis dan pengembangan bisnis hijau baru. Strategi inisiatif tersebut mencakup strategi jangka pendek, jangka menengah, dan jangka panjang yang diwujudkan dalam tiga agenda besar:

- **Pertama**, mengubah operasional kilang menjadi kilang hijau (*green refinery*) serta pengembangan bioenergi;
- **Kedua**, pengembangan proyek karbon netral seperti proyek panas bumi dan hidrogen;
- **Ketiga**, mengembangkan inisiatif karbon negatif seperti proyek *carbon capture utilization and storage* (CCUS) dan *nature-based solution* (NBS).

Pelaksanaan ketiga agenda tersebut berimplikasi pada aspek finansial Perseroan dengan menyediakan biaya investasi. Perseroan mengalokasikan belanja modal (*capital expenditure/capex*) pada tahun 2025 sebesar 10% dan bervariasi dari 6-25% di tahun 2026-2034.

PERTAMINA is committed to performing energy transition and helping the achievement of net zero emissions (NZE) initiated by the Government. This commitment is translated into the NZE Roadmap with strategies that are based on decarbonization-based business activities and new green business development. These strategies are short, mid, and long term, which are embodied in the following three large agendas:

- **First**, changing refinery operations to green refinery and bioenergy developments;
- **Second**, developing neutral carbon projects, such as geothermal and hydrogen projects;
- **Third**, developing negative carbon projects, such as carbon capture utilization and storage (CCUS) and nature-based solution (NBS) projects.

The three agendas implicate the Company's financial aspect through investment costs. The company allocates capital expenditure (capex) in 2025 of 10% and varies from 6-25% in 2026-2034.

Peluang dari Pengelolaan Perubahan Iklim [CCE-1.A1, 1.A3][CCE-3.A6]

Opportunities from Managing Climate Change

Komitmen pengelolaan perubahan iklim juga menghadirkan peluang bisnis yang akan mendorong optimalisasi kinerja keuangan Perseroan. Hal ini tidak terlepas dari pemberlakuan Peraturan Presiden Nomor 98/2021 tentang Nilai Ekonomi Karbon serta pembentukan pasar karbon sebagai wadah untuk perdagangan karbon di Indonesia. Untuk pengembangan perdagangan karbon, PT Pertamina Power Indonesia, sebagai Subholding Power & New Renewable Energy (NRE) menjalankan peran sebagai *carbon credit aggregator* di PERTAMINA Group. Pada tahun 2023, PERTAMINA berhasil menjual 483.112 ton CO₂e melalui IDX Carbon.

Perdagangan kredit karbon juga dijalankan melalui kerja sama antara Pertamina NRE dan PT Pertamina Patra Niaga Subholding Commercial & Trading (PPN). Melalui kerja sama ini, *demand* kredit karbon dari perusahaan-perusahaan dalam negeri (sebagai *potential customers*) akan terus dijajaki. Kredit karbon tersebut dapat digunakan oleh *customers* untuk meng-*offset* karbon yang dihasilkan dari bisnisnya maupun untuk dijual kembali.

Dari sisi *supply*, pada tahun 2023, Pertamina NRE menandatangani kerja sama perdagangan karbon dengan PT Pertamina Geothermal Energy Tbk (PGE). Dalam perjanjian kerja sama tersebut, potensi volume kredit karbon yang dihasilkan sebesar 1,8 juta ton emisi karbon ekuivalen untuk 10 tahun periode kredit. Sumber kredit karbon adalah pembangkit listrik tenaga panas bumi (PLTP) Lahendong Unit 5 dan 6 berkapasitas 2 x 20 MW yang dikelola PGE dan telah terdaftar di Sistem Registri Nasional (SRN) sejak tahun 2023.

[CCE-1.A4]

Secara keseluruhan, PERTAMINA melalui PGE memiliki potensi ekonomi dari reduksi emisi karbon melalui pengoperasian PLTP. Perhitungan potensi pengurangan emisi GRK menggunakan *standard methodology ACM 0002 grid connected*

The commitment to managing climate change also engenders business opportunities that will optimize the Company's financial performance. This materializes because of the enforcement of the Presidential Regulation Number 98/2001 on Carbon Economic Value and the establishment of carbon market as a medium for Indonesia's carbon trading. For the development of carbon trading, PT Pertamina Power Indonesia, as Subholding Power & New Renewable Energy (NRE) performs the role of carbon credit aggregator in PERTAMINA Group. In 2023, PERTAMINA sold 483,112 tons CO₂e through IDX Carbon.

Carbon credit trading is also run through cooperation between Pertamina NRE and PT Pertamina Patra Niaga, Commercial & Trading (PPN) Subholding. Through this cooperation, the carbon credit demand from domestic companies (as potential customers) can always be explored. The carbon credit can be used by customers to offset the carbon generated from their business for reselling.

In terms of supply, in 2023, Pertamina NRE signed a carbon trading cooperation with PT Pertamina Geothermal Energy Tbk (PGE). The agreement states the generated potential volume of carbon credit is 1.8 million tons of carbon credit, which is equivalent to 10-year credit period. Said amount of carbon credit derived from Lahendong Unit 5 and 6 Geothermal Power Plants (PLTP), with the capacity of 2 x 20 MW, under the management of PGE and has been registered at National Registry System since 2023. [CCE-1.A4]

As a whole, PERTAMINA through PGE has the economic potential from the carbon emissions reduction by operating PLTP. The calculation of GHG emissions reduction potential uses the standard methodology ACM 0002 grid-connected

electricity generation from renewable sources. PGE mengelola 15 wilayah kerja panas bumi (WKP) dengan total kapasitas terpasang 1.877,5 MW dan potensi pengurangan emisi karbon sebesar 2,58 juta ton CO₂e/tahun, dan sudah masuk dalam Clean Development Mechanism (CDM). Hingga saat ini, PGE mengelola tujuh proyek CDM, dengan kondisi enam proyek CDM terdaftar di United Nations Framework Convention on Climate Change (UNFCCC), sementara Proyek Lahendong Unit 5 & 6 sedang dalam proses registrasi pada mekanisme *voluntary carbon* yakni VCS. Dari enam proyek CDM, sebanyak lima proyek mencapai *Gold Standard/GS* (atau *Gold Standard for the Global Goals*) berdasarkan *benchmark* dari Gold Standard Foundation.

electricity generation from renewable sources. PGE manages 15 geothermal working areas (WKP) with total installed capacity of 1,877.5 MW and carbon emissions reduction potential of 2.58 million tons of CO₂e/year, which has all been included in the Clean Development Mechanism (CDM). Up to date, PHE has managed seven CDM projects where six of them have been registered at the United Nations Framework Convention on Climate Change (UNFCCC), while the Lahendong Unit 5 & 6 Project is still under the process of registration at VCS, a voluntary carbon mechanism. Of the six CDM projects, five reached Gold Standard/GS (or Gold Standard for the Global Goals) based on the Gold Standard Foundation's benchmark.

Program Clean Development Mechanism (CDM) per 31 Desember 2023

Clean Development Mechanism (CDM) Program as of 31 December 2023

Program CDM CDM Program	Unit Operasi Operating Unit	Potensi Reduksi Emisi Verifikasi CDM Emissions Reduction Potential CDM Verification	Realisasi Reduksi Emisi dari Operasi Sendiri Realization of Emissions Reduction of Own Operation
		Ton CO ₂ e	
CDM Gold Standard	Lumut Balai 1-2	581,784	415,702
	Lumut Balai 3-4	581,784	-
	Ulubelu 3-4	581,518	642,794
	Karaha 1	156,669	56,699
	Kamojang 5	156,669	219,109
CDM	Kamojang 4 (dengan PLN)	402,780	379,528
VCS	Lahendong 5	181,030	239,150

Pengurangan Emisi CDM

Emissions Reduction of CDM

Keterangan Description	Satuan Unit	2023	2022	2021
Pembangkit Listrik Power Plant	Ton CO ₂ e	4,734,567.86	4,629,594.51	4,660,478.00
Pengurangan Emisi CDM CDM Emissions Reduction		3,971,869.92	3,879,690.33	3,920,976.71
Pembangkitan Listrik PLTP Geothermal Power Plant		2,442,570.55	2,330,344.26	2,366,214.00
Pengurangan Emisi CDM CDM Emissions Reduction		2,086,573.69	1,952,981.31	1,996,362.14



Nilai Ekonomi Diperoleh dan Didistribusikan Economic Value Generated and Distributed

Nilai Ekonomi Diperoleh [GRI 201-1][OG 11.21.2] [FR] Economic Value Generated

Nilai ekonomi yang diperoleh PERTAMINA terdiri dari penjualan dalam negeri minyak mentah, gas bumi, energi panas bumi dan EBT lainnya, dan produk minyak; penggantian biaya subsidi dari Pemerintah, penjualan ekspor minyak mentah, gas bumi, dan produk minyak; imbalan jasa pemasaran; dan pendapatan usaha dari aktivitas operasi lainnya.

Pengungkapan komprehensif informasi tentang kinerja keuangan PERTAMINA selama tahun 2023 disampaikan dalam Laporan Tahunan 2023 PT Pertamina (Persero) berdasarkan Laporan Keuangan Perseroan Konsolidasian yang berakhir 31 Desember 2023 (Audited). Pengungkapan

PERTAMINA's economic value generated consists domestic sales of crude oil, natural gas, geothermal energy and other NRE, and oil products; subsidy reimbursement from Government, export sales of crude oil, natural gas, and oil products; marketing fees; and revenue from other operating activities.

Comprehensive information on PERTAMINA's financial performance of 2023 is available in the 2023 Annual Report of PT Pertamina (Persero), which is based on the Consolidated Financial Statements as of 31 December 2023 (Audited). Information disclosure on the Company's 2023

informasi tentang kinerja keuangan Perseroan selama tahun 2023 dalam Laporan ini, disusun berdasarkan Standar GRI Konsolidasi 2021 dengan tanpa merinci berdasarkan wilayah operasi, segmen usaha, dan/atau kriteria lain.

Persaingan Usaha Sehat, Pelabelan, dan Komunikasi

Penjualan produk-produk energi yang dihasilkan PERTAMINA diatur dalam regulasi yang ditetapkan Pemerintah, termasuk harga penjualan kepada pelanggan melalui Perjanjian Jual Beli Minyak/Gas Bumi/Uap Panas Bumi dan Penetapan Harga Jual Eceran Jenis Bahan Bakar Minyak Tertentu, serta Jenis Bahan Bakar Minyak Khusus. Kekhususan ini menjadikan PERTAMINA tidak dihadapkan pada persaingan usaha dan penguasaan pasar dengan perusahaan lain. [GRI 206-1][EM-RM-520a.1]

Bantuan Finansial dari Pemerintah [GRI 201-4][OG 11.21.3] [FR]

Pendapatan Lain Perseroan antara lain berasal dari bantuan finansial Pemerintah, berupa penggantian subsidi atas Jenis Bahan Bakar Tertentu (JBT), meliputi JBT minyak solar, JBT minyak tanah dan LPG tabung 3 Kg, serta penggantian Dana Kompensasi BBM atas JBT Solar dan Jenis Bahan Bakar Khusus Penugasan (JBKP) Peralite dan Kebijakan BBM Satu Harga.

Total penggantian biaya subsidi dan penggantian dana kompensasi BBM yang diterima Perseroan tahun 2023 mencapai USD5.608,36 juta. Jumlah tersebut turun 10,93% dari tahun 2022 sebesar USD6.297 juta.

Laporan ini tidak menyertakan pengungkapan informasi terkait bantuan finansial dari Pemerintah di wilayah operasi Perseroan di mancanegara.

financial performance in this Report is compiled based on the 2021 Consolidated GRI Standards without detailing by operating areas, business segments, and/or other criteria.

Healthy Business Competition, Labeling, and Communication

The sales of energy products manufactured by PERTAMINA are stipulated in the Government's regulations, including the sale prices for customers through a Purchase Agreement of Oil/Natural Gas/Geothermal and Determining Retail Prices for Certain Oil Fuel and Special Oil Fuel. This specificity has helped PERTAMINA avoid business competition and market share with other companies. [GRI 206-1][EM-RM-520a.1]

Financial Aid from the Government [GRI 201-4][OG 11.21.3] [FR]

The Company's Other Revenues derive from the Government's financial aid in the form of subsidy reimbursement for Certain Types of Fuel (JBT), including JBT diesel oil, JBT kerosene, and 3 Kg cylinder LPG; and reimbursement of the BBM Compensation Fund for JBT Solar and Assignment Fuels (JBKP) Peralite and One Price Fuel Policy.

Total reimbursement for subsidy cost and BBM compensation fund received by the Company in 2023 reached USD5,608.36 million. This figure dropped by 10.93% from USD6,297 million in 2022.

This Report does not include information disclosure on financial aid from the Government in operating areas overseas.

Distribusi Nilai Ekonomi yang Diperoleh [GRI 201-1] [FR]

Distribution of the Economic Value Generated

Distribusi nilai ekonomi yang diperoleh terdiri dari Biaya Operasi yang meliputi juga pembayaran kepada kontraktor/mitra/vendor; Biaya Pekerja; Pembayaran bagi Pemodal dalam bentuk pembayaran dividen; Pembayaran kepada Pemerintah; dan Investasi Sosial, meliputi pemenuhan tanggung jawab sosial dan lingkungan (TJSL), serta pemberdayaan usaha mikro kecil (PUMK).

The distribution of the economic value generated consists of Operating Costs, which include payments to contractors/partners/vendors; Employees Wages; Payment to Investors in the form of dividend payments; Payment to the Government; and Social Investments, encompassing fulfillment of corporate social and environmental responsibility (CSR) and micro small business empowerment (PUMK).

Nilai Ekonomi Diperoleh dan Didistribusikan (dalam USD Juta) Economic Value Generated and Distributed (in million USD)

Uraian Description	2023	2022	2021
Nilai Ekonomi yang Diperoleh Economic Value Generated			
Pendapatan Revenues	75,788	84,888	57,509
Nilai Ekonomi yang Didistribusikan Economic Value Distributed			
Biaya Operasi Operating Costs	69,542	68,790	46,134
Biaya Pekerja Employee Wages	2,597	2,258	2,063
Pembayaran bagi Pemodal Payment to Investors	1,190	846	798
Pembayaran kepada Pemerintah Payment to the Government	27,769.92	30,476.76	17,328.57
Investasi Sosial (TJSL + PUMK) Social Investments (CSR + PUMK)	43	43	56
Jumlah Total	100,300	102,238	66,140
Nilai Ekonomi yang Ditahan Economic Value Retained			
Jumlah Total	(25,354)	(17,526)	(8,871)



Biaya Operasi dan Biaya Pekerja

Pengungkapan informasi terkait Distribusi Nilai Ekonomi yang Diperoleh untuk kontraktor/mitra/vendor yang menjadi bagian Biaya Operasi disampaikan terpisah dalam bahasan Proporsi Pemasok Lokal dan Ketenagakerjaan pada Laporan ini. Untuk Biaya Pekerja, jumlah yang didistribusikan tahun 2023 meningkat 15% dari tahun 2022 sebesar USD2.258 juta.

Salah satu bentuk pembayaran Biaya Pekerja adalah kesertaan pegawai dalam program pensiun. Sampai dengan akhir tahun 2023, terdapat beberapa program pensiun yang diikuti pegawai PERTAMINA, antara lain: [\[GRI 201-3\]](#)

Operating Costs and Employee Wages

Information disclosure on the Distribution of Economic Value Generated for contractors/partners/vendors that are a part of the Operating Costs is separately presented in the Local Suppliers Proportion and Employment in this Report. On Employee Wages, total distribution in 2023 increased by 15% from USD2,258 million in 2022.

An example of Employee Wages is having employees registered in a pension program. By the end of the 2023, several pension programs joined by PERTAMINA's employees are as follows: [\[GRI 201-3\]](#)

1. Program Pensiun Manfaat Pasti (PPMP)

yang dikelola Dana Pensiun (DP) PERTAMINA, dengan kontribusi Perseroan membayarkan iuran sebesar 21,6% x Penghasilan Dasar Pensiun atau 5,616% x Upah Tetap Pensiun (UTP), dan pekerja sebesar 7,5% x PhDP atau 1,95% x UTP. Berdasarkan Laporan Kinerja DP PERTAMINA tahun 2023, diketahui Rasio Kecukupan Dana (RKD) mencapai 95% dan Jumlah Kewajiban Pembayaran Pensiun Rp1,00 triliun, sehingga DP PERTAMINA dapat memenuhi kewajiban pembayaran terhadap 41.022 pegawai PERTAMINA yang pensiun pada tahun 2023.

1. Defined Benefit Pension Plan (PPMP),

which is managed by PERTAMINA Pension Fund, with the Company contributing to the dues as much as 21.6% x Basic Retirement Income, or 5.616% x Pension Fixed Wages (UTP), and employees 7.5% x PhDP, or 1.95% x UTP. Based on the 2023 Performance Report of DP Pertamina, the Fund Sufficiency Ratio (RKD) was at 95% and Total Pension Payment Liabilities Rp1.00 trillion, making DP Pertamina able to pay for its 41,022 employees who retired in 2023.

Kinerja Pengelolaan PMPP DP PERTAMINA

Performance of PMPP Management of DP PERTAMINA

Uraian Description	Satuan Unit	2023	2022	2021
Aset Neto Dana Pensiun Net Assets of Pension Fund		10.07	9.55	9.67
Jumlah Kewajiban Pembayaran Pensiun Total Pension Payment Liabilities	Rp Triliun Trillion Rp	1	0.99	1
Rasio Kecukupan Dana (RKD) Fund Sufficiency Ratio		95.3	96.5	95.9

2. Program Pensiun Iuran Pasti (PPIP) yang bekerja sama dengan beberapa Dana Pensiun Lembaga Keuangan (DPLK) yang ditunjuk, dengan besaran iuran 4,5% menjadi beban Perseroan dan 2% menjadi beban Pekerja.

2. Defined Contribution Pension Program (PPIP), which collaborates with several designated Pension Funds of Financial Institutions (DPLK), pays for 4.5% contribution and employees 2%.

3. Program Perlindungan Tenaga Kerja BPJS Ketenagakerjaan, mencakup Program Jaminan Hari Tua (JHT) dan Program Jaminan Pensiun (JP). Besaran iuran Program JHT adalah 5,7% dari upah dengan kontribusi pekerja membayar 2% dan Perseroan membayar 3,7%, sementara iuran Program JP adalah 3% dengan kontribusi 2% dibayarkan Perseroan dan 1% oleh pekerja. Pengungkapan informasi terkait kinerja pengelolaan iuran Program JHT dan JP disampaikan dalam Laporan BPJS Ketenagakerjaan.

3. Insurance Program of BPJS Ketenagakerjaan encompasses Old Age Benefits (JHT) and Pension Guarantee (JP). The JHT Program's contribution rate is 5.7% of wages, where 2% is borne by employees and 3.7% by the Company, whereas the JP Program's contribution rate is 3%, with 2% paid by the Company and 1% by employees. Information disclosure on the performance of the contribution of JHT and JP Programs is presented in the BPJS Ketenagakerjaan Report.

Pembayaran bagi Pemodal

Pembayaran bagi Pemodal meningkat 41% dari tahun 2022 sebesar USD846 juta, seiring bertumbuhnya Laba Usaha Perseroan. Pengungkapan informasi tentang investor disampaikan dalam Laporan Tahunan 2023 PT Pertamina (Persero).

Payment to Investors

Payment to Investors increased by 41% from USD846 million in 2022 due to the Company's Operating Income. Information disclosure on investors is stated in the 2023 Annual Report of PT Pertamina (Persero).

Pembayaran kepada Pemerintah

Pembayaran kepada Pemerintah terdiri dari pembayaran, setoran pajak dan PNBP atas minyak mentah dan/atau kondensat bagian negara, serta bonus tanda tangan.

Payment to the Government

Payment to the Government consists of tax and PNBP deposits of state crude oil and/or condensate, and signature bonuses.

Komponen Pembayaran kepada Pemerintah

Components of Payment to the Government

Komponen Component	Satuan Unit	2023	2022	2021
Pajak Tax	USD Juta Million USD	14,699.19	14,341.36	7,629.08
	Rp Miliar Billion Rp	224,530.13	219,064.28	116,534.13
PNBP PNBP	USD Juta Million USD	4,331.65	5,551.16	3,069.76
	Rp Miliar Billion Rp	66,165.99	84,793.90	46,890.54
Setoran Dividen Dividend Deposit	USD Juta Million USD	841.458	175.68	240
	Rp Miliar Billion Rp	14,024.30	2,928.00	4,000.00
Minyak Mentah dan/atau Kondensat Bagian Negara State Crude Oil and/ Condensate	USD Juta Million USD	7,897.06	10,383.47	6,368.47
	Rp Miliar Billion Rp	120,794.40	158,607.53	97,278.33
Bonus Tanda Tangan Signature Bonuses	USD Juta Million USD	0.56	25.09	21.26
	Rp Miliar Billion Rp	8.57	383.30	324.69
Total	USD Juta Million USD	27,769.92	30,476.76	17,328.57
	Rp Miliar Billion Rp	425,523.39	465,777.01	265,027.69

Catatan | Note:
Asumsi nilai kurs Rp1,000 = USD0,06
Assumed exchange rate of Rp1,000 = USD0.06

Komponen Pembayaran Pajak PERTAMINA

Component of PERTAMINA's Paid Tax

Komponen Component	Satuan Unit	2023	2022	2021
PPh Income Tax	USD Juta Million USD	2,836.92	3,668.98	1,237.86
	Rp Miliar Billion Rp	43,333,954	56,043,610	18,908,314
PPN & PPnBM Value Added Tax and Sales Tax on Luxury Goods	USD Juta Million USD	8,604.23	7,672.61	3,820.14
	Rp Miliar Billion Rp	131,429,662	117,199,089	58,352,663
Bea & Cukai Customs & Excise	USD Juta Million USD	217.32	265.94	204.76
	Rp Miliar Billion Rp	3,319,581	4,062,296	3,127,712
Pajak Lainnya Other Taxes	USD Juta Million USD	1,073.90	647.49	1,007.14
	Rp Miliar Billion Rp	16,403,838	9,890,387	15,384,131
Pajak Daerah Local Tax	USD Juta Million USD	1,966.81	2,086.34	1,359.17
	Rp Miliar Billion Rp	30,043,099	31,868,901	20,761,308
Jumlah Total	USD Juta Million USD	14,699.19	14,341.36	7,629.08
	Rp Miliar Billion Rp	224,530,133	219,064,283	116,534,129

Catatan | Note:
Asumsi nilai kurs Rp1,000 = USD0,06
Assumed exchange rate of Rp1,000 = USD0.06

Pembayaran Pajak dan PNBP

Strategi perpajakan Perseroan mengacu pada ketentuan peraturan perundang-undangan perpajakan yang berlaku di masing-masing negara yang menjadi wilayah operasi PERTAMINA. Untuk wilayah operasi di Indonesia, acuan strategi perpajakan di antaranya adalah UU Nomor 7 Tahun 2021 tentang Harmonisasi Peraturan Perpajakan (HPP) dan UU No. 11 Tahun 2020 tentang Cipta Kerja. Sesuai prinsip kepatuhan berdasarkan ketentuan perpajakan, pada tahun 2023, PERTAMINA melakukan penyesuaian strategi perpajakan, di antaranya terkait dengan Pajak Karbon di mana dalam rangka pencapaian target *Net Zero Emission (NZE) Roadmap* dan percepatan implementasi *pilot project* perdagangan karbon di internal PERTAMINA Group, semua Subholding dan Anak Perusahaan akan segera mengimplementasikan

Tax and Non-Tax State Revenue Payment

The taxation strategy used in the Company refers to the tax laws and regulations prevalent in the respective countries in which PERTAMINA's operating areas are located. Specifically for Indonesia, the references are Law Number 7 of 2021 on Harmonization of Tax Regulations (HPP) and Law Number 11 of 2020 on Job Creation. Per the compliance principle based on tax provisions, in 2023, PERTAMINA made adjustments to the taxation strategy, among others related to the Carbon Tax in which to achieve the targets of the Net Zero Emissions (NZE) Roadmap and accelerate the pilot project of carbon trading within PERTAMINA Group, all Subholdings and Subsidiaries will have to immediately implement the carbon trading and prioritize the synergy among Subholdings and PT Pertamina Power

perdagangan karbon dan mengedepankan sinergi antar-Subholding dengan PT Pertamina Power Indonesia (PPI) sebagai *carbon market aggregator* di PERTAMINA Group. Strategi perpajakan Perseroan menjadi tanggung jawab Fungsi *Tax* yang dipimpin pejabat perusahaan setingkat Vice President dan bertanggung jawab kepada Direktur Keuangan. Secara berkala, Fungsi *Tax* melakukan *monitoring* dan evaluasi atas penerapan strategi perpajakan untuk memastikan kepatuhan terhadap regulasi, di antaranya: [GRI 207-1][OG 11.21.4]

- Penerbitan strategi pajak: Pengelolaan risiko dan kebijakan perpajakan oleh manajemen untuk mendukung komitmen Direksi Perseroan terkait kepatuhan terhadap kebijakan perpajakan.
- Penerapan secara komprehensif: Penerapan Prosedur Pengendalian secara komprehensif terhadap aspek perpajakan yang teridentifikasi.
- Penetapan penanggung jawab: Penerapan pemisahan tugas (*segregation of duties*) yang jelas terkait tanggung jawab *Tax Strategy* di Fungsi *Tax Advisory*, *Tax Operation* di Fungsi *Tax Accounting*, dan *Tax Control* di Fungsi *Tax Compliance*.
- Tata kelola dokumentasi: Pengelolaan proses perpajakan yang terdokumentasi dalam aplikasi Sistem Informasi Perpajakan PERTAMINA Terintegrasi (SIPPINTER) sehingga dapat dimonitor setiap harinya.
- Pengujian: Untuk menjamin kepatuhan terhadap regulasi perpajakan dan proses dalam *Tax Control Framework* (TCF) maka dilakukan monitoring (termasuk Subholding dan Perusahaan Anak) serta pengujian *Tax Risk Assessment* secara berkala.
- Penjaminan: PERTAMINA telah membuka diri kepada Direktorat Jenderal Pajak (DJP) dan bersedia terbuka untuk di-assess kepatuhan perpajakannya dalam rangka implementasi *Cooperative Tax Compliance*. Penerapan integrasi perpajakan di Grup PERTAMINA.

Indonesia (PPI), the carbon market aggregator in the group. The Tax Function is held accountable for the Company's taxation strategy and it is led by an official equivalent to the Vice President and answers to the Finance Director. The Tax Function periodically monitors and evaluates the taxation strategy to ensure compliance with regulations, such as: [GRI 207-1][OG 11.21.4]

- Tax strategy establishment: Risk management and taxation policy by the management to support the commitment of the Board of Directors concerning compliance with the taxation policy.
- Applied Comprehensively: A comprehensive implementation of Control Procedure on the identified taxation aspects.
- Responsibility Assigned: A clear segregation of duties related to the Tax Strategy responsibilities in the Tax Advisory Function, Tax Operation in the Tax Accounting Function, and Tax Control in the Tax Compliance Function.
- Governance Documented: A documented management of taxation process in PERTAMINA Integrated Tax Information System (SIPPINTER) application for daily monitoring.
- Testing Performed: To ensure compliance with tax regulations and processes in Tax Control Framework (TCF), periodic monitoring (including Subholdings and Subsidiaries) and Tax Risk Assessment test are necessary.
- Assurance Provided: PERTAMINA is now open to the Directorate General of Tax (DJP) and willing to have its tax compliance assessed for the implementation of Cooperative Tax Compliance. Tax integration is implemented in PERTAMINA Group.



Pengelolaan perpajakan seluruh entitas di PERTAMINA Group dilakukan melalui penerapan prinsip-prinsip *fundamental tax management*, meliputi potensi risiko perpajakan, pengawasan internal, pengawasan proses bisnis perpajakan, meningkatkan keterlibatan fungsi pajak, serta ketersediaan informasi yang memadai. Fungsi Tax memastikan kepatuhan Perseroan sebagai wajib pajak sesuai Ketentuan Perpajakan yang berlaku. Sejak tahun 2018, PERTAMINA telah melakukan inisiasi integrasi, digitalisasi, otomatisasi data, serta sistem maupun fasilitas perpajakan dengan Direktorat Jenderal Pajak (DJP) Kementerian Keuangan, sehingga DJP dapat melakukan tinjauan, evaluasi, dan validasi pemenuhan kewajiban perpajakan PERTAMINA Group. Selama tahun 2023, *Holding, Subholding*, serta Anak Perusahaan Jasa dan Portofolio maupun unit operasional/unit bisnis telah memenuhi kewajiban perpajakan, sehingga memperoleh penghargaan sebagai Wajib Pajak Patuh maupun Wajib Pajak Berisiko Rendah dari Kantor Wilayah (Kanwil) DJP maupun Kantor Pelayanan Pajak (KPP). [GRI 207-2] [OG 11.21.5]

Managing taxes in PERTAMINA Group is carried out based on the fundamental tax management principles, including potential tax risks, internal oversight, tax business process supervision, intensifying the involvement of tax function, and providing adequate information. The Tax Function ensures the Company's compliance in accordance with the prevalent Tax Provisions. Since 2018, PERTAMINA has performed initiation of integration, digitalization, data automation, and tax system and facilities with the Directorate General of Tax (DJP) of the Ministry of Finance, allowing the DJP to review, evaluate, and validate the Group's fulfilment of tax obligations. In 2023, Holding, Subholdings, Service and Portfolio Subsidiaries, and operating units/business units have met their tax obligations and received Taxpayer Awards and Low-Risk Taxpayers Awards from the Regional Office (Kanwil) of DJP and Tax Service Office (KPP). [GRI 207-2][OG 11.21.5]

PERTAMINA secara berkala melakukan koordinasi dan pelibatan dengan DJP melalui Kanwil DJP atau KPP di masing-masing wilayah operasi. Koordinasi dan pelibatan pada tahun 2023 dilaksanakan melalui beberapa kegiatan, di antaranya: [GRI 207-3][OG 11.21.6]

- Asistensi dan konsultasi pelaporan pajak (Surat Pemberitahuan Tahunan/SPT), termasuk kepada pegawai PERTAMINA Group sebagai Wajib Pajak Orang Pribadi;
- *Tax Gathering*;
- Penyuluhan dan sosialisasi perpajakan terkait dengan peraturan perpajakan terbaru;
- Penyelenggaraan FGD untuk memperoleh pemahaman yang lebih mendalam atas implikasi aspek pajak pada skema bisnis baru di PERTAMINA Group.

Sebagai anggota *Extractive Industries Transparency Initiative* (EITI), Perseroan bersama Pemerintah maupun lembaga lain mendukung transparansi pelaporan pajak dan aktivitas-aktivitas lainnya di bidang energi. Penyampaian pelaporan mengacu standar EITI di negara-negara anggota EITI tempat PERTAMINA melakukan kegiatan operasional hulu, yaitu Indonesia, Irak, Nigeria, Gabon, Tanzania, Kolombia, dan Angola, termasuk negara Non EITI *member* yaitu Malaysia. Pengungkapan informasi Total Pembayaran Pajak Perseroan untuk wilayah operasi di mancanegara yaitu: [GRI 207-4][OG 11.21.7]

PERTAMINA periodically performs coordination and engagement with DJP through Kanwil DJP or KPP in each operating area. The 2023 coordination and engagement were conducted through several activities, such as: [GRI 207-3][OG 11.21.6]

- Assistance and consultation for tax reporting (Annual Tax Returns/SPT), including PERTAMINA Group's employees as Individual Taxpayer;
- *Tax Gathering*;
- Counselling and socialization on taxation and the latest tax regulations;
- Organizing FGD for more in-depth insights to the implications of tax aspects in PERTAMINA Group's new business scheme.

As a member of the Extractive Industries Transparency Initiative (EITI), the Company along with the Government and other institutions are for the transparency in tax reporting and other activities in the energy sector. The reporting adheres to the EITI standards and in the EITI's countries where PERTAMINA operates the upstream operational activities, namely Indonesia, Iraq, Nigeria, Gabon, Tanzania, Colombia, and Angola, including countries with non-EITI members, such as Malaysia. Information disclosure on the Company's Total Tax Payment for operating areas overseas is as follows: [GRI 207-4][OG 11.21.7]

Negara Country	Jumlah Karyawan Number of Employees	Pendapatan Revenues			Laba/Rugi Sebelum Pajak Profit Before Tax	Pajak Penghasilan yang Dibayarkan Tax Paid	Tax Accrued	Aset Berwujud Tangible Assets
		Pendapatan dari Pihak Ketiga Third-Party Revenues	Pendapatan dengan Pihak Terkait Related-Party Revenues	Total Pendapatan Total Revenues				
Singapura Singapore	35	3,630,328,129	481,228,596	4,111,556,725	110,380,584	1,799,332	23,670	252,193,096
Malaysia	5	235,263,917	68,824,131	304,088,048	111,593,802	44,185,789	695	833,735,766
Irak Iraq	18	195,274,283	-	195,274,283	33,861,859	9,824,393	25,534,162	477,709,947
Perancis (M & P Grup)* France (M & P Grup)	0	484,940,435	-	484,940,435	265,376,126	37,320,828	9,248,098	1,254,625,466
Timor Leste	28	68,203,644	3,342,572	71,546,216	10,354,890	1,151,679	-	4,550,361

* Data lebih rinci dapat dilihat pada website <https://www.maureletprom.fr/en/investisseurs/rapports-annuels>.
More detailed data can be seen on the website <https://www.maureletprom.fr/en/investisseurs/rapports-annuels>.

Pembayaran *Participating Interest* (PI)

Selain pembayaran pajak ke mancanegara yang menjadi lokasi wilayah operasi, Perseroan juga memenuhi kewajiban pembayaran *Participating Interest* (PI) kepada pemerintah daerah sesuai wilayah operasi. Realisasi PI di 2023, meliputi:

- Akuisisi *participating interest* pada wilayah Masela
- Perpanjangan kontrak bagi hasil (KBH) Jabung
- KBH *gross split* Blok Corridor
- Perjanjian pengalihan (akuisisi) 10% *participating interest* di West Qurna I (WQ I)
- Akuisisi wilayah kerja Bunga dan Peri Mahakam
- Akuisisi wilayah kerja East Natuna
- Perpanjangan hak pengelolaan lapangan minyak dan gas Blok 405a Menzel Lejmat Nord (MLN)
- Pendirian PT Pertamedika Bali Hospital
- Penawaran umum perdana PGE
- Pendirian *joint venture* - PT Cahaya Anagata Energy

Paid *Participating Interest* (PI)

Aside from paying taxes overseas where the operating areas are located, the Company also meets the obligation of paying *Participating Interest* (PI) to the local government based on the operating areas. The realization of PI in 2023, included:

- Acquisition of participating interest in Masela working area
- Jabung production sharing contract (PSC) extension
- Corridor gross split PSC
- Agreement to transfer (acquisition) of 10% participating interest in West Qurna I (WQ I)
- Acquisition of the Bunga and Peri Mahakam Area
- Acquisition of the East Natuna Area
- Extension of management right of oil and gas field Block 405a Menzel Lejmat Nord (MLN)
- Establishment of PT Pertamedika Bali Hospital
- Initial public offering (IPO) PGE
- Establishment of joint venture - PT Cahaya Anagata Energy



Perbandingan Target dan Realisasi Kinerja Portofolio, Target Pembiayaan atau Investasi pada Instrumen Keuangan, atau Proyek yang Sejalan dengan Keberlanjutan

Comparison of Target and Realization of Portfolio Performance, Target of Financing or Investments in Financial Instruments, or Sustainability-based Projects

Perbandingan Target dan Kinerja Portofolio [OJK F.2]

Comparison of Targets and Portfolio Performance

Sepanjang tahun 2023, Perseroan telah menetapkan target yang hendak dicapai dalam Rencana Kerja dan Anggaran Perusahaan (RKAP) tahun 2023. Target tersebut telah disesuaikan dengan kondisi industri dan ekonomi PERTAMINA, termasuk realisasi energi transisi sejalan dengan penerapan keberlanjutan. Proyeksi yang tercakup pada target tersebut yaitu selama satu tahun ke depan (2024).

In 2023, the Company set targets that should be achieved in the 2023 Company Work Plan and Budget (RKAP). The targets have been tailored to PERTAMINA's industry and economic condition, including the realization of energy transition that align with sustainability implementation. The projection included in the targets is the next one year (2024).

Perbandingan Target dan Kinerja Portofolio (dalam USD Juta) Comparison of Portfolio Target and Performance (in Million USD)

Uraian Description	2024	2023		2022	
	Target	Target	Realisasi Realization	Target	Realisasi Realization
Penjualan dan Pendapatan Usaha Lainnya Other Sales and Operating Income	78,854	81,976	75,788	58,531	84,888
Laba Tahun Berjalan Profit for the Year	3,784	3,647	4,770	1,373	4,060

Perbandingan Target dan Realisasi Pembiayaan Proyek Sejalan Keberlanjutan [OJK F.3]

Comparison of Target and Realized Financing of Sustainability-based Projects

Uraian Description	Satuan Unit	2024	2023	
		Target Target	Target Target	Realisasi Realization
Sustainability Budget Tagging (SBT)	USD Juta Million USD	938	576.44	314.57

Kontribusi realisasi anggaran keberlanjutan terbesar berasal dari Subholding Power & NRE dari proyek PLTP Lumut Balai 1 & 2 dan Lahendong 7 & 8, serta Subholding Integrated Marine Logistics dari kegiatan penggunaan bunker *Low Sulfur Fuel Oil* (LSFO).

The largest contribution to the realization of sustainability budget was from the Power & NRE Subholding of the PLTP Lumut Balai 1 & 2 and Lahendong 7 & 8 projects and the Integrated Marine Logistics Subholding of activities in the Low Sulphur Fuel Oil (LSFO) bunker.



03

Kinerja Pengelolaan Lingkungan
Environmental Management
Performance

Lingkungan Lestari untuk Generasi Masa Depan

Sustainable Environment for Future Generation



PT Pertamina (Persero) berkomitmen menjaga lingkungan lestari untuk generasi masa depan. Komitmen diwujudkan Perseroan dengan mendukung upaya Pemerintah dalam merespons perubahan iklim serta mengelola dampak terhadap lingkungan.






PT Pertamina (Persero) is committed to maintain sustainable environment for future generation. The commitment is embodied through the Government's efforts in responding to climate change and managing environmental impacts.





Highlight Issues

Topik Topics	Aktivitas Activities	Keluaran dan Nilai yang Diciptakan Output and Value Created	Kontribusi pada TPB Contributing to SDGs
Pengelolaan Perubahan Iklim Climate Change Management			
<p>Respons dan Mitigasi terhadap Perubahan Iklim Response and Mitigation to Climate Change</p>	<p>Penguatan <i>green financing framework</i> dan pengembangan proyek sektor hijau. Strengthening green financing framework and green sector project developments.</p>	<p>PT Pertamina Geothermal Energy Tbk, anak usaha PT Pertamina Power & New Renewable Energy, menerbitkan obligasi hijau (<i>green bond</i>) USD400 juta atau sekitar Rp5,88 triliun (asumsi kurs Rp14.706 per dolar AS). Pencatatan obligasi dilakukan di Singapore Exchange Securities Trading Limited. PT Pertamina Geothermal Energy Tbk, a subsidiary of PT Pertamina Power & New Renewable Energy, issued green bonds of USD400 million, or approximately Rp5.88 trillion (the exchange rate assumed at Rp14,706 per USD). The bonds were listed at Singapore Exchange Securities Trading Limited.</p>	
<p>Transisi Energi dan Pengembangan Energi Baru Terbarukan Energy Transition and New and Renewable Energy Developments</p>	<p>Delapan pilar transisi energi antara lain: kilang ramah lingkungan, bioenergi, ekosistem baterai terintegrasi; ekonomi karbon sirkuler, dan hidrogen. Eight pillars of energy transition are: eco-friendly refineries, bioenergy, integrated battery ecosystem, circular carbon economy, and hydrogen.</p>	<ul style="list-style-type: none"> • Perubahan operasi kilang untuk produksi bahan bakar ramah lingkungan dan petrokimia. • Produksi dan distribusi biodiesel B35; Pertamina Green 95 (bioethanol 5%); • Pembangunan 46 stasiun penukaran baterai; • Penerapan <i>carbon capture, utilization, and storage</i> (CCUS); • Kerja sama pembangunan <i>hydrogen refueling station</i> (HRS). • Changes in refinery operations for eco-friendly fuel and petrochemical products. • Produced and distributed B35 biodiesel; Pertamina Green 95 (bioethanol 5%); • Built 46 battery swapping stations; • Carried out carbon capture, utilization, and storage (CCUS); • Cooperating to build hydrogen refueling station (HRS). 	

Topik Topics	Aktivitas Activities	Keluaran dan Nilai yang Diciptakan Output and Value Created	Kontribusi pada TPB Contributing to SDGs
Dekarbonisasi dan Reduksi Emisi Decarbonization and Emissions Reduction	Upaya dan pencapaian efisiensi energi. Efforts and achievements of energy efficiency.	Realisasi efisiensi energi tahun 2023 mencapai 38.211,4 TJ. The 2023 efficiency energy reached 38,211.4 TJ.	 
	Upaya dan pencapaian pengurangan emisi. Efforts and achievements of emissions reduction.	Reduksi emisi sebesar 8,5 juta ton CO ₂ e dari baseline emisi tahun 2010 berdasarkan skenario <i>business as usual</i> . Emissions were reduced by 8.5 million tons of CO ₂ e of the 2010 emissions baseline based on the business-as-usual scenario.	
Pengelolaan Dampak Lingkungan Environmental Impact Management			
Konservasi Sumber Daya Air Water Sources Conservation	Mengurangi pemakaian air tawar, terutama di daerah langka/stres air. Reducing the use of freshwater, mainly in water stress areas.	Pemakaian air di beberapa wilayah operasi berkurang signifikan. Water use in several operating areas reduced significantly.	
	Pemulihan daerah aliran sungai (DAS) sebagai area tangkapan air. Restoring drainage basin (DAS) as catchment area.	Rehabilitasi DAS di Hutan Produksi Kendilo 669 hektar di Kabupaten Paser, Kalimantan Timur, dan di Blok Hutan Produksi Terbatas Pedamaran, Kabupaten Ogan Komering Ilir (OKI) seluas 250 hektar. DAS rehabilitation in Kendilo Production Forest of 669 hectares in Paser Regency, East Kalimantan, and in Pedamaran Restricted Production Forest Block, Ogan Komering Ilir Regency (OKI) of 250 hectares.	
Pengelolaan Limbah, Efluen, dan Beban Pencemar Air Waste, Effluent, and Water Pollutant Load Management	Pengelolaan limbah dan efluen yang efisien. Efficient waste and effluent management.	Penurunan limbah B3 yang dihasilkan 421 ton dan penurunan limbah non-B3 sebesar 430 ton. The generated hazardous and toxic (B3) waste was reduced by 421 tons and an amount of 430 tons of non-B3 waste declined.	
	Pencegahan insiden tumpahan minyak. Preventing oil spill incidents.	Penurunan insiden tumpahan minyak tahun 2023 sebesar 87% dibanding tahun 2022. 87% decrease in the 2023 oil spill incidents compared to 2022.	
Perlindungan dan Konservasi Keanekaragaman Hayati Biodiversity Protection and Conservation	Peningkatan wilayah konservasi keanekaragaman hayati. Improving biodiversity conservation areas.	Luasan wilayah konservasi pada tahun 2023 mencapai 51.081,56 Ha, meningkat dibandingkan dengan tahun 2022 sebesar 30.810,81 Ha. The 2023 conservation areas reached 51,081.56 Ha, showing an increase from 30,810.81 Ha in 2022.	
		Kerja sama konservasi dengan Taman Nasional Teluk Cendrawasih untuk pengelolaan penyelamatan hiu paus; dengan Taman Nasional Kepulauan Seribu untuk transplantasi terumbu karang dan pelepasan 200 tukik. Cooperated with Teluk Cendrawasih National Park to conserve and manage whale shark rescue; and Thousand Islands National Park for coral transplantation and releasing 200 turtle hatchlings.	

Bersama Mengatasi Perubahan Iklim Collectively Addressing Climate Change



PERTAMINA mengelola isu perubahan iklim dengan strategi dan perencanaan, baik secara **operasional (infrastruktur)** maupun **lingkungan fisik**.

PERTAMINA manages climate change issues with strategies and planning, both operationally (infrastructure-wise) and in a physical environment.

Respons dan Mitigasi terhadap Perubahan Iklim [OG 11.2.1][CCE-1.A1]

Response and Mitigation towards Climate Change

Perseroan mendukung kebijakan Pemerintah Indonesia untuk mencapai target penurunan emisi gas rumah kaca (GRK) dan NZE. Respons PERTAMINA untuk mendukung kebijakan Pemerintah dalam mencapai ketahanan iklim dilakukan dengan menargetkan reduksi emisi GRK, mengembangkan energi terbarukan, serta menerapkan produksi bersih dan ramah lingkungan.

The Government supports the Government of Indonesia's policies to achieve the targeted GHG emissions reduction and NZE. To realize climate resilience, the Company targets GHG emissions reduction, promotes renewable energy, and implements clean and eco-friendly production.

Pengungkapan informasi terkait respons dan mitigasi Perseroan terhadap perubahan iklim dalam Laporan ini disampaikan secara umum dengan pendekatan pada Rekomendasi *Task Force on Climate-related Financial Disclosure* (TCFD) yang memuat tata kelola, strategi, pengelolaan risiko, dan metrik data.

Implikasi Finansial Akibat Perubahan Iklim

[OG 11.2.2]

PERTAMINA mengalokasikan belanja modal (*capital expenditure/capex*) sebesar 15% dari total biaya investasi untuk menyukseskan transisi energi dalam mengelola perubahan iklim. Nilai tersebut lebih tinggi dibandingkan perusahaan energi dunia yang lainnya untuk pengembangan energi terbarukan. Dalam jangka panjang, PERTAMINA menyiapkan *capex* sekitar USD9 miliar pada tahun 2023 dan untuk tahun-tahun berikutnya berkisar antara USD10-15 miliar dalam rentang waktu 2023-2026. Pengungkapan informasi tentang hal ini juga disampaikan di halaman 62 Laporan.

Information disclosure on the Company's response and mitigation towards climate change in this Report is generally presented based on the Task Force on Climate-related Financial Disclosure (TCFD) Recommendation, which contains governance, strategies, risk management, and data metrics.

Financial Implications Due to Climate Change

[OG 11.2.2]

PERTAMINA allocates 15% for capital expenditure (*capex*) of the total investment costs to help bring success to energy transition whilst managing climate change. This number shows higher value compared to other world energy companies in expanding renewable energy. In a long term, PERTAMINA has around USD9 billion prepared for the 2023 *capex*, and for the subsequent years, an amount of approximately USD10-15 billion has been allocated for the period of 2023-2026. Information disclosure on this matter can also be viewed on page 62 of this Report.

Tata Kelola Pengelolaan Perubahan Iklim [TCFD GOV.a, GOV.b][CCE-1.C1, 1.C2]

Governance of Climate Change Management

Pengelolaan perubahan iklim termasuk dalam Fokus Keberlanjutan PERTAMINA yang menjadi tugas dan tanggung jawab Direksi sesuai Indikator Kinerja Utama (KPI). Direksi menetapkan strategi, program kerja, dan anggaran untuk mengelola risiko iklim, serta bertanggung jawab dalam memastikan pengelolaan risiko iklim telah sejalan dengan manajemen risiko Perseroan. [CCE-2.A2]

Dewan Komisaris berperan dalam mengawasi pelaksanaan tugas dan tanggung jawab Direksi. Melalui mekanisme pertemuan/rapat dengan Direksi, Dewan Komisaris memberikan saran dan masukan terkait pengelolaan risiko iklim, serta memastikan respons Direksi sejalan dengan komitmen penerapan tata kelola perusahaan yang baik (GCG).

Climate change management, included in PERTAMINA Sustainability Focus, is a part of the Board of Directors' duties and responsibilities in accordance with the Key Performance Indicators (KPIs). The Board of Directors sets the strategies, work programs, and budgets to manage climate risks and is responsible for ensuring the alignment of climate risk management with the Company's risk management.

The Board of Commissioners plays the role of overseeing the implementation of duties and responsibilities of the Board of Directors. Through meetings with the Board of Directors, the Board of Commissioners advises and gives inputs related to climate risk management as well as ensures the Board of Directors' responses are in line with the commitment of good corporate governance (GCG) implementation.

Komite Keberlanjutan

Dalam mengelola perubahan iklim, Direksi dibantu Komite Keberlanjutan yang dipimpin Direktur Utama sebagai Ketua Komite. Komite Keberlanjutan ini terdiri dari peran eksekutif dalam aspek keberlanjutan. PERTAMINA menunjuk SVP Health, Safety, Security, and Environment (HSSE) untuk bertanggung jawab terhadap iklim, lingkungan hidup, emisi, serta aspek terkait iklim lainnya seperti keanekaragaman hayati, kesehatan dan keselamatan, pencegahan kecelakaan besar, air, efluen, pengelolaan limbah, tanggap darurat, pengelolaan sumur lepas pantai, penutupan, dan rehabilitasi lahan. Struktur organisasi Komite Keberlanjutan disampaikan di halaman 223 Laporan ini.

Komite Keberlanjutan mempunyai tugas dan tanggung jawab secara umum dan khusus terkait aspek keberlanjutan, antara lain:

- Mengawasi, menetapkan dan memberikan arahan mengenai ambisi, strategi, peta jalan, kebijakan, inisiatif dan ukuran kinerja, termasuk aspek iklim.
- Mengidentifikasi dampak dan risiko operasional Perseroan terhadap perekonomian, sosial dan lingkungan, serta memantau upaya pencegahan risiko.
- Memantau pencapaian target dan hasil penerapan aspek keberlanjutan sesuai jangka waktu yang ditentukan.
- Memantau pencapaian kinerja Perseroan di bidang keberlanjutan berdasarkan penilaian pihak ketiga.
- Mengarahkan dan memantau komunikasi eksternal terkait aspek keberlanjutan.
- Memberikan arahan mengenai pelaksanaan pendanaan eksternal berbasis keberlanjutan bagi Perseroan.
- Berkoordinasi dengan Dewan Komisaris, Direksi, Direktorat atau Sub holding dalam penerapan aspek keberlanjutan.
- Melaksanakan peran Komite TJSL BUMN.

Pada tataran *Holding* , keanggotaan Komite Keberlanjutan didukung pejabat Perseroan

Sustainability Committee

In managing climate change, the Board of Directors is assisted by the Sustainability Committee with President Director & CEO running as the chairman of the committee. This Sustainability Committee consists of executive roles in the sustainability aspect. PERTAMINA appoints SVP of Health, Safety, Security, and Environment (HSSE) to be in charge of aspects concerning climate, environment, emissions, and others, such as biodiversity; health and safety; prevention of major accidents; water, effluent, and waste management; emergency response; offshore management; and land abandonment and rehabilitation. The organizational structure of the Sustainability Committee is presented on page 223 of this Report.

The Sustainability Committee has general and specific duties and responsibilities concerning sustainability aspect, such as the following:

- Overseeing, stipulating, and giving directions on ambition, strategies, roadmap, policies, initiatives and performance measures, including climate aspects.
- Identifying the Company's operational impacts and risks on the economy, social, and environment sectors as well as monitoring risk prevention efforts.
- Monitoring the Company's performance achievements in sustainability based on third-parties evaluation.
- Monitor the Company's performance achievement in sustainability based on third party assessment.
- Directing and monitoring external communication pertaining to sustainability aspect.
- Giving directives on the application of sustainability-based external funding for the Company.
- Coordinating with the Board of Commissioners, Board of Directors, Directorate or Subholding in implementing sustainability aspects.
- Conducting the roles of SOE's CSR Committee.

At the Holding level, the Sustainability Committee's membership has the support of the Company's

setingkat Senior Vice President (SVP), yakni SVP Corporate Finance untuk keuangan berkelanjutan; SVP Strategy & Investment untuk integrasi strategi/energi transisi; serta SVP Health, Safety, Security & Environment (HSSE) untuk lingkungan iklim, emisi, keanekaragaman hayati, efluen, dan pengelolaan limbah. Di tingkat *Subholding*, Komite Keberlanjutan berkoordinasi dengan Direktur Utama masing-masing Anak Perusahaan.

Direksi mendukung pengembangan kinerja PERTAMINA dalam segala hal yang berkaitan dengan iklim. Secara langsung, Direktur Utama selaku Ketua Komite Keberlanjutan bertanggung jawab dalam:

- Memberikan arahan serta mengawasi visi, misi, dan kebijakan strategi Perseroan.
- Menetapkan, memantau, serta mengawasi progres tujuan dan target perubahan iklim.
- Mengambil keputusan, mengkaji, serta memberikan arahan mengenai ambisi, strategi, peta jalan dan inisiatif jangka pendek, menengah, dan panjang dalam penerapan aspek terkait perubahan iklim pada setiap lini bisnis dan fungsi pendukung.
- Fungsi kepemimpinan dan koordinasi lainnya, seperti mencapai target yang telah disetujui.

Secara berkala, Direksi *Subholding* bertemu dengan Direksi Perseroan dan Komite Keberlanjutan untuk melaksanakan rapat rutin bulanan. Dalam rapat tersebut, Direksi akan membahas dan mengevaluasi isu-isu perubahan iklim Perseroan, termasuk:

- Mengawasi, meninjau dan menetapkan tujuan kinerja, termasuk target Perseroan seperti target energi transisi.
- Memantau perkembangan terkait kinerja iklim dan kemajuan terhadap target Perseroan.
- Mengawasi, meninjau, dan mengarahkan strategi, rencana aksi, anggaran, dan pengembangan rencana transisi.
- Mengawasi, meninjau, dan mengarahkan proses manajemen risiko perubahan iklim dalam pengembangan bisnis dan strategi PERTAMINA.

officials equivalent to Senior Vice President (SVP), namely SVP Corporate Finance for sustainable finance; SVP Strategy & Investment for strategy integration/energy transition; and SVP Health, Safety, Security & Environment (HSSE) for climate, emissions, biodiversity, effluent, and waste management. At the *Subholding* level, the Sustainability Committee coordinates with the President Director of each Subsidiary.

The Board of Directors upholds PERTAMINA's performance development in all climate-related affairs. The President Director & CEO as the Chairman of the Sustainability Committee is directly responsible for:

- Giving directives and supervising the Company's vision, missions, and strategic policies.
- Setting, monitoring, and supervising the objectives progress and targets of climate change.
- Making decisions, reviewing, and giving directives on ambition, strategies, roadmap, and long-, mid-, and long-term initiatives in implementing climate change-related aspects in all business lines and supporting functions.
- Other leadership and coordination functions, such as realizing the targets set.

The Board of Directors of *Subholding*, the Company, and the Sustainability Committee periodically hold a monthly meeting. In this meeting, the Board of Directors will discuss and evaluate the Company's climate change issues, including:

- Supervising, reviewing, and establishing performance objectives, including the Company's targeted energy transition.
- Monitoring developments on climate performance and its progress against the Company's targets.
- Oversee, review and direct strategy, action plan, budget, and transition plan development.
- Supervising, reviewing, and directing the risk management of climate change in PERTAMINA's business developments and strategies.

Evaluasi Kinerja Komite Keberlanjutan

PERTAMINA telah menerapkan kebijakan insentif untuk manajemen terkait perubahan iklim pada tingkat Direksi dan manajemen, serta memberikan insentif kepada peran kepemimpinan kunci. Secara khusus, Direktur, pejabat *C-Suite*, serta Manajer Lingkungan/Keberlanjutan berhak atas bonus moneter jika target spesifik terkait dengan kinerja iklim tercapai. Insentif ini disusun untuk memastikan bahwa tindakan kepemimpinan selaras dengan komitmen iklim dan rencana transisi PERTAMINA, serta mengukur kemajuan dan efektivitas pengelolaan risiko terkait iklim.

Target kinerja tersebut, termasuk pencapaian skor peringkat ESG dan jumlah pengurangan emisi CO₂e yang telah ditentukan, serta pelepasan kredit karbon. Selain itu, terdapat target jangka panjang untuk pengurangan emisi yang selaras dengan proses dekarbonisasi PERTAMINA.

Kontribusi pada Kebijakan Publik

[OG 11.2.4][CCE-1.C3]

Salah satu dukungan PERTAMINA pada transisi energi adalah partisipasi dalam *Business 20* (B20) yang merupakan bagian dari G20. Dalam B20, Direktur Utama PERTAMINA ditunjuk sebagai Ketua Satuan Tugas Energi, Keberlanjutan, dan Iklim yang bekerja sama dengan para pemimpin bisnis global untuk menangani kebijakan terkait energi maupun perubahan iklim. B20 menjadi salah satu wadah entitas bisnis global untuk berperan sebagai penggerak pertumbuhan ekonomi, berkelanjutan, serta berimbang yang mendukung komitmen mencapai NZE dan pengembangan energi baru dan terbarukan.

Performance Evaluation of Sustainability

PERTAMINA has enforced an incentive policy on climate change to the Board of Directors and the management and provides incentives for key leadership. The Board of Directors, C-Suite officials, and Environmental/Sustainability Management are specifically entitled to a monetary bonus if relevant specific targets on climate performance are accomplished. This incentive is prepared to ensure that the actions of the leadership is in harmony with PERTAMINA's climate commitments and transition plans as well as to measure the progress and effectiveness of the climate risks management.

The performance targets include ESG rating score achievement, total determined CO₂e emissions reduction, and carbon credit release. Additionally, there are long-term targets for emissions reduction that are in line with PERTAMINA's decarbonization process.

Contribution to Public Policies [OG 11.2.4][CCE-1.C3]

One of PERTAMINA's supports in energy transition is participating in Business 20 (B20), a part of G20. In B20, PERTAMINA's President Director & CEO was appointed as the Chair of Task Force Energy, Sustainability, and Climate who collaborates with global business leaders to handle policies related to energy and climate change. B20 has become a global business entity to drive the economic growth in a sustainable and balanced manner that supports the commitment of NZE and new renewable energy developments.

Strategi Keberlanjutan terkait Perubahan Iklim [TCFD STRA.a, STRA.b][CCE-2.C2]

Sustainability Strategies on Climate Change



Strategi Perseroan dalam mengelola perubahan iklim menggunakan dua pendekatan, yakni inisiatif dekarbonisasi untuk mengurangi emisi cakupan 1 dan 2 serta pengembangan bisnis rendah karbon baru untuk mengurangi emisi cakupan 3. Inisiatif dekarbonisasi mencakup berbagai kegiatan bisnis, seperti melakukan efisiensi energi, memastikan pengurangan kerugian untuk pembakaran gas, menerapkan elektrifikasi sistem, menggunakan bahan bakar rendah karbon, serta memasang pembangkit listrik tenaga surya di beberapa unit operasi.

Two approaches are the strategies administered by the Company to manage climate change, namely decarbonization initiatives to reduce the scope 1 and 2 emissions and new low-carbon business developments to reduce the scope 3 emissions. The decarbonization initiatives include various business activities, such as efficient energy, reducing the loss of gas combustion, implementing system electrification, using low-carbon fuel, and installing solar power plants in several operating units.

Selain dekarbonisasi, PERTAMINA akan mengembangkan bisnis rendah karbon baru dengan memproduksi, mendistribusikan, serta menjual berbagai produk hijau, termasuk *biofuel*, hidrogen hijau, amonia, dan petrokimia (termasuk metanol). Bisnis rendah karbon ini rencananya akan dimulai pada tahun 2034 dengan melibatkan Subholding PERTAMINA. Sementara itu dalam jangka pendek, PERTAMINA akan memulai pembangunan Pembangkit Listrik Tenaga Panas Bumi (PLTP) Biner sebagai salah satu proyek Subholding PNRE.

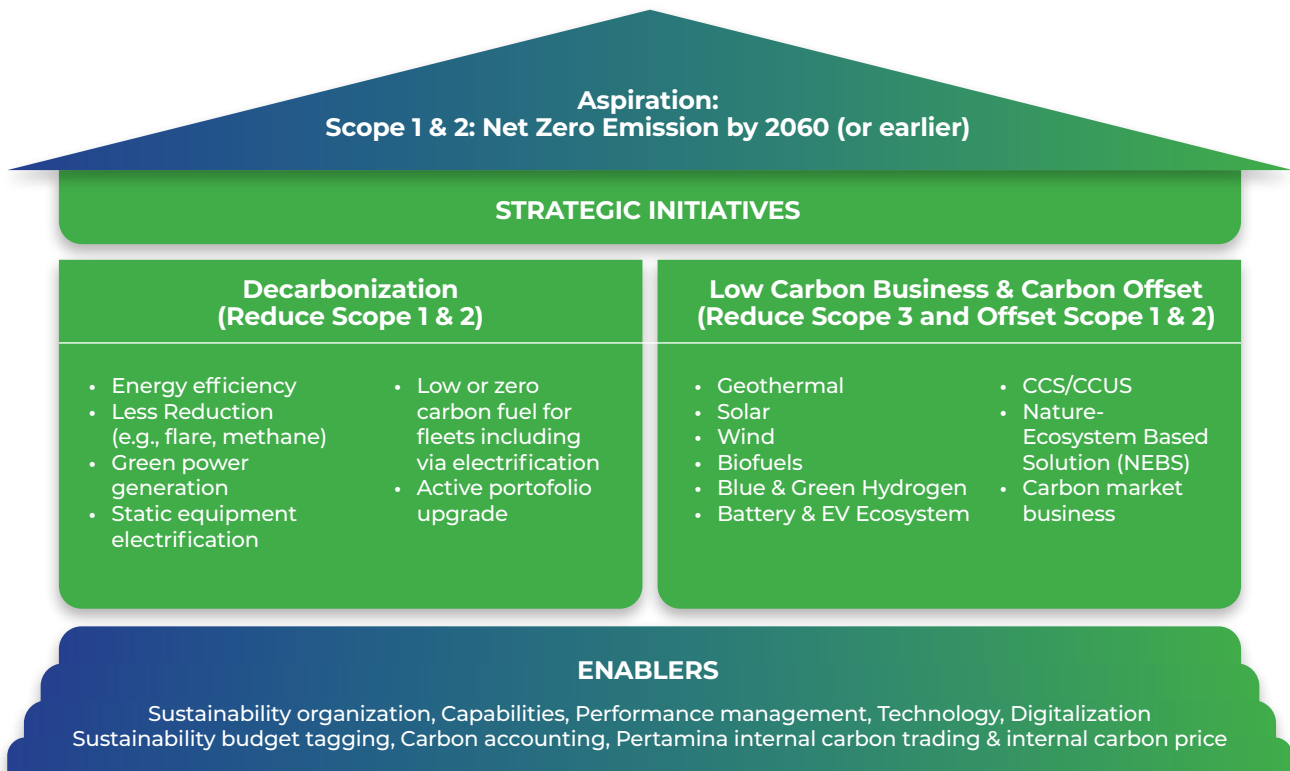
Melalui strategi tersebut, PERTAMINA berkomitmen mendukung target Pemerintah Indonesia mencapai NZE pada tahun 2060. Sesuai dokumen *Nationally Determined Contribution* (NDC), Perseroan menyusun *PERTAMINA Net Zero Emission Roadmap* untuk mencapai target penurunan emisi GRK 31,89% pada tahun 2030 dengan upaya sendiri dan 43,20% dengan bantuan internasional. Sejalan dengan tujuan tersebut, PERTAMINA juga berkomitmen untuk memperkuat dukungan melalui peningkatan pangsa EBT dalam portofolio energi. [CCE-1.A2]

Aside from the decarbonization, PERTAMINA will develop new low-carbon business by producing, distributing, and selling various green products, including biofuel, green hydrogen, ammonia, and petrochemical (including methanol). This low-carbon business is planned to commence in 2034 involving PERTAMINA's Subholdings. In a short term, PERTAMINA will start building a Binary Geothermal Power Plants (PLTP) as a project of PNRE Subholding.

Through these strategies, PERTAMINA is committed to sanctioning the Government of Indonesia's targets to achieve NZE by 2060. Per the *Nationally Determined Contribution* (NDC) document, the Company established *PERTAMINA Net Zero Emission Roadmap* to reach the targeted GHG emissions reduction of 31.89% in 2030 through self-efforts and 43.20% from international assistance. Backing the aim, PERTAMINA is also committed to strengthening its support by increasing the new renewable energy market in the energy. [CCE-1.A2]



Peta Jalan Net Zero Emission PERTAMINA
PERTAMINA's Net Zero Emission Roadmap



Realisasi dari peta jalan tersebut adalah delapan inisiatif strategis percepatan transisi energi yang dijalankan *Holding* maupun *Subholding* PERTAMINA, terutama melalui proyek solusi berbasis alam (NBS), yaitu:

- Peningkatan kapasitas terpasang *geothermal* ;
- Pengembangan *green refinery* ;
- Komersialisasi *green hydrogen* ;
- Pengembangan ekosistem baterai dan penyimpanan energi terintegrasi;
- Pengembangan pabrik metanol untuk gasifikasi;
- Peningkatan kapasitas pembangkit;
- Pengembangan bioenergi; dan
- *Carbon Capture Utilization & Storage (CCUS)* (mulai tahun 2029).

Strategi Pembiayaan Hijau

PERTAMINA juga menyusun strategi pembiayaan untuk mendukung pengelolaan perubahan iklim dengan fokus pada substitusi kontribusi pendapatan dari hasil energi fosil menuju ke *green business* atau bisnis hijau. Pengembangan bisnis hijau dilakukan secara bertahap, sehingga terbuka peluang bagi Perseroan mengakses ke pembiayaan

Of the roadmap, eight strategic initiatives for accelerating energy transition are brought forth and applied by PERTAMINA's Holding and Subholdings, mainly through nature-based solution projects, namely:

- Increasing the geothermal installed capacity;
- Developing green refinery;
- Commercializing green hydrogen;
- Developing a battery ecosystem and an integrated energy storage;
- Developing a methanol factory for gasification;
- Enhancing generating capacity;
- Developing bioenergi; and
- *Carbon Capture Utilization & Storage (CCUS)* (starting 2029).

Green Financing Strategy

PERTAMINA prepares a financing strategy to sustain climate change management by substituting the revenue contributions from fossil-based energy output to green business. The green business developments are carried out gradually, providing more opportunities for the Company to access the green financing through blended financing and

hijau melalui pembiayaan kombinasi (*blended financing*) dan pembiayaan hijau (*green financing*). Skema *blended financing* dilakukan melalui kerja sama multilateral, termasuk masuknya filantropi hingga dukungan *green investor*.

Pada tahun 2023, PERTAMINA melalui PT Pertamina Geothermal Energy Tbk atau PGE, anak perusahaan PT Pertamina PNRE Subholding Power & New Renewable Energy, menerbitkan obligasi berwawasan hijau (*green bond*). Total dana yang diperoleh mencapai US\$400 juta atau sekitar Rp6 triliun dan akan digunakan untuk membiayai kembali proyek-proyek pengembangan sumber daya panas bumi yang dikelola PGE. Penggunaan dana tersebut sudah sesuai dengan *Eligibility Criteria* yang ditetapkan dalam *Green Financing Framework* PGE berunjuk *Green Bonds Principles* 2021, *Green Loan Principles* 2021, dan *ASEAN Green Bonds Standards* 2018. Obligasi PGE tercatat pada Singapore Exchange Securities Trading Limited (SGX-ST) dengan kupon 5,15% dan tenor 5 tahun.

Risiko Perubahan Iklim

PERTAMINA 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. Pengelolaan risiko dan peluang terkait iklim, bersama dengan isu terkait LST juga diselaraskan dengan kerangka kerja ISO 31000:2018, sebagai upaya dalam mewujudkan TPB yang selaras dengan strategi dan rencana kerja PERTAMINA secara menyeluruh. Seluruh proses identifikasi dan pengelolaan risiko dan peluang ini dilakukan secara berkala serta telah mendapat persetujuan dan pengawasan dari Direksi dan Dewan Komisaris. Melalui perumusan rencana kerja dan peta jalan, PERTAMINA telah menetapkan rencana jangka pendek selama 3 tahun, rencana jangka menengah selama 10 tahun, serta rencana jangka panjang selama 60 tahun untuk mengatasi masalah terkait iklim.

green financing. The blended financing scheme will be conducted in a multilateral cooperation, from philanthropy to green investors.

In 2023, PERTAMINA through PT Pertamina Geothermal Energy Tbk or PGE, the subsidiary of PT Pertamina PNRE Power & New Renewable Energy Subholding, issued green bonds. The total funds gained reached US\$400 million, or approximately Rp6 trillion, and it will be used to finance geothermal sources development projects that are under PGE. The use of funds has adhered to the Eligibility Criteria arranged in the Green Financing Framework PGE that refers to the Green Bonds Principles 2021, Green Loan Principles 2021, and ASEAN Green Bonds Standards 2018. PGE's bonds are listed at the Singapore Exchange Securities Trading Limited (SGX-ST) with a 5.15% coupon and 5-year tenor.

Climate Change Risks

The Company integrates risk management with opportunities related to climate change into ongoing activities. These risks and opportunities are identified and categorized systematically in the Company's Risk Intelligence Map and Risk Management Guidance. Risk management and climate-related opportunities along with ESG-related issues are adjusted with the ISO 31000:2018 framework, as an endeavour to realize the SDGs that reflect the Company's strategies and work plans as a whole. The process of identification, risk management, and opportunities is carried out periodically and has been approved and overseen by the Board of Directors and Board of Commissioners. After formulating the work plan and roadmap, PERTAMINA has decided on a 3-year short-term plan, 10-year mid-term plan, and 60-year long-term plan to mitigate climate problems.

Risiko terkait Perubahan Iklim
Climate Change-related Risks

Risiko Risk	Dampak Risiko Risk Impact	Strategi Mitigasi/Adaptasi Mitigation/Adaptation Strategy	Jangka Waktu Time Horizon
Risiko Transisi Transition Risks			
Ketidakpastian dalam sinyal pasar Uncertainty in market signals	Menurunnya pendapatan karena berkurangnya kapasitas produksi akibat perubahan kondisi pasar yang tidak dapat diprediksi. Decreased revenue due to reduced production capacity due to unpredictable changes in market conditions.	<ol style="list-style-type: none"> Memperluas portofolio bisnis di sektor energi rendah karbon. Mendaftarkan asuransi yang dapat menjamin keberlangsungan bisnis. <ol style="list-style-type: none"> Expand business portfolio in the low-carbon energy sector. Register insurance that can guarantee business continuity. 	Menengah Medium
Penurunan reputasi atas kegagalan pengelolaan lingkungan Decreased reputation for environmental management failures	Penurunan nilai ESG <i>Rating</i> atas kegagalan untuk mencapai skor minimum lingkungan hidup. ESG Rating downgrade for failure to achieve minimum environmental score.	<ol style="list-style-type: none"> Pemantauan kinerja lingkungan seperti air, limbah, efluen, dan keanekaragaman hayati. Pemantauan pelaksanaan program dekarbonisasi dan realisasi penurunan emisi. Kampanye terkait mitigasi dan adaptasi perubahan iklim. Verifikasi dan validasi emisi GRK. Pemantauan program-program PROPER atau PERCA di lokasi kerja. <ol style="list-style-type: none"> Monitoring of environmental performance such as water, waste, effluent, and biodiversity. Monitoring of the implementation of decarbonization programs and realization of emission reductions. Campaigns related to climate change mitigation and adaptation. Verification and validation of GHG emissions. Monitoring of PROPER or PERCA programs at work sites. 	Pendek Short
Kegagalan mencapai target dekarbonisasi Failure to achieve decarbonization targets	Kegagalan atas pencapaian target dekarbonisasi yang mengakibatkan perolehan denda dari pemerintah, penurunan reputasi, dan penurunan daya saing. Failure to achieve decarbonization targets resulting in government fines, reputational damage and reduced competitiveness.	<ol style="list-style-type: none"> Mengembangkan strategi dekarbonisasi yang jelas dan terukur. Mengembangkan infrastruktur energi terbarukan. Meningkatkan efisiensi operasional untuk mengurangi emisi gas rumah kaca. Menerapkan tata kelola terbaik dan praktik manajemen risiko. Memantau pelaksanaan program dekarbonisasi dan realisasi penurunan emisi. <ol style="list-style-type: none"> Develop a clear and measurable decarbonization strategy. Develop renewable energy infrastructure. Improve operational efficiency to reduce greenhouse gas emissions. Implement best governance and risk management practices. Monitor the implementation of decarbonization programs and realization of emission reductions. 	Panjang Long

Risiko Risk	Dampak Risiko Risk Impact	Strategi Mitigasi/Adaptasi Mitigation/Adaptation Strategy	Jangka Waktu Time Horizon
Ketidakberhasilan investasi terhadap teknologi baru Unsuccessful investment in new technologies	Peningkatan biaya tidak langsung (operasional) akibat kegagalan pengembangan teknologi dan produk baru. Increased indirect (operational) costs due to failure to develop new technologies and products.	<ol style="list-style-type: none"> 1. Melakukan studi kelayakan dan ketahanan investasi terhadap seluruh investasi teknologi baru yang akan dilakukan. 2. Melakukan <i>sharing</i> dan pembelajaran dengan <i>peers</i> dan industri lain untuk meningkatkan pemahaman terkait teknologi dan risiko iklim. <ol style="list-style-type: none"> 1. Conduct feasibility and investment robustness studies on all new technology investments to be made. 2. Sharing and learning with peers and other industries to improve understanding of technology and climate risk. 	Panjang Long
Mandat dan regulasi atas produk dan layanan yang ada Mandates on and regulation of existing products and services	Peningkatan biaya operasional dari impor bahan bakar yang dilakukan atas pemenuhan regulasi EURO V yang kemungkinan besar akan diterapkan. Increased operational costs from fuel imports made to fulfill EURO V regulations that are likely to be implemented.	<ol style="list-style-type: none"> 1. Memastikan produk dapat menyesuaikan diri dengan permintaan industri yang terus berkembang (termasuk EURO V). 2. Memastikan teknologi yang digunakan tetap relevan untuk tiga hingga empat dekade ke depan. 3. Menerapkan kebijakan dan proses yang transparan untuk menarik mitra global untuk berinvestasi di sektor hilir minyak dan gas bumi. <ol style="list-style-type: none"> 1. Ensure products can adapt to the evolving demands of the industry (including EURO V). 2. Ensure the technology used remains relevant for the next three to four decades. 3. Implement transparent policies and processes to attract global partners to invest in the downstream oil and gas sector. 	Menengah Medium
Mekanisme penetapan harga karbon Carbon pricing mechanisms	Peningkatan biaya langsung untuk membeli barang atau jasa yang menghasilkan karbon karena adanya penerapan pajak karbon di Indonesia. An increase in the direct cost of purchasing carbon-emitting goods or services due to the implementation of a carbon tax in Indonesia.	<ol style="list-style-type: none"> 1. Menyediakan dana untuk pajak karbon yang dapat dialokasikan dari penghematan energi. 2. Menerapkan harga karbon internal ketika mempertimbangkan setiap proyek yang menghasilkan emisi besar. 3. Mengembangkan dan berinvestasi dalam proyek penyerapan karbon yang kemudian dapat dijual di pasar karbon. 4. Mensinergikan inisiatif investasi CCUS dengan memverifikasi dan mengkonversi pengurangan emisi dari proyek-proyek CCUS menjadi kredit karbon. <ol style="list-style-type: none"> 1. Provide funds for a carbon tax that can be allocated from energy savings. 2. Apply internal carbon pricing when considering every project that produces large emissions. 3. Develop and invest in carbon absorption project which can be sold on the carbon market. 4. Synergize CCUS investment initiatives by verifying and converting emission reductions from CCUS projects into carbon credits. 	Pendek Short

Risiko Risk	Dampak Risiko Risk Impact	Strategi Mitigasi/Adaptasi Mitigation/Adaptation Strategy	Jangka Waktu Time Horizon
Physical Risks			
Meningkatnya bencana alam dan kejadian cuaca ekstrem akibat perubahan iklim Increasing natural disasters and extreme weather events due to climate change	Potensi dampak pada manusia (cedera dan/atau kematian), kerusakan aset, dan gangguan operasional yang berdampak pada area operasi PERTAMINA, termasuk <i>Subholding</i> dan anak perusahaan. Potential impact on humans (injuries and/or fatalities), damages to assets, and operational disruption on PERTAMINA's operational locations including its Subholding and subsidiaries.	<ol style="list-style-type: none"> Melaksanakan Program Perbaikan Berkelanjutan (CIP). Memperluas jaringan koordinasi, komunikasi dan kerja sama dengan lembaga/instansi eksternal. Melakukan kajian analisis potensi risiko iklim fisik yang dimasukkan ke dalam manajemen risiko. Memastikan kesiapan tanggap darurat melalui <i>workshop</i>, pedoman, dan pelatihan/simulasi. Merancang perlindungan bahaya, sistem pengawasan, dan rencana pemeliharaan rutin (seperti instalasi Sistem Penangkal Petir dan Pendeteksi Tanah Longsor). <ol style="list-style-type: none"> Carrying out a Continuous Improvement Program (CIP). Expanding coordination, communication and cooperation network with external parties. Conduct potential physical climate risk analysis, included in risk management. Ensure disaster emergency response preparedness through workshops, guidelines, and drills/simulations. Design hazard protection, monitoring systems, and routine maintenance plan (such as installation of Lightning Protection System and Landslide Detector). 	Pendek Short
Kekeringan Drought	Dampak pada berkurangnya ketersediaan air permukaan sehingga meningkatkan biaya utilitas domestik Divisi Bisnis PERTAMINA. Impact on decreased availability of surface water, which increases PERTAMINA Business Division's domestic utility cost.	Penanaman pohon di area sekitar, terutama di lahan yang terdegradasi untuk melestarikan cadangan air dan mengurangi kemungkinan terjadinya kekeringan. Trees planting in surrounding areas, especially degraded land to conserve water reservoirs and reduce the likelihood of drought.	Panjang Long
Kenaikan permukaan laut Sea level rise	Hilangnya akses ke air tawar dan kerusakan infrastruktur lepas pantai (jaringan pipa, sistem drainase, bangunan) yang disebabkan oleh genangan dan erosi pantai, sehingga menyebabkan tumpahan minyak dan kebocoran bahan kimia. Loss of access of fresh water and damages to offshore infrastructure (pipelines, drainage system, buildings) due to inundation and coastal erosion, which might lead to oil spills and chemical leaks.	<ol style="list-style-type: none"> Mengadopsi bahan dan desain yang tahan terhadap air laut dan cuaca laut. Melindungi dan mengintegrasikan fasilitas lepas pantai dengan infrastruktur hijau dan pembangkit EBT. Melakukan tanggap darurat (sistem peringatan dini), langkah mitigasi erosi, dan pemeliharaan pengendalian erosi. Menghentikan fasilitas yang sudah tidak produktif dan rentan terhadap risiko kenaikan muka air laut. <ol style="list-style-type: none"> Adopt materials and designs that are resistant to sea water and marine weather. Protect and integrate offshore facilities with green infrastructure and NRE power plants. Carry out emergency response (early warning system), erosion mitigation measures and maintenance on erosion control. Retire facilities that are no longer productive and vulnerable to the risk of sea level rise. 	Panjang Long



Peluang dari Pengelolaan Perubahan Iklim

[CCE-1.A1, 1.A3][CCE-3.A6]

Peluang dari perubahan iklim salah satunya adalah pengelolaan karbon yang didukung oleh pasar karbon (IDX Carbon) sebagai wadah untuk perdagangan karbon. Untuk pengembangan perdagangan karbon, PT Pertamina Power Indonesia Subholding Power New & Renewable Energy (Pertamina NRE) menjalankan peran sebagai *carbon credit aggregator* di PERTAMINA Group.

Sebagai *carbon credit aggregator*, Pertamina NRE berfungsi untuk menyediakan supply kredit karbon (baik dari *tech-based* maupun *nature-based solutions*) serta mencari *demand*. Seiring dengan belum terbitnya peraturan terkait perdagangan kredit karbon internasional, pada tahun 2023, penjualan kredit karbon masih dilakukan dalam ruang lingkup domestik. Penjualan tersebut dilakukan baik secara langsung (*B2B deal* antara Pertamina NRE dan *customers*) melalui IDX Carbon ataupun melalui Pertamina Patra Niaga.

Selain risiko iklim, PERTAMINA juga telah melakukan pemetaan peluang iklim yang dapat dilakukan Perseroan, termasuk peluang efisiensi maupun peluang terkait pengembangan bisnis Perseroan. Peluang efisiensi yang telah dipetakan mencakup proses operasional dan aktivitas bisnis Perseroan, yang meliputi:

Opportunities from Managing Climate Change

[CCE-1.A1, 1.A3][CCE-3.A6]

One of the opportunities from climate change management is carbon management, which is supported by the carbon market (IDX Carbon) as the forum for carbon trading. To expand carbon trading, PT Pertamina Power Indonesia, Power New & Renewable Energy Subholding (Pertamina NRE) functions as a carbon credit aggregator in PERTAMINA Group.

As a carbon credit aggregator, Pertamina NRE supplies carbon credit (both tech-based and nature-based solutions) and seeks demands. Despite the absence of a regulation on international carbon credit trading, in 2023 the carbon credit sale is still conducted domestically. The sales were held directly (*B2B deal* between Pertamina NRE and customers) through IDX Carbon or Pertamina Patra Niaga.

Aside from climate risks, PERTAMINA has mapped climate opportunities on which can be acted by the Company, including opportunities of efficiency and those of business developments. The mapped efficiency opportunities encompass operational process and business activities, such as follows:

Jenis Peluang Opportunity Type	Strategi Mitigasi/Adaptasi Mitigation/Adaptation Strategy	Tahun (Tahun Mulai) Year (Started Year)
CCS/CCUS	Melakukan pengembangan CCS dan CCUS. Developing CCS and CCUS.	2029
Nature-Ecosystem Based Solution (NBS)	<ol style="list-style-type: none"> 1. Melakukan penyeimbangan karbon (<i>carbon offsetting</i>) melalui pengembangan proyek penghijauan dan praktik pertanian berkelanjutan. 2. Melakukan validasi kredit karbon (<i>carbon credit origination</i>) untuk memastikan pemenuhan standar metodologi pengurangan emisi oleh pihak ketiga. 3. Melakukan perdagangan karbon (<i>carbon trading</i>). <ol style="list-style-type: none"> 1. Conducting carbon offsetting through the development of reforestation projects and sustainable agricultural practices. 2. Validating carbon credit origination to ensure the fulfillment of standard emission reduction methodologies by third parties. 3. Conducting carbon trading. 	2034
Green Power Generation (Geothermal)	Membangun Pembangkit Listrik Tenaga Panas Bumi (PLTP) Biner. Building a Binary Geothermal Power Plant.	2025
Biofuels	Melakukan produksi, distribusi, dan penjualan <i>biofuel</i> . Conduct production, distribution, and sales of biofuels.	2034
Ekosistem Baterai dan EV Battery & EV Ecosystem	<ol style="list-style-type: none"> 1. Membangun bisnis ekosistem kendaraan listrik (penukaran dan pengisian daya). 2. Produksi baterai. <ol style="list-style-type: none"> 1. Building electric vehicle ecosystem business (swapping and charging). 2. Battery pack manufacturing. 	2034
Hidrogen dan Amonia Hijau Green Hydrogen and Ammonia	Melakukan produksi, distribusi, dan penjualan hidrogen dan amonia hijau. Conduct production, distribution, and sales of green hydrogen and ammonia.	2034
Petrochemical	Melakukan produksi, distribusi, dan penjualan petrokimia (termasuk metanol). Conduct production, distribution, and sales of petrochemicals (including methanol).	2034
Efisiensi Energi Energy Efficiency	<ol style="list-style-type: none"> 1. Penghematan konsumsi bahan bakar. 2. Melakukan efisiensi penggunaan bahan bakar gas. 3. Melakukan pembersihan lambung kapal dan pemolesan baling-baling secara teratur untuk meningkatkan efisiensi bahan bakar dan memperpanjang umur kapal pada proses distribusi laut. 4. Melakukan efisiensi desain kapal pada proses distribusi laut. <ol style="list-style-type: none"> 1. Fuel consumption savings. 2. Use efficiency of gas fuel. 3. Conduct regular hull cleaning and propeller polishing to improve fuel efficiency and extend the vessel's life in the marine distribution process. 4. Conduct vessel design efficiency in the marine distribution process. 	2022

Jenis Peluang Opportunity Type	Strategi Mitigasi/Adaptasi Mitigation/Adaptation Strategy	Tahun (Tahun Mulai) Year (Started Year)
<p>Reduksi Kerugian Loss Reduction</p>	<ol style="list-style-type: none"> Melakukan penggantian kompresor gas sewa dengan milik sendiri. Melakukan pemulihan gas <i>flare</i> pada Program <i>Zero Routine Flaring</i> Tomori. Melakukan optimalisasi pemanfaatan gas suar untuk bahan bakar turbin pada 2 fasilitas. Melakukan optimalisasi pemanfaatan <i>associated gas</i>. <ol style="list-style-type: none"> Replacing leased gas compressors with our own. Performed flare gas recovery in Tomori Zero Routine Flaring Program. Optimizing the utilization of flare gas for turbine fuel at two facilities. Performed optimization of associated gas utilization. 	<p>2023</p>
<p>Bahan Bakar Rendah/ Nol Karbon pada Operasi Internal Low/Zero Carbon Fuel on Internal Operations</p>	<ol style="list-style-type: none"> Menggunakan <i>biosolar</i> untuk kegiatan operasional. Melakukan <i>co-firing</i> hidrogen. Melakukan konversi kendaraan berbahan bakar bensin/solar menjadi kendaraan listrik. Melakukan optimalisasi efisiensi tungku pada kegiatan pengolahan minyak menjadi produk minyak dan produk petrokimia. <ol style="list-style-type: none"> Using biodiesel for operational activities. Conducting hydrogen co-firing. Converting gasoline/diesel-fueled vehicles to electric vehicles. Optimizing furnace efficiency in oil processing activities into oil products and petrochemical products. 	<p>2023</p>
<p>Pembangkit Listrik Tenaga Hijau pada Operasi Internal Green Power Generation on Internal Operations</p>	<ol style="list-style-type: none"> Instalasi Pembangkit Listrik Tenaga Surya (PLTS) pada beberapa wilayah operasional. Melakukan Pemanfaatan <i>Renewable Energy Certificate</i> (REC) untuk Sistem Kelistrikan pada beberapa lokasi Stasiun Pengisian Bahan Bakar Umum (SPBU). <ol style="list-style-type: none"> Installation of Solar Power Plants (PLTS) in several operational areas. Utilizing Renewable Energy Certificate (REC) for Electricity System at several locations of Public Fuel Filling Stations (SPBU). 	<p>2021</p>
<p>Elektrifikasi Electrification</p>	<ol style="list-style-type: none"> Memasang <i>EV refueler</i> pada beberapa lokasi operasional. Melakukan penggantian mesin gas pada kompresor gas <i>flash</i> di Stasiun Ekstraksi Inti (SEI) dengan motor listrik. <ol style="list-style-type: none"> Installed EV refuelers at several operational locations. Replacing the gas engine in the flash gas compressor at the Core Extraction Station (SEI) with an electric motor. 	<p>2025</p>
<p>Bunker Hijau dan Rendah Karbon Green and Low Carbon Bunker</p>	<ol style="list-style-type: none"> Menggunakan kapal dengan energi hijau (amonia hijau, metanol hijau hidrogen, listrik) pada proses distribusi laut. Menggunakan kapal dengan intensitas energi yang rendah seperti <i>Liquefied Natural Gas</i> (LNG), <i>Liquefied Petroleum Gas</i> (LPG), dan kapal bahan bakar ganda (<i>dual-fuel</i>) pada proses distribusi laut. <ol style="list-style-type: none"> Using green energy vessels (green ammonia, green methanol hydrogen, electricity) in the marine distribution process. Use low-energy intensity vessels such as Liquefied Natural Gas (LNG), Liquefied Petroleum Gas (LPG), and dual-fuel vessels in the marine distribution process. 	<p>2023</p>

EBT sebagai Energi Masa Depan [CCE-1.C4][CCE-3.C1, 3.C2]

Peningkatan porsi EBT menjadi bagian dari inisiatif strategis dekarbonisasi dan pengembangan bisnis hijau baru yang dijalankan Perseroan bersama enam *Subholding* meliputi kegiatan dan proses bisnis di hulu hingga hilir. Inisiatif yang dijalankan mencakup jangka pendek, jangka menengah, dan jangka panjang. [CCE-3.A1, 3.A2][EM-RM-110a.2]

NRE as Future Energy [CCE-1.C4][CCE-3.C1, 3.C2]

The growing portion of NRE is a part of the strategic initiatives, namely decarbonization and new green business development, which are run by the Company along with six *Subholdings*. These initiatives are short-, medium-, and long-term, covering activities and business processes in upstream and downstream sectors. [CCE-3.A1, 3.A2][EM-RM-110a.2]

Periode Period	Dekarbonisasi Kegiatan Bisnis Decarbonization of Business Activities	Pengembangan Bisnis Hijau Baru New Green Business Development
Subholding Upstream		
Near Term	Kampanye PV surya di semua zona dan konversi diesel ke gas. Solar PV campaign in all zones and diesel fuel to gas conversion.	<i>Pilot project</i> CCS/CCUS pada Gundih, Sukowati, dan Ramba. CCS/CCUS pilot projects for Gundih, Sukowati and Ramba.
Mid Term	Komersialkan CCUS di Gundih, Sukowati, dan Ramba, serta konversi diesel ke gas. Commercialize CCUS in Gundih, Sukowati, and Ramba, and convert diesel fuel to gas.	Penyiapan Infrastruktur CCS/CCUS. CCS/CCUS Infrastructure Setup.
Long Term	Elektrifikasi peralatan. Equipment electrification.	Pengembangan dan menskalakan CCS dan integrasi kluster untuk CCUS. Development and scaling of CCS and cluster integration for CCUS.
Subholding Refining and Petrochemical (R&P)		
Near Term	Kampanye <i>Solar PV</i> dan penerapan energi efisiensi. Solar PV campaign and application of energy efficiency.	Pengembangan <i>Green Refinery</i> , Produksi HVO dan HEFA. Green Refinery Development, HVO and HEFA Production.
Mid Term	Efisiensi energi, <i>flaring/venting</i> . Energy efficiency, flaring/venting.	Peralihan ke energi listrik ramah lingkungan. Switch to environmentally friendly electricity.
Long Term	Penerapan teknologi CCUS. CCUS Technology application.	Peningkatan kapasitas HVO berbasis CPO dan pembangunan kapasitas HEFA. CPO-based HVO capacity building and HEFA capacity building.
Subholding Commercial and Trading (C&T)		
Near Term	Inisiatif energi rendah karbon. Low carbon energy initiative.	Pembangunan stasiun pengisi daya dan unit pemasaran <i>biofuel</i> . Construction of charging stations and biofuel marketing units.
Mid Term	Instalasi stasiun pengisi daya. Charging station installation.	Instalasi stasiun pengisi daya. Charging station installation.
Long Term	Konversi ke baterai dan HDT rendah karbon. Convert to low carbon battery and HDT.	Memperluas cakupan stasiun pengisi daya, meningkatkan infrastruktur pencampuran <i>biofuel</i> , dan infrastruktur stasiun pengisi bahan bakar H ₂ cair. Expanding the coverage of charging stations, upgrading the biofuel blending infrastructure, and the liquid H ₂ fueling station infrastructure.

Periode Period	Dekarbonisasi Kegiatan Bisnis Decarbonization of Business Activities	Pengembangan Bisnis Hijau Baru New Green Business Development
Subholding Power New and Renewable Energy (PNRE)		
Near Term	<p><i>Low carbon power</i> dan Pembangkit Listrik Tenaga Biogas (PLTBs) Sei Mangkei. Low carbon power and Sei Mangkei Biogas Power Plant</p>	<ul style="list-style-type: none"> • Pilot skala besar Solar PV dan peningkatan kapasitas panas bumi. • Memproduksi baterai. • <i>Pilot project</i> untuk NH₃ (Ammonia). • Pilot large scale Solar PV and increasing geothermal capacity. • Producing batteries. • Pilot project for NH₃ (Ammonia).
Mid Term	<p>Efisiensi pada pembangkit <i>Combined Cycle Gas Turbine</i> (CCGT). Efficiency in Combined generation Gas Turbine Cycle (CCGT).</p>	<ul style="list-style-type: none"> • Peningkatan kapasitas <i>Solar PV</i> dan panas bumi. • Peningkatan rantai produksi baterai dan pengembangan pada E2W. • Pengembangan bisnis NBS. • Increasing the capacity of Solar PV and geothermal. • Improvement of the battery production chain and development of the E2W market. • NBS business development.
Long Term	<p>CCUS untuk aset panas bumi dan CCGT. CCUS for geothermal assets and CCGT.</p>	<ul style="list-style-type: none"> • Peningkatan kapasitas <i>Solar PV</i> dan panas bumi. • Melanjutkan pertumbuhan baterai dan E2W. • Meningkatkan volume penjualan H₂ dan NH₃. • Increase the capacity of Solar PV and Geothermal. • Continuing battery and E2W growth. • Increasing sales volume of H₂ and NH₃.
Subholding Gas		
Near Term	<p><i>Solar PV</i> dan efisiensi energi di transmisi gas dan operasi <i>pigging</i>. Solar PV and energy efficiency in gas transmission and pigging operations.</p>	<ul style="list-style-type: none"> • Pengembangan <i>biomethane</i> yang berasal dari gas metana <i>Palm Oil Mill Effluent</i> (POME) sebagai tambahan pasokan gas nasional. • Infrastruktur pengangkutan <i>Fatty Acid Methyl Ester</i> (FAME) sebagai bahan campuran BBM <i>biodiesel</i>. • Development of biogas through biomethane, which comes from Palm Oil Mill Effluent (POME) as an additional gas supply for the domestic market. • Transportation infrastructure for Fatty Acid Methyl Ester (FAME) as a mixture of biodiesel fuel.
Mid Term	<p>Peralihan ke listrik ramah lingkungan untuk aset transmisi. Switch to green electricity for transmission assets.</p>	<p>Infrastruktur untuk pengangkutan CO₂. Infrastructure for CO₂ transport.</p>
Long Term	<p>Elektrifikasi turbin gas, dan konversi pembangkit listrik sendiri ke ramah lingkungan. Electrification of gas turbines, and conversion of own power plants to environmentally friendly.</p>	<ul style="list-style-type: none"> • Meningkatkan infrastruktur bagi lebih banyak klaster untuk pengangkutan CO₂. • Penyediaan <i>grey/blue</i> hidrogen dan amonia bagi pelanggan gas bumi. • Improve infrastructure for more clusters for CO₂ transport. • Providing grey/blue hydrogen and ammonia for natural gas customers.

Periode Period	Dekarbonisasi Kegiatan Bisnis Decarbonization of Business Activities	Pengembangan Bisnis Hijau Baru New Green Business Development
Subholding Integrated Marine Logistic (IML)		
Near Term	Optimasi kecepatan dan rute kapal, serta penggunaan bahan bakar rendah emisi (LSFO). Ship speed and route optimization, and usage of low emission fuel (LSFO).	Pengembangan lini bisnis logistik untuk produk amonia, LPG/LNG, dan <i>biodiesel</i> . Development of business lines for ammonia, LPG/LNG and biodiesel logistics.
Mid Term	Penggunaan <i>Biofuel</i> , <i>Dual Fuel</i> dan implementasi teknologi reduksi emisi & peningkatan efisiensi. The use of Biofuel, Dual Fuel and emission reduction & efficiency enhancement technology implementation.	Pengembangan lini bisnis logistik untuk produk hidrogen dan <i>green ammonia</i> . Development of business lines for hydrogen and green ammonia logistics.
Long Term	Peremajaan kapal <i>existing</i> dengan kapal berbahan bakar <i>green fuel</i> . Existing fleet rejuvenation with green fuelled vessels.	Pengembangan lini bisnis logistik untuk produk <i>biofuel</i> , CO ₂ , dan komponen kendaraan listrik. Development of business lines for biofuel, CO ₂ , and electric vehicle component logistics.

Membangun Ketahanan Iklim melalui Analisis Skenario [TCFD STRA.c]

PERTAMINA menggunakan perangkat lunak *Low Emission Analysis Platform* (LEAP) untuk membuat model internal yang memungkinkan pembuatan skenario kuantitatif yang mencakup permintaan energi primer dan energi final, transformasi energi, serta dampak emisi. PERTAMINA mengadopsi pendekatan pengembangan skenario ekonomi energi, dengan mempertimbangkan faktor kebijakan, kemajuan teknologi, preferensi pasar, pertimbangan hukum sebagai risiko transisi, serta perubahan iklim sebagai risiko fisik.

Pemetaan Skenario ke dalam Prospek Energi dan Ekonomi

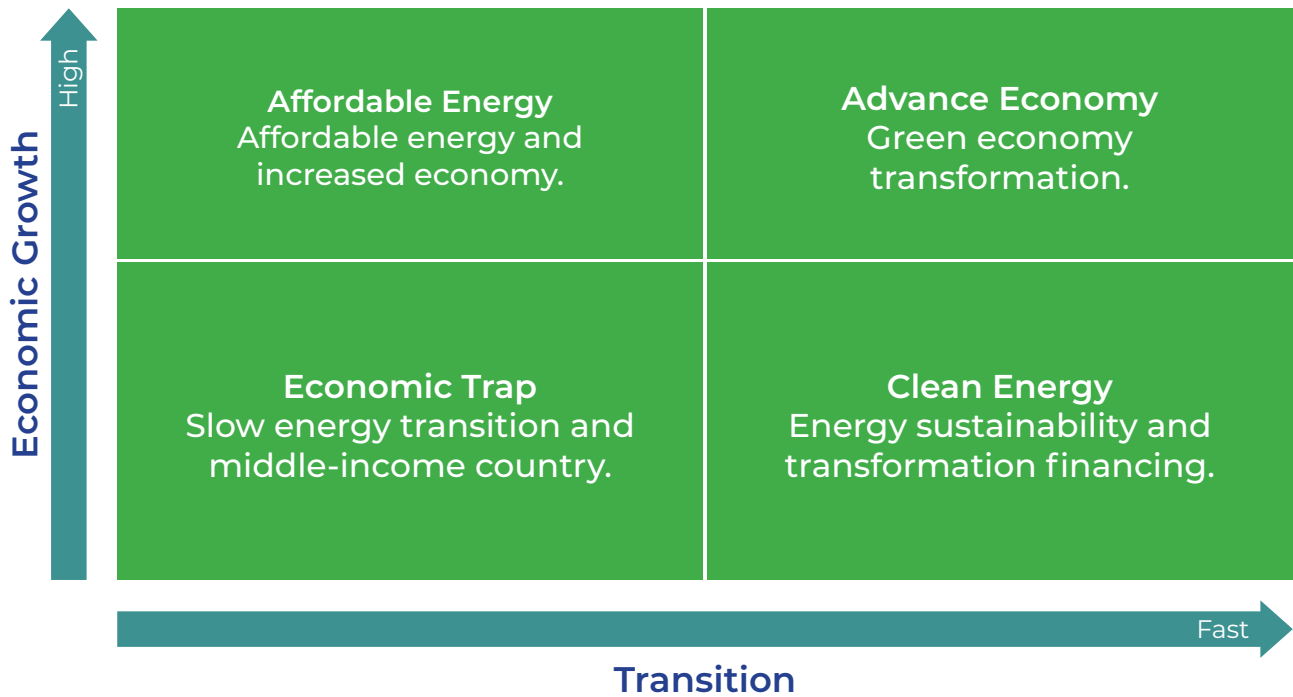
Berasal dari matriks skenario dan penyesuaian risiko perubahan iklim fisik, prospek energi-ekonomi terungkap melalui pengembangan skenario, khususnya skenario *Ordinary State* (OS), *Appropriate Sustainability* (AS), dan *Economic Renaissance* (ER) serta dijelaskan sebagai berikut:

Building Climate Resilience through Scenario Analysis [TCFD STRA.c]

Using the software *Low Emission Analysis Platform* (LEAP), PERTAMINA creates an internal model that allows them to generate a quantitative scenario for demands in primary energy and final energy, energy transformation, and emission impacts. The Company adopts an economic energy scenario approach by considering the factors of policy, technology advancement, market preference, legal considerations as transition risk, and climate change as physical risk.

Mapping Scenario into Energy and Economic Prospect

According to the scenario matrix and the alignment of physical climate change risks, the energy-economic prospect is disclosed through developments of scenarios, mainly the *Ordinary State* (OS), *Appropriate Sustainability* (AS), and *Economic Renaissance* (ER) scenarios. The explanation is as follows:



Ordinary State (S)	<p>Pertumbuhan ekonomi Indonesia relatif sama dengan tren historis, berfokus pada energi yang terjangkau untuk memastikan ketahanan energi dan mendukung pertumbuhan ekonomi.</p> <p>Indonesia's economic growth is relatively similar to historical trends, focusing on affordable energy to ensure energy security and support economic growth.</p>
Appropriate Sustainability (AS)	<p>Pertumbuhan ekonomi Indonesia yang relatif sama dengan tren historis, memperkuat komitmen Indonesia terhadap transisi energi dengan menerapkan teknologi ramah lingkungan dan menyeimbangkan antara ketahanan dan keterjangkauan energi.</p> <p>Indonesia's economic growth is relatively similar to historical trends, strengthening its commitment to energy transition by implementing green technologies and balancing energy security and affordability.</p>
Economic Renaissance (ER)	<p>Indonesia telah bertransformasi menjadi negara berpenghasilan tinggi dengan kemajuan ekonomi hijau dan pencapaian NZE.</p> <p>Indonesia has transformed into a high-income country with advancement in the green economy and achieving NZE.</p>

Mengintegrasikan Manajemen Risiko Iklim ke dalam Keputusan Kami

[TCFD RISK.a, RISK.b, RISK.c][CCE-2.C1]

Integrating Climate Risks Management in Our Decisions



Proses Identifikasi, Penilaian, dan Pengelolaan Risiko Terkait Iklim

Menyadari bahwa risiko dan peluang iklim merupakan bagian yang tidak terpisahkan dari ketahanan bisnis dan kepercayaan pemangku kepentingan, PERTAMINA telah mengintegrasikan praktik-praktik manajemen risiko di seluruh kegiatan operasional dan rantai nilai kami. Pendekatan kami meliputi identifikasi, penilaian, pengelolaan, dan pemantauan berkelanjutan terhadap semua risiko.

PERTAMINA menerapkan kerangka kerja manajemen risiko yang komprehensif untuk mengidentifikasi, menilai, dan mengelola risiko terkait iklim di seluruh operasi. Tujuannya adalah untuk memberikan pedoman standar bagi pemilik risiko dan fungsi manajemen risiko untuk mengkompilasi semua risiko, menentukan risiko utama, serta menetapkan *key risk indicators* (KRIs) yang selaras dengan tujuan strategis Perseroan.

Metodologi

Proses manajemen risiko mengikuti metodologi yang diuraikan dalam ISO 31000:2018 dengan menggunakan berbagai teknik seperti *brainstorming*, wawancara, serta *Fault Tree Analysis* (FTA) untuk identifikasi dan penilaian risiko. Metode penghitungan dampak kuantitatif seperti *Value at Risk* (VaR) serta penilaian ahli digunakan untuk menilai risiko secara akurat. Sementara KRI ditentukan melalui *Root Cause Analysis* dengan menggunakan metode FTA.

Climate-related Identification, Evaluation, and Risk Management Process

Risks and opportunities related to climate are integrally connected to business resilience and stakeholder trust, hence PERTAMINA has integrated risk management practices in all operational and supply chain activities. Our approach includes identification, evaluation, management, and sustainable monitoring of all risks.

A comprehensive framework of risk management is applied to identify, evaluate, and manage climate-related risks across all operations. The purpose is to generate standard guidelines for risk owner and risk management function upon compiling all risk, determining key risks, and deciding on key risk indicators (KRIs) that are in line with the Company's strategic objectives.

Methodology

The process of risk management follows a methodology stated in the ISO 31000:2018 by using various techniques, such as *brainstorming*, interview, and *Fault Tree Analysis* (FTA) to identify and evaluate risks. The calculation methods for quantitative impact – *Value at Risk* (VaR) and experts' evaluation – are administered to evaluate risks accurately; whereas KRI is determined through *Root Cause Analysis* by using the FTA method.

Tahap | Step 1:
Pengembangan
Seluruh Risiko
Development of All Risk

Pengembangan semua risiko melibatkan penentuan ruang lingkup, konteks, dan kriteria untuk penilaian risiko, diikuti dengan identifikasi risiko, analisis, evaluasi, penanganan, dan pemetaan. Pendekatan sistematis ini memastikan cakupan yang komprehensif atas semua potensi risiko di seluruh Perseroan serta memfasilitasi strategi manajemen risiko yang proaktif.

The development of all risks involves determining the scope, context, and criteria for risk assessment, followed by risk identification, analysis, evaluation, treatment and mapping. This systematic approach ensures comprehensive coverage of all potential risks across the Company and facilitates proactive risk management strategies.

Tahap | Step 2:
Pengembangan
Risiko Utama
Development of
Top Risk

Proses pengembangan risiko utama dilakukan dengan pendekatan *bottom-up* dan *top-down*, dengan memilah-milah semua risiko berdasarkan kriteria kuantitatif atau kualitatif, menentukan kandidat risiko utama dan menyelesaikannya dengan tujuan strategis Perseroan. *Key Risk Indicators* (KRI) ditetapkan untuk risiko utama yang memungkinkan pemantauan dan strategi mitigasi yang efektif.

The process of developing top risks entails both bottom-up and top-down approaches, sorting all risks based on quantitative or qualitative criteria, determining top risk candidates and aligning them with the Company's strategic objectives. Key Risk Indicators (KRIs) are established for top risks to enable effective monitoring and mitigation strategies.

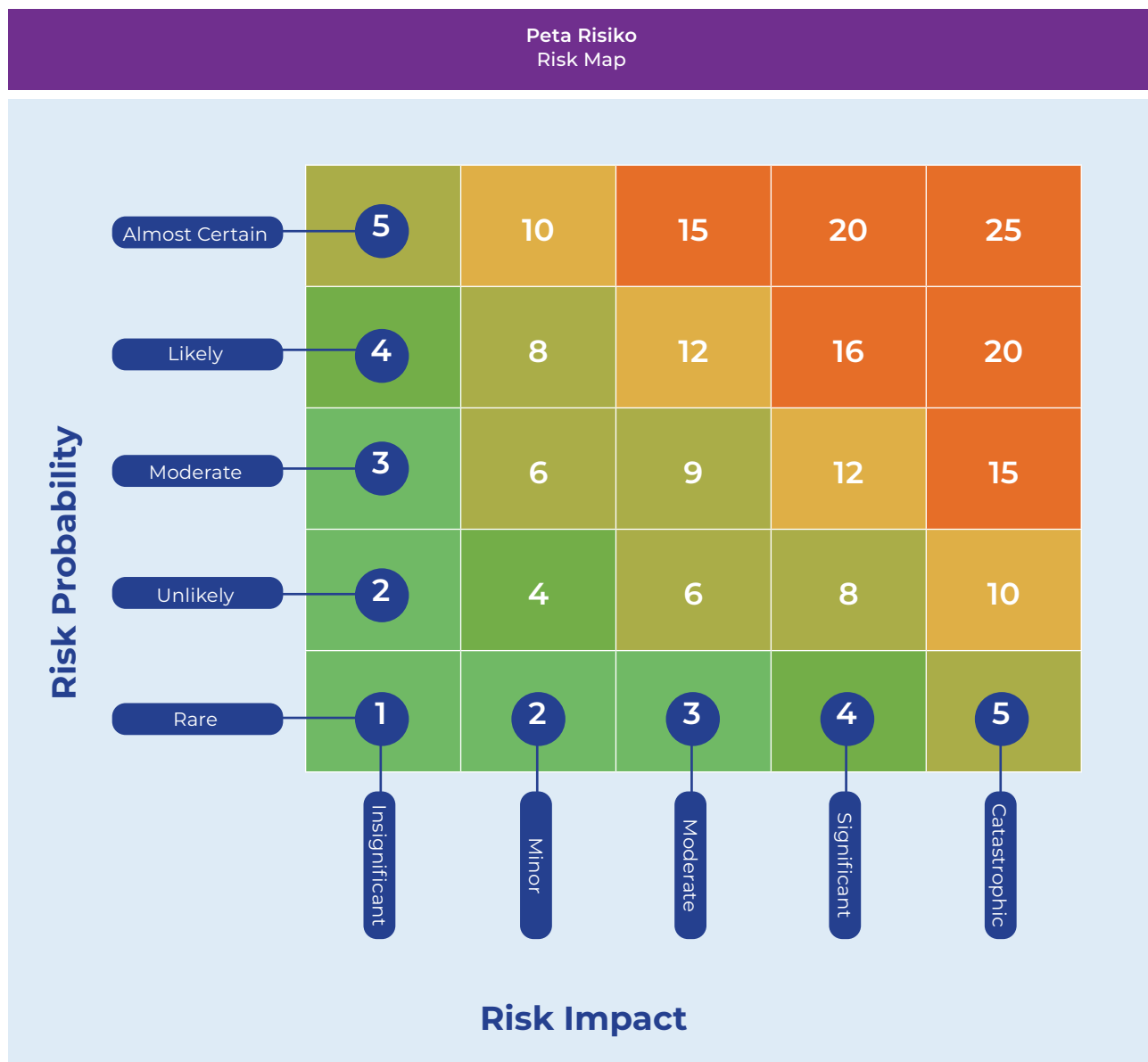
Tahap | Step 3:
Pengembangan Risiko
Utama Perseroan
Development of
Corporate Top Risk

Risiko-risiko utama Perseroan diidentifikasi melalui kombinasi mekanisme *bottom-up* dan *top-down*, dengan mempertimbangkan kontributor laba/rugi, pengeluaran, dan arahan dari manajemen puncak. Koordinasi dengan para pemangku kepentingan yang relevan dan pengkinian secara berkala terhadap daftar risiko sangat penting untuk memastikan keselarasan dengan tujuan perusahaan dan kepentingan para pemangku kepentingan.

Corporate top risks are identified through a combination of bottom-up and top-down mechanisms, considering profit/loss contributors, expenses and directives from top management. Coordination with relevant stakeholders and regular updates to the risk register are crucial to ensure alignment with corporate objectives and stakeholder interests.

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, PERTAMINA dapat secara efektif memvisualisasikan serta memastikan *Risk Priority Number* (RPN) dan tingkat risiko yang sesuai. Proses ini memungkinkan PERTAMINA untuk melakukan evaluasi risiko yang komprehensif berdasarkan RPN serta mengidentifikasi langkah-langkah penanganan risiko yang sesuai, termasuk kontrol yang diperlukan dan kegiatan jaminan yang disesuaikan untuk mengelola setiap risiko tertentu.

To evaluate the risks' substantive impacts on the business, they are considered based on two aspects, namely risk probabilities and risk impacts. A 1 to 5 scale is administered to assess the risk probabilities and impacts, which then are translated into a risk map. Choosing to evaluate the risk probabilities and risks, PERTAMINA can effectively visualize and ensure Risk Priority Number (RPN) along with the appropriate risk level. This process allows the Company to evaluate risks comprehensively based on RPN and identify compatible steps for managing the risks, including the required control and assurance activities adjusted to manage certain risks.



Skala Scale	Probabilitas/ Kemungkinan Risiko Risk Probability/ Likelihood	Dampak Risiko/ Konsekuensi Risk Impact/ Consequence	RPN	Tingkat Risiko Risk Level	Penanganan Risiko Risk Treatment
1	Tidak Mungkin Terjadi Rare	Sangat Kecil Insignificant	1-3	Rendah Low	Mempertahankan Retain
2	Jarang Terjadi Unlikely	Kecil Minor	4	Rendah-Menengah Low-Moderate	Mengurangi/Mitigasi atau Mempertahankan Reduce/Mitigate or Retain
3	Bisa Terjadi Moderate	Sedang Moderate	5-9	Menengah Moderate	Mengurangi/Mitigasi Reduce/Mitigate
4	Sangat Mungkin Terjadi Likely	Besar Significant	10-12	Menengah-Tinggi Moderate-High	Membagi atau Mengurangi/Mitigasi Sharing or Reduce/ Mitigate
5	Hampir Pasti Terjadi Almost Certain	Sangat Besar Catastrophic	15-25	Tinggi High	Menghindari, Membagi atau Mengurangi/ Mitigasi Avoid, Sharing or Reduce/ Mitigate

Jenis Penanganan Risiko

1. Menghindari (*Risk Avoidance*) dengan memutuskan untuk tidak memulai atau melanjutkan kegiatan yang dapat menimbulkan risiko.
2. Mengurangi/Mitigasi (*Risk Reduction*), baik dengan mengurangi Kemungkinan Risiko atau Konsekuensi/Dampak Risiko.
3. Membagi risiko (*Risk Sharing*) dengan pihak lain, seperti kerja sama dalam bentuk *joint venture*/kemitraan.
4. Mempertahankan (*Risk Acceptance*) dengan melakukan aktivitas tertentu tanpa berusaha mengurangi, membagi, atau mengalihkan risiko untuk memaksimalkan peluang.
5. Kombinasi dari beberapa alternatif di atas.

Types of Risk Treatment

1. Avoid (*Risk Avoidance*) by deciding not to initiate or continue activities that may pose a risk.
2. Reduce/Mitigate (*Risk Reduction*), either by reducing Risk Likelihood or Risk Consequence/Impact.
3. Sharing (*Risk Sharing*) with other parties, such as cooperation in the form of joint ventures/partnerships.
4. Retain (*Risk Acceptance*) by carrying out certain activities without attempting to reduce, share, or transfer Risks in order to maximize an opportunity.
5. Combination of several of the above alternatives.

Metrik dan Target [TFCD MET.a, MET.b, MET.c][OG 11.3.1][CCE-2.C4]

Metrics and Targets

PERTAMINA juga senantiasa berupaya untuk mengembangkan dan berinvestasi pada Energi Baru Terbarukan (EBT), baik di dalam proses bisnis internal maupun dalam meningkatkan portofolio energi. Realisasi *Milestone NRE Development* pada tahun 2023 mencapai 22,6% atau setara dengan 16,2 MW. Optimalisasi penggunaan NRE ini kami lakukan pada lokasi-lokasi operasional kami dengan melibatkan seluruh Subholding kami yang tersebar di seluruh Indonesia.

Selain fokus pada penggunaan EBT di internal, kami juga berkomitmen untuk memperluas portofolio bisnis di sektor EBT. Target kami adalah mencapai 17% pada tahun 2030 sebagai bentuk dukungan terhadap pencapaian *Net Zero Emission* di tahun 2060.

PERTAMINA also continuously develops and invests in new and renewable energy (NRE) in internal business processes and increasing energy portfolios. The Milestone NRE Development of 2023 was realized at 22.6%, or equal to 16.2 MW. We are optimizing the use of NRE in our operational locations by involving all our Subholdings across Indonesia.

Aside from the internal use of NRE, we are also committed to expanding our business portfolio in said sector. Our target is to achieve 17% by 2030 as proof of support for the achievement of Net Zero Emission in 2060.

Jumlah Emisi GRK [OJK F.11][GRI 305-1, 305-2, 305-3, 305-4] [OG 11.1.5, 11.1.6, 11.1.7, 11.1.8]

Perhitungan emisi GRK mengacu pada Peraturan Menteri Lingkungan Hidup (Permen LH) Nomor 12 Tahun 2012 tentang Pedoman Penghitungan Beban Emisi Kegiatan Industri Minyak dan Gas Bumi. Penghitungan meliputi Cakupan 1 (penggunaan sendiri) dan Cakupan 2 (konsumsi energi yang berasal dari luar). Hasil penghitungan disampaikan sebagai total emisi GRK, termasuk dari fasilitas/unit yang dioperasikan bersama maupun penjualan energi serta tidak ada yang berasal dari kegiatan produksi *oil sands*. Berdasarkan perhitungan, didapatkan emisi Cakupan 1 tahun 2023 sebesar 24,743 juta ton CO₂e dan emisi Cakupan 2 sebesar 2,21 juta ton CO₂e. [CCE-4.C1, 4.C2, 4.A1, 4.A3, 4.A4, 4.A5, 4.A6][CCE-2.A1][EM-RM-110a.1]

Total GHG Emission [OJK F.11][GRI 305-1, 305-2, 305-3, 305-4] [OG 11.1.5, 11.1.6, 11.1.7, 11.1.8]

The calculation of GHG emission refers to the Minister of Environment Regulation (Permen LH) Number 12 of 2012 on the Guidelines for Calculating Emission Loads for Oil and Gas Industry Activities, American Petroleum Institute (API) 2021, and GHG Protocol. It covers the Scope 1 (self-use) and Scope 2 (energy consumption originating from outside). The calculation results are presented as total GHG emissions, including those from facilities/units operated collectively and energy sales, and none from oil sands production activities. The results show that the total Scope 1 emission of 2023 reached 24.743 million tons of CO₂e and that of the Scope 2 emission reached 2.21 million tons of CO₂e. [CCE-4.C1, 4.C2, 4.A1, 4.A3, 4.A4, 4.A5, 4.A6][CCE-2.A1][EM-RM-110a.1]

Jumlah Emisi GRK yang Dihasilkan

Total GHG Emissions Generated

Emisi GRK Cakupan 1 Scope 1 GHG Emission

Keterangan Description	Satuan Unit	2023	2022	2021
Berdasarkan Jenis Emisi Based on Emission Types				
Total Emisi GRK Langsung Total Direct GHG Emissions	Juta Ton CO ₂ e Million Tons of CO ₂ e	24.743	24.836*	24.643*
Karbon Dioksida (CO ₂) Carbon Dioxide (CO ₂)		19.395	19.379*	19.215
Metana (CH ₄) Methane (CH ₄)		0.088	0.085	0.090*
Nitrogen Oksida (N ₂ O) Nitrogen Oxide (N ₂ O)	Juta Ton Million Tons	0.011	0.011*	0.011*
Hydrofluorocarbons (HFCs)		-	-	-
Sulphur Hexafluoride (SF ₆)		-	-	-
Perfluorocarbons (PFC)		-	-	-
Nitrogen Trifluoride (NF ₃)		-	-	-
Berdasarkan Segmen Bisnis Based on Business Segment				
Upstream		11.99	12.12	11.46
Refining and Petrochemical		11.12	10.83*	11.81
Commercial and Trading	Juta Ton CO ₂ e Million Tons of CO ₂ e	0.18	0.28	0.14
Power New Renewable Energy		0.09	0.12	0.11
Gas		0.62	0.63	0.48
Integrated Marine Logistics		0.74	0.86*	0.65*

Keterangan Description	Satuan Unit	2023	2022	2021
Berdasarkan Sumber Emisi Based on Emission Sources				
Pembakaran Combustion	Juta Ton CO ₂ e Million Tons of CO ₂ e	12.74	13.08*	12.40*
Routine Flaring		2.22	2.35	2.25
Non-routine Flaring		0.22	0.22	0.19
Safety Flaring		0.53	0.34	0.40*
Process Emission & Venting		8.49	8.44	8.94
Fugitives		0.55	0.40	0.45
Emisi GRK Cakupan 2 Scope 2 GHG Emission				
Berdasarkan Segmen Bisnis Based on Business Segment				
Upstream	Ribu Ton CO ₂ e Thousand Tons of CO ₂ e	1,971.92	1,757.99*	902.41*
Refining and Petrochemical		160.42	135.51	110.80
Commercial and Trading		60.22	104.04	90.45
Power New Renewable Energy		1.89	2.78	1.87
Gas		12.88	14.74	9.44
Integrated Marine Logistics		0	0*	0*
Total Emisi Tidak Langsung Total Indirect Emissions		2,207.33	2,015.06*	1,114.97

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, khususnya di Subholding IML, yaitu dengan dilakukannya *exclude non-operated asset* dan *non-leased asset* sesuai standar GHG Protocol. [GRI 2-4]

*Restatement of information due to changes in the scope of reporting, especially in the IML Subholding, by excluding non-operated assets and non-leased assets in accordance with the GHG Protocol standard.

Emisi Cakupan 3 merupakan emisi GRK tidak langsung dari kegiatan operasional Perseroan. Pengukuran emisi GRK Cakupan 3 mengacu pada GHG Protocol/IPIECA *Category 1* dan *11 Scope 3 – Used of Sold Products*. Faktor emisi yang digunakan mengacu pada faktor emisi lokal produk BBM yang dijual di Indonesia, serta pembelian minyak mentah dan produk BBM dari luar. Produk non-BBM yang digunakan oleh konsumen tidak termasuk dalam perhitungan emisi Cakupan 3. [CCE-4.C3, 4.A2, 4.A7]

The Scope 3 emission is an indirect GHG emission arising from the Company's operations. The measurement of GHG emission Scope 3 refers to GHG Protocol/IPIECA *Category 1* and *11 Scope 3 – Used of Sold Products*. The emission factors applied refer to the local fuel products sold in Indonesia and the purchase of crude oil and fuel products from outside. The non-fuel products used by customers are not factored in the calculation of Scope 3 emission. [CCE-4.C3, 4.A2, 4.A7]

Jumlah Emisi GRK Cakupan 3 (Juta Ton CO₂e) Total Scope 3 GHG Emissions (Million Tons of CO₂e)

Uraian Description	2023	2022	2021
Pembelian Minyak Mentah dan Produk BBM dari Luar – Kategori I Purchase of Crude Oil and Fuel Products from Outside – Category I	2.69	2.30	1.98
Penggunaan Produk yang Dijual – Kategori 11 Use of Products Sold – Category 11	175.86	163.83*	151.95*

*Penyajian kembali informasi (*restatement*) karena adanya perubahan faktor emisi yang digunakan, yang sebelumnya menggunakan faktor US EPA diubah menjadi faktor emisi lokal hasil pengujian Lemigas untuk meningkatkan akurasi. [GRI 2-4]

*Restatement of information due to a change in the emission factor used, which previously used the US EPA factor to be changed to the local emission factor from Lemigas testing to improve accuracy.

Penghitungan Intensitas Emisi GRK [OJK F.11][GRI 305-4][OG 11.1.8][CCE-4.C4]

Sejalan dengan reduksi emisi GRK yang terus berlangsung, penghitungan Intensitas Emisi selama tahun 2023 memperlihatkan penurunan dari tahun 2022 untuk segmen bisnis *Upstream* dan peningkatan untuk segmen bisnis *Refining and Petrochemical*.

Intensitas Emisi Cakupan 1
Scope 1 Emission Intensity

Berdasarkan Segmen Bisnis Based on Business Segment	Satuan Unit	2023	2022	2021
Upstream*	Kg CO ₂ e/BOE	38.36	38.9**	37.22**
Refining and Petrochemical	Kg CO ₂ e/BBL Minyak Mentah Diolah Kg CO ₂ e/BBL of Processed Crude	35.51	32.52**	37.57

*Tidak termasuk Badak LNG.

**Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu dengan dilakukannya *exclude non-operated asset* dan *non-leased asset* sesuai standar GHG Protocol. [GRI 2-4]

*Excluding Badak LNG.

**Restatement of information due to changes in the scope of reporting, by excluding non-operated assets and non-leased assets in accordance with the GHG Protocol standard.

Emisi Gas Metana [CCE-2.C3][CCE-3.A3, 3.A5][CCE-5.A1, 5.A2, 5.A3, 5.A4]

Salah satu emisi GRK penting yang harus diturunkan adalah gas metana karena memiliki potensi pemanasan global 25 kali lebih besar dari CO₂ dalam periode 100 tahun. Upaya yang kami lakukan untuk menurunkan emisi gas metana antara lain: [CCE-5.C2, 5.A1, 5.A2, 5.A4]

- Partisipasi pada ASEAN Energy Sector Methane Roundtable, bersama dengan berbagai pemangku kepentingan terkait, di antaranya World Bank, UNEP, dan perusahaan *oil & gas* di Asia Tenggara.
- Pelaksanaan studi pengukuran dan kuantifikasi emisi metana di 3 lokasi *Subholding*.

Berdasarkan penghitungan yang dilakukan pada tahun 2023, emisi gas metana mencapai 9 ribu ton CO₂e. Adapun sumber emisi gas metana antara lain dari proses pembakaran, *process emission*, dan *fugitive*. [CCE-5.C1][EM-EP-110a.1][EM-MD-110a.1]

Calculation of GHG Emission Intensity [OJK F.11][GRI 305-4][OG 11.1.8][CCE-4.C4]

Following the ongoing reduction in GHG emission, the calculation of Emission Intensity in 2023 shows a decrease from 2022 in both the Upstream and Refining and Petrochemical business segments.

Methane Gas Emission [CCE-2.C3][CCE-3.A3, 3.A5][CCE-5.A1, 5.A2, 5.A3, 5.A4]

One of the significant GHG emissions that must be reduced is methane gas as it has the potential of exacerbating global warming 25 times greater than CO₂ in a 100-year period. The following are our efforts to reduce the methane gas: [CCE-5.C2, 5.A1, 5.A2, 5.A4]

- Participating in the ASEAN Energy Sector Methane Roundtable together with other various relevant stakeholders, such as World Bank, UNEP, and oil & gas companies in South East Asia.
- Implementing a measurement and quantification study on methane emission in 3 Subholding locations.

Based on the 2023 calculation, the methane gas emission reached 9 thousand tons of CO₂e. Combustion process, emission process, and fugitive are among the methane gas emission sources. [CCE-5.C1][EM-EP-110a.1][EM-MD-110a.1]

PERTAMINA juga mengelola emisi gas metana di luar kegiatan operasional, termasuk kerja sama dengan pihak ketiga, antara lain: [CCE-3.A3]

- Kerjasama proyek bio-metana antara Pertamina NRE dengan perusahaan gas dari Jepang, yakni Osaka Gas Co., Ltd. (Osaka Gas), JGC Holdings Corporation (JGC), dan INPEX CORPORATION (INPEX). Kerja sama meliputi studi kelayakan produksi bio-metana dari limbah pabrik kelapa sawit (*palm oil mill effluent* atau POME) dan potensinya menjadi gas alam cair (LNG) di Indonesia. Kerja sama melibatkan penilaian teknis rantai pasok, produksi dan pasokan bio-metana dengan asumsi produksi dimulai tahun 2025 di Sumatra bagian selatan. [CCE-5.A3]
- Program tanggung jawab sosial dan lingkungan perusahaan (CSR) Desa Energi Berdikari (DEB) yang dijalankan entitas anak. Sampai dengan akhir tahun 2023, ada 58 DEB yang dapat memenuhi kebutuhan energinya secara mandiri dari gas metana. Pengungkapan informasi tentang Desa Mandiri Energi disampaikan di halaman 198 Laporan ini. [CCE-5.A3]

Upaya Reduksi Emisi dan Pencapaiannya [OJK

F.12][GRI 305-5][OG 11.1.1, 11.2.3][CCE-3.A3, 3.A5] [ENV-3.A4][EM-EP-110a.3][EM-RM-110a.2]

Reduksi emisi yang dilakukan oleh Perseroan mengacu pada *road map* reduksi emisi berdasarkan hasil *baseline* tahun 2010 dan *baseline* tahun 2020 yang mengacu pada *business as usual* dengan target 32% hingga tahun 2030.

Di tahun 2023, PERTAMINA juga melanjutkan upaya reduksi emisi yang dilakukan sebelumnya melalui penambahan beberapa inisiatif baru dengan reduksi sebesar 1.135.099 ton CO₂e, sehingga pada tahun 2023, PERTAMINA berhasil mereduksi emisi cakupan 1 sebesar 8,5 juta ton CO₂e berdasarkan *baseline* tahun 2010.

PERTAMINA also manages methane gas emission outside its operations, including cooperating with third parties, such as follows: [CCE-3.A3]

- A cooperation of biomethane project between Pertamina NRE and Japan-based gas companies, namely Osaka Gas Co., Ltd. (Osaka Gas), JGC Holdings Corporation (JGC), and INPEX CORPORATION (INPEX). It includes a feasibility study of biomethane production from palm oil mill effluent (POME) and its potentials of becoming liquefied natural gas (LNG) in Indonesia. This cooperation involves a technical evaluation of biomethane supply chain, production, and supply, assuming the production starts in 2025 in southern Sumatra. [CCE-5.A3]
- A corporate social and environmental responsibility (CSR) program of Independent Energy Village (DEB), which is performed by subsidiaries. As of the end of 2023, there has been 58 DEB that met its energy needs independently from methane gas. Information disclosure on the Independent Energy Village is available on page 198 of this Report. [CCE-5.A3]

Efforts in Emissions Reduction and Their Achievements [OJK F.12][GRI 305-5][OG 11.1.1, 11.2.3][CCE-3.

A3, 3.A5] [ENV-3.A4][EM-EP-110a.3][EM-RM-110a.2]

The emissions reduction carried out by the Company adheres to the emissions reduction roadmap based on the 2010 baseline results and the 2020 rebaseline that reflect on the business-as-usual with a 32% target up to 2030.

In 2023, PERTAMINA continued to perform its previous endeavors to reduce emissions through several new initiatives with approximately 1,135,099 tons of CO₂e reduction, which then helped the Company to cut the scope 1 emissions by 8.5 million tons of CO₂e based on the 2010 baseline.

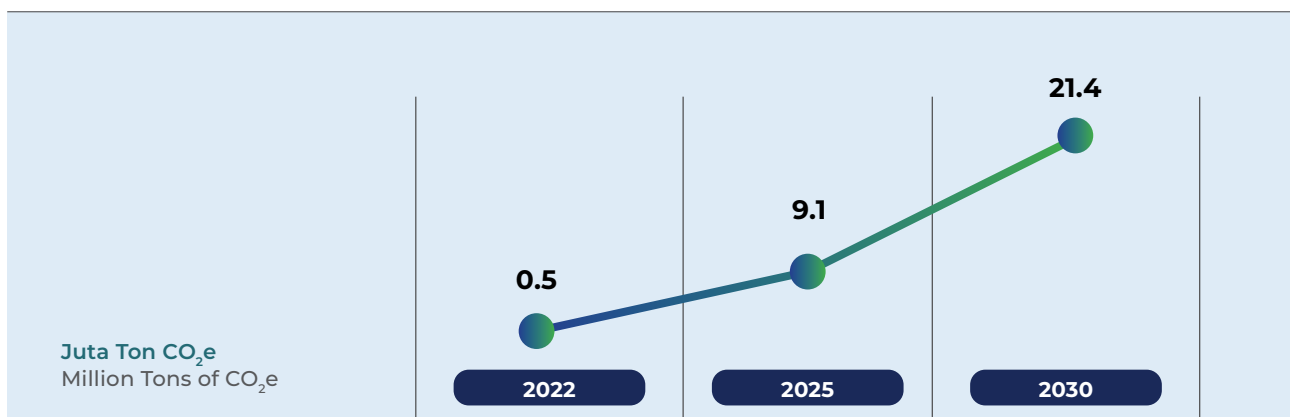
Sesuai peta jalan, PERTAMINA terus meningkatkan porsi EBT dalam bauran energi dari 1% di tahun 2021 menjadi 17% di tahun 2030, serta peningkatan porsi gas dari 3% di tahun 2021 menjadi 19% di tahun 2030. Hal ini sejalan dengan pandangan lembaga-lembaga internasional, yang memperkirakan EBT akan menjadi energi masa depan. Meskipun belum memiliki target reduksi emisi jangka panjang, PERTAMINA telah mendukung *Road Map Net Zero Emission (NZE)* Pemerintah Indonesia di tahun 2060.

In accordance with the roadmap, PERTAMINA continues to increase the NRE portion in the energy mix from 1% in 2021 to 17% by 2030 as well as the gas portion from 3% in 2021 to 19% by 2030. This is line with the international agencies' stance, which projected that the NRE will be the future energy. Although it does not yet have a long-term emission reduction target, PERTAMINA has supported the Indonesian Government's Net Zero Emission (NZE) Road Map in 2060.

End-to-End GHG Emission Reduction Achieved 2010-2024



Roadmap Reduksi Emisi [GRI 302-1, OG 11.1.2, CCE-6.C1]
Emission Reduction Roadmap



Selama tahun 2023, terdapat beberapa inisiatif yang dijalankan PERTAMINA untuk mendukung reduksi emisi GRK, termasuk bekerja sama dengan pihak ketiga: [CCE-3.A3]

- Dukungan Inisiatif *Zero Routine Flaring 2030* Salah satu upaya strategis adalah penerapan teknologi pengelolaan gas suar (*flare gas*) pada kegiatan operasi hulu dan hilir. Pengelolaan gas suar yang dilakukan PERTAMINA antara lain melalui program eliminasi gas suar dengan pemanfaatan sebagai sumber energi alternatif, sejalan dengan dukungan Pemerintah Indonesia pada inisiatif *Zero Routine Flaring by 2030*. [CCE-7.C3, 7.C5]

Total volume gas suar di wilayah operasi di Indonesia pada tahun 2023 mencapai 2,96 juta ton CO₂e. Total volume gas suar berasal dari kegiatan eksplorasi dan produksi migas, pengilangan, serta gas suar rutin maupun non-rutin. Selain itu juga terdapat gas ventilasi, yakni pelepasan ke udara gas-gas yang tidak terbakar. [CCE-7.C1, 7.C2, 7.C4, 7.A1, 7.A2][EM-EP-110a.2]

In 2023, there were a number of initiatives executed by PERTAMINA to support the GHG emission reduction, including collaborating with third parties: [CCE-3.A3]

- Support for the *Zero Routine Flaring 2030 Initiative* One of the strategic efforts is implementing technological flare gas management in upstream and downstream operations. This is conducted through a flare gas elimination program from which is used as an alternative energy source, in line with the Government of Indonesia's supports for the *Zero Routine Flaring by 2030 initiative*. [CCE-7.C3, 7.C5]

The total flare gas of 2023 in the operating areas of Indonesia reached 2.96 million tons of CO₂e. The total volume of flare gas originated from the exploration and production activities of oil and gas, refinery, and both routine and non-routine flare gas. There was also venting gas, i.e. releasing non-combusted gas into the air. [CCE-7.C1, 7.C2, 7.C4, 7.A1, 7.A2][EM-EP-110a.2]

Volume Emisi Gas Suar (*Flare Gas*)

Volume of Flare Gas Emission

Uraian Description	Satuan Unit	2023	2022	2021
Routine Flaring		2.22	2.35	2.25
Non-Routine Flaring	Million Tons	0.22	0.22	0.19
Safety Flaring		0.53	0.34	0.40

- Inisiatif *nature based solutions* (NBS) dilakukan melalui beberapa kerja sama, seperti dengan Perum Perhutani (untuk 9 konsesi milik Perhutani di Kalimantan) dan Otoritas Ibu Kota Nusantara (OIKN). Realisasi tahun 2023 yaitu penyelesaian *feasibility study* atas dua konsesi NBS dari sembilan konsesi potensial milik Perum Perhutani yang bekerja sama dengan Pertamina NRE melalui *master agreement*. Khusus untuk studi terkait *operational analysis*, Pertamina NRE telah mendapat *grant* dari ADB. Potensi kredit karbon yang bisa dihasilkan dari dua konsesi tersebut mencapai 25 juta ton untuk 30 tahun.

- Nature-based Solutions (NBS) initiative is performed through different cooperation, one of which is with Perum Perhutani (for 9 Perhutani-owned concessions in Kalimantan) and Nusantara Capital City Authority (OIKN). In 2023, two concessions of NBS of the nine potential concessions owned by Perum Perhutani completed their feasibility study by collaborating with Pertamina NRE through a master agreement. Specifically for the operational analysis-related study, Pertamina NRE has received a grant from ADB. The potential carbon credit that could be generated

Secara total, proyek kerja sama ini berpotensi menurunkan 7 juta ton CO₂e per tahun atau secara kumulatif 20 juta ton kredit karbon sampai dengan tahun 2030. Untuk satu konsesi pertama (Semamu), *Commercial Agreement* telah di tanda tangani antara Pertamina NRE dan Inhutani I. Terkait kerja sama dengan OIKN, *Joint Study Agreement* antara Pertamina NRE dan OIKN untuk melakukan *Feasibility Study* di Wilayah OIKN telah di tanda tangani di tahun 2023. Program NBS akan mendukung reduksi emisi GRK melalui pengelolaan hutan, sehingga memperkuat kontribusi PERTAMINA menurunkan emisi Indonesia sebesar 31,89% pada tahun 2030. [CCE-3.A5][ENV-3.A1, 3.A4]

- Pengembangan teknologi CCS/CCUS melalui kerja sama terpisah dengan Chevron Energy International Pte.Ltd. dan ExxonMobil Asia Pacific Pte. Ltd. Proyek CCS/CCUS sangat strategis dikarenakan potensi penyimpanan karbon di Indonesia besar. Saat ini, PERTAMINA tengah mengembangkan enam proyek CCS/CCUS, yakni CCS/CCUS Hubs Central Sumatra, CCS for coal to Dimethyl Ether (DME) plant di Tanjung Enim, CCS/CCUS Hubs Kutai and South Asri Basin, CCUS/EGR Gundih, CCUS CO₂-EOR Sukowati, serta CCS di Donggi Matindok. Sampai dengan akhir tahun 2023, Perseroan telah menemukan potensi tempat penyimpanan karbon di Cekungan Sunda-Asri berkapasitas 2 giga ton CO₂, sementara berdasarkan studi mandiri diketahui total potensi penyimpanan karbon di seluruh cekungan migas Indonesia mencapai 400 giga ton. [CCE-3.A2]

Sampai dengan tahun 2023, pemanfaatan CO₂ dari penerapan CCS/CCUS telah dilakukan di Lapangan Sukowati, Jawa Timur melalui injeksi CO₂ ke sumur produksi dalam penerapan *enhanced oil recovery* (EOR) untuk meningkatkan produksi. Selama tahun 2023, total volume CO₂ yang diinjeksi mencapai 511 ton CO₂e. [CCE-3.A6]

from the two concessions was 25 million tons for 30 years. In total, this cooperation project can potentially cut down 7 million tons of CO₂e per year, or cumulatively 20 million tons of carbon credit up to 2030. For the first concession (Semamu), the *Commercial Agreement* has been signed by Pertamina NRE and Inhutani I. On the cooperation with OIKN, a *Joint Study Agreement* was signed in 2023 between Pertamina NRE and OIKN to perform a *Feasibility Study* in the OIKN Area. The NBS Program will support the GHG emission reduction through forest management, strengthening PERTAMINA's contribution to reduce Indonesia's emission by 31.89% in 2030. [CCE-3.A5][ENV-3.A1, 3.A4]

- The CCS/CCUS technology development is carried out through a separate cooperation with Chevron Energy International Pte. Ltd. and ExxonMobil Asia Pacific Pte. Ltd. This project is surely strategic because of Indonesia's large potential in carbon storage. Currently, PERTAMINA is undertaking six CCS/CCUS projects, namely CCS/CCUS Hubs Central Sumatra, CCS for coal to Dimethyl Ether (DME) in Tanjung Enim, CCS/CCUS Hubs Kutai and South Asri Basin, CCUS/EGR Gundih, CCUS CO₂-EOR Sukowati, and CCS in Donggi Matindok. As of the end of 2023, the Company has discovered potential locations for carbon storage in Sunda-Asri Basin with a capacity of 2 giga tons of CO₂, whereas an independent study shows that the total potential carbon storage across Indonesia's oil and gas basin reached 400 giga tons. [CCE-3.A2]

As of the end of 2023, the utilization of CO₂ from the CCS/CCUS implementation has been realized in Sukowati Field, East Java through a CO₂ injection into production wells while implementing *enhanced oil recovery* (EOR) for production increase. Throughout 2023, the total volume of CO₂ injected reached 511 tons of CO₂e. [CCE-3.A6]

- PERTAMINA melalui Indonesia Battery Corporation (IBC) yang merupakan afiliasi Subholding PNRE menyiapkan investasi hingga USD1,7 atau setara Rp25 triliun (asumsi kurs Rp15.180 per USD) untuk membangun ekosistem baterai kendaraan bermotor listrik berbasis baterai (KBLBB) di Indonesia. Investasi tersebut terutama untuk menyiapkan infrastruktur pengisian tenaga baterai kendaraan listrik melalui kerja sama dengan Indonesia Battery Corporation (IBC). [CCE-3.A8]
- PERTAMINA through the Indonesia Battery Corporation (IBC), an affiliate of Subholding PNRE, prepared up to USD1.7 for investments, or equivalent to Rp25 trillion (the assumed exchange rate was at Rp15,180 per USD), to build battery electric vehicles (KBLBB) ecosystem in Indonesia. The investments are mainly to build an infrastructure for electric vehicles battery charging stations by cooperating with the Indonesia Battery Corporation (IBC). [CCE-3.A8]

Pengendalian Emisi Penipis Lapisan Ozon

[GRI 305-6]

Perseroan menggunakan refrigeran yang diproduksi sendiri, yaitu *Musicool* untuk bahan pendingin dalam berbagai mesin pendingin seperti AC *split*, *chiller*, *refrigerator*, *cold storage*, dan lain-lain. Produk tersebut memiliki berbagai varian produk dengan indeks *Global Warming Potential* (GWP) = 2 dan indeks *Ozone Depletion Potential* (ODP) = 0 (dalam metrik ton setara CFC-11). Dengan demikian, selama tahun 2023, operasional PERTAMINA tidak menghasilkan ODS (CFC - Halon - HCFC), sehingga Laporan ini tidak mengungkapkan informasi total volume emisi ODS pada tahun 2023. [ENV5-A1]

Musicool dan varian produknya menjadi produk yang dikomersialisasikan ke masyarakat, sehingga secara tidak langsung turut mengurangi emisi ODS. Pada tahun 2023, total penjualan *Musicool* dan varian produknya sebesar 332 MT, mengalami penurunan 66,53% dari tahun 2022 sebesar 992 MT.

Beban Emisi Non-GRK [GRI 305-7][OG 11.3.2][ENV-5.

C1, 5.C2, 5.A1][EM-EP-120a.1][EM-MD-120a.1][EM-RM-120a.1][EM-SV-110a.2]

Perseroan secara berkala memantau kualitas udara ambien di wilayah operasi. Pemantauan dilakukan dengan pengukuran beban emisi NO₂ (nitrogen dioksida), SO₂ (sulfur dioksida), partikulat, senyawa organik volatil (*volatile organic compound/VOC*), partikulat (PM), dan total senyawa organik (TOC) dengan menggunakan metode aktif manual dan aktif kontinyu. Pengukuran mengacu pada Peraturan Pemerintah Nomor 22 Tahun 2021 tentang

Controlling Emissions of Ozone-Depleting Substances [GRI 305-6]

The Company uses a self-produced refrigerant, *Musicool*, as a cooling material for various refrigeration machines, such as AC split, chiller, refrigerator, cold storage, and others. These products have a variety of products with the Global Warming Potential (GWP) index at 2 and the Ozone Depletion Potential (ODP) index at 0 (in metric tons, equivalent to CFC-11). Hence, in 2023, PERTAMINA's operations did not produce any ODS (CFC – Halon – HCFC), so this Report does not disclose information on total volume of ODS emission in 2023. [ENV5-A1]

Musicool and its product variants were commercialized to communities, which indirectly reduced the ODS emission. In 2023, the total sale of *Musicool* and its product variants amounted to 332 MT, decreasing by 66.53% from 992 MT in 2022.

Non-GHG Emissions Load [GRI 305-7][OG 11.3.2][ENV-5.

C1, 5.C2, 5.A1][EM-EP-120a.1][EM-MD-120a.1][EM-RM-120a.1][EM-SV-110a.2]

The Company frequently monitors air ambient quality in operating areas. This is carried out by measuring the emissions load of NO₂ (nitrogen dioxide), SO₂ (sulphur dioxide), particulates, volatile organic compounds (VOC), and total organic compounds (TOC) using active manual and active continuous methods. The measurement refers to the Governmental Regulation Number 22 of 2021 on Environmental Management and Protection as

Penyelenggaraan dan Perlindungan Lingkungan Hidup serta ketentuan turunannya. Seluruh lokasi kerja PERTAMINA telah memenuhi baku mutu emisi udara yang telah ditetapkan oleh Pemerintah. PERTAMINA juga telah menetapkan target emisi SO_x , yaitu <160 mg/ Nm_3 di tahun 2024 dan <155 mg/ Nm_3 di tahun 2030.

Pengungkapan informasi hasil pengukuran dan penghitungan disampaikan secara total, sedang untuk setiap wilayah operasi termasuk sumber faktor emisi disampaikan dalam Laporan Keberlanjutan entitas anak. Dari hasil pengukuran dan perhitungan selama tahun 2023, serta perbandingannya dengan baku mutu udara ambien di masing-masing wilayah operasi, diketahui bahwa kualitas udara ambien telah memenuhi baku mutu yang ditetapkan regulasi, sehingga sehat untuk manusia maupun makhluk hidup di wilayah operasi. [ENV-5.A2, 5.A3]

well as its derivative provisions. All working areas of PERTAMINA have met the air emissions quality standards set by the Government. PERTAMINA has also set SO_x emission targets, which are <160 mg/ Nm_3 in 2024 and <155 mg/ Nm_3 in 2030.

Information on the results of measurement and calculation is disclosed as a whole, whereas that of each operating area, including the emission sources, is presented in the Sustainability Report of subsidiaries. According to the 2023 measurement and calculation results and their comparison to each operating area's air ambient quality standards, the air ambient quality has met the regulated quality standards, proving it to be healthy for people and other living things in the operating areas. [ENV-5.A2, 5.A3]

Beban Emisi Non-GRK

Non-GHG Emissions Load

Parameter Parameter	Satuan Unit	2023	2022*	2021*
SO_x	Ton	537,781.91	577,657.42	737,937.33
NO_x		81,303.79	93,054.20	127,982.18
VOC		165,765.50	196,889.42	176,691.80
CO_x		2,878.00	894,615.74	649,198.53
PM		7,437.86	3,798.99	3,825.11
TOC		104,329.63	102,768.55	102,768.55

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, khususnya di Subholding IML dengan melakukan *exclude non-operated asset* dan *non-leased asset* sesuai dengan standar GHG Protocol. [GRI 2-4]

*Restatement of information due to changes in the scope of reporting, especially in Subholding IML by excluding non-operated assets and non-leased assets in accordance with the GHG Protocol standard.

Pengelolaan Energi

Energy Management

Energi dibutuhkan untuk mendukung kegiatan operasional PERTAMINA. Perseroan berkomitmen melakukan efisiensi energi dengan berbagai kebijakan dan inisiatif berkelanjutan serta penerapan ISO 50001:2018 Sistem Manajemen Energi. Sejalan dengan kebijakan transisi energi, PERTAMINA meningkatkan produksi dan penggunaan EBT.

Energy is needed to sustain PERTAMINA's operations. The Company is committed to performing energy efficiency with various sustainability policies and initiatives along with the implementation of ISO 50001:2018 Energy Management System. In accordance with the energy transition policy, PERTAMINA amplifies its new renewable energy production and use.

Total Konsumsi dan Penjualan Energi [OJK F.6]

[GRI 302-1, 302-2][OG 11.1.2, 11.1.3][CCE-6.C1, 6.A1]

Informasi pemakaian energi dalam Laporan ini mencakup pemakaian energi hanya di dalam Perseroan (cakupan 1). Total pemakaian energi tahun 2023 mencapai 166.759,20 TeraJoule (TJ), menurun dari konsumsi energi tahun 2022 sebesar 189.705,54 TJ. Jumlah pemakaian EBT tahun 2023 mencapai 6.927,37 TJ. Perseroan tidak memproduksi energi dari reaktor nuklir. Sementara total energi terjual tahun 2023 mencapai 18.525,50 TJ. Penjualan energi dilakukan sesuai perjanjian jual beli dengan pelanggan sesuai regulasi yang berlaku. [CCE-3.A4, 3.A7, 3.A9]

Total Energy Consumption and Sale [OJK F.6][GRI

302-1, 302-2][OG 11.1.2, 11.1.3][CCE-6.C1, 6.A1]

Information on energy use in this Report includes that of in the Company (scope 1). The total energy use of 2023 reached 166,759.20 TeraJoule (TJ), declining from 189,705.54 JL in 2022. The total use of new and renewable energy (NRE) in 2023 amounted to 6,927.37 TJ. The Company does not produce energy from nuclear reactors. As for sales, the total energy sold in 2023 reached 18,525.50 TJ. The selling of energy is conducted based on the purchase agreement with customers per the prevalent regulations. [CCE-3.A4, 3.A7, 3.A9]

Konsumsi Energi Berdasarkan Sumber Energi
Energy Consumption Based on Energy Sources

Sumber Konsumsi Energi Energy Consumption Sources	Satuan Unit	2023	2022	2021
Energi yang Dihasilkan Sendiri Self-generated Energy		149,734.70	166,065.88*	146,811.89*
Listrik yang Dibeli Purchased Electricity		10,722.85	10,293.05*	6,083.62*
Uap dan Panas yang Dibeli Purchased Steam and Heat		24,827.14	30,372.48	10,930.43
Listrik yang Dijual Electricity for Sale	TJ	8,824.76	8,497.69	8,769.60
Uap dan Panas yang Dijual Steam and Heat for Sale		9,700.74	8,528.18	8,438.25
Total Konsumsi Energi Total Energy Consumption		166,759.20	189,705.54*	146,618.10*

Keterangan:

Listrik yang dibeli berasal dari *Power Producer* dikonversi dari satuan kWh menjadi TeraJoule (TJ) sesuai dengan Standar GRI. Sementara untuk energi yang dihasilkan sendiri dihitung menggunakan 3 metode perhitungan, yaitu berdasarkan bahan bakar yang digunakan, nilai kalor, serta volume bahan bakar yang dikonversi ke satuan bahan bakar.

Note:

The electricity purchased from *Power Producer* is converted from kWh unit to Terajoule (TJ) in accordance with the GRI Standards. The self-generated energy is calculated using three methods, i.e. the fuel used, caloric value, and fuel volume converted to fuel unit.

Konsumsi Energi dari Sumber Energi Terbarukan Berdasarkan Sumber
Energy Consumption from Renewable Energy by Source

Sumber Konsumsi Energi Energy Consumption Source	Satuan Unit	2023	2022	2021
Pembangkit Energi Internal Internal Energy Generator		6,927.37	5,222.77	3,156.92*
Listrik Dibeli dari Sumber Terbarukan Electricity Purchased from Renewable Sources	TJ	24.60	22.74	15.98
Listrik dari Sumber Terbarukan yang Dijual ke <i>Grid</i> Electricity from Renewable Sources Sold to Grid		16,790.84	16,771.75	16,870.04

Konsumsi Bahan Bakar untuk Operasional Sumber Emisi Tidak Bergerak Fuel Consumption for Operations Using Immovable Emission Sources

Sumber Konsumsi Energi Energy Consumption Source	Satuan Unit	2023	2022	2021
Fuel Gas	MMSCF	203,715.96	317,349.91*	560,300.07
	TJ	6,404.96	9,977.69	17,623.35
Fuel Oil	m ³	1,145,282.20	1,174,849.72	1,138,680.31
	TJ	43,618.49	44,744.58	43,348.46
Gasoline	m ³	132.49	60.60	19.30
	TJ	4,418.53	2,020.98	642.63
Diesel	m ³	146,174.51	89,100.68*	94,473.83*
	TJ	5,646.72	3,441.96	3,655.74

Konsumsi Bahan Bakar untuk Operasional Sumber Emisi Bergerak Fuel Consumption for Operations Using Mobile Emissions Sources

Sumber Konsumsi Energi Energy Consumption Source	Satuan Unit	2023	2022*	2021
Diesel/Solar	MMSCF	223,594.11	549,548.26	759,086.54*
	TJ	8,648.62	8,648.62	21,256.53*
Gasoline	m ³	2,995.56	2,228.86	20,701.67
	TJ	103.83	103.83	77.25*
Marine Fuel	m ³	466,400.92	292,726.52	207,299.11*
	TJ	19,462.91	19,462.91	12,215.48*

Konsumsi Energi Berdasarkan Segmen Bisnis Energy Consumption Based on Business Segments

Segmen Bisnis Business Segment	Satuan Unit	2023	2022	2021
Upstream		157,529.43	164,329.54	119,103.17
Refining and Petrochemical		6,877.45	23,009.78*	24,491.81
Commercial and Trading		276.70	695.27	545.22
Power New Renewable Energy	TJ	576.85	513.42	533.73
Gas		1,444.25	1,150.22	1,944.16
Integrated Marine Logistics		54.53	7.32	8.51
Total		166,759.20	189,705.54*	146,626.61

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu dengan dilakukannya *exclude non-operated asset* dan *non-leased asset* sesuai standar GHG Protocol. [GRI 2-4]

*Restatement of information due to changes in the scope of reporting, namely by excluding non-operated assets and non-leased assets in accordance with the GHG Protocol standard.

Penjualan Energi Berdasarkan Jenis Energi Tahun 2023 Energy Sales Based on Types of Energy in 2023

No	Kategori Category	Satuan Unit	Jumlah Total	Penjualan Energi Sales of Energy
Energi Tidak Terbarukan Non-Renewable Energy				
1.	Lifting Minyak Mentah Crude Oil Lifting	MMBO	206.76	1.26 × 10 ¹⁵ TJ
	Lifting Gas Bumi Gas Lifting	BSCF	717.14	2.59 × 10 ¹⁵ TJ
	BBM JBT JBKP JBU dan Aviasi (exc BBM Energi Terbarukan) BBM JBT JBKP JBU and Avitation (excl. BBM Renewable Energy)	KL	51,133,573.70	0.44 × 10 ¹⁵ TJ
Energi Terbarukan Renewable Energy				
2.	Produksi Listrik Tenaga Surya Solar Power Production	MWh	614,163.70	2.2 × 10 ⁶ TJ
	Produksi Listrik Tenaga Panas Bumi Geothermal Power Production	GWh	4,734.57	17.03 × 10 ⁶ TJ
	Produksi Listrik Biogas Biogas Power Production	MWh	18,031.50	0.065 × 10 ⁶ TJ

Intensitas Konsumsi Energi [OJK F.6][GRI 302-3][OG 11.1.4][CCE-6.A2]

Efektivitas pemakaian energi dapat diketahui dari penghitungan Intensitas Konsumsi Energi (IKE). Secara umum, nilai IKE untuk setiap segmen usaha pada tahun 2023 memperlihatkan peningkatan seiring dengan kenaikan produksi.

Energy Consumption Intensity [OJK F.6][GRI 302-3][OG 11.1.4][CCE-6.A2]

The effectiveness of energy use can be detected from calculating the Energy Consumption Intensity (IKE). In general, the IKE value for each business segment in 2023 shows an increase due to the production increase.

Intensitas Konsumsi Energi Berdasarkan Segmen Bisnis Energy Consumption Intensity Based on Business Segment

Segmen Bisnis Business Segment	Satuan Unit	2023	2022	2021
Upstream	TJ/MBOE	0.55	0.58*	0.47*
Refining and Petrochemical	Solomon Energy Intensity Index	106.4	108.4*	108.6*

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu dengan dilakukannya *exclude non-operated asset* dan *non-leased asset* sesuai standar GHG Protocol. [GRI 2-4]
*Restatement due to changes in the reporting's scope, i.e. by excluding the non-operated asset and the non-leased asset per the GHG Protocol standards.

Upaya dan Pencapaian Efisiensi Energi dan Penggunaan EBT [OJK F.7][GRI 302-4, 302-5][CCE-6.C2, 6.A3]

Pencapaian efisiensi energi diukur berdasarkan ketentuan dalam International Energy Agency (IEA) dan diaudit berkala. Perseroan terus meningkatkan

Efforts and Achievements in Energy Efficiency and NRE Use [OJK F.7][GRI 302-4, 302-5][CCE-6.C2, 6.A3]

Achievements in energy efficiency are based on the provisions stated in the International Energy Agency (IEA) and audited periodically.

efisiensi energi melalui beberapa upaya, di antaranya efisiensi bahan bakar, listrik, pemanas, pendingin, dan uap. Pencapaian efisiensi energi harus memenuhi tiga kriteria, meliputi intervensi spesifik yang telah berhasil mengurangi konsumsi energi; pengurangan harus terukur dan berkelanjutan; serta pengurangan dilaporkan untuk periode 12 bulan sejak dimulainya intervensi atau tindakan. Pada tahun 2023, Perseroan mengimplementasikan rangkaian inisiatif efisiensi energi, di mana secara kumulatif berhasil mengurangi konsumsi energi sebesar 38.211,4 TJ.

Salah satu unit operasi pada Subholding Refinery and Petrochemical yang berhasil menerapkan efisiensi energi adalah PT Kilang Pertamina Internasional Unit Dumai, Riau. Efisiensi energi yang dilakukan mampu menekan biaya operasional Rp176,4 miliar per tahun melalui upaya sewa *gas engine generator* (GEG) untuk meningkatkan penyerapan gas eksternal serta substitusi *refinery fuel oil* menjadi *fuel gas* pada *Program Retrofit Burner Boiler* Mitsubishi (MHI). Dampak lain dari inisiatif ini adalah reduksi emisi GRK sebesar 130 ton CO₂e per hari. [CCE-6.A4]

Untuk mengoptimalkan efisiensi energi, Perseroan mendorong pemanfaatan EBT. Total konsumsi energi dari sumber terbarukan pada tahun 2023 mencapai 6.927,37 TJ, meningkat dibanding tahun sebelumnya yang sebesar 5.222,77 TJ. Selain itu, produksi energi dari sumber terbarukan yang dijual oleh PERTAMINA juga meningkat pada tahun 2023 sebesar 16.790,84 TJ dibanding tahun 2022 yang sebesar 16.771,75 TJ.

Perseroan juga melakukan sosialisasi penghematan energi kepada khalayak luas melalui beberapa program/kegiatan tanggung jawab sosial dan lingkungan perusahaan (TJSL/CSR). Pengungkapan informasi tentang hal ini disampaikan di halaman 192 Laporan ini. [CCE-6.A5]

The Company continues to heighten the energy efficiency through various efforts, such as fuel efficiency, electricity, heating, cooling, and steam. The achievements of energy efficiency must meet three criteria, including specific interventions that have cut down energy consumption; measurable and sustainable reduction; and report on reduction for 12-month period since the start of the intervention or action. In 2023, the Company implemented a series of energy efficiency initiatives that cumulatively reduced energy consumption by 38,211.4 TJ.

One of the operating units in the Subholding Refinery and Petrochemical that succeeded in implementing energy efficiency is PT Kilang Pertamina Internasional, Dumai Unit, Riau. The energy efficiency performed could suppress the operating cost by Rp176.4 billion per year by renting gas engine generator (GEG) to increase external gas absorption and substituting refinery fuel oil into fuel gas in Mitsubishi's Retrofit Burner Boiler Program (MHI). In addition, the GHG emissions reduction amounted to 130 tons of CO₂e per day. [CCE-6.A4]

To optimize energy efficiency, the Company promotes the use of NRE. The total energy consumption from renewable sources in 2023 reached 6,927.37 TJ, showing an increase from the previous year at 5,222.77 TJ. Moreover, the renewable source-based energy production sold by PERTAMINA also increased in 2023, amounting to 16,790.84 TJ compared to 16,771.75 TJ in 2022.

The Company also introduces energy saving to wider communities through various corporate social and environmental responsibility (TJSL/CSR) programs. Information disclosure on this matter is available on page 192 of this Report. [CCE-6.A5]

Pengelolaan Dampak Lingkungan Environmental Impact Management

Pengelolaan perubahan iklim juga dijalankan Perseroan melalui konservasi sumber daya air. Selain itu, PERTAMINA menerapkan pengelolaan limbah, efluen, dan beban pencemar air, serta melakukan perlindungan dan konservasi keanekaragaman hayati.

Climate change management is also carried out by the Company through water source conservation. Additionally, PERTAMINA manages waste, effluent, and water pollutant load as well as protects and conserves biodiversity.

Pengelolaan Air dan Konservasi Sumber Daya Air [OJK F.8][OG 11.6.1] Water Management and Water Sources Conservation

Perubahan iklim berdampak langsung maupun tidak langsung terhadap sumber daya air. PERTAMINA berkomitmen menjaga keseimbangan dalam pemakaian air, dengan mendukung konservasi sumber daya air di wilayah operasi terutama pada kawasan yang stres/langka air.

Climate change directly and indirectly impacts water sources. The Company is committed to maintain the balance in water consumption by conserving the water sources in operating areas, especially in water-stressed/water scarce areas.

Pengelolaan Sumber Air Bersama [GRI 303-1][OG 11.6.2, 11.6.3]

Air digunakan untuk mendukung kegiatan operasional dan diambil dari berbagai sumber. Beberapa di antaranya berasal dari sumber air yang digunakan bersama masyarakat di sekitar wilayah operasi. Perseroan memastikan pengambilan dan pemanfaatan air dilakukan dengan bertanggung jawab, disertai upaya meminimalkan dampak terhadap sumber air yang digunakan bersama masyarakat sehingga tidak menimbulkan kerugian terhadap masyarakat.

Management of Shared Water Sources [GRI 303-1][OG 11.6.2, 11.6.3]

Water is used to sustain operations and withdrawn from various sources, some of which originated from sources used collectively by communities residing around the operating areas. The Company ensures water withdrawal and use is executed in a discretion manner along with efforts to minimize impacts on the water sources used collectively with the community so that they will not experience any loss.

Pemanfaatan Air dari Sumber Air yang Digunakan Bersama Masyarakat dan Pengelolaannya

Utilization of Water from Community Shared Water Sources and Their Management

Sumber Air Water Source	Bentuk Pemanfaatan Types of Utilization	Pengelolaan Management
Laut dan pantai Sea and beach	<ul style="list-style-type: none"> Operasional anjungan lepas pantai oleh PERTAMINA. Pencarian ikan oleh nelayan. Sebagai prasarana transportasi dan mobilitas warga pesisir. Operating offshore platforms by PERTAMINA. Fishing by fishermen. Functioning as transportation and mobility means for coastal residents. 	<p>Pemenuhan regulasi terkait baku mutu air buangan, serta koordinasi dengan pemangku kepentingan terkait.</p> <p>Meeting regulations concerning the quality standards of discharged water and coordinating with the relevant shareholders.</p>

Sumber Air Water Source	Bentuk Pemanfaatan Types of Utilization	Pengelolaan Management
Sungai dan waduk River and reservoir	<ul style="list-style-type: none"> Operasional pembangkit listrik tenaga air (PLTA) oleh PERTAMINA maupun mitra. Pemeliharaan dan pencarian ikan oleh nelayan. Sebagai sumber air kebutuhan domestik oleh warga. Sebagai prasarana transportasi dan mobilitas warga. Operating hydroelectric power plants (PLTA) by PERTAMINA and its partners. Performing maintenance and fishing by fishermen. Functioning as domestic needs by residents. Functioning as residents' transportation and mobility means. 	Implementasi inisiatif konservasi pemanfaatan air, pemenuhan regulasi baku mutu, pengelolaan air buangan, serta kerja sama dengan pemangku kepentingan. Implementing water use conservation, meeting the quality standards regulation, managing discharged water, and cooperating with stakeholders.

Penarikan dan Penggunaan Air [GRI 303-3, 303-5]

[OG 11.6.4, 11.6.5, 11.6.6][ENV-1.C1, 1.C2]

Total volume penarikan air tahun 2023 mencapai 903.229.668,89 Megaliter. Air yang ditarik dan digunakan terdiri dari air tawar yang berasal dari sumber air tanah, air permukaan, air laut, dan pembelian pihak ketiga. Proses penarikan air dari setiap sumbernya dilengkapi alat pengukur untuk mengatur serta mengatur debit penarikan. PERTAMINA juga telah memenuhi standar yang terdapat di IFC dengan melakukan implementasi terhadap kebijakan yang berlaku. Informasi terkait hal tersebut disampaikan pada Laporan Keberlanjutan setiap entitas anak. [ENV-1.A8][EM-EP-140a.1][EM-MD-160a.1][EM-RM-140a.1][EM-SV-140a.1]

Water Withdrawal and Use [GRI 303-3, 303-5][OG

11.6.4, 11.6.5, 11.6.6][ENV-1.C1, 1.C2]

The total volume of water withdrawal and use in 2023 reached 903,229,668.89 Megaliters. The water withdrawn and used consists of freshwater from groundwater, surface water, seawater, and third-party purchases. The process of water withdrawal is equipped with measuring devices to regulate the withdrawal discharge. PERTAMINA has also met the standards at IFC by implementing the prevalent policies. Information related to this matter is presented in the Sustainability Report of each subsidiary. [ENV-1.A8][EM-EP-140a.1][EM-MD-160a.1][EM-RM-140a.1][EM-SV-140a.1]

Pengambilan dan Pemanfaatan Air Berdasarkan Sumber

Water Withdrawal and Use Based on Sources

Sumber Source	Satuan Unit	2023	2022	2021*
Air Permukaan Surface Water	Megaliter	277,186.27	358,913.44*	312,460.31
Air Tanah Groundwater		17,773.78	48,042.69	15,606.51
Air Laut Seawater		602,688.56	585,413.08*	477,278.57
Air yang Berasal dari Pihak Ketiga Water Sourced from Third Parties		5,581.06	64,255.07*	3,461.07
Total Pengambilan Air Total Water Withdrawal		903,229.67	1,056,624.28*	808,806.46

*Penyajian kembali informasi (restatement) karena adanya perubahan lingkup pelaporan, yaitu penambahan jumlah pemanfaatan air laut di beberapa lokasi. [GRI 2-4]

*Restatement due to changes in the reporting's scope, i.e. additional amount of seawater use in several locations.

Total Pengambilan dan Pemanfaatan Air Berdasarkan Kategori

Total Water Withdrawal and Use Based on Categories

Kategori Category	Satuan Unit	2023	2022*	2021*
Air Tawar (≤ 1.000 mg/L Total Padatan Terlarut) Freshwater ($\leq 1,000$ mg/L of Total Dissolved Solids)	Megaliter	300,541.11	471,211.20	331,527.89
Air Lainnya (> 1.000 mg/L Total Padatan Terlarut) Other Water ($> 1,000$ mg/L of Total Dissolved Solids)		602,688.56	585,413.08	477,278.57

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu penambahan jumlah pemanfaatan air dari *reservoar* (*produced water*) di beberapa lokasi. [GRI 2-4]
*Restatement due to changes in the reporting's scope, i.e. additional amount of water use from reservoirs (produced water) in several locations.

Total Pengambilan dan Pemanfaatan Air Berdasarkan Segmen Bisnis

Total Water Withdrawal and Use Based on Business Segment

Segmen Bisnis Business Segment	Satuan Unit	2023	2022*	2021*
Upstream	Megaliter	25,116.64	28,800.59	23,019.55
Refining & Petrochemical		576,757.65	393,529.85	618,903.20
Commercial & Trading		481.04	392.25	410.19
Power New Renewable Energy		293.54	121.87	54.12
Gas		25,116.64	28,800.59	23,019.55
Total Air yang Diambil Total Water Withdrawal		903,195.81	799,313.03	808,806.41

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu penambahan jumlah pemanfaatan air dari *reservoar* (*produced water*) di beberapa lokasi. [GRI 2-4]
*Restatement due to changes in the reporting's scope, i.e. additional amount of water use from reservoirs (produced water) in several locations.

Volume terbesar air laut tahun 2023 digunakan untuk kegiatan unit operasi/unit bisnis pada entitas anak Subholding Refining & Petrochemical dengan total volume sebesar 576,76 Megaliter. Selama periode pelaporan, tidak ada air tanah yang diekstraksi untuk bioremediasi tanah terkontaminasi serta tidak ada air yang digunakan untuk perekahan hidrolik. [ENV-1.A3, 1.A4, 1.A11][EM-EP-140a.3][EM-EP-140a.4][EM-SV-150a.1]

The largest volume of seawater in 2023 was assigned for activities in operating units/business units in a subsidiary of the Subholding Refining & Petrochemical with a total volume of 576.76 Megaliters. During the reporting period, there was no groundwater extracted for contaminated soil bioremediation and no water used for hydraulic fracturing. [ENV-1.A3, 1.A4, 1.A11][EM-EP-140a.3][EM-EP-140a.4][EM-SV-150a.1]

Efisiensi Air dan Konservasi Sumber Daya Air

[ENV-1.C5][ENV-2.A1, 2.A2]

PERTAMINA berkomitmen mengurangi jumlah pemakaian air tawar. Total volume pengurangan air tawar pada tahun 2023 mencapai 8.112 Megaliter dengan pengurangan terbesar dilakukan oleh Segmen Bisnis Refinery & Petrochemical.

Water Efficiency and Water Sources Conservation

[ENV-1.C5][ENV-2.A1, 2.A2]

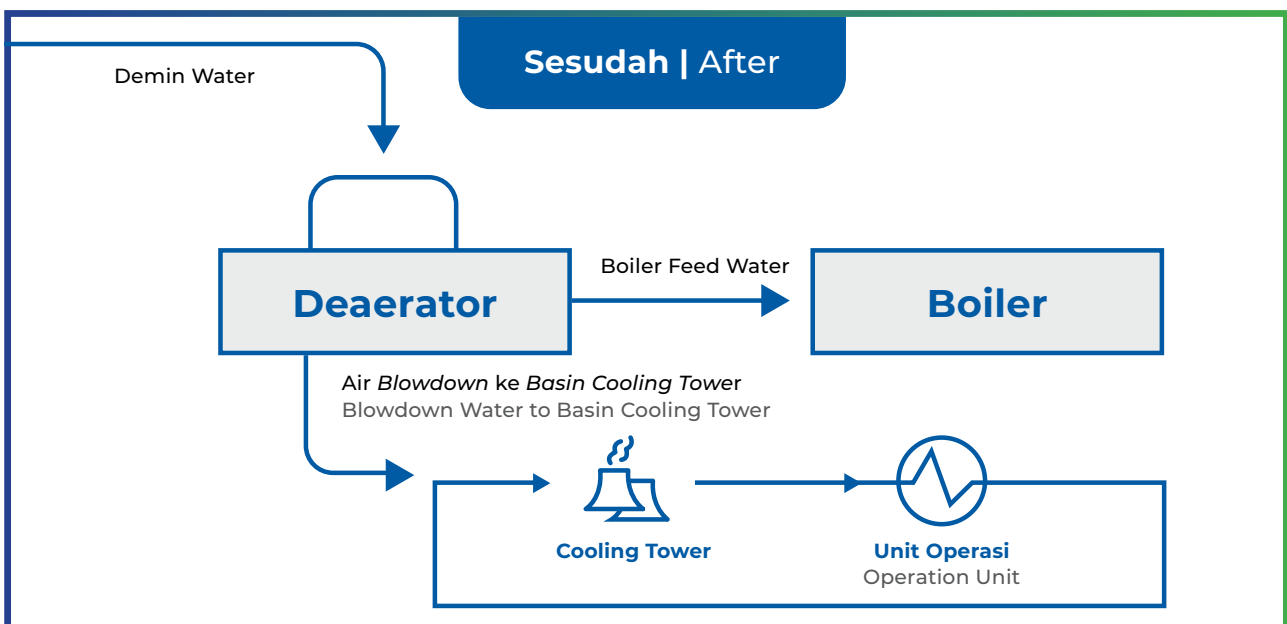
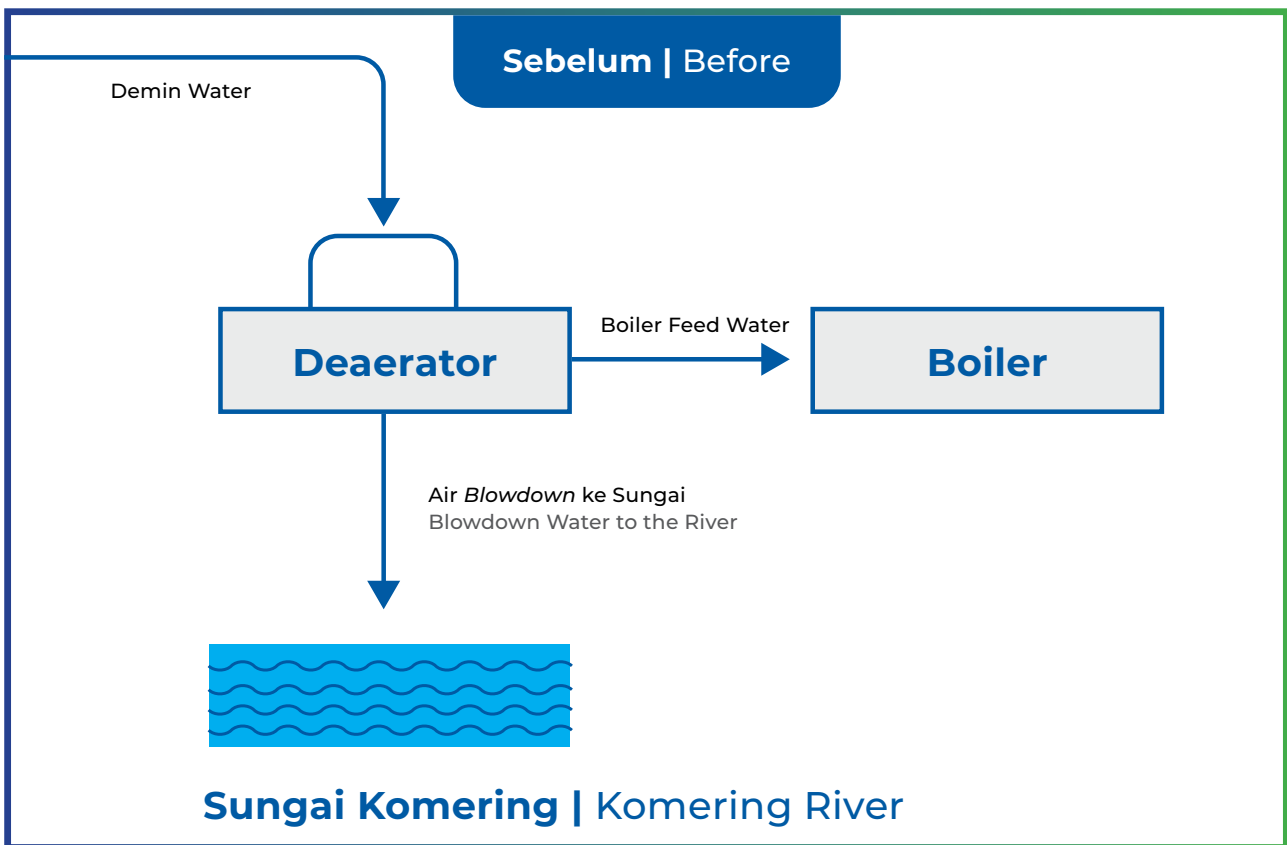
PERTAMINA is committed to cutting down the amount of freshwater consumption. The total volume of freshwater reduction in 2023 reached 8,112 Megaliters with the most reduction occurring in the Refinery & Petrochemical Business Segment.

Selama tahun 2023, terdapat beberapa upaya penghematan pemakaian air tawar, salah satunya di RU III Plaju melalui penggunaan kembali air *Blowdown ex Deaerator* ke *Basin Cooling Tower* Plaju. Inovasi ini dilakukan dengan

In 2023, various efforts were made to economically use freshwater, one of which was in RU III Plaju by reusing water from *Blowdown ex Deaerator* to *Basin Cooling Tower* Plaju. This innovation was conducted by optimizing the *blowdown* water reuse from

mengoptimalkan penggunaan kembali air *blowdown* dari unit *deaerator* dengan tujuan menurunkan konsumsi air permukaan, khususnya untuk unit *cooling tower*. Inovasi ini dilakukan karena adanya *losses*/kehilangan air permukaan *blowdown* ex unit *deaerator* serta adanya kandungan *chemical oxygen scavenger* (*amine based*), sehingga berpotensi menyebabkan air buangan ke sungai tidak memenuhi baku standar.

the deaerator unit to reduce the consumption of surface water, mainly for the cooling tower unit. This innovation was carried out due to the losses of blowdown surface water ex deaerator unit and the presence of chemical oxygen scavenger (*amine-based*), which potentially causes the discharge water to the river to not comply with the standard.



Seluruh *Subholding* maupun entitas anak lain dan unit operasional/unit bisnis di dalamnya telah dilengkapi instalasi pengolahan air limbah (IPAL) dengan metode fisikawi, kimiawi, dan biologis. Secara berkala, kualitas olahan air limbah dipantau dan diukur untuk memastikan pemenuhan baku mutu 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. Hasil pemantauan dan pengukuran dilaporkan kepada pihak berwenang. Sebagian dari olahan air limbah dari IPAL digunakan kembali dan dialirkan kembali ke badan air, termasuk sumber air permukaan untuk air tawar. [ENV-1.A.9, 1.A10]

All Subholdings and other subsidiaries, including the operating units/business units, have a wastewater treatment plant (WWTP) using physical, chemical, and biological methods. The quality of processed wastewater is periodically monitored and measured to meet the quality standards enforced in the Regulation of Minister of Environment Number 19 of 2010 on the Wastewater Quality Standards for Oil and Gas and Geothermal Businesses and/or Activities. The monitoring and measuring results are reported to the authorities. Some processed wastewater from WWTP is reused and redistributed to water bodies, including surface water for freshwater. [ENV-1.A.9, 1.A10]

Pengelolaan Air | Water Management [EM-SV-140a.1]

Lokasi Kegiatan Activities Location	Tempat Pengolahan Treatment Site	Metode Pengolahan Processing Method	Bentuk Pemanfaatan Utilization Form
Kegiatan Lepas Pantai Offshore Activities	Instalasi Pengolahan Air Limbah (IPAL)	<ol style="list-style-type: none"> 1. Biologis 2. Kimiawi 3. 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 	<ul style="list-style-type: none"> • Digunakan kembali • Dilepaskan ke badan air: laut, berdasar Izin Pembuangan Limbah Cair (IPLC) dari Kementerian LHK • Reused • Discharged into water bodies: sea, based on the Liquid Waste Disposal Permit (IPLC) from the Ministry of Environment and Forestry
Kegiatan di Daratan Onshore Activities	Wastewater Treatment Plant (WWTP)	<ol style="list-style-type: none"> 1. Biological 2. Chemistry 3. Monitoring and measurement in accordance with the Regulation of the Minister of the Environment Number 19 of 2010 concerning Wastewater Quality Standards for Oil and Gas and Geothermal Business and/or Activities 	<ul style="list-style-type: none"> • Digunakan kembali • Dilepaskan ke badan air: saluran air, sungai, danau berdasar izin dari pemerintah daerah • Reused • Discharged into water bodies: water channels, rivers, lakes with permission from the local government

Unit operasional anjungan di lepas pantai dilengkapi dengan fasilitas desalinasi untuk mengolah air laut menjadi air tawar. Anjungan juga memiliki fasilitas penampungan air tawar dari pengoperasian pendingin ruangan (AC) maupun penampungan air hujan. Air tawar yang diperoleh digunakan untuk kegiatan pendukung, sementara olahan air bekas pakai dari IPAL di anjungan dialirkan ke perairan di sekitarnya. [ENV-1.A.10]

The operating units at offshore platforms are equipped with desalination facilities to process seawater into freshwater. There are also freshwater storage facilities that accommodate water from operating air-conditioning and from rainwater. The freshwater obtained is used for supporting activities whereas the processed used water from WWTP in the platforms is distributed to the surrounding waters. [ENV-1.A.10]

Total Air yang Dikonsumsi Berdasarkan Segmen Bisnis [GRI 303-5] Total Water Consumed Based on Business Segments

Segmen Bisnis Business Segment	Satuan Unit	2023	2022	2021
Upstream		14,448.49	12,877.71	17,685.43
Refining & Petrochemical		159,238.76	234,109.13*	503,489.49
Commercial & Trading		7.82	92.91	410.19
Power New Renewable Energy	Megaliter	57.64	5.78*	54.12
Gas		28,948.26	4,621.66	2,990.76
Integrated Marine Logistics		30.09	51.99*	0.05*
Total		202,731.05	251,759.18*	524,630.03*

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu penambahan jumlah pemanfaatan air dari *reservoir* (*produced water*) dan air laut di beberapa lokasi. [GRI 2-4]

*Restatement due to changes in the reporting's scope, i.e. additional amount of water use from reservoirs (produced water) and seawater in several locations.

Total Air Tawar yang Didaur Ulang Berdasarkan Segmen Bisnis [GRI 303-5] Total Recycled Freshwater Based on Business Segment

Segmen Bisnis Business Segment	Satuan Unit	2023	2022	2021
Upstream		19.93	314.02	231.20
Refining & Petrochemical		13,793.87	13,134.90	12,971.49
Power New Renewable Energy	Megaliter	-	-	1.66
Gas		0.48	0.02	2,272.56
Total		13,814.27	13,448.94	15,476.90

Intensitas Konsumsi Air [ENV-1.A1, 1.A2]

Efektivitas pengambilan dan pemakaian air juga diketahui dari penghitungan Intensitas Konsumsi Air. Secara umum, Intensitas Konsumsi Air segmen bisnis Upstream tahun 2023 mengalami kenaikan dari tahun 2022 seiring dengan peningkatan kegiatan operasional dan produksi. Laporan ini juga mengungkapkan informasi Intensitas Konsumsi Air untuk Air Tawar yang dihitung, mencakup kegiatan operasional, produksi, dan pendukung.

Water Consumption Intensity [ENV-1.A1, 1.A2]

The effectiveness of water withdrawal and use can be known from calculating the Water Consumption Intensity. In general, the 2023 Water Consumption Intensity increased since 2022 along with the intensifying operations and production activities. This Report also discloses information on the calculated Water Consumption Intensity for Freshwater, including operational, production, and supporting activities.

Intensitas Konsumsi Air Berdasarkan Segmen Bisnis Water Consumption Intensity Based on Business Segment

Segmen Bisnis Business Segment	Satuan Unit	2023	2022	2021
Upstream	m ³ /MBOE	50.18	45.61*	70.15*
Refining & Petrochemical	m ³ /Barel Minyak Mentah Diproses m ³ /Barrel of Processed Crude Oil	0.56	0.714	0.607

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu penambahan jumlah pemanfaatan air dari *reservoir* (*produced water*) dan air laut di beberapa lokasi. [GRI 2-4]

*Restatement due to changes in the reporting's scope, i.e. additional amount of water use from reservoirs (produced water) and seawater in several locations.

Pengelolaan Air di Daerah Stres/Langka Air

[GRI 303-4][ENV-1.C3, 1.C4][EM-EP.140a.1][EM-ER-140a.1]

Sampai dengan akhir tahun 2023, terdapat beberapa lokasi kerja PERTAMINA yang beroperasi di wilayah stres/langka air. Identifikasi wilayah yang mengalami stres/langka air mengacu pada PERTAMINA Water Risk Assessment Tools™ yang dikembangkan oleh PERTAMINA, mengacu pada beberapa referensi, di antaranya GEMI *Local Water Tools* dan *Alliance of Water Stewardship (AWS)*. PERTAMINA juga telah melakukan identifikasi risiko air secara mendalam di area pulau Jawa dan Pulau Sumatra bagian selatan.

Total volume penarikan air unit operasi/unit bisnis di wilayah stres/langka air tahun 2023 mencapai 162.291,89 Megaliter. PERTAMINA berupaya mengurangi pengambilan air di wilayah stres/langka air agar tidak berdampak signifikan terhadap masyarakat setempat. [ENV-1.A6][ENV-2.A7]

Water Management in Water-Stressed/Water-Scarce Areas

[GRI 303-4][ENV-1.C3, 1.C4][EM-EP.140a.1][EM-ER-140a.1]

By the end of 2023, several working locations of PERTAMINA have operated in water-stressed/water-scarced areas. Identification of water-stressed/water-scarced water refers to PERTAMINA Water Risk Assessment Tools™. It refers to a number of references, among others GEMI *Local Water Tools* and *Alliance of Water Stewardship (AWS)*. PERTAMINA has been identify water risk in areas located in Java and southern part of Sumatra.

The total volume of water withdrawal of operating units/business units in water-stressed/water-scarced areas in 2023 reached 162,291.89 Megaliters. PERTAMINA endeavored to reduce water withdrawal in the water-stressed/water-scarced areas so that it will not significantly affect local communities. [ENV-1.A6][ENV-2.A7]

Volume Air yang Dikonsumsi di Wilayah Stres/Langka Air (Megaliter) [GRI 303-5]

Volume of Water Consumed in Water-Stressed/Water-Scarced Areas (Megaliters)

2023	2022	2021
162,291.89	230,353.18	182,353.56

Salah satu unit operasi/unit bisnis yang berlokasi di daerah stres/langka air adalah PT Pertamina Patra Niaga Regional Jatim Balinus. Perseroan membangun sarana air bersih di Desa Tendambepa, Kecamatan Nangapanda dan Desa Wolosoko, Kecamatan Wolowaru, di Kabupaten Ende, Nusa Tenggara Timur (NTT). Penyediaan sarana air bersih berbentuk pembangunan bak *reservoir* dan pipanisasi untuk mengalirkan air dari mata air yang berjarak lebih dari 7 kilometer. Selain di Kabupaten Ende, selama tahun 2023, ada 77 program akses air bersih untuk membantu masyarakat di daerah stres/langka air, yang termasuk wilayah operasi Perseroan melalui program tanggung jawab sosial dan lingkungan perusahaan (CSR). [ENV-1.A7]

One of the operating units/business units in water-stressed/water-scarced areas is PT Pertamina Patra Niaga Regional Jatim Balinus. The Company built clean water facilities in Tendambepa Village, Nangapanda District and Wolosoko Village, Wolowaru District, Ende Regency, East Nusa Tenggara (NTT). The clean water facilities come in the form of reservoirs and pipelines to distribute water from springs that are more than 7 kilometers. Aside from Ende Regency, in 2023, there were 77 clean water access programs to help communities in water-stressed/water-scarced areas, those of located in the Company's operating areas through corporate social and environmental responsibility (CSR) programs. [ENV-1.A7]

Pengelolaan Efluen dan Tujuan Pembuangan

[OJK F.13][GRI 303-2, 303-4][ENV-1.A10][ENV-2.C1, 2.C2, 2.A6][EM-RM-140a.2]

Efluen atau air limbah terdiri atas air limbah dari kegiatan operasional dan produksi, serta kegiatan domestik. Perseroan melalui unit operasional/unit bisnis entitas anak serta mengelola efluen dengan cara diolah di unit IPAL disertai pemantauan dan pengukuran berkala, termasuk kandungan hidrokarbon di dalam air terproduksi maupun efluen dari kegiatan hulu migas dan panas bumi; pengolahan (pengilangan) minyak, *liquified petroleum gas* (LPG) dan *liquified natural gas* (LNG); serta operasional instalasi, depot dan terminal minyak.

Berdasarkan pengukuran pada tahun 2023, kualitas olahan air terproduksi maupun efluen pada seluruh fasilitas tersebut telah memenuhi baku mutu yang ditetapkan Pemerintah. Pengelolaan efluen mengacu pada pedoman pengelolaan lingkungan dengan berkelanjutan dan pedoman pengelolaan air. PERTAMINA juga telah menetapkan target baku mutu air buangan (*oil content*) dalam efluen. Perseroan juga secara rutin melakukan *monitoring* terhadap efluen. Berdasarkan hasil *monitoring*, pada tahun 2023, seluruh air buangan telah memenuhi baku mutu yang berlaku.

Total volume air buangan (*water discharged*) selama tahun 2023 mencapai 700.267,43 Megaliter. Sebesar 460.120,24 Megaliter atau 79,84% dari total volume air limbah dialirkan ke laut, sedangkan lainnya sebesar 116.216,28 Megaliter atau 20,16% dialirkan ke sumber air permukaan. Selain itu juga ada yang dilepaskan ke tanah dalam bentuk air terinjeksi dan didistribusikan kepada pihak ketiga untuk diolah lebih lanjut. Khusus pembuangan air limbah ke laut dan sumber air permukaan, disertai pemantauan dan pengukuran parameter tertentu seperti *chemical oxygen demand* (COD), sulfat, amonia, fenol, *total suspended solids* (TSS), serta lumpur pengeboran. Langkah ini dilakukan untuk meminimalkan pencemaran badan air. Hasil pemantauan dan pengukuran dilaporkan kepada pihak-pihak berwenang. [ENV-1.A9][ENV-2.A1, 2.A2, 2.A3, 2.A5]

Effluent Management and Discharge Destination

[OJK F.13][GRI 303-2, 303-4][ENV-1.A10][ENV-2.C1, 2.C2, 2.A6][EM-RM-140a.2]

Effluent or wastewater consists of wastewater from operational and production activities and domestic activities. Through the subsidiaries' operating units/business units, the Company manages effluent by processing it at IPAL Unit with periodic monitoring and measuring, including hydrocarbon content in produced water and effluent from upstream oil and gas and geothermal activities; oil processing (refinery), liquefied petroleum gas (LPG) and liquefied natural gas (LNG); and operational installation, and oil depot and terminal.

Based on the 2023 measurement, the quality of processed produced water and effluent in all facilities have met the quality standards set by the Government. The effluent management adheres to sustainable environmental management guidelines and water management guidelines. PERTAMINA has also established a quality standard target for wastewater (oil content) in effluent. A routine monitoring is also conducted on the effluent. Based on the monitoring results, in 2023 all wastewater have met the prevailing quality standards.

The total volume of water discharged in 2023 reached 700,267.43 Megaliters. The total volume of effluent discharged to the sea amounted to 460,120.24 Megaliters, or 79.84% while 116,216.28 Megaliters, or 20.16%, was discharged to the sources of surface water. In addition, some was released to the ground in the form of injected water and distributed to third parties for further processing. As for wastewater discharged to the sea and surface water, certain monitoring and measurement parameters were applied, such as chemical oxygen demand (COD), sulfate, ammonia, phenol, total suspended solids (TSS), and drilling mud. This step was to minimize water bodies pollution. Monitoring and measurement results were reported to the authorities. [ENV-1.A9][ENV-2.A1, 2.A2, 2.A3, 2.A5]

Volume Pembuangan Air (Water Discharged) Berdasarkan Segmen Bisnis

Volume of Wastewater Discharge from WWTP Based on Business Segment

Segmen Bisnis Business Segment	Satuan Unit	2023	2022	2021*
Upstream		10,668.15	15,922.88	5,334.12
Refining & Petrochemical		417,518.89	111,972.09	115,413.71
Commercial & Trading		473.22	299.33	-
Power New Renewable Energy	Megaliter	8.49	7.72	-
Gas		271,598.69	371,846.82	163,428.60
Integrated Marine Logistics		10,668.15	-	5,334.12
Total		700,267.43	500,048.84	284,176.42

Volume Pembuangan Air (Water Discharged) Berdasarkan Tujuan Pembuangan

Volume of Wastewater Discharge from WWTP Based on Discharge Destination

Uraian Description	Satuan Unit	2023	2022*	2021*
Air Permukaan Surface Water		108,025.37	126,692.55	116,159.22
Air Tanah Groundwater	Megaliter	5,057.27	34,644.09	1.37
Air Laut Seawater		585,527.00	587,871.76	167,115.72
Distribusi Pihak Ketiga Third-Party Distribution		1,652.59	55,555.89	900.01

Volume Pembuangan Air (Water Discharged) Berdasarkan Kategori

Volume of Wastewater Discharge from WWTP Based on Categories

Uraian Description	Satuan Unit	2023	2022	2021*
Air Tawar (≤1.000 mg/L Total Padatan Terlarut) Freshwater (≤1,000 mg/L of Total Dissolved Solids)	Megaliter	114,735.22	216,880.43	117,060.71
Air Lainnya (>1.000 mg/L Total Padatan Terlarut) Other Water (>1,000 mg/L of Total Dissolved Solids)		585,527.00	283,168.41	167,115.72
Total		700,262.22	500,048.84	284,176.42

Volume Hidrokarbon Dilepas ke Badan Air (Metric Ton)

Volume of Hydrocarbon Discharged to Water Bodies (Metric Tons)

2023	2022*	2021*
608.26	257.47	247.62

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu penambahan jumlah pembuangan air dari *reservoir* (*produced water*) dan air laut di beberapa lokasi. [GRI 2-4]

*Restatement due to changes in the reporting's scope, i.e. additional amount of water use from reservoirs (produced water) and seawater in several locations.

Pengelolaan Air dan Efluen pada Lapangan Mature [ENV-2.A4, 2.A5][EM-EP-140a.2]

Tingkat penggunaan air dipengaruhi oleh tingkat kematangan lapangan. Sepanjang tahun 2023, penggunaan air pada lapangan *mature* (*mature field*) menurun 1,57% menjadi 12.768 Megaliter dari tahun 2022 sebesar 12.970 Megaliter. Air yang digunakan berasal dari sumber air permukaan dan air terproduksi yang kemudian diinjeksikan kembali ke sumur produksi. Sebagian dari air terproduksi diolah di IPAL dan kemudian dialirkan ke badan air.

Water and Effluent Management in Mature Fields [ENV-2.A4, 2.A5][EM-EP-140a.2]

The amount of water use relies on the fields' maturity level. In 2023, the use of water in mature fields dropped by 1.57% to 12,768 Megaliters from 12,970 Megaliters in 2022. The water used originated from surface water and produced water, which were then reinjected into production wells. Some of the produced water was processed at WWTP and distributed to water bodies.

Pengambilan dan Pemakaian Air pada Lapangan Mature Water Withdrawal and Use in Mature Fields

Lapangan Field	Sumber Air Terpakai Sources of Water Used	Volume Air Terpakai (Megaliter) Volume of Water Used (Megaliters)		
		2023	2022	2021
Rantau	Produksi air struktur Rantau Water production of Rantau structure	1,211	1,100	1,360
Jirak	Produksi air struktur Jirak ditambah produksi Struktur Sopa dan Musi Water production of Jirak structure plus Sopa and Musi structure	668	910	960
Belimbing	Produksi air struktur Belimbing Water production of Belimbing structure	1,163	1,370	1,180
Ramba	Produksi air struktur Ramba Water production of Ramba structure	1,063	1,370	480
North East Air Serdang	Produksi air struktur North East Air Serdang Water production of North East Air Serdang structure	1,404	1,490	1,620
Meruap	Produksi air struktur Meruap Water production of Meruap structure	284	420	460
Handil	Produksi air struktur Handil Water production of Handil structure	4,621	3,980	1,980
Tanjung	Produksi air struktur Tanjung Water production of Tanjung structure	2,352	2,330	2,360
Total Air Terinjeksi Total Injected Water		12,766	12,970	10,400

Pengelolaan Air Terproduksi Produced Water Management

Uraian Description	Satuan Unit	2023	2022*	2021*
Total Volume Air Terproduksi Total Volume of Produced Water		758,339.04	697,233.37	940,998.18
Volume Air Terproduksi Diinjeksikan Kembali Volume of Produced Water Reinjecting	Megaliter	566,288.64	525,158.01	385,824.02
Volume Air Terproduksi Dialirkan ke Badan Air Volume of Produced Water Distributed to Water Bodies		192,050.40	172,075.36	555,174.16

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, di mana terdapat penambahan beberapa lokasi yang melaporkan volume air terproduksi. [GRI 2-4]

*Restatement due to changes in the reporting's scope, i.e. there were additional locations reporting volumes of produced water.

Penggunaan Material, serta Pengelolaan Limbah, dan Efluen [GRI 306-1,

306-2][OG 11.5.1, 11.5.2, 11.5.3][ENV-7.C1]

Use of Materials, and Waste and Effluent Management



Sebagai entitas bisnis energi terintegrasi dari hulu hingga hilir, kegiatan operasional dan usaha yang dijalankan PERTAMINA menimbulkan berbagai bentuk maupun jenis limbah. Timbulan limbah yang dihasilkan, khususnya limbah B3, berpotensi mempengaruhi kesehatan dan kerusakan pada lingkungan apabila terjadinya kebocoran. Perseroan berupaya untuk mengoptimalkan penggunaan material dalam kegiatan yang dijalankan untuk mengurangi timbulan limbah, sehingga akan meminimalkan potensi cemaran lingkungan maupun dampak terhadap masyarakat di wilayah operasi. PERTAMINA telah memiliki standar HSSE, termasuk standar HSSE bagi kontraktor sehingga kontraktor yang bekerja harus memenuhi regulasi pengelolaan lingkungan secara keseluruhan, khususnya dalam pengelolaan limbah B3.

Penggunaan Material Ramah Lingkungan

[OJK F.5][GRI 301-1, 301-2, 301-3]

Perseroan berupaya untuk meningkatkan penggunaan material ramah lingkungan dalam kegiatan yang dijalankan. Pengungkapan informasi mengenai material ramah lingkungan untuk setiap entitas anak disampaikan dalam Laporan Keberlanjutan masing-masing. Laporan

As an integrated business entity from upstream to downstream, PERTAMINA's operations and businesses generate various types and forms of waste. The generation of waste caused, especially B3 waste, has the potential of affecting health and damaging the environment if there is any leakage. The Company makes efforts to optimize the use of materials in activities to reduce the waste generation, so that it will minimize the potential for environmental contamination and impacts on communities in the operating areas. PERTAMINA has HSSE standards, including those for contractors, so that the working contractors must meet overall environmental management regulations, mainly in B3 waste management.

Use of Eco-Friendly Materials [OJK F.5][GRI 301-1, 301-2, 301-3]

The Company aims to increase the use of eco-friendly materials in its activities. Information disclosure on the eco-friendly materials for each subsidiary is presented in each Sustainability Report. This report merely explains some examples, such as refined, bleached, and deodorized palm oil

ini hanya menyampaikan beberapa di antaranya mengenai *refined, bleached, and deodorized palm oil* (RBDPO) dari kelapa sawit sebagai bahan baku produksi bahan bakar nabati (BBN). Total kebutuhan RBDPO sebesar 219,5 kiloliter (KL)/tahun.

Material ramah lingkungan juga digunakan untuk pembangunan sejumlah gedung di PERTAMINA Group. Sampai dengan akhir tahun 2023, terdapat 13 gedung yang memiliki sertifikat *Green Building* dari Green Building Council Indonesia (GBCI). Selain pertimbangan material ramah lingkungan yang digunakan, sertifikasi *Green Building* juga menandakan bangunan telah menerapkan energi bersih dan minim emisi.

Pengelolaan dan Volume Timbulan Limbah

[OJK F.13, F.14][GRI 306-3, 306-4, 306-5][OG 11.5.4, 11.5.5, 11.5.6][ENV-7.C2, 7.C3][EM-RM-150a.1]

Timbulan limbah dari pemakaian material dalam kegiatan operasi dikelola dengan pendekatan kepatuhan pada regulasi yang berlaku, serta penerapan ISO 14001:2015 Sistem Manajemen Lingkungan dan SUPREME. Pengelolaan limbah dilakukan di masing-masing unit bisnis dan diawasi oleh Fungsi Health, Safety, Security and Environment (HSSE) untuk memastikan pengelolaan limbah berjalan dengan baik dan turut mendukung upaya reduksi emisi GRK.

Pengelolaan limbah dapat dilakukan sendiri oleh Perseroan maupun melibatkan pihak lain (pihak ketiga) sesuai persyaratan yang ditentukan, antara lain memiliki izin dari Kementerian Lingkungan Hidup dan Kehutanan (KLHK) serta memiliki fasilitas pengangkutan dan penyimpanan yang aman. Limbah padatan non-B3 dikelola dengan cara disimpan di tempat penampungan sementara (TPS). Dari TPS, timbulan limbah dimanfaatkan kembali oleh Perseroan melalui program *reuse, reduce, dan recycle* (3R) serta dapat juga dimanfaatkan pihak ketiga, termasuk masyarakat melalui kegiatan pemberdayaan. [ENV-7.A2]

Limbah padatan maupun cairan/efluen B3 dikelola dengan cara disimpan di TPS dan kemudian

(RBDPO) from oil palms as raw material for biofuel production. The total demand for RBDPO is 219.5 kiloliters (KL)/year.

The eco-friendly materials are also used to construct some buildings in PERTAMINA Group. As of the end of 2023, there have been 13 buildings that owned a Green Building certificate from the Green Building Council Indonesia (GBCI). Aside from considering the eco-friendly materials used, the certificate works as a mark that shows the building has implemented clean energy and minimum emissions.

Generated Waste Management and Volume

[OJK F.13, F.14][GRI 306-3, 306-4, 306-5][OG 11.5.4, 11.5.5, 11.5.6][ENV-7.C2, 7.C3][EM-RM-150a.1]

Waste generated from the materials used in the operations is handled by complying with prevalent regulations and implementing the ISO 14001:2015 Environmental Management System and SUPREME. Waste management is conducted in each business unit and supervised by the Health, Safety, Security, and Environment (HSSE) Function to ensure the waste management is well-implemented and can sustain the efforts of GHG emission reduction.

Waste management can be performed self-sufficiently by the Company or involving other parties (third parties) per the regulated requirements, such as acquiring a permit from the Ministry of Environment and Forest (KLHK) and owning a safe transportation and storage facility. Solid Non-Hazardous and Toxic Waste (Non-B3) is stored in a Temporary Landfill (TPS). From the TPS, the generated waste is reused by the Company through reuse, reduce, and recycle (3R) and can be reused by third parties, including communities through empowerment activities. [ENV-7.A2]

Solid and liquid/effluent B3 waste is stored in TPS which is then transported by a licensed third party

diangkut pihak ketiga berizin ke tempat pengolahan untuk proses insinerasi, penimbunan, maupun pemanfaatan kembali. [ENV-7.A2, 7.A4]

PERTAMINA telah melakukan pencatatan limbah yang dihasilkan, baik yang diserahkan ke pihak ketiga maupun yang dikelola sendiri sesuai dengan regulasi sistem pelaporan yang berlaku. Sistem pelaporan menggunakan aplikasi "Si Raja" dan sistem KLHK "Fastronic", sehingga pengelola dan pelapor dapat melakukan *update* terkait pengelolaan limbah dalam bentuk *manifest* yang selanjutnya akan diupload ke aplikasi "Si Raja".

to a processing facility for incineration, landfilling, and reuse. [ENV-7.A2, 7.A4]

PERTAMINA has recorded the generated waste, both that transferred to third parties and self-managed per the prevailing reporting system. The reporting system uses "Si Raja" application and KLHK system - "Fastronic" - so that the manager and informer can update the waste management in the form of a manifest that subsequently is uploaded to the "Si Raja" application.

Total Volume Timbunan Limbah Non-B3 dan Pengelolaannya Total Volume of Non-B3 Waste Generated and its Management

Uraian Description	Satuan Unit	2023	2022*	2021*
Volume timbunan limbah Waste generated volume		41,302.71	22,165.72	21,745.76
Volume limbah yang dapat dicegah dan direduksi Volume of preventable and reducible waste		910.30	184.87	164.52
Limbah digunakan kembali dan didaur ulang Waste reused and recycled	Ton	4,419.43	1,982.47	3,722.68
Limbah dikelola pihak ketiga (di dalam dan di luar lokasi) Waste generated by third parties (in and outside the location)		52,841.61	16,754.93	19,986.67

Total Volume Timbunan Limbah B3 dan Pengelolaannya Total Volume of B3 Waste Generated and its Management

Uraian Description	Satuan Unit	2023	2022*	2021
Volume timbunan limbah Waste generated volume		184,474.78	123,182.11	81,369.53*
Volume limbah yang dapat dicegah dan direduksi Volume of preventable and reducible waste		680.70	470.71	403.53
Limbah digunakan kembali dan didaur ulang Waste reused and recycled	Ton	4,802.45	5,079.19	1,682.28
Limbah dikelola pihak ketiga (di dalam dan di luar lokasi) Waste generated by third parties (in and outside the location)		152,605.08	117,432.91	76,727.08*

*Penyajian kembali informasi (*restatement*) karena adanya perubahan lingkup pelaporan, yaitu dengan melakukan *exclude non-operated asset* dan *non-leased asset* sesuai standar GHG Protocol. [GRI 2-4]

*Restatement due to changes in the reporting's scope, i.e. by excluding the non-operated asset and non-leased asset per the GHG Protocol standards.

Volume Pengurangan Limbah Volume of Waste Reduction

Jenis Limbah Waste Type	Satuan Unit	2023	2022	2021
B3	Ton	421.07	189.70	133.58
Non-B3		430.48	183.90	222.32

Selama tahun 2023, PERTAMINA juga mulai menerapkan ekonomi sirkuler dengan memanfaatkan limbah tertentu untuk digunakan sebagai bahan baku/bahan pembantu dalam kegiatan produksi, di antaranya: [ENV-7.A1]

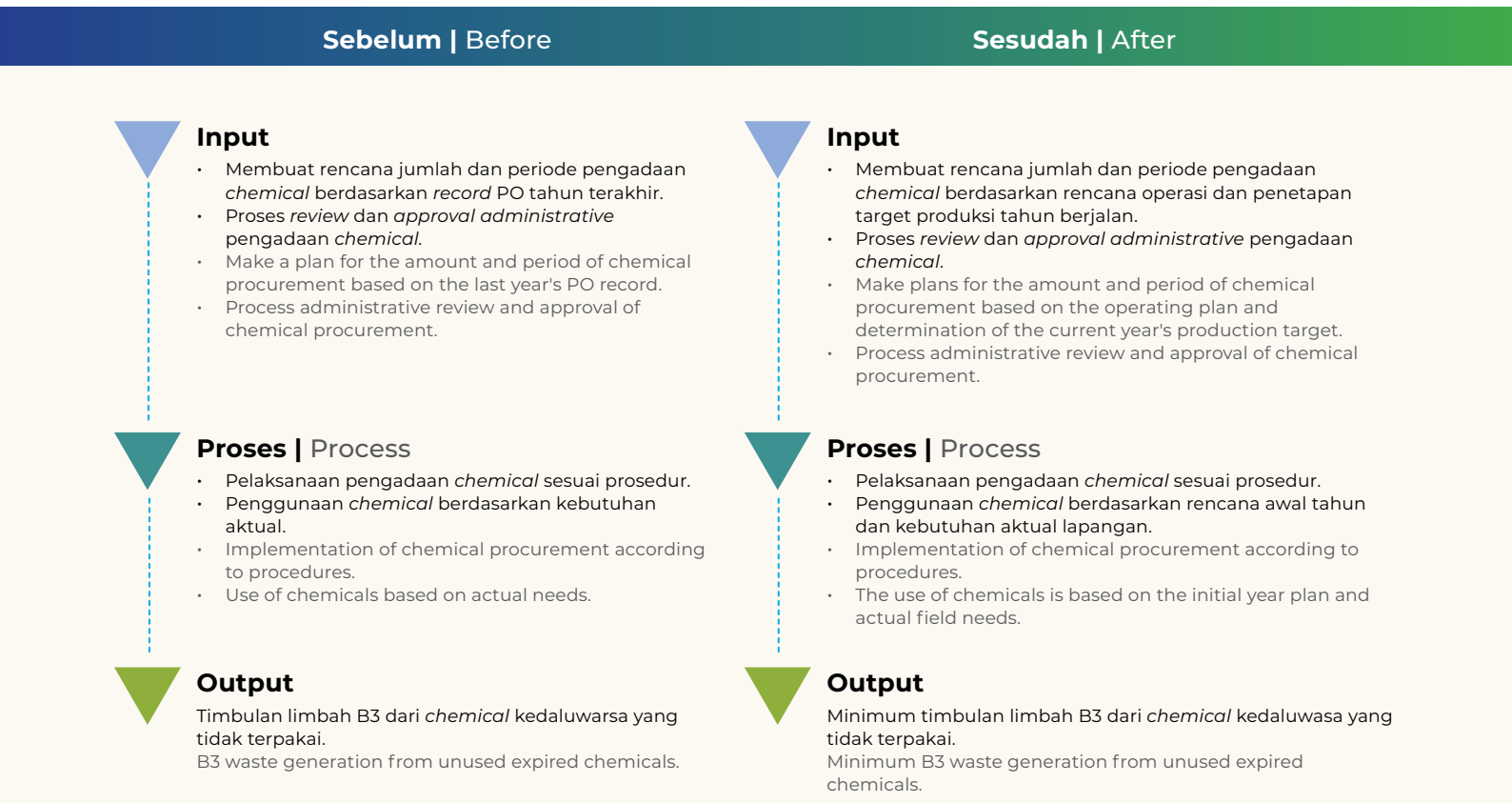
1. Tempe Tahan Aksi (Pemetaan Penyediaan Kebutuhan Chemical Sesuai Target Produksi) - RU VII Kasim

Tidak dilakukannya pengukuran pemesanan *chemical* operasional kegiatan laboratorium untuk proses pengujian produk di PT Kilang Pertamina Internasional RU VII Kasim, sehingga hal ini membuat pengadaan jumlah *chemical* tidak terencana dengan baik serta membuat beberapa *chemical* kadaluarsa sebelum digunakan. Dengan demikian, Perusahaan berinovasi untuk melakukan perbaikan kondisi lingkungan melalui penggunaan sistem pemesanan dalam jumlah kecil serta sesuai kebutuhan *chemical* berdasarkan target operasi yang ada, sehingga dapat mengurangi jumlah *chemical* yang kedaluwarsa. Melalui inovasi ini, Perusahaan berhasil mengurangi timbulan limbah B3 *chemical* bekas pada tahun 2023 sebesar 0,61 ton.

In 2023, PERTAMINA started to implement circular economy by utilizing certain waste used as raw material/supporting material in production activities, among others: [ENV-7.A1]

1. Tempe Tahan Aksi (Mapping Chemical Needs per Production Targets) - RU VII Kasim

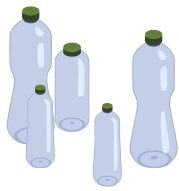
There is no measurement of the operational chemical orders for laboratory activities for the product testing process at PT Kilang Pertamina Internasional RU VII Kasim, causing the not well-planned procurement of chemicals and expiring chemicals even before use. Hence, the Company makes innovations to improve the environment condition by using a delivery system in a small portion and based on the chemicals needs per existing operational targets, reducing the expired chemicals. Through these innovations, the Company was able to reduce the generation of used B3 chemical waste in 2023 by 0.61 tons.



2. Plakat dari Hasil Solidifikasi Cacahan Plastik (PERISALTIK) - RU VI Balongan
PERISALTIK merupakan program pengurangan limbah botol plastik (limbah non-B3) yang dimanfaatkan untuk membuat plakat, sehingga tidak menjadi limbah yang terbuang.

2. Placards from Solidified Plastic Shreds (PERISALTIK) – RU VI Balongan
PERISALTIK is a plastic bottle waste reduction program (non-B3 waste) that is used to make placards, ensuring there is no wasted waste.

Sebelum
Before



Botol Plastik
Plastic Bottles



Pemilahan Sampah
Waste Sorting

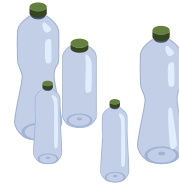


Pengangkutan Sampah ke TPS
Transporting Waste to TPS



Sampah dibuang ke TPS
Waste is Disposed of at TPS

Sesudah
After



Botol Plastik
Plastic Bottles



Pemilahan Sampah
Waste Sorting



**Pengelolaan oleh Wilayah Masyarakat
Pengelola Daur Ulang Sampah**
Management by Waste Recycling
Management Community Area (Wiralodra)



Proses Pencacahan Plastik dan Pressing Plastik
Process of Shredding and Pressing Plastic



Plakat
Placards

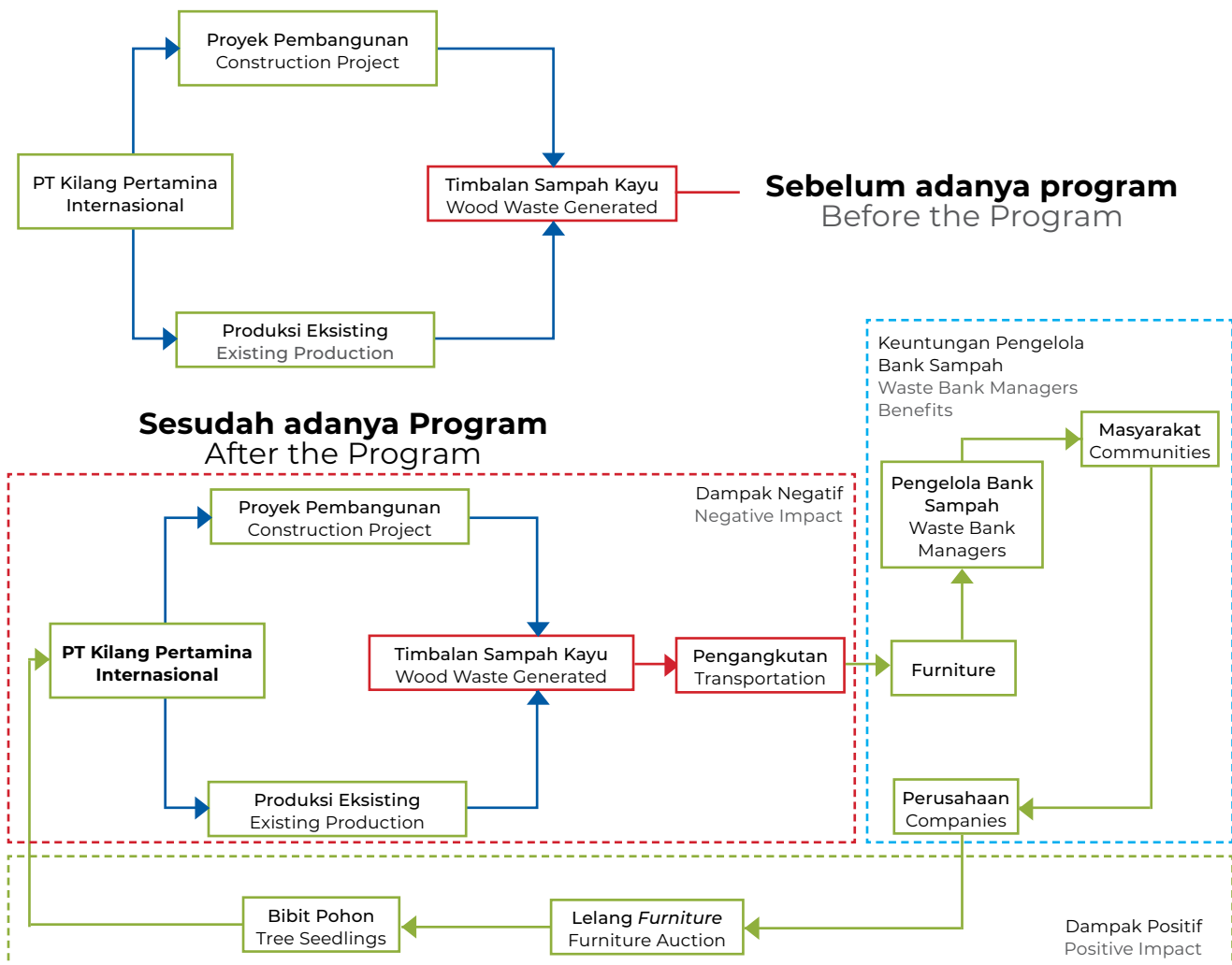
3. Bank Sampah Olah Sampah Kayu Sistem Lelang (BAKSO SAKU SILANG) - RU V Balikpapan

BAKSO SAKU SILANG merupakan program 3R pengelolaan limbah kayu (Non-B3) yang dihasilkan dari aktivitas operasional konstruksi PT KPI RU V Balikpapan. Pengolahan timbulan limbah kayu dilakukan dengan mengolah kembali sampah tersebut menjadi peralatan rumah tangga, yang selanjutnya peralatan rumah tangga tersebut dilelang dengan bibit pohon. Implementasi program BAKSO SAKU SILANG termasuk kriteria perubahan Sub-Sistem, yaitu produk *sharing* karena dapat memberikan keuntungan untuk masyarakat (bank sampah) dalam penjualan peralatan rumah tangga.

3. Wood Waste Processing Waste Bank by Auction System (BAKSO SAKU SILANG) – RU V Balikpapan

BAKSO SAKU SILANG is a 3R program of managing wood waste (Non-B3) resulted from construction operations in PT KPI RU V Balikpapan. The processing of wood waste generated recycles said waste into household appliances, which are then auctioned off with tree seedlings. The implementation of BAKSO SAKU SILANG program is categorized as Sub-system change, a sharing product that may benefit the community (waste bank) in selling household appliances.

Skema Program BAKSO SAKU SILANG
Scheme of BAKSO SAKU SILANG Program



Pada tahun 2023, PERTAMINA juga telah melakukan pemboran 20 sumur eksplorasi dan 799 sumur eksploitasi. Kegiatan pemboran disertai pengelolaan timbulan lumpur pemboran yang bukan termasuk timbulan limbah rutin. Total timbulan lumpur pemboran mencapai 1.339,5 ton. Pengelolaan lumpur tersebut dilakukan oleh pihak ketiga, salah satunya dengan dimanfaatkan sebagai substitusi bahan baku (*alternative raw material*). [ENV-7.A3]

In 2023, PERTAMINA drilled 20 exploration wells and 799 exploitation wells. The drilling activities were accompanied by drilling mud generation management, which was not a routine waste generation. The total drilling mud generation reached 1,339.5 tons. The mud management was led by a third-party by using alternative raw materials. [ENV-7.A3]

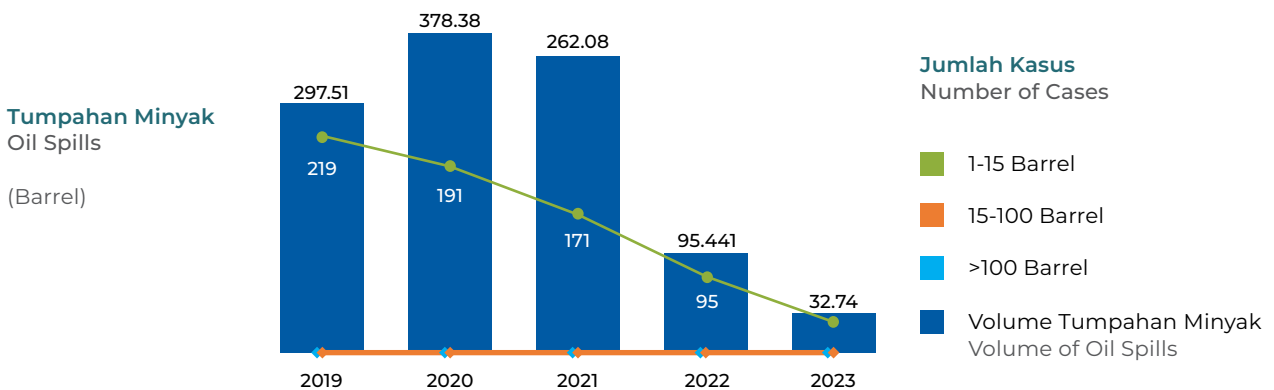
Tumpahan Minyak dan Penanganannya [OJK F.15][OG 11.81, 11.8.2][ENV-6.C1, 6.C2][EM-EP-160a.2]

Selama tahun 2023, terdapat 12 kasus tumpahan minyak dan hidrokarbon dengan total volume mencapai 32,74 barrel, di mana seluruhnya telah dapat ditanggulangi dan dilakukan mitigasi dampak negatif ke lingkungan. Jumlah tersebut turun dari kasus tumpahan minyak tahun sebelumnya. Selama tahun 2023, tidak ada tumpahan bahan kimia maupun material non-hidrokarbon dalam jumlah signifikan, termasuk yang terjadi dalam proses pengangkutan oleh pihak ketiga. Selain itu, tidak terjadinya tumpahan minyak skala besar atau major (lebih dari 15 barrel) di area operasi PERTAMINA maupun tumpahan di *sensitive area*. [ENV-6.A1, 6.A2, 6.A4, 6.A5, 6.A6, 6.A7, 6.A8] [ENV-6.C3]

Oil Spills and Their Management [OJK F.15][OG 11.81, 11.8.2][ENV-6.C1, 6.C2][EM-EP-160a.2]

Throughout 2023, there were 12 cases of oil and hydrocarbon spills, totaling a volume of 32.74 barrels, which were manageable and to which mitigation of negative impacts was carried out on the environment. The number of cases dropped compared to the oil spill cases in the previous year. In 2023, no significant amount of chemical or non-hydrocarbon material spills, including that occurred in the process of transporting by a third party. Moreover, there were no large-scale or major oil spills (more than 15 barrels) in PERTAMINA's operating areas, nor were there spills in sensitive areas. [ENV-6.A1, 6.A2, 6.A4, 6.A5, 6.A6, 6.A7, 6.A8][ENV-6.C3]

Jumlah Peristiwa Tumpahan Minyak
Number of Oil Spill Incidents



Tumpahan minyak dan hidrokarbon berdampak pencemaran pada lokasi yang terkena tumpahan, baik di daratan maupun perairan. Pencemaran yang terjadi akan berdampak terhadap habitat, ekosistem dan fauna serta flora di dalamnya, maupun terhadap kesehatan dan kehidupan sosial masyarakat. [ENV-6.A3]

Adapun beberapa peristiwa tumpahan minyak dan hidrokarbon yang terjadi pada tahun 2023 beserta langkah-langkah penanggulangannya antara lain: [ENV-6.C3]

1. Insiden Depot Plumpang

Pada Jumat, 3 Maret 2023 pukul 20.12 WIB, terjadi kebakaran *manifold* pipa penerimaan BBM di Fasilitas Penerimaan Terminal BBM. Kejadian ini disebabkan karena adanya kebocoran BBM yang diakibatkan oleh kendala teknis yang menyebabkan *overpressure*. Adapun tindak penanganannya yang dilakukan antara lain:

- Meningkatkan implementasi Proses *Safety & Asset Integrity Management*;
- Melakukan integrasi sistem instrumentasi jalur pipa penerimaan Balongan-Jakarta;
- Meningkatkan kompetensi aspek operasional dan HSSE, serta sistem proteksi dan tanggap darurat di area pipa penerimaan;
- Memastikan terpenuhinya kebutuhan *buffer zone* sesuai dengan standar dan *best practice* yang berlaku;
- Meningkatkan sosialisasi risiko operasional terminal kepada masyarakat sekitar dan menyediakan *public announcer*;
- Memberikan pelayanan terhadap masyarakat terdampak dalam bentuk bantuan berupa kebutuhan dasar serta bantuan tempat tinggal sementara (kontrakan).

2. Kilang RU II Dumai

Pada Sabtu, 1 April 2023 pukul 22.40 WIB, terjadi *flash* di perpipaannya fasilitas *Make Up Gas Compressor* (MUGC) yang menyebabkan 9 orang pekerja PERTAMINA luka ringan (kategori *First Aid*) akibat terkena serpihan kaca di tempat kerja (*shelter*). Kejadian ini disebabkan kebocoran pada pipa hidrogen yang menyebabkan terjadinya letupan di fasilitas MUGC. Adapun tindak penanganannya yang dilakukan antara lain:

Oil and hydrocarbon spills can pollute the affected locations, both in land and in the waters. The pollution will have impacts on habitats, ecosystems along with their fauna and flora as well as on the communities' healthy and social life. [ENV-6.A3]

Below are several oil and hydrocarbon spill incidents in 2023, including the mitigations: [ENV-6.C3]

1. Plumpang Depot Incident

On Friday, 3 March 2022 at 20.12 WIB, a manifold of fuel reception pipeline was on fire at the Fuel Reception Terminal Facility. This was due to a fuel leakage triggered by a technical constraint that led to overpressure. The following are the actions taken:

- Heightened the Process Safety & Asset Integrity Management;
- Integrated the instrumentation system of Balongan-Jakarta reception pipeline;
- Increased the competence of operational and HSSE aspects, and protection and emergency system in the reception pipeline;
- Ensured the fulfillment of buffer zone's needs in accordance with the prevalent standards and best practices;
- Amplified the socialization of terminal operational risks to the surrounding community and providing a public announcer;
- Providing services to the affected community in the form of basic aids and temporary residence (rented housings).

2. RU II Dumai Refinery

On Saturday, 1 April 2023 at 22.40 WIB, a flash occurred in the Make Up Gas Compressor (MUGC) pipeline facility, mildly injuring 9 PERTAMINA's employees (First Aid category) due to being exposed to glass fragments in the workplace (*shelter*). The cause was a leakage on a hydrogen pipeline that led to an explosion at the MUGC facility. Below are the mitigations:

- Melakukan perbaikan pengelolaan *Asset Integrity*;
- Meningkatkan implementasi dan melakukan perbaikan proses *Safety & Asset Integrity Management*;
- Memastikan implementasi *risk-based inspection* guna mencegah terjadinya korosi pada peralatan;
- Melakukan perbaikan atau penggantian nilai kerusakan fasilitas umum seperti sekolah, rumah ibadah, kantor pemerintahan, serta kerusakan rumah warga. RU II Dumai juga menyediakan tenaga kesehatan untuk memeriksa warga serta diberikan bantuan ke fasilitas kesehatan jika terdapat cedera tubuh.

3. Insiden Hulu Rokan

Pada hari Kamis, 8 Juni 2023, terjadi *Flashfire* saat *Commissioning Sump Pump* yang menyebabkan 2 personel rawat inap dan 1 personel rawat jalan. Insiden disebabkan adanya akumulasi hidrokarbon pada *Sump Pit* di lokasi kejadian yang menyebabkan *flash fire*. Adapun tindak penanganan yang dilakukan antara lain melalui peningkatan implementasi *Proses Safety & Asset Integrity Management* serta Penguatan *Permit to Work* dan *risk assessment* sebelum bekerja.

PERTAMINA menindaklanjuti peristiwa ini dengan menerapkan langkah-langkah penanggulangan sebagai berikut: [ENV-6.C3]

- Melakukan pemantauan dan pengukuran dampak yang ditimbulkan, termasuk terhadap komunitas lokal dan pemangku kepentingan lain;
- Pelibatan pemangku kepentingan untuk kegiatan pembersihan dan pemulihan, di antaranya Direktorat Jenderal Minyak dan Gas Bumi Kementerian ESDM, Direktorat Jenderal Perhubungan Laut Kementerian Perhubungan, Direktur Jenderal Pengendalian Pencemaran dan Kerusakan Lingkungan Kementerian LHK, TNI dan Polri, serta pemerintah daerah; dan
- Investigasi insiden untuk memastikan penyebab.

- Improved the *Asset Integrity* management;
- Enhanced the implementation of and heightened the *Safety & Asset Integrity Management*;
- Ensured the implementation of *risk-based inspection* to prevent corrosion;
- Repaired or replaced the damage value of public facilities, such as schools, houses of worship, government offices, and damage to residents' homes. The RU II Dumai also provided health workers to perform check-ups on residents and assistance to healthcare facilities if there were bodily injuries.

3. Hulu Rokan Incident

On Thursday, 8 June 2023, there was a flash fire during the *Commissioning Sump Pump*, causing 2 personnel hospitalized and 1 personnel to be an outpatient. The incident happened due to the accumulation of hydrocarbon in the *Sump Pit* at the location where the flash fire occurred. Because of this, the *Process Safety & Asset Integrity Management* was heightened as well as the *Permit to Work* and *risk assessment* prior to working.

Following the incidents, the Company carried out the steps of mitigation: [ENV-6.C3]

- Monitored and measured the impacts caused, including against local communities and other stakeholders;
- Involved stakeholders in the cleaning and restoration activities, such as the Directorate General of Oil and Gas of the Ministry of Environment and Mineral Resources (MoEMR), Director General of Environmental Pollution and Damage Control of Ministry of Environment and Forestry, TNI and Polri, and local governments; and
- Investigated incidents to confirm the causes.

Penanganan tumpahan minyak dan hidrokarbon dilaksanakan sesuai ketentuan yang berlaku di PERTAMINA, di antaranya:

- Pedoman Penanggulangan Tumpahan Minyak di Perairan No.A-013/I00400/2009-S0; dan
- Pedoman Penanggulangan Bencana Tingkat Korporat No.A-02/I00200/2011-S Revisi ke-2.

Perseroan secara rutin mempersiapkan peralatan penanggulangan, tim atau personel, serta melakukan latihan penanggulangan. Secara struktur organisasi, tanggung jawab penanganan tumpahan minyak dan hidrokarbon ditetapkan berjenjang dari level terendah di unit operasi/unit bisnis hingga level tertinggi di *Holding* yang bertanggung jawab kepada Direktur Utama Perseroan. [ENV-6.C4]

The management of oil and hydrocarbon spills was conducted in accordance with the prevailing stipulations in PERTAMINA:

- Guideline of Management of Oil Spills in the Waters No. A-013/I00400/2009-S0; and
- Guideline of Management of Corporate-Level Disasters No. A-02/I00200/2011-S 2nd Revision.

The Company routinely prepares mitigation equipments, teams or personnel, and performs mitigation trainings. Based on the organizational structure, the responsibility of managing the oil and hydrocarbon spills is tiered from the lowest level of the operating unit/business unit to the highest level in the Holding, which answers to the President Director of the Company. [ENV-6.C4]

Perlindungan dan Konservasi Keanekaragaman Hayati [OG 11.4.1][ENV-3.C1, 3.C2]

Protecting and Conserving Biodiversity

PERTAMINA berkomitmen melestarikan fauna dan flora endemik Indonesia melalui program perlindungan dan konservasi keanekaragaman hayati. Perseroan merancang 16 program perlindungan keanekaragaman hayati, di antaranya pembentukan kawasan konservasi sebagai habitat baru bagi spesies-spesies yang terganggu kegiatan operasi. Melalui program ini, kurang lebih sebanyak 700.000 ekor fauna dari 261 spesies telah dikonservasi. PERTAMINA juga telah melakukan konservasi terhadap flora sebanyak 628.065 tumbuhan dari 28 spesies, di antaranya jenis tumbuhan mangrove dan anggrek.

PERTAMINA is committed to conserving Indonesia's endemic fauna and flora through a biodiversity protection and conservation program. The Company has planned 16 biodiversity protection programs, among others the establishment of conservation areas as a new habitat for species disturbed by operational activities. Because of this program, approximately 700,000 fauna from 261 species have been conserved. In terms of flora, 628,065 plants from 28 species have also been conserved, among others mangroves and orchids.

Secara keseluruhan, PERTAMINA mengelola 96 kawasan konservasi melalui kerja sama dengan perguruan tinggi, lembaga independen, masyarakat, dan pemangku kepentingan lainnya, termasuk kontraktor/mitra kerja/pemasok/vendor. Salah satu bentuk perlindungan dan konservasi keanekaragaman hayati yang melibatkan pemangku kepentingan dan terlaksana dengan baik ada di wilayah operasi PT Pertamina Geothermal Energi Area Kamojang, Jawa Barat. Pengungkapan informasi tentang hal tersebut, dapat disimak melalui situs: <https://www.pge.pertamina.com/Media/Uploads/keberlanjutan/file/perlindungan-keanekaragaman-hayati.pdf>. [ENV-3.A3]

Dampak Kegiatan Operasi terhadap Keanekaragaman Hayati [OJK F.9][GRI 304-1, 304-2]

[OG 11.4.2, 11.4.3][ENV-3.C3][ENV-4.C1, 4.C2][EM-EP-160a.1]

Sebagian wilayah operasi PERTAMINA berada dan/atau berdekatan dengan kawasan dilindungi/kawasan bernilai keanekaragaman hayati tinggi, sehingga kegiatan yang dijalankan berdampak terhadap habitat, ekosistem, beserta keanekaragaman hayati yang ada. Perseroan memastikan bahwa kegiatan di wilayah operasional yang berada dan/atau berdekatan dengan wilayah dilindungi/kawasan bernilai keanekaragaman hayati tinggi telah dilengkapi dokumen perizinan dari KLHK, serta menerapkan hirarki mitigasi: *avoid, minimize, remediate, offsite*, dengan memperhatikan ketentuan yang mengatur kegiatan inventarisasi dan verifikasi kawasan dengan nilai keanekaragaman hayati tinggi dari KLHK.

In total, PERTAMINA runs 96 conservation areas by cooperating with universities, independent agencies, communities, and other stakeholders, including contractors/business partners/vendors. One form of well-managed biodiversity protection and conservation that involves stakeholders is found in the operating area of PT Pertamina Geothermal Energi, Kamojang, West Java. This information is disclosed on the website: <https://www.pge.pertamina.com/Media/Uploads/keberlanjutan/file/perlindungan-keanekaragaman-hayati.pdf>. [ENV-3.A3]

Impacts of Operations to Biodiversity [OJK F.9]

[GRI 304-1, 304-2][OG 11.4.2, 11.4.3][ENV-3.C3][ENV-4.C1, 4.C2][EM-EP-160a.1]

Some operating areas of PERTAMINA are located in or adjacent to conservation areas or those that shelter valuable biodiversity, so any activities may affect the existing habitats, ecosystems, and biodiversity. The Company ensures that any activities executed in operating areas located in or in close proximity to conservation areas or high-biodiversity areas have obtained licensing documents from KLHK and enforced a mitigation hierarchy: *avoid, minimize, remediate, and offsite* while adhering to KLHK's stipulations that regulate inventory activities and verification of high-biodiversity areas.

Luas Wilayah Konservasi yang Dikelola oleh PERTAMINA Berdasarkan Segmen Bisnis [GRI 304-3]

Extent of Conservation Area Managed by PERTAMINA Based on Business Segment

Segmen Bisnis Business Segment	Satuan Unit	2023	2022	2021
Upstream		18,568.48	13,511.37	13,511.37
Refining & Petrochemical		12,502.94	12,638.36	12,306.60*
Commercial and Trading		4,580.74	4,580.74	4,480.74
Power New Renewable Energy	Ha	26.65	24.63	19.73
Gas		58.80	55.71	5.85
Total		35,737.61	30,810.81	30,426.29

*Penyajian kembali informasi. [GRI 2-4]

*Restatement of information.

Sampai dengan akhir tahun 2023, PERTAMINA telah mengidentifikasi dan memverifikasi keberadaan wilayah operasi yang berada dan/atau berdekatan dengan kawasan dilindungi/kawasan bernilai keanekaragaman hayati tinggi. [ENV-4.A1] [EM-EP-160a.3]

As of the end of 2023, PERTAMINA has identified and verified the operating areas located in or adjacent to conservation areas or high-biodiversity areas. [ENV-4.A1][EM-EP-160a.3]

Wilayah Operasi Perseroan yang Berada/Berdekatkan Kawasan Dilindungi/Nilai Keanekaragaman Hayati Tinggi
The Company's Operating Areas Located in/Adjacent to Conservation Areas/High-Biodiversity Areas

Wilayah Area	Uraian Description
Segmen Upstream Upstream Segment	
Blok ONWJ ONWJ Block	Seluas 324 km ² dari WK di perairan Kabupaten Kepulauan Seribu berada di kawasan Taman Nasional Kepulauan Seribu. A 324 km ² area of WK in the waters of the Thousand Islands Regency located in the Thousand Islands National Park.
Jambi Merang	Wilayah Kerja PHE Jambi Merang beririsan dengan kawasan Taman Nasional Sembilang, namun hingga saat ini, PHE Jambi Merang tidak melakukan aktivitas di dalam area Taman Nasional Sembilang. The Jambi Merang PHE Working Area overlaps with the Sembilang National Park, but to date, PHE Jambi Merang has not performed any activities within the Sembilang National Park.
Blok OSES OSES Block	Wilayah kerja terluar PHE OSES di perairan Laut Jawa, berbatasan dengan Taman Nasional Kepulauan Seribu di Tenggara dan Taman Nasional Way Kambas di Barat. The outer working area of PHE OSES in the waters of the Java Sea, bordering the Thousand Islands National Park in the southeast and the Way Kambas National Park in the west.
Donggi Matindok	Wilayah Kerja PEP Field Donggi Matindok berbatasan dengan Taman Keanekaragaman Hayati Kokolomboi, Banggai Kepulauan, Sulawesi Tengah. PEP Field Donggi Matindok Working Area borders with the Kokolomboi Biodiversity Park, Banggai Islands, Central Sulawesi.
Sanga-sanga	Wilayah Kerja PEP Field Sangasanga area Samboja berbatasan dengan Taman Nasional Bukit Soeharto. PEP Field Sangasanga Working Area of Samboja borders with the Bukit Soeharto National Park.
Sangata	Wilayah Kerja PEP Field Sangatta beririsan dengan kawasan Taman Nasional Kutai. PEP Field Sangatta Working Area overlaps with the Kutai National Park.
Rokan	Wilayah kerja PHR beririsan dengan Taman Hutan Raya Sultan Syarif Hasyim pada Wilayah Operasi Minas Siak dan beririsan dengan Suaka Margasatwa Balairaja pada wilayah operasi Bekasap Rokan. PHR Working Area overlaps with the Sultan Syarif Hasyim Grand Forest Park in Minas Siak Operating Area, and it overlaps with the Balairaja Wildlife Sanctuary in the Bekasap Rokan operating area.
Segmen Power New and Renewable Energy Power New and Renewable Energy Segment	
Kamojang, Lumut Balai, Karaha, Hululais, Bukit Daun, Ulubelu	Wilayah kerja PGE area Kamojang, Lumut Balai, Karaha, Hululais, Bukit Daun, dan Ulubelu berada di kawasan hutan lindung. PGE Working Area of Kamojang, Lumut Balai, Hululais, Bukit Daun, and Ulubelu areas are situated in a protected forest area.

Sampai dengan akhir tahun 2023, PERTAMINA telah mempersiapkan beberapa proyek pengembangan. Berdasarkan studi dan analisis yang dilakukan, tidak ada proyek pengembangan yang berlokasi di dalam dan/atau berdekatan dengan kawasan dilindungi/kawasan bernilai keanekaragaman hayati tinggi. [ENV-4.A2]

As of the end of 2023, PERTAMINA has prepared several development projects. According to the studies and analyses conducted, no development projects take place in or adjacent to conservation areas or high-biodiversity areas. [ENV-4.A2]

Perlindungan terhadap Warisan Dunia [GRI 403-3, 403-6, 403-8]

PERTAMINA juga berupaya untuk mengelola dampak operasi terhadap kawasan lain yang memiliki status dilindungi berdasarkan regulasi internasional. Kawasan tersebut di antaranya Situs Warisan Dunia UNESCO, baik situs warisan alam maupun situs warisan budaya. Selain itu, area operasi PERTAMINA juga tidak ada yang berdekatan/bersinggungan dengan wilayah UNESCO *World Heritage Natural Sites*.

Protecting World Heritage [GRI 403-3, 403-6, 403-8]

PERTAMINA oversees its operational impacts on other areas with protected status based on international regulations. Among these areas is the UNESCO World Heritage Sites, both natural and cultural heritage sites. Aside from this, the Company's other operating areas are not in close proximity to the UNESCO World Heritage Natural Sites.

Jumlah Lokasi yang Berada di Dalam atau Berdekatan dengan Kawasan Lindung dan/atau Kawasan Keanekaragaman Hayati Utama

Number of Locations Within or Adjacent to the Protected Areas and/or Key Biodiversity Areas

Keterangan	Tumpang Tindih dengan Lokasi Operasional Overlapping with Operational Sites	Berdekatan dengan Lokasi Operasional Adjacent to Operational Sites (<1 km)
UNESCO World Heritage Natural Sites	0	0
Natura 2000	0	0
Area Konservasi Conservation Area	8	3

Usaha Konservasi Keanekaragaman Hayati

[OJK F.10][GRI 304-3, 304-4][OG 11.4.4, 11.4.5][ENV-3.C2][ENV-4.A1]

Perlindungan keanekaragaman hayati dijalankan PERTAMINA sebelum kegiatan operasi dijalankan. Selain itu, pengelolaan keanekaragaman hayati juga mengacu pada standar International Union for Conservation of Nature (IUCN) dan IPIECA untuk mencapai *net positive impact*, serta melakukan MoU terkait kesepakatan luasan wilayah dengan pihak ketiga sesuai dengan ketentuan dari KLHK.

Endeavors in Biodiversity Conservation [OJK

F.10][GRI 304-3, 304-4][OG 11.4.4, 11.4.5][ENV-3.C2][ENV-4.A1]

In PERTAMINA, protecting biodiversity takes place before starting any operations. Biodiversity management refers to the standards in the International Union for Conservation of Nature (IUCN) and IPIECA to achieve net positive impact and establish MoU concerning the agreement of land areas with third parties in accordance with KLHK's stipulations.

PERTAMINA melakukan identifikasi spesies endemik dan/atau spesies dilindungi, diikuti dengan pemindahan ke kawasan konservasi yang sudah disiapkan ataupun kawasan lain yang tidak terdampak kegiatan operasi. Seluruh tahapan kegiatan dijalankan dengan melibatkan pihak-pihak berwenang, termasuk Balai Konservasi dan Sumber Daya Alam (BKSDA) maupun Dinas Lingkungan Hidup setempat yang disertai pelaporan berkala. PERTAMINA juga melakukan kerjasamadengan pihak ketiga untuk menjalankan restorasi lahan sesuai dengan situasi dan kondisi lahan tersebut. Restorasi diprioritaskan untuk flora yang akan menjadi sumber pakan fauna yang akan dipindahkan ke area lahan restorasi.

Identifikasi spesies dilindungi dilakukan mengacu pada Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.106/MENLHK/SETJEN/KUM.1/12/2018 tentang Jenis Tumbuhan dan Satwa Dilindungi serta Daftar Merah (*Red List*) IUCN. Metode yang digunakan adalah sesuai dampak yang dihasilkan dan akan dilihat berdasarkan luasan tertentu untuk luasan lahan restorasi.

PERTAMINA identifies endemic and/or protected species, followed with transferring them to conservation areas that have been prepared, or other areas with zero operational impact. All stages of activities involve the authorities, including the Natural Resources Conservation Agency (BKSDA) and local Environment Service Offices, with regular reporting. There are collaborations with third parties to restore lands based on each situation and condition. Restoration is prioritized for flora whose purpose is to be a source of food for fauna that will be moved to a restoration areas.

Protected species identification refers to the Regulation of Minister of Environment and Forestry Number P.106/MENLHK/SETJEN/KUM.1/12/2018 on the Types of Protected Plants and Animals and the IUCN Red List. The method applied is in line with the impacts generated and it will be reviewed based on certain land areas for the restoration land areas.

Jumlah Spesies Dilindungi sesuai Status Berdasarkan IUCN Red List

Number of Protected Species by Status Based on the IUCN Red List

Status	Fauna			Flora		
	2023	2022	2021	2023	2022	2021
Kritis atau sangat terancam Critically Endangered (CR)	6	6	8	8	8	2
Terancam Endangered (EN)	17	17	10	5	5	0
Rentan Vulnerable (VU)	20	20	8	27	27	8
Hampir Terancam Near Threatened (NT)	9	9	3	12	12	2
Risiko Rendah Least Concern (LC)	84	84	20	132	132	22

Sampai dengan akhir tahun 2023, terdapat beberapa kegiatan konservasi keanekaragaman hayati di wilayah operasi, di antaranya rehabilitasi daerah aliran sungai (DAS):

By the end of 2023, there have been several biodiversity conservation activities in the operating areas, such as rehabilitating watershed (DAS):

- PT Pertamina Hulu Mahakam (PHM) melakukan rehabilitasi DAS di Hutan Produksi Kendilo seluas 669 hektar di Kabupaten Paser, Provinsi Kalimantan Timur. PHM melakukan rehabilitasi alam dan pelestarian lingkungan melalui program rehabilitasi DAS mencapai total 2.189 Ha, lebih luas dari kewajiban Izin Pinjam Pakai Kawasan Hutan (IPPKH) yakni seluas 1.986,40 Ha.
 - PT Pertamina Hulu Rokan (PHR) merealisasikan program penanaman pohon dalam rangka pemenuhan kewajiban Izin IPPKH dan untuk rehabilitasi DAS di Blok Hutan Produksi Terbatas Pedamaran, Wilayah V Lempuing – Mesuji, Kabupaten Ogan Komering Ilir (OKI) dengan luas 250 Ha. Program penanaman pohon dalam Rehabilitasi DAS ini akan berlangsung selama tiga tahun sejak awal tahun 2023 hingga 2025 dengan target penanaman pohon sebanyak 210.000 batang.
- PT Pertamina Hulu Mahakam (PHM) has rehabilitated DAS in Kendilo Production Forest of 669 hectares in Paser Regency, East Kalimantan Province. PHM has performed nature rehabilitation and environmental conservation through a DAS conservation program, covering an area of 2,189 Ha, much wider than the Leasehold of Forest Area License (IPPKH) of 1,986.40 Ha.
 - PT Pertamina Hulu Rokan (PHR) has realized a tree planting program to fulfill the obligations stated in the IPPKH license and rehabilitate DAS in the Pedamaran Limited Production Forest Block, Lempuing V Area – Mesuji, Ogan Komering Ilir (OKI) Regency of 250 Ha. The tree planting program will last for three years from 2023 to 2025 with 210,000 trees targeted to be planted.

Selain itu PERTAMINA juga melakukan beberapa kegiatan konservasi di perairan untuk mendukung pelestarian biota laut, di antaranya:

- PERTAMINA melalui Pertamina Foundation melakukan kerja sama dengan Balai Besar Taman Nasional Teluk Cenderawasih (BBTNTC) Kementerian Lingkungan Hidup dan Kehutanan (KLHK), untuk mengelola *Whale Shark Center* (WSC) dalam upaya penyelamatan hiu paus. Taman Nasional Teluk Cenderawasih secara konsisten telah memantau populasi hiu paus sejak tahun 2011. Sampai dengan bulan Agustus 2023, telah teridentifikasi 188 individu hiu paus dengan rincian 165 ekor jantan, 6 ekor betina, serta 17 ekor yang belum teridentifikasi jenis kelaminnya.
 - PHE OSES dan Balai Taman Nasional Kepulauan Seribu (BTNKpS) melakukan aksi konservasi berupa transplantasi 30 fragmen karang dan pelepasan 200 ekor tukik. Kerja sama tersebut bertujuan untuk meningkatkan kepedulian pelestarian sumber daya alam dan ekosistem di TN Kepulauan Seribu untuk mendukung kesejahteraan masyarakat sekitar. Salah satu
- Several conservation activities were conducted in the waters to help conserve marine biota:
 - PERTAMINA through Pertamina Foundation cooperates with Teluk Cenderawasih National Park (BBTNTC) and the Ministry of Environment and Forestry (KLHK) to save whale sharks by managing the Whale Shark Center (WSC). The Teluk Cenderawasih National Park has consistently monitored the animal's population since 2011. As of August 2023, 188 whale sharks have been identified with 165 males, 6 females, and 17 unidentified sexes.
 - PHE OSES and the Thousand Islands National Park (BTNKpS) have transplanted 30 coral fragments and released 200 turtles. This cooperation aims to increase the awareness of natural resources and ecosystem conservation in the islands to support the welfare of the surrounding community. One example of building the community's capacity is the

bentuk kegiatan pengembangan kapasitas masyarakat adalah pengelolaan rumah penyus dengan mengikutsertakan Karang Taruna Pulau Sabira dengan keberhasilan menetas lebih dari 1.200 tukik penyus sisik yang berstatus dilindungi.

Pembongkaran (*Decommissioning*) Anjungan

[ENV-8.C1, 8.C2]

Pembongkaran anjungan migas yang tidak beroperasi (*decommissioning*) dilakukan sesuai peraturan pemerintah. Pada akhir tahun 2022, PT Pertamina Hulu Kalimantan Timur (PHKT) menyelesaikan kegiatan *decommissioning* anjungan di Lapangan Attaka, Daerah Operasi Bagian Utara (DOBU) melalui *Project Rig to Reef* yang merupakan proyek percontohan pertama di Indonesia. [ENV-8.A1, 8.A2]

Penerapan *Project Rig to Reef* mengurangi 10%-20% kebutuhan biaya dalam proses *decommissioning* anjungan, karena meniadakan penanganan di daratan. Bagian-bagian dari anjungan yang dibongkar dijadikan terumbu karang buatan untuk mendukung konservasi terumbu karang dan ekosistem laut sehingga dapat meningkatkan populasi ikan. Kegiatan ini bertujuan untuk menciptakan efek berantai pertumbuhan ekonomi berupa peningkatan tangkapan nelayan dan ekonomi wisata penyelaman. [ENV-8.A3, 8.A4]

management of turtles' habitat by involving Karang Taruna of Sabira Island with the success of hatching over 1,200 hatchlings of hawksbill turtle, a species with protected status.

Decommissioning Platforms [ENV-8.C1, 8.C2]

Decommissioning non-operating oil and gas platforms is performed per the Government's regulations. By the end of 2022, PT Pertamina Hulu Kalimantan Timur (PHKT) has completed decommissioning the platform in Attaka Field, Northern Operational Area (DOBU) through a Rig to Reef Project, the first pilot project in Indonesia.

[ENV-8.A1, 8.A2]

The implementation of the Rig to Reef Project cut down 10% - 20% of the cost upon decommissioning platforms as it removed onshore handling. Parts of the decommissioned platforms were transformed into artificial coral reefs to conserve coral reefs and marine ecosystems, which can increase the fish population. This activity aims to create a ripple effect in economic growth, such as an increase in fishermen's catch and the diving tourism economy.

[ENV-8.A3, 8.A4]



Informasi Lain Bukan Topik Material

Other Information on Non-Material Topic

Biaya Lingkungan Hidup [OJK F.4]

Environmental Cost

Biaya lingkungan hidup yang dikeluarkan Perseroan mencakup biaya pada kegiatan pencegahan dan penanganan dampak lingkungan hidup, termasuk biaya reduksi emisi. Total biaya lingkungan hidup tahun 2023 mencapai Rp1.264.950.784.238.

The environmental cost incurred by the Company includes costs for activities to prevent and manage environmental impacts, such as emission reduction cost. Total environmental cost in 2023 reached Rp1,264,950,784,238.

Biaya Lingkungan Hidup Berdasarkan Segmen Bisnis | Environmental Cost Based on Business Segment

Segmen Bisnis Business Segment	Satuan Unit	2023	2022*	2021*
Upstream		903,796	1,078,747	888,288
Refining & Petrochemical		192,767	259,525	209,557
Commercial & Trading		108,085	78,924	71,756
Power New Renewable Energy	Rp Juta	7,846,373	6,102	5,760
Gas	Million Rp	44,202,689	25,532	50,242
Integrated Marine Logistics		8,252,982	1,663	188
Holding		1,264,950	1,450,496	1,225,793

*Penyajian kembali informasi (*restatement*) karena adanya perubahan pedoman perhitungan yang sebelumnya mengacu pada PROPER KLHK menjadi GRI dan CDP, yang memasukkan kegiatan mitigasi dan adaptasi untuk merespons perubahan iklim ke dalam perhitungan biaya lingkungan hidup. [GRI 2-4]
*Restatement due to changes in the previous calculation guideline from previously PROPER KLHK and now to GRI and CDP, which include mitigation and adaptation activities to respond to climate change into the calculation of environmental costs.

Pengaduan terkait Lingkungan Hidup [OJK F.16]

Complaints Concerning Environment

Selama tahun 2023, Perseroan melalui PERTAMINA Contact Center (PCC) 135 menerima 1.765 pengaduan/keluhan terkait pengelolaan lingkungan. Jumlah tersebut mencapai 10,98% dari total pengaduan yang disampaikan melalui PCC 135. Seluruh pengaduan/keluhan yang disampaikan telah ditindaklanjuti Perseroan maupun entitas anak. Adapun peningkatan jumlah keluhan yang signifikan disebabkan oleh bertambahnya jumlah keluhan kebocoran pipa instalasi. Adapun peningkatan kebocoran pipa instalasi disebabkan karena adanya integrasi data dengan *call center* PGN.

In 2023, the Company through PERTAMINA Contact Center (PCC) 135 received 1,765 complaints on environmental management. This number reached 10.98% of the total complaints reported through PCC 135. All of these complaints have been followed up by the Company and its subsidiaries. The significant increase in complaints was caused by the rising complaints related to the leakage in installation pipelines, which was triggered by an integration data with PGN call center.

Jumlah Keluhan/Pengaduan terkait Pengelolaan Lingkungan Number of Complaints on Environmental Management

Jenis Pengaduan Types of Complain	Jumlah Keluhan yang Diterima Number of Complaints Received			Persentase Keluhan terselesaikan Percentage of Complaints Resolved		
	2023	2022	2021	2023	2022	2021
Kebocoran pipa instalasi Installation pipe leakage	1,716	133	-			
Dugaan kebocoran pada jaringan Alleged leakage on the network	45	16	14	100%	100%	100%
Keluhan terkait pipa BBM Complaints related to fuel pipes	4	2	-			

Asesmen Lingkungan untuk Pemasok [GRI 308-1, 308-2] Environmental Assessment for Suppliers

PERTAMINA menerapkan Kebijakan *Green Procurement* kepada kontraktor, mitra, dan pemasok untuk menjaga lingkungan, melakukan pengadaan yang bertanggung jawab, serta menggunakan sistem manajemen yang meminimalkan dampak operasional terhadap lingkungan. Perseroan memastikan setiap kontraktor, mitra, dan pemasok telah menerapkan proses produksi yang berorientasi pada tujuan mengurangi emisi GRK maupun non-GRK, memanfaatkan sumber daya alam yang berorientasi pada daur ulang, melestarikan sumber daya air, mengurangi dampak zat kimia terhadap kesehatan manusia dan lingkungan, mempertimbangkan dan melestarikan keanekaragaman hayati, menyediakan produk dan layanan yang menciptakan nilai lingkungan, serta kepatuhan terhadap perundang-undangan. Selain itu tidak ada kontraktor, mitra, dan pemasok yang dilaporkan karena kegiatan operasional yang dijalankan menimbulkan dampak negatif terhadap lingkungan.

PERTAMINA applies the Green Procurement Policy to contractors, business partners, and suppliers to protect environment, perform responsible procurement, and use a management system that minimizes operational impacts on the environment. The Company ensures that each contractor, partner, and supplier has implemented a production process that orients towards the goal of reducing GHG and non-GHG emissions, harnessing natural resources that focused on recycling, conserving water sources, lessening the impacts of chemicals on human health and environment, considering and preserving biodiversity, providing products and services that create environmental value, and complying with regulations. There are no contractors, partners, and suppliers reported because their operations had a negative impact on the environment.

04

Kinerja Pengelolaan Sosial
Social Management Performance

Bersama Membangun Energi Berkelanjutan

 [CDSB REQ-04]

Together Building Sustainable Energy

Kami berkomitmen menerapkan kebijakan Respectful Workplace Policy dan Human Right Policy guna menciptakan lingkungan kerja yang sehat dan mendukung keberagaman. Di 2023, pekerja perempuan Grup PERTAMINA mencapai 19,4% dari total pekerja. Sementara itu, pekerja disabilitas tercatat ada 57 orang, naik 22% dari tahun lalu

We are committed to implementing the Respectful Workplace Policy and Human Rights Policy to create a healthy work environment and support diversity. In 2023, PERTAMINA Group female workers will reach 19.4% of the total workers. Meanwhile, there were 57 workers with disabilities, up 22% from last year





Lingkungan Kerja Layak dan Aman dan Keselamatan Proses [OJK F.21]

Decent and Safe Working Environment and Process Safety

Sebagai badan usaha milik negara (BUMN) terbesar di sektor energi dengan risiko tinggi dalam kegiatan operasionalnya, PERTAMINA berkomitmen kuat menerapkan aspek K3 dan keselamatan proses di seluruh lini bisnisnya. Sistem Manajemen HSSE (SUPREME) PERTAMINA didasarkan pada 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. Selain itu, Manajemen Keselamatan Proses juga menjadi dasar dari Sistem Manajemen HSSE ini.

As the largest state-owned enterprise (SOE) in the energy sector with high risks operations, PERTAMINA is strongly committed to implementing OHS and process safety aspects throughout its business lines. PERTAMINA HSSE (SUPREME) Management System based on statutory regulations applies like SMK3, SMP Perkap 24/2007, and KLHK proper and management system standards international such as ISO 9001, ISO 14001, ISO 26000, ISO 27001, ISO 28000, ISO 31000, ISO 39001, ISO 45001, ISO 50001, and other standards. Therefore, Process Safety Management also becomes the basis of this HSSE Management System.

Penerapan Sistem Manajemen K3 dan Keselamatan Proses [GRI 403-1, 403-8]

Implementation of OHS and Process Safety Management System

PERTAMINA memastikan aspek K3 diterapkan dengan baik sebagai faktor penting kelangsungan bisnis, sekaligus mendukung pencapaian Tujuan Pembangunan Berkelanjutan (TPB/SDGs). Perseroan berkomitmen meningkatkan kinerja K3 dengan target nihil insiden. Untuk mendukung komitmen tersebut, PERTAMINA menghadirkan sistem manajemen yang mengintegrasikan praktik-praktik terbaik kesehatan, keselamatan, keamanan dan perlindungan lingkungan (HSSE), yakni *Sustainability Pertamina Expectations For HSSE Management Excellence* (SUPREME). Penerapan aspek HSSE berlaku untuk seluruh pegawai PERTAMINA, dan semua pihak yang terlibat dalam kegiatan operasional dan bisnis Perseroan. [SHS-1.C3. SHS-7.A5][EM-EP-320a.2]

PERTAMINA ensures that OHS aspects are well-implemented as they are an important factor for business continuity and support the achievement of Sustainable Development Goals (SDGs). The Company is committed to improving OHS performance with zero incident target. To support this commitment, PERTAMINA presents a management system that integrates health, safety, security and environmental protection (HSSE) best practices, namely Sustainability Pertamina Expectations For HSSE Management Excellence (SUPREME). The implementation of HSSE aspects applies to all PERTAMINA employees, and all parties involved in the operations and businesses. [SHS-1.C3. SHS-7.A5][EM-EP-320a.2]

SUPREME didasarkan pada pemenuhan peraturan perundang-undangan seperti Sistem Manajemen (SMK3), Sistem Manajemen Pengamanan sesuai Peraturan Kapolri No.24/2007, dan PROPER

SUPREME is based on the fulfillment of laws and regulations such as Management System (SMK3), Security Management System per the National Police Regulation No.24/2007, and PROPER KLHK.

KLHK. Standar lain adalah sistem manajemen internasional (ISO) yang dievaluasi melalui mekanisme audit dan sertifikasi oleh lembaga independen. Secara berkala Perseroan melakukan audit atas penerapan SUPREME, mencakup setiap entitas anak dan unit operasi/unit bisnisnya. Berdasarkan audit yang dilakukan tahun 2023 diperoleh hasil seluruh unit bisnis PERTAMINA telah mengelola risiko HSSE secara efektif. [SHS-3.A4]

Perseroan juga memiliki *Corporate Life Saving Rules* (CLSR) PERTAMINA, yang memuat 11 elemen untuk mendukung keselamatan dan kesehatan jiwa pekerja. Elemen-elemen tersebut adalah *Tools & Equipment, Safe Zone Position, Permit to Work, Isolation, Confined Space, Lifting Operation, Fit to Work, Working at Height, Personal Floatation Device, System Override, dan Asset Integrity*. [SHS-3.A3][EM-EP-320a.2]

Strategi Implementasi HSSE [SHS-7.A4][EM-EP-320a.2][EM-MD-540a.4][EM-RM-320a.2][EM-SV-320a.2].

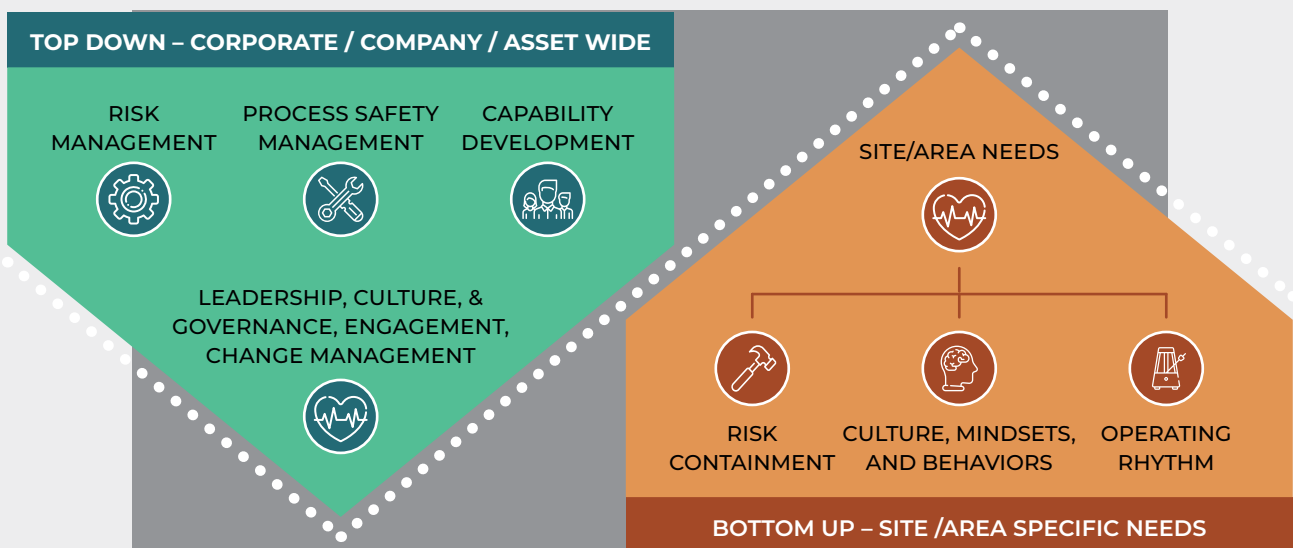
Dalam rangka penguatan aspek HSSE, dipilih pendekatan yang mengkombinasikan antara *top-down* dan *bottom-up* yang melibatkan seluruh personil, mulai dari Top Manajemen, Middle Management, Frontliner, maupun kontraktor. Pendekatan *top-down* dan *bottom-up* yang terstruktur efektif untuk mengurangi risiko dan meningkatkan kinerja HSSE secara berkelanjutan.

Another standard is the international management system (ISO) which is evaluated through an audit and certification mechanism by an independent institution. The Company periodically audits the implementation of SUPREME, including subsidiaries and their operating units/business units. The conducted audit in 2023 states that all PERTAMINA business units have managed HSSE risks effectively. [SHS-3.A4]

The Company also has PERTAMINA Corporate Life Saving Rules (CLSR), containing 11 elements to support employees' safety and health. These elements are *Tools & Equipment, Safe Zone Position, Permit to Work, Isolation, Confined Space, Lifting Operation, Fit to Work, Working at Height, Personal Floatation Device, System Override, and Asset Integrity*. [SHS-3.A3][EM-EP-320a.2]

HSSE Implementation Strategy [SHS-7.A4][EM-EP-320a.2][EM-MD-540a.4][EM-RM-320a.2][EM-SV-320a.2].

To strengthen the HSSE aspect, an approach is chosen that combines top-down and bottom-up, involving all personnel, starting from the Top Management, Middle Management, Frontliner, to Contractor. The effectively structured top-down and bottom-up approach is in place to reduce the risks and increase the HSSE performance sustainably.



Inisiatif Peningkatan Kinerja HSSE [SHS-1.A3]


Dalam rangka meningkatkan kinerja keselamatan, Fungsi HSSE menjalankan serangkaian inisiatif yang disusun untuk mengatasi permasalahan aspek *people*, *process*, dan *plant* yang telah diidentifikasi. Program ini diimplementasikan secara berjenjang mulai dari Holding, Subholding, sampai dengan anak perusahaan. Selain itu, dilakukan *surveillance* guna memastikan program yang telah dicanangkan telah diimplementasikan di unit operasi.

HSSE Performance Improvement Initiatives

[SHS-1.A3]

To improve safety performance, the HSSE Function carries out a series of initiatives prepared to address issues related to the people, process, and plant aspects that have been identified. This program is implemented gradually starting from Holding, Subholding, to subsidiaries. A surveillance is performed to ensure the program has been implemented in the operating units.

 <p>Safety Leadership</p>	<p>Komitmen & Visibilitas Kepemimpinan terhadap Zero Accident</p> <ol style="list-style-type: none"> 1. HSSE Performance dibahas secara rutin di BOD Meeting. 2. Monitoring tindak lanjut rekomendasi MWT. 3. Dokumentasi pelaksanaan oleh Leaders. 4. Dokumentasi concending komitmen HSSE. <p>Leadership Commitment & Visibility towards Zero Accident</p> <ol style="list-style-type: none"> 1. HSSE Performance is discussed regularly at BOD Meetings. 2. Monitoring the follow-up to MWT recommendations. 3. Documentation of implementation by Leaders. 4. Documentation of concending OHS commitments. 	 <p>Emergency & Crisis Management</p>	<p>Penguatan Pengelolaan <i>Emergency & Crisis Management System</i></p> <ol style="list-style-type: none"> 1. Program pengujian dan pemeliharaan <i>fire equipment</i>. 2. Laporan <i>readiness fire equipment</i>. 3. Pelaksanaan <i>Major Emergency Drill</i>. 4. Penyediaan personil dan peralatan <i>emergency team</i> yang siap 24 jam. <p>Strengthening Emergency Management & Crisis Management System</p> <ol style="list-style-type: none"> 1. Fire equipment testing and maintenance program. 2. Fire equipment readiness report. 3. Implementation of Major Emergency Drill. 4. Providing emergency team personnel and equipment that is ready 24 hours.
 <p>Safety Culture</p>	<p>Budaya HSSE (<i>Occupational Safety & Process Safety</i>)</p> <ol style="list-style-type: none"> 1. Tersedia program Safety Leadership. 2. Tersedia program HSSE Role Modeling. 3. Tersedia program kampanye HSSE rutin. 4. Pelaksanaan MCU & DCU bagi pekerja dan kontraktor. <p>OHS (<i>Occupational Health & Safety</i>) Culture</p> <ol style="list-style-type: none"> 1. Safety Leadership program available. 2. OHS Role Modeling program available. 3. Regular OHS campaign programs are available. 4. Implementation of MCU & DCU for workers and contractors. 	 <p>Learning from Event</p>	<p>Sistem belajar dair kejadian secara <i>full cycle</i></p> <ol style="list-style-type: none"> 1. Pedoman LFE level Holding dan Subholding. 2. <i>Monitoring closed out</i> rekomendasi investigasi. 3. Materi LFE dari <i>recordable incident</i>. <p>Learning system from events in a full cycle</p> <ol style="list-style-type: none"> 1. LFE Guidelines for Holding and Subholding levels. 2. Monitoring closed out investigation recommendations. 3. LFE material from recordable incidents.
 <p>Competence</p>	<p>Kompetensi dan Kapabilitas HSSE & Operasional</p> <ol style="list-style-type: none"> 1. Tersedia program HSSE Mandatory Training dan sertifikasi keahlian/profesi yang efektif. 2. Program HSSE Marshall. 3. Tersedianya program pelatihan HSSE untuk Manajemen. 4. HSSE Passport diterbitkan bagi pekerja kontraktor. <p>OHS & Operational Competencies and Capabilities</p> <ol style="list-style-type: none"> 1. Effective OHS Mandatory Training and skills/professional certification programs are available. 2. Marshall OHS Program. 3. Availability of OHS training programs for Management. 4. OHS Passport is issued to contractor workers. 	 <p>Process Safety & Asset Integrity Management</p>	<p>Penguatan implementasi <i>Process Safety & Asset Integrity Management System (PSAIMS)</i></p> <ol style="list-style-type: none"> 1. Pedoman PSAIM level Holding dan Subholding. 2. Terdapat fungsi/tim task force yang ditunjuk sebagai <i>Assurance PSAIM</i>. <p>Strengthening the implementation of the Process Safety & Asset Integrity Management System (PSAIMS)</p> <ol style="list-style-type: none"> 1. PSAIM Guidelines for Holding and Subholding levels. 2. There is a task force function/team designated as PSAIM Assurance.
 <p>Organisasi & Manpower</p>	<p>Organisasi & Kekosongan Man Power HSSE</p> <ol style="list-style-type: none"> 1. Tersedianya <i>haul workload analysis</i> organisasi 2. Hasil review efektivitas organisasi dalam pengelolaan PSAIMS. 3. Dokumen <i>job description</i> yang mempertimbangkan aspek HSSE <p>OHS Organization & Man Power Vacancy</p> <ol style="list-style-type: none"> 1. Availability of organizational haul workload analysis 2. Results of a review of organizational effectiveness in managing PSAIMS. 3. Job description document that considers OHS aspects 	 <p>Conduct of Operation</p>	<p>Pelaksanaan Operasi</p> <ol style="list-style-type: none"> 1. Implementasi <i>task observation</i> dan <i>pre-use impaction</i>. 2. Tersedianya CCTV di ruang <i>control</i> dan lokasi kritis terintegrasi dengan PICC. 3. Pelaksanaan audit HSSE MS untuk lokasi kritis. 4. Pelaksanaan patrol secara berkala dengan detektor gas. <p>Implementation of Operations</p> <ol style="list-style-type: none"> 1. Implementation of task observation and pre-use impaction. 2. Availability of CCTV in control rooms and critical locations integrated with PICC. 3. Implementation of OHS MS audits for critical locations. 4. Implementation of regular patrols with gas detectors.
 <p>Life Saving Rules</p>	<p>Penguatan Implementasi <i>Corporate Life Saving Rules (CLSR)</i></p> <ol style="list-style-type: none"> 1. Tersedianya paket komunikasi CLSR untuk sosialisasi dan <i>training</i>. 2. <i>Safe Work Practice</i> dalam CLSR telah dikomunikasikan kepada pekerja dan kontraktor. 3. Tersedianya ahli HSSE untuk pekerjaan kritis dan kompleks. <p>Strengthening the Implementation of Corporate Life Saving Rules (CLSR)</p> <ol style="list-style-type: none"> 1. Availability of CLSR communication packages for socialization and training. 2. Safe Work Practices in CLSR have been communicated to workers and contractors. 3. Availability of OHS experts for critical and complex work. 	 <p>Major Accident Risk Containment</p>	<p><i>Major Accident Risk Containment</i></p> <ol style="list-style-type: none"> 1. Program monitoring risiko utama. 2. Daftar peralatan yang dikategorikan SECE. 3. Terdapat dokumen <i>performance standard</i> terhadap peralatan SECE. <p>Major Accident Risk Containment</p> <ol style="list-style-type: none"> 1. Program monitoring risiko utama. 2. Daftar peralatan yang dikategorikan SECE. 3. Terdapat dokumen performance standard terhadap peralatan SECE.




HSSE Management System

Penguatan HSSE MS (SUPREME)

1. Tersedianya program *training* SUPREME.
2. Terlaksananya pelatihan SUPREME.
3. Tersedianya dokumen pembentukan organisasi SUPREME.
4. Notulen pembahasan SUPREME dalam *HSSE Committee meeting*.

OHS MS Strengthening (SUPREME)

1. Availability of the SUPREME training program.
2. Implementation of SUPREME training.
3. Availability of documents for the formation of the SUPREME organization.
4. Minutes of SUPREME discussion at the OHS Committee meeting.



Community Emergency Response

1. Hasil audit keselamatan dan evaluasi kecukupan *buffer zone*.
2. Tersedianya *portable gas detector* di lokasi kritikal.
3. Kajian dan evaluasi pemasangan *early warning system* yang permanen.
4. Kerja sama penanggulangan keadaan darurat dengan pemangku kepentingan terkait.

Community Emergency Response

1. Results of safety audits and evaluation of buffer zone adequacy.
2. Availability of portable gas detectors in critical locations.
3. Study and evaluate the installation of a permanent early warning system.
4. Collaboration in handling emergencies with relevant stakeholders.

Komitmen Perseroan meningkatkan penerapan dan kinerja HSSE juga dilakukan melalui forum nasional, regional maupun global. Sampai dengan tahun 2023, PERTAMINA terlibat aktif dalam berbagai forum HSSE, di antaranya IOGP (International Oil & Gas Producer), IPA (Indonesian Petroleum Association), dan sebagainya. [SHS-1.A3]

The Company's commitment to enhancing the HSSE implementation and performance is also conducted through national, regional, and global forums. As of 2023, PERTAMINA has been actively involved in various HSSE programs, such as IOGP (International Oil & Gas Producer), IPA (Indonesian Petroleum Association), and others. [SHS-1.A3]

Identifikasi Bahaya, Asesmen Risiko dan Investigasi Insiden [GRI 403-2][SHS-3.A4][SHS-6.C3][SHS-7.A2]

Hazard Identification, Risk Assessment and Incident Investigation [GRI 403-2][SHS-3.A4][SHS-6.C3][SHS-7.A2]

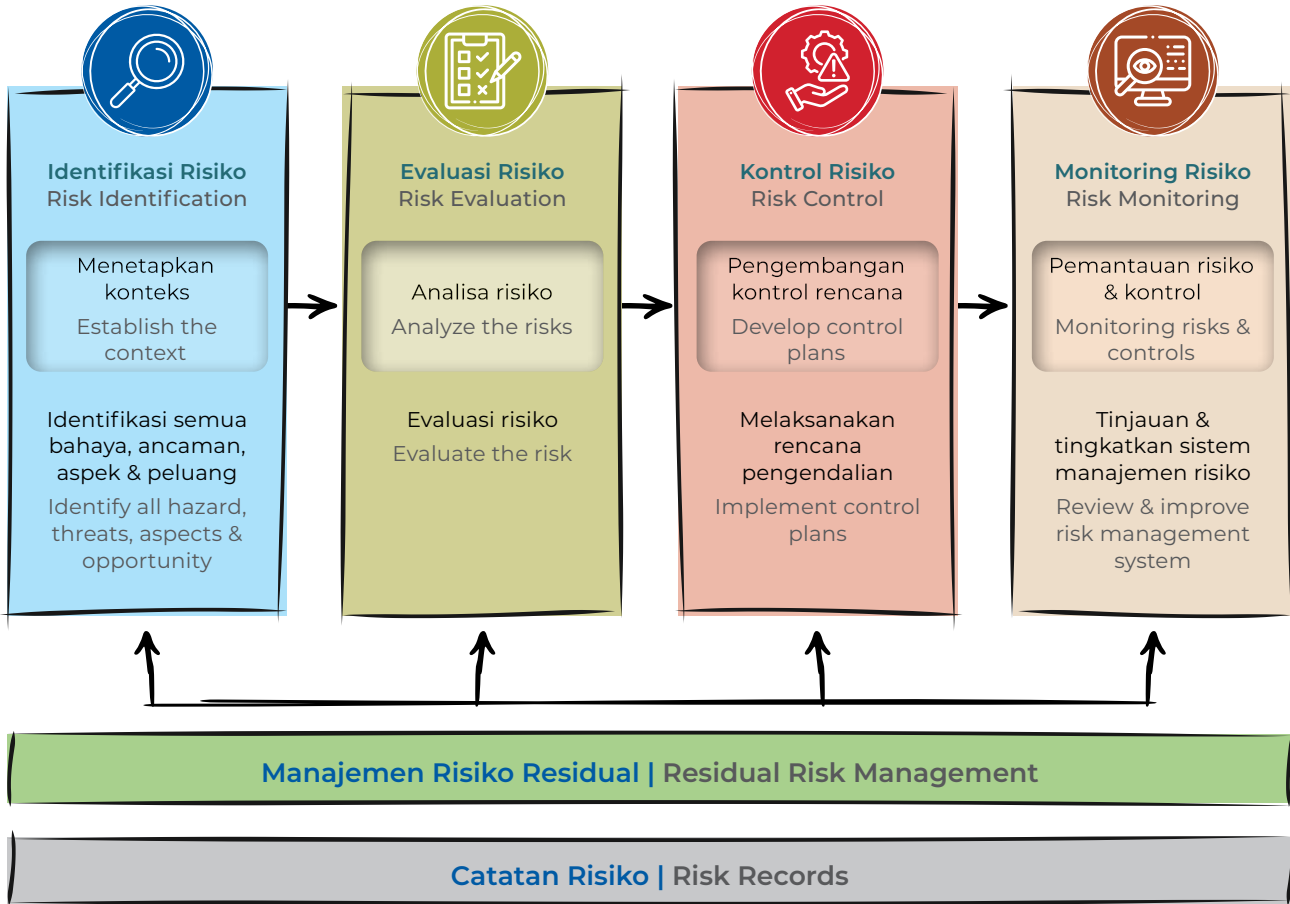
Dalam pengelolaan K3, identifikasi dan pengendalian risiko merupakan langkah penting untuk mencegah kecelakaan dan penyakit akibat kerja (PAK). PERTAMINA dan entitas anak melakukan pendekatan yang disesuaikan dengan kondisi masing-masing perusahaan, yakni HIRADC (*Hazard Identification, Risk Assessment, and Determining Controls*), atau HIRARC (*Hazard Identification, Risk Assessment, and Risk Control*).

In OHS management, risk identification and control are important steps to prevent accidents and occupational diseases (PAK). PERTAMINA and its subsidiaries assume an approach that is adjusted to the conditions of each company, namely HIRADC (*Hazard Identification, Risk Assessment, and Determining Controls*), or HIRARC (*Hazard Identification, Risk Assessment, and Risk Control*).

Identifikasi risiko dilakukan pada kegiatan operasional rutin dan nonrutin, untuk kemudian ditetapkan tingkat risikonya. Perseroan berupaya menurunkan risiko ke tingkat yang dapat diterima atau ALARP (*As Low As Possible Reasonably Practicable*), dengan melakukan pengendalian risiko sesuai dengan hirarki yakni eliminasi, substitusi, *engineering control*, pengendalian administratif, dan alat pelindung diri (APD). Selain itu juga dibuat rencana pengendalian tambahan untuk menurunkan risiko sisa pada ALARP, didasarkan pada kemampuan dalam menghadapi risiko tersebut.

Risk identification is carried out on routine and non-routine operational activities to then determine the level of risk. The Company strives to reduce risks to an acceptable level or ALARP (*As Low As Possible Reasonably Practicable*) by controlling risks in accordance with the hierarchy, namely elimination, substitution, engineering control, administrative control, and personal protective equipment (PPE). An additional control plan is also made to reduce the residual risk at ALARP, based on the ability to deal with these risks.

Pengelolaan Risiko K3 | OHS Risk Management



Dalam hal terjadi insiden K3, sesuai ketentuan yang berlaku di PERTAMINA, maka akan dilakukan prosedur investigasi dan perbaikan guna pencegahan. Pelaksanaan investigasi diatur dalam sistem tata kelola penyelidikan insiden, dan dilakukan dalam sebuah tim dengan salah satu anggota tim memiliki kompetensi untuk menyelidiki insiden kecelakaan. Laporan hasil investigasi dilaporkan ke Direksi PERTAMINA, pemegang saham dan pihak eksternal berwenang lainnya. Selama tahun 2023 Perseroan telah melakukan investigasi terhadap insiden kecelakaan kerja yang terjadi, dan menerbitkan rekomendasi perbaikan sebagai upaya pencegahan.

Perseroan memiliki mekanisme *stop work authority*, yang memberi kewenangan kepada semua pekerja untuk menghentikan pekerjaan, apabila ada kondisi atau tindakan yang mengancam keselamatan mereka.

In the event of an OHS incident, as stated in PERTAMINA's prevalent provisions, investigation and improvement procedures will be carried out for prevention. The implementation of the investigation is regulated in the incident investigation governance system, and is carried out in a team with one of the team members having the competence to investigate accident incidents. The investigation report is reported to the PERTAMINA Board of Directors, shareholders and other authorized external parties. During 2023, the Company conducted investigations into work accident that occurred, and issued recommendations for improvement as a preventive.

The Company has a stop work authority mechanism, which authorizes all employees to stop work, if there are conditions or actions that threaten their safety.

Layanan dan Promosi Kesehatan Kerja

[GRI 403-3, 403-6, 403-8]

Kegiatan operasional di PERTAMINA memiliki potensi bahaya terhadap keselamatan dan kesehatan pekerja, peralatan serta lingkungan. Berbeda dengan efek bahaya keselamatan yang terlihat secara langsung, potensi efek bahaya kesehatan akan timbul dalam jangka waktu cukup lama, sehingga penting bagi Perseroan memastikan kondisi kesehatan pekerja dan tempat kerja.

Upaya Perseroan mengurangi risiko terhadap kesehatan pekerja dan kesehatan kerja, disesuaikan dengan ketentuan yang berlaku, salah satunya Peraturan Presiden No. 7 Tahun 2019 tentang Penyakit Akibat Kerja (PAK). Upaya yang dilakukan untuk memastikan kondisi kesehatan pekerja antara lain: [SHS-2.C1]

- Program *Fit to Work*, meliputi pemeriksaan kesehatan (*medical check up/MCU*) satu kali setiap tahun bagi seluruh pekerja, dan pemeriksaan kesehatan harian untuk pekerja berisiko tinggi terkait pekerjaannya. Tujuan pemeriksaan kesehatan adalah memastikan pekerja dalam kondisi *fit* sehingga produktivitas kerja menjadi optimal dan mencegah kecelakaan kerja, kecacatan maupun kematian di tempat kerja;
- Penerapan pola hidup sehat kepada pekerja sehingga dapat menurunkan faktor risiko penyakit, meningkatkan kualitas hidup dan optimalisasi produktivitas kerja. Ada beberapa program/kegiatan untuk mendukung penerapan hidup sehat pekerja, di antaranya "Sehat, Bugar, Senang (Sebuse)", serta "*Stay Fit*". Kegiatan melibatkan seluruh pekerja dan manajemen, sehingga turut membangun kebersamaan serta keberagaman; [SHS-2.C3, 2.A4]
- Penerapan kesehatan industri (*hygiene industry*) untuk memastikan kebersihan dan kesehatan tempat kerja, termasuk penyediaan fasilitas makan dan makanan pekerja, fasilitas istirahat dan waktu istirahat, serta fasilitas sanitasi;

Occupational Health Services and Promotion

[GRI 403-3, 403-6, 403-8]

Operational activities at PERTAMINA have potential hazards to the employment safety and health, equipment and the environment. Unlike the effects of safety hazards that are visible immediately, the potential effects of health hazards will occur over a long period of time, so it is important for the Company to ensure employees' health and workplace soundness.

The Company's efforts to reduce risks to workers' health and occupational health align with applicable regulations, one of which is the Presidential Regulation Number 7 of 2019 concerning Occupational Diseases (PAK). Below are the efforts made to ensure employees' health condition: [SHS-2.C1]

- Fit to Work program includes once-a-year medical check-ups (MCU) for all employees, and daily medical check-ups for employees with high-risk work. The health check is to ensure that workers are in a fit condition so that work productivity is optimized and to prevent work accidents, disability and morbidity in the workplace;
- Encouraging healthy lifestyle to employees to reduce disease risk factors, improve quality of life, and optimize work productivity. There are several programs/activities to support the implementation of healthy living for employees, including "Healthy, Fit, Happy (Sebuse)", and "*Stay Fit*". As these activities involve all employees and the management, it builds togetherness and diversity; [SHS-2.C3, 2.A4]
- Implementing hygiene industry is to ensure workplace cleanliness and soundness, including the provision of employees' meals and food facilities, rest and break facilities, and sanitation facilities;

- Penyediaan rencana respons medis darurat (*medical emergency response plan* atau MERP), yang merupakan tindakan mencegah, mengantisipasi, mengatasi, dan memulihkan kondisi keadaan darurat. Pengelolaan penanggulangan mencakup kesiapsiagaan Tim Tanggap Darurat, penyediaan, dan perawatan peralatan yang andal.

Selain itu ada program/kegiatan yang disinergikan dengan program/kegiatan nasional dan global, di antaranya pencegahan dan pengendalian HIV di tempat kerja yang diinisiasi Organisasi Buruh Internasional (ILO) dan Kementerian Tenaga Kerja.

[SHS-2.C1]

Aspek kesehatan kerja dalam penerapan K3 tidak hanya terkait PAK, tapi juga bukan PAK. Perseroan menyertakan pegawai PERTAMINA dan pekerja kontraktor, mitra maupun pemasok, pada program jaminan pemeliharaan kesehatan. Kepesertaan yang bersifat wajib sesuai regulasi Pemerintah adalah kepesertaan Badan Penyelenggara Jaminan Sosial (BPJS) Kesehatan. Tingkat kepesertaan BPJS Kesehatan tahun 2023 mencapai 100% atau seluruh pegawai PERTAMINA. Mereka juga disertakan pada program jaminan pemeliharaan kesehatan lain yang diselenggarakan pihak ketiga/asuransi. PERTAMINA bersama entitas anak memfasilitasi pembayaran iuran kepesertaan berdasarkan peraturan yang berlaku. Melalui kepesertaan jaminan kesehatan tersebut, pegawai PERTAMINA mendapatkan akses layanan kesehatan bukan PAK di fasilitas kesehatan yang telah disepakati.

Partisipasi, Konsultasi dan Komunikasi Pekerja Terkait K3 [GRI 403-4][SHS-1.C1]

PERTAMINA menyediakan mekanisme maupun forum bagi pekerja untuk berpartisipasi, berkonsultasi serta berkomunikasi terkait K3:

- Melalui perwakilan di serikat pekerja, pegawai PERTAMINA menyusun Perjanjian Kerja Bersama (PKB) yang di dalamnya mengatur perihal K3;

- Enforcing medical emergency response plan (MERP), which is an action to prevent, anticipate, overcome, and restore emergency conditions. Management of countermeasures includes Emergency Response Team preparedness, provision and maintenance of reliable equipment.

In addition, there is a program/activity that is synergizes with national and global program/activities, among others HIV prevention and controlling in workplace that is initiated by the International Labor Organization (ILO) and the Ministry of Manpower. [SHS-2.C1]

The occupational health aspect in the OHS aspect does not only relate to PAK. The Company has PERTAMINA's employees, contractors, partners, and suppliers registered to a health insurance program. The mandatory membership according to the Government regulation is the membership of the Social Security Agency on Health (BPJS Kesehatan). The level of BPJS Kesehatan membership in 2023 reached 100% or all PERTAMINA employees. They are also included in other healthcare insurance programs organized by third parties/insurers. PERTAMINA and its subsidiaries facilitate the payment of premium based on prevalent regulations. Through the health insurance membership, PERTAMINA employees get access to non-PAK health services at agreed health facilities.

Employees' Participation, Consultation, and Communication Related to OHS [GRI 403-4][SHS-1.C1]

PERTAMINA provides mechanisms and forums for workers to participate, consult and communicate related to OHS:

- Through representatives in labor unions, PERTAMINA's employees develop Collective Labor Agreements (CLA) which regulate OHS;

- Pembentukan Tim Panitia Pembina Kesehatan Keselamatan kerja (P2K3) yang juga berfungsi sebagai Komite HSSE di unit operasi/unit bisnis pada entitas anak. Pengungkapan informasi keanggotan Tim P2K3/Komite HSSE disampaikan dalam Laporan Keberlanjutan masing-masing unit operasi/unit bisnis di PERTAMINA Group;
- PERTAMINA juga aktif melaksanakan Bulan K3 Nasional yang diperingati setiap tahun pada 12 Januari–12 Februari;
- Mekanisme lain adalah kegiatan *safety induction*, *safety briefing/safety talk*, dan *safety patrol* yang bersifat rutin.
- Establishment of the Occupational Health and Safety Committee (P2K3) which also functions as the HSSE Committee in subsidiaries' operating unit/business unit. Information disclosure on the membership of the P2K3 Team / HSSE Committee is presented in the Sustainability Report of each operating unit/business unit of PERTAMINA Group;
- PERTAMINA also actively implements the National HSSE Month, which is annually commemorated from January 12 to February 12;
- Other mechanisms are routine-wise, namely safety induction activities, safety briefing/safety talk, and safety patrol which are routine.

Pelatihan K3 untuk Pekerja [GRI 403-5][SHS-1.C2, 1.A2]

Selama tahun 2023 Perseroan telah melaksanakan pelatihan rutin K3 untuk meningkatkan kompetensi/sertifikasi K3. Peserta pelatihan adalah pegawai PERTAMINA, pekerja kontraktor, mitra kerja maupun pemasok.

Selama tahun 2023 ada 36 pelatihan dengan jumlah jam pelatihan mencapai 125.410 jam, dan peserta 4.643 orang. Kegiatan pelatihan yang diselenggarakan, di antaranya:

- Pelatihan *Basic Safety For Refinery* (BSR) dengan jumlah jam pelatihan mencapai 55.232 jam, dan total peserta 1.726.
- Pelatihan *Health Risk Assessment* dengan jumlah jam pelatihan mencapai 1.104 jam, dan total peserta 69.
- Pelatihan Terminal *BBM Operation & Process Safety* dengan jumlah jam pelatihan mencapai 20.784 jam, dan total peserta 799.

Selain ketiga pelatihan di atas, terdapat pelatihan-pelatihan lainnya yang diberikan pada pegawai PERTAMINA, pekerja kontraktor, mitra, dan pemasok.

OHS Training for Employee [GRI 403-5][SHS-1.C2, 1.A2]

During 2023, the Company conducted a routine OHS training to improve OHS competency/certification. The training participants are PERTAMINA's employees, contractor workers, partners, and suppliers.

In 2023, there were 36 trainings with total training hours reaching 125,410 hours, and 4,643 participants. Some training activities organized are as follows:

- Basic Safety For Refinery (BSR) training with total training hours reaching 55,232 hours, and a total of 1,726 participants.
- Health Risk Assessment Training with total training hours reaching 1,104 hours, and a total of 69 participants.
- Fuel Terminal Operation & Process Safety training with total training hours reaching 20,784 hours, and a total of 799 participants.

In addition to the three trainings above, there are other trainings provided to PERTAMINA employees, contractor workers, partners, and suppliers.

Pelatihan terkait **Safety** bagi Pegawai PERTAMINA serta Pekerja Kontraktor, Mitra, dan Pemasok

Safety-related Training for PERTAMINA's Employees, Contractor Workers, Partners, and Suppliers

Materi Material	Jumlah Peserta Number of Participants	
	2023	2022
Basic HSSE Mandatory Training	253	325
Fire Fighting Training/Certification	503	831
Incident Command System	168	231
Incident Investigation Training	60	243
Gas Tester	1,173	854
HAZOPS	25	189
Contractor Safety Management System	125	89
Confined Space Entry	183	100
Process Safety management	209	111
Working at Height	-	125
Pelatihan dan Sertifikasi Pengawas Utama K3 Migas Oil and Gas OHS Main Superintendent Training and Certification	27	44

Pelatihan terkait **SUPREME** bagi Pegawai PERTAMINA serta Pekerja Kontraktor, Mitra, dan Pemasok

SUPREME-related Training for PERTAMINA's Employees, Contractor Workers, Partners, and Suppliers

Materi Material	Jumlah Peserta Number of Participants		
	2023	2022	2021
Training SUPREME (Peserta yang Diaudit) SUPREME Training (Audited Participants)	2,950	4,033	756
Training SUPREME (Auditor) SUPREME Training (Auditor)	-	-	158
Training HSE Demo Room HSE Demo Room Training	86	-	70
Pelatihan Daring (Webinar) Online Training (Webinar)	2,080	-	54
Training (Webinar) Process Safety & Asset Integrity Management System Process Safety & Asset Integrity Management System Training (Webinar)	209	111	659
Training Pertolongan Pertama First Aid Training	361	523	1,209
Jumlah Total	5,686	4,667	2,906

Pencegahan dan Mitigasi K3 terkait Relasi Bisnis [GRI 403-7]

Perseroan mendorong pihak-pihak yang melakukan relasi bisnis dengan PERTAMINA untuk mengedepankan aspek keselamatan dalam semua kegiatan bisnis yang dijalankan. Langkah yang dilakukan adalah memastikan kontraktor, mitra maupun pemasok mematuhi dan melaksanakan

OHS Prevention and Mitigation related to Business Relationship [GRI 403-7]

The Company encourages parties who conduct business relations with PERTAMINA to prioritize safety aspects in all business activities. The steps taken are to ensure that contractors, partners and suppliers comply with and implement all HSE requirements stated in the work contract

seluruh persyaratan HSE yang tertuang di dalam kontrak kerja tanpa pengecualian. PERTAMINA juga memastikan *Contractor Safety Management System* (CSMS) maupun *Contractor of Health and Environment Safety Management* (CHESM) dilaksanakan secara konsisten sesuai prosedur yang berlaku.

Untuk membangun komitmen bersama pada penerapan CSMS/CHESM, PERTAMINA menyelenggarakan klinik pelatihan (*coaching clinic*). Melalui kegiatan ini para kontraktor, mitra dan pemasok diberikan pembinaan agar siap mengikuti persyaratan dalam proses pengadaan barang dan jasa dengan memenuhi CSMS/CHESM. Calon maupun kontraktor, mitra kerja dan pemasok diharapkan dapat mengetahui alur dan prosedur untuk penerbitan sertifikat CSMS/CHESM sebagai syarat mengikuti tender.

Kinerja Keselamatan Kerja [GRI 403-9][SHS-3.C1][EM-EP-320a.1][EM-RM-320a.1][EM-SV-320a.1]

Kinerja HSSE merupakan salah satu Indikator Kinerja Utama (KPI) Direksi atau KPI Manajemen tahun 2023, termasuk *Total Recordable Injury Rate* (TRIR), pencegahan insiden skala besar (*zero major accident*). Dasar penghitungan TRIR mengacu kepada International Association of Oil & Gas Procedures, yakni per 1.000.000 jam kerja untuk *Lost Time Injury Rate* (LTIR) dan TRIR, sedangkan untuk *Fatal Accident Rate* (FAR) per 100.000.000 jam kerja.

without exception. PERTAMINA also ensures that the Contractor Safety Management System (CSMS) and Contractor of Health and Environment Safety Management (CHESM) are implemented consistently based on the applicable procedures.

To build a shared commitment to the implementation of CSMS/CHESM, PERTAMINA organizes a coaching clinic. This activity provides guidance for contractors, partners, and suppliers to be ready to follow the requirements in the goods and services procurement process by fulfilling CSMS/CHESM. Prospective and existing contractors, partners, and suppliers are expected to know the flow and procedures for issuing CSMS/CHESM certificates as a condition for participating in tenders.

Occupational Safety Performance [GRI 403-9][SHS-3.C1][EM-EP-320a.1][EM-RM-320a.1][EM-SV-320a.1]

HSSE performance is one of the Board of Directors' 2023 Key Performance Indicators (KPIs) or Management KPIs, including Total Recordable Injury Rate (TRIR) and zero major accident. The basis for calculating TRIR refers to the International Association of Oil & Gas Procedures, stating that per 1,000,000 working hours for Lost Time Injury Rate (LTIR) and TRIR, and per 100,000,000 working hours for Fatal Accident Rate (FAR).

Tingkat Kecelakaan pada Pegawai Tetap dan Kontraktor

Accident Rates on Permanent Employees and Contractors

Kategori Category	2023	2022	2021
Jumlah Jam Kerja (Jam Kerja) Number of Hours Worked (Hours Worked)	730	710	595
FAR – Per 100 juta Jam Kerja FAR – Per 100 million Work Hour	0.54	0.42	0.50
LTIR – Per 1 juta Jam Kerja LTIR – Per 1 million Work Hour	0.02	0.02	0.01
TRIR – Per 1 juta Jam Kerja TRIR – Per 1 million Work Hour	0.10	0.09	0.12

Jumlah Insiden pada Pegawai Tetap dan Kontraktor

Number of Incidents on Permanent Employees and Contractors

Tahun Year	Kategori Category	Fatalitas Fatality	Lost Time	Restricted Work Days	Rawat Medis Medical Treatment	Jumlah Total
2023	Pegawai PERTAMINA PERTAMINA's Employees	0	0	0	0	0
	Pekerja Kontraktor Contractor Workers	4	9	18	46	77
2022	Pegawai PERTAMINA PERTAMINA's Employees	0	2	1	2	5
	Pekerja Kontraktor Contractor Workers	3	6	11	37	57
2021	Pegawai PERTAMINA PERTAMINA's Employees	0	0	0	0	0
	Pekerja Kontraktor Contractor Workers	3	4	12	53	72

Pada tahun 2023 masih terjadi kecelakaan fatal yang menimpa pekerja kontraktor, mitra maupun pemasok. Dari hasil evaluasi untuk mencegah terjadinya kecelakaan fatal di masa datang, PERTAMINA melakukan beberapa upaya:

- terus mendorong kontraktor, mitra, pemasok untuk melaksanakan 12 inisiatif peningkatan kinerja HSSE;

In 2023, fatal accidents still occurred that befalling the contractor workers, partners, and suppliers. Based on the evaluation results, to prevent future fatal accidents, PERTAMINA exerted some efforts:

- continued encouraging contractors, partners, and suppliers to implement 12 HSSE performance improvement initiatives;



- mengintegrasikan budaya HSSE dengan operasi perusahaan. Program ini dilakukan melalui pelibatan keluarga pekerja, *Agent of Change* (AOC), kontraktor, serta pekerja frontliner di unit operasi dalam mendukung internalisasi budaya HSSE dalam aktivitas perusahaan;
- meningkatkan *Integrity Asset* dan penguatan pengelolaan *Process Safety* dan *Asset Integrity Management*.

Kinerja Penerapan Kesehatan Kerja [GRI 403-10]

Salah satu tantangan penerapan kesehatan kerja adalah tersebarnya wilayah operasional PERTAMINA, dengan kondisi masyarakat setempat yang berbeda-beda termasuk dalam mengakses air bersih maupun sanitasi. Melalui pemenuhan TJSL, Perseroan membantu perbaikan kondisi kesehatan masyarakat, karena dapat mempengaruhi penerapan kesehatan kerja di setiap unit operasi/unit bisnis di PERTAMINA Grup. [SHS-2.A5]

Sampai dengan akhir tahun 2023, berdasarkan hasil pemeriksaan kesehatan dan MCU rutin di lingkungan Kantor Pusat, belum ditemukan PAK yang menyebabkan fatalitas. Pengungkapan informasi tentang PAK dominan pada *Subholding* maupun entitas anak dan unit operasi/unit bisnisnya, serta tindak lanjut atas PAK dominan disampaikan pada Laporan Keberlanjutan masing-masing. [SHS-2.A2]

Kinerja penerapan kesehatan kerja juga dinyatakan dalam beberapa indikator, yakni *Total Recordable Illness Frequency* (TRIF), *Lost Time Illness Frequency* (LTIF), dan jumlah fatalitas akibat PAK. Target KPI TRIF adalah 0,11 dengan dasar penghitungan mengacu kepada *International Association of Oil & Gas Procedures*, yakni per 1.000.000 jam kerja untuk LTIF. [SHS-3A1]

- integrated the HSSE culture with company operations. This program was carried out by involving employees' families, Agent of Change (AOC), contractors, and frontliners in the operating units to support internalizing the HSSE culture in company activities;
- improved Asset Integrity and strengthened the management of Process Safety and Asset Integrity Management.

Occupational Health Implementation Performance [GRI 403-10]

The challenging part in implementing occupational health is PERTAMINA's widely spread operating areas, with discerning conditions of local communities, including access to clean water and sanitation. By realizing CSR, the Company helps improve public health conditions as it can affect the implementation of occupational health in each operating unit/business unit in PERTAMINA Group. [SHS-2.A5]

Until the end of 2023, based on the results of routine MCU at the Head Office, no PAK has been detected to cause fatalities. Information disclosure on the dominant PAK in Subholding and its subsidiaries and operating units/business units, as well as follow-up on the dominant PAK is presented in the respective Sustainability Reports. [SHS-2.A2]

The performance of occupational health implementation is also expressed in several indicators, namely Total Recordable Illness Frequency (TRIF), Lost Time Illness Frequency (LTIF), and the number of fatalities due to PAK. The TRIF KPI target is 0.11 with the basis of calculation referring to the International Association of Oil & Gas Procedures, which is per 1,000,000 working hours for LTIF. [SHS-3A1]



Menjaga Integritas Aset

Maintaining Asset Integrity

Integritas aset menjadi salah satu faktor penting penerapan K3 dan keselamatan proses. Perseroan memastikan integritas aset selalu terjaga, tidak menimbulkan dampak terhadap keberlangsungan operasi, maupun terhadap manusia dan lingkungan. Aset PERTAMINA tersebar di wilayah operasi di seluruh Indonesia dan mancanegara, dengan kondisi bervariasi sehingga menuntut penanganan khusus agar tetap terjaga keandalannya. Untuk memastikan hal tersebut, Perseroan menerapkan *Process Safety Asset Integrity Management System (PSAIMS)*, sebagai panduan bagi *Holding*, *Subholding* dan unit operasi/unit bisnis di dalamnya, kontraktor, mitra kerja maupun pemasok dalam mengelola risiko keselamatan proses. PSAIMS juga diharapkan berperan sebagai pusat pengelolaan *early warning system* untuk mencegah potensi munculnya gangguan di fasilitas berisiko tinggi.

Asset integrity is one of the important factors in implementing OHS and process safety. The Company continuously maintains asset integrity, ensuring no impact on the continuity of operations, as well as on the people and the environment. PERTAMINA's assets are spread across the operating areas in Indonesia and overseas, with varied conditions that require special handling to maintain their reliability. Hence, the Company implements *Process Safety Asset Integrity Management System (PSAIMS)*, as a guide for *Holding*, *Subholding*, and their operating units/business units; contractors, partners, and suppliers upon managing process safety risks. PSAIMS is also expected to act as a central management of *early warning system* to prevent potential disruptions in high-risk facilities.

Realisasi pengelolaan integritas aset dan penerapan PSAIMS selama tahun 2023, beserta pencapaiannya dalam menunjang keselamatan kerja dan keselamatan proses:

- Pembuatan *dashboard* PSAIM;
- Pelaksanaan Audit PSAIM internal & eksternal;
- Standarisasi *framework* pengelolaan PSAIM.

The asset integrity management and PSAIMS implementation in 2023, along with their achievements in supporting work safety and process safety are as follows:

- Established PSAIM dashboard;
- Organized internal & external PSAIM Audit;
- Standardized the PSAIM management framework.

Keselamatan Proses, Pencegahan Insiden Berskala Besar, dan Keamanan Produk

Process Safety, Large-Scale Incident Prevention, and Product Safety

Keselamatan Proses dan Pencegahan Insiden Berskala Besar [SHS-3.C2][SHS-6.C1, 6-A1]

Penerapan integritas aset yang baik akan mendukung keselamatan proses sehingga berpengaruh pada pencegahan insiden berskala besar. Perseroan memiliki inisiatif melakukan pemantauan terhadap *process safety event* (PSE). Selama tahun 2023, tercatat ada 4 PSE untuk Tier 1 dan Tier 2. Kategori PSE didasarkan pada standar American Petroleum Institute (API) RP 754 dan International Association of Oil & Gas Producer (IOGP) Report 456.

Process Safety and Large-Scale Incident Prevention [SHS-3.C2][SHS-6.C1, 6-A1]

Good asset integrity will support process safety, which consecutively affects the prevention of large-scale incidents. The Company has an initiative to monitor process safety events (PSE). In 2023, there were 4 PSEs recorded for Tier 1 and Tier 2. The PSE categories are based on the American Petroleum Institute (API) RP 754 and International Association of Oil & Gas Producer (IOGP) Report 456 standards.

Jumlah PSE yang Dipantau dan Dilaporkan

Total PSE Monitored and Reported

Kategori PSE PSE Category	Uraian Description	2023	2022	2021
Tier 1	PSE yang memiliki dampak negatif paling besar. PSE with the highest negative impacts.	4	3	7
Tier 2	PSE yang memiliki dampak lebih rendah. PSE with the lowest impacts.	8	17	31

Selain itu ada PSE Tier 3 terkait permasalahan pada sistem instrumentasi keselamatan proses, namun tidak sampai menimbulkan PSE Tier 1 dan 2; serta PSE Tier 4 terkait kinerja sistem manajemen untuk mencegah insiden keselamatan proses. Laporan ini tidak mengungkapkan informasi PSE Tier 3 dan Tier 4. [SHS-7.A3][EM-RM-540a.2]

In addition, there are Tier 3 PSEs related to problems with the process safety instrumentation system, but not that severe that led to Tier 1 and 2 PSEs; and there was Tier 4 PSEs related to the management system performance to prevent process safety incidents. This report does not disclose Tier 3 and Tier 4 PSE information. [SHS-7.A3][EM-RM-540a.2]

Beberapa PSE yang terjadi pada tahun 2023 menjadi perhatian publik mengingat dampak yang ditimbulkan, di antaranya: [SHS-3.C4][SHS-6.C2]

- Kebakaran Depo Plumpang pada 3 Maret 2023, menyebabkan rumah warga di sekitar depo di Kelurahan Rawa Badak Selatan, Kecamatan Koja, Jakarta Utara, turut terbakar. Peristiwa tersebut menyebabkan 38 orang meninggal dunia;
- Kilang di Unit Kilang Dumai, Riau, meledak dan terbakar pada 1 April 2023. insiden menyebabkan sembilan orang mengalami luka bakar.

Seluruh peristiwa tersebut telah ditindaklanjuti dengan investigasi dan upaya perbaikan untuk pencegahan. Dalam upaya pencegahan insiden berskala besar di fasilitas pengilangan dan depo/terminal, langkah yang dilakukan PERTAMINA di antaranya: [SHS-3.C3, SHS-3.A2]

- Memperkuat sistem perlindungan petir (*lightning protection system*);
- Memperkuat kontrol mencegah terjadinya aliran berlebih (*overflow*);
- Memperkuat kontrol mencegah terjadinya *high temperature hydrogen attack*;
- Memperkuat kontrol atas sulfidasi dan korosi di bawah isolasi.

Perseroan juga mendorong penerapan PS AIMS di lingkup *Holding*, entitas anak baik *Subholding* maupun AP portofolio/jasa, beserta unit operasi/unit bisnis masing-masing. Selama tahun 2023 PERTAMINA telah melakukan sosialisasi, klinik kepelatihan (*coaching clinic*) maupun pelatihan penerapan PSAIMS.

Several PSEs that occurred in 2023 stirred some concerns among the public due to their impacts, including: [SHS-3.C4][SHS-6.C2]

- The Plumpang Depot fire on March 3, 2023, burning the houses around the depot in Rawa Badak Selatan Urban Village, Koja District, North Jakarta. The incident caused the death of 38 people;
- A refinery in the Dumai refinery unit, Riau, exploded and caught fire on April 1, 2023. the incident caused nine people to suffer burns.

All of these incidents have been followed up with investigations and restorations for prevention. To prevent large-scale incidents at refinery facilities and depots/terminals, the measures taken by the Company included: [SHS-3.C3, SHS-3.A2]

- Strengthened the lightning protection system;
- Strengthened controls to prevent overflow;
- Strengthened control to prevent high temperature hydrogen attack;
- Strengthened control over sulfidation and corrosion under insulation.

The Company also encourages the implementation of PS AIMS in Holding, subsidiaries of both Subholding and AP portfolios/services, along with their respective operating units/business units. During 2023, PERTAMINA conducted socialization, coaching clinics, and trainings on the implementation of PSAIMS.

Keamanan Produk, Keselamatan Pelanggan dan Masyarakat [OJK F.17, F.27][GRI 416-1, 416-2]

Dengan kegiatan operasional dan bisnis yang terintegrasi, menjadikan produk dan pelanggan PERTAMINA sangat bervariasi. Perseroan berkomitmen untuk memberikan layanan atas produk/jasa yang setara kepada pelanggan. Perseroan juga berkomitmen menerapkan standar keamanan produk untuk menjamin keselamatan pelanggan, dan memastikan seluruh (100%) proses produksi, produk PERTAMINA serta pengembangannya, telah melalui penerapan mutu, kesehatan, keselamatan, keamanan dan kelola lingkungan (QHSSE) untuk memastikan keselamatan dan kesehatan pelanggan.

Perseroan juga memastikan kepatuhan pada regulasi yang mengatur keamanan produk dan keselamatan pelanggan, di antaranya Undang-Undang No. 8 Tahun 1999 tentang Perlindungan Konsumen, Undang-Undang No 20 Tahun 2014 tentang Standardisasi dan Penilaian Kesesuaian yang mengatur Standar Nasional Indonesia (SNI). Secara berkala seluruh produk Perseroan menjalani pemeriksaan oleh pihak-pihak yang berwenang. Dari pemeriksaan yang dilakukan tahun 2023 tidak ada produk yang membahayakan keselamatan penggunaannya. [OJK F.29][SHS-5.C1, 5.A4]

Product Safety, Customer and Community Safety [OJK F.17, F.27][GRI 416-1, 416-2]

PERTAMINA's integrated operations and businesses explain the varied products and customers. The Company is committed to providing equal product/service to customers. The Company is also committed to implementing product safety standards to ensure customer safety, and ensuring all (100%) production processes, its products and their development, have undergone the quality, health, safety, security and environmental management (QHSSE) to ensure customer safety and health.

It is also ensured that PERTAMINA complies with regulations on product safety and customer safety, including Law No. 8 Year 1999 on Consumer Protection, Law No. 20 Year 2014 on Standardization and Conformity Assessment that regulates the Indonesian National Standard (SNI). Periodically, all of the Company's products undergo inspection by authorized parties. From the inspection conducted in 2023, there were no products that endangered the safety of its users. [OJK F.29][SHS-5.C1, 5.A4]



PERTAMINA juga memberikan akses kepada pelanggan untuk menyampaikan keluhan maupun pengaduan terkait keamanan produk, melalui PERTAMINA *Call Center* (PCC) 135. Pada tahun 2023, ada 16.067 keluhan/pengaduan maupun permintaan informasi terkait keamanan produk, dan seluruhnya telah ditindaklanjuti Perseroan. Secara berkala PERTAMINA juga bertemu dengan kontraktor, mitra dan pemasok, untuk membahas penerapan keselamatan terhadap pelanggan dalam rantai pasok. [SHS-5.C2, 5-A3]

Selama tahun 2023 PERTAMINA melakukan beberapa upaya untuk meningkatkan keamanan produk dan fasilitas, dan keselamatan pelanggan maupun masyarakat, di antaranya: [SHS-5.C3]

- Terkait keamanan dan keselamatan masyarakat di sekitar fasilitas PERTAMINA, Perseroan mengupayakan perluasan kawasan penyangga (*buffer zone*) di sembilan terminal BBM dan tiga kilang minyak.
- Mempercepat penetapan Daerah Terbatas dan Terlarang (DTT) di wilayah operasi PERTAMINA, khususnya di lepas pantai, sesuai Peraturan Menteri ESDM No.32/2021 tentang Inspeksi Teknis dan Pemeriksaan Keselamatan Instalasi dan Peralatan pada Kegiatan Usaha Minyak dan Gas Bumi. Pada tahun 2023 Perseroan telah melakukan percepatan penetapan DTT untuk 520 fasilitas di wilayah kerja perairan PERTAMINA GROUP, terdiri dari 331 pipa bawah laut, 177 anjungan (*platform*), dan 26 *conventional buoy mooring* (CBM). Fasilitas tersebut meliputi tiga zona, yaitu Zona Barat terdiri dari 10 lokasi, Zona Tengah (9 lokasi), dan Zona Timur (6 lokasi). Dengan telah ditetapkannya DTT, selanjutnya PERTAMINA akan berproses dalam percepatan penerbitan Izin Usaha Migas yaitu pengurusan persetujuan layak operasi (PLO).

PERTAMINA also provides access to customers to submit complaints related to product safety through PERTAMINA *Call Center* (PCC) 135. In 2023, there were 16,067 complaints and requests for information related to product safety, and all have been followed up by the Company. A regular meeting with contractors, partners, and suppliers takes place to discuss the implementation of safety towards customers in the supply chain. [SHS-5.C2, 5-A3]

In 2023, PERTAMINA endeavored to improve products and facilities safety, and customer and community safety, including: [SHS-5.C3]

- Related to the security and safety of the community around PERTAMINA facilities, the Company sought the expansion of buffer zones in nine fuel terminals and three oil refineries.
- Accelerated the establishment of Restricted and Prohibited Areas (DTT) in PERTAMINA's operating areas, especially offshore, in accordance with the Minister of Energy and Mineral Resources Regulation No.32/2021 on Technical Inspection and Safety Check of Installation and Equipment in Oil and Gas Business Activities. In 2023, the Company accelerated the DTT establishment for 520 facilities in the working areas of PERTAMINA GROUP waters, consisting of 331 subsea pipelines, 177 platforms, and 26 conventional buoy mooring (CBM). The facilities cover three zones, namely West Zone with 10 locations, Central Zone (9 locations), and East Zone (6 locations). The DTT establishment will help PERTAMINA to accelerate the issuance of the Oil and Gas Business License, i.e. the processing of approval for proper operation (PLO).

Keselamatan Proses pada Rantai Pasok

Process Safety in Supply Chain

Sebagai industri energi yang terintegrasi di sektor hulu (*upstream*), tengah (*midstream*) dan hilir (*downstream*), PERTAMINA mengelola keselamatan proses pada rantai pasok secara terpadu. Hal ini tidak terlepas dari tantangan berbeda pada masing-masing sektor, sehingga diperlukan pengelolaan keselamatan proses yang terintegrasi. Langkah yang dilakukan Perseroan adalah penggunaan dan pemanfaatan digitalisasi dalam fungsi pengelolaan rantai pasok, sehingga PERTAMINA dapat mengoperasikan aset dengan aman, meningkatkan kapasitas produksi, dan meningkatkan keandalan melalui pembiayaan yang lebih rendah.

PERTAMINA telah memiliki sistem pemantauan data mulai dari produksi di hulu hingga distribusi BBM ke masyarakat di hilir, yakni PERTAMINA *Integrated Enterprise Data and Command Center* (PIEDCC). Melalui PIEDCC bisa terpantau aliran dari fluida ataupun gas, sementara dalam konteks BBM terlihat dari kilang-kilang produksinya dan penyalurannya ke Terminal Bahan Bakar Minyak (TBBM). Demikian pula dengan distribusi, jumlah BBM yang akan disalurkan ke kendaraan pengangkut (truk tangki) akan dilakukan secara otomatis sesuai. Begitupun pengangkutan menuju SPBU yang terpantau di layar monitor. Tak hanya di darat tapi juga di laut, saat pengangkutan menggunakan kapal, semuanya tertata dengan baik dan terpantau secara langsung lewat PIEDCC. Hal ini menunjukkan Transformasi Digital di PERTAMINA untuk memantau seluruh pengelolaan energi nasional secara terintegrasi hingga semakin meningkatkan produktivitas bisnis perusahaan dan pelayanan kebutuhan energi bagi masyarakat secara berkelanjutan. [SHS-4.A5]

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As an integrated energy industry in the upstream, midstream and downstream sectors, PERTAMINA manages process safety in the supply chain in an integrated manner. Each sector has its inherent unique challenges, hence the integrated process safety management is needed. Because of this, the Company utilizes digitalization in the supply chain management function so that it can operate the assets safely, increase production capacity, and increase reliability through lower financing.

The Company has a system called PERTAMINA Integrated Enterprise Data and Command Center (PIEDCC) that monitors data from production in the upstream to fuel distribution to the community in the downstream. PIEDCC can monitor the flow from gas or fluid, while in fuel, it can be seen from the production refineries and its distribution to the Fuel Terminal (TBBM). Similar to distribution, the amount of fuel to be distributed to transport vehicles (tank trucks) will be done automatically according to the amount entered through the system. This similarly applies to transportation to gas stations, which is monitored on the screen. PIEDCC functions both on land and at sea as it well organizes and directly monitors the transporting process when using ships. This shows the Digital Transformation in PERTAMINA monitors the entire national energy management in an integrated manner to further improve the company's business productivity and service energy needs for the community in a sustainable manner. [SHS-4.A5]

PERTAMINA already has a data monitoring system starting from upstream production to fuel distribution to downstream communities, namely the PERTAMINA Integrated Enterprise Data and Command Center (PIEDCC). Through PIEDCC, the flow of fluid or gas can be monitored, while in



BBM terlihat dari kilang-kilang produksinya dan penyalurannya ke Terminal Bahan Bakar Minyak (TBBM). Demikian pula dengan distribusi, jumlah BBM yang akan disalurkan ke kendaraan pengangkut (truk tangki) akan dilakukan secara otomatis sesuai dengan jumlah yang dimasukkan lewat sistem. Demikian pula dengan pengangkutan menuju SPBU yang terpantau di layar monitor. Tak hanya di darat tapi juga di laut, saat pengangkutan menggunakan kapal, semuanya tertata dengan baik dan terpantau secara langsung lewat PIEDCC. Hal ini menunjukkan Transformasi Digital di PERTAMINA untuk memantau seluruh pengelolaan energi nasional secara terintegrasi hingga semakin meningkatkan produktivitas bisnis perusahaan dan pelayanan kebutuhan energi bagi masyarakat secara berkelanjutan. [SHS-4.A5]

the context of fuel it can be seen from production refineries and its distribution to the Oil Fuel Terminal (TBBM). Likewise with distribution, the amount of fuel that will be distributed to vehicles transportation (tank truck) will be carried out automatically according to the amount entered through the system. Likewise with transportation to the gas station which is monitored on the monitor screen. Not only on land but also at sea, when transporting by ship, everything is well organized and monitored directly via PIEDCC. This shows the Digital Transformation at PERTAMINA to monitor all national energy management in an integrated manner to further increase the company's business productivity and service energy needs for the community sustainably. [SHS-4.A5]

Di samping itu, Tim PIEDCC juga melakukan analisa data menjadi informasi, mendeteksi data, anomali, menguji keandalan data serta menyusun *executive summary* dan rekomendasi yang diperlukan dalam proses pengambilan keputusan (*data analytics*). Sebagai contoh upaya melalui digitalisasi dan *data analytics* pada peningkatan keselamatan rantai pasok di sektor retail yaitu :

- a. Melalui penggunaan teknologi informasi pada program penguatan sarana & fasilitas digitalisasi di SPBU untuk memantau pembelian BBM bersubsidi di SPBU-SPBU.
- b. Pengembangan *alert system* yang mengirimkan *exception signal* dan dimonitor langsung oleh PIEDCC untuk ditindaklanjuti oleh tim di lapangan, sehingga memastikan konsumen BBM bersubsidi yang membeli adalah masyarakat yang berhak (tepat sasaran). *Exception signal* ini mengirimkan data transaksi tidak wajar, diantaranya pengisian solar di atas 200 liter untuk satu kendaraan bermotor pada hari yang sama, pengisian BBM bersubsidi dengan tidak memasukkan nopol kendaraan, dan lain sebagainya.

Sejak implementasi *data analytics* melalui *exception signal* ini pada tanggal 1 Agustus 2022 hingga 31 Desember 2023, PERTAMINA telah berhasil mengurangi risiko penyalahgunaan BBM bersubsidi (*cost avoidance*) senilai US\$200 juta atau sekitar Rp3,04 triliun.

Salah satu aspek dalam penerapan keselamatan proses pada rantai pasok adalah pengangkutan atau transportasi minyak, gas dan bahan bakar. Perseroan menerapkan pengangkutan atau transportasi yang mengedepankan keselamatan, sejalan kebijakan yang diterapkan entitas anak dan unit operasional/unit bisnis yang bertanggung jawab. [SHS-4.C1]

In addition, the PIEDCC Team analyzes data into information, detects data, anomalies, tests data reliability and prepares executive summaries and recommendations needed in the decision-making process (data analytics). Below are some efforts of improving supply chain safety in the retail sector through digitization and data analytics:

- a. The use of information technology in the program strengthens the digitalization facilities at gas stations to monitor subsidized fuel purchases at gas stations.
- b. Development of an alert system that sends an exceptional signal and is directly monitored by PIEDCC to be followed up by the field team so that it can be made certain that the consumers of subsidized fuel are the rightful people (accurate). This exception signal sends data on unusual transactions, including filling diesel fuel above 200 liters for one motor vehicle on the same day and filling subsidized fuel by not entering the vehicle license plate.

Since the implementation of data analytics through this exception signal, which occurred from August 1, 2022 to December 31, 2023, PERTAMINA has succeeded in reducing the risk of misuse of subsidized fuel (cost avoidance) by US\$200 million, or around Rp3.04 trillion.

One aspect in the implementation of process safety in the supply chain is the oil, gas, and fuel transportation. The Company implements transportation that prioritizes safety, aligning with the policies enforced by its subsidiaries and responsible operating units/business units. [SHS-4.C1]

Secara keseluruhan, tidak ada tumpahan migas maupun BBM dalam volume signifikan, yang berdampak terhadap keselamatan lingkungan dan masyarakat. Perseroan berkomitmen meningkatkan kompetensi pekerja yang terlibat dalam pengangkutan migas dan bahan bakar, dengan melakukan beberapa program keselamatan, di antaranya: [SHS-4.C3][SHS-4.A4, 4-A7] [EM-MD-540a.3][EM-MD-540a.4]

- PT Pertamina Patra Niaga Subholding Commercial & Trading bersama Kementerian Perhubungan secara berkala menggelar pelatihan dan Sertifikasi Awak Angkutan Barang Berbahaya, untuk memperkuat operasi keselamatan dan kinerja unggul. Peserta pelatihan akan mendapatkan dua sertifikat, yaitu sertifikat Bahan Berbahaya dan Beracun (B3) dan sertifikat *Defensive Driving Training* (DDT).

Pengungkapan informasi terkait kinerja pengangkutan migas dan bahan bakar, disampaikan dalam Laporan Keberlanjutan masing-masing entitas anak. Laporan ini tidak mengungkapkan jumlah insiden yang terjadi selama satu tahun, informasi terkait kecelakaan kendaraan bermotor pengangkut migas/bahan bakar, jumlah kejadian penerbangan yang direkam dan tingkat kejadian penerbangan per 100.000 jam terbang. [SHS-4.A1, 4-A2, 4-A3]

Melalui entitas anak, Perseroan menjadi anggota aktif asosiasi penyelenggara pengangkutan migas dan bahan bakar. PERTAMINA memastikan kondisi kendaraan pengangkut migas dan BBM menjalani pengujian berkala dari Dinas Perhubungan. [SHS-4.A5, 4.A6, 4.A8]

Overall, there were no oil, gas, and fuel spills in significant volumes that impacted the safety of the environment and the community. The Company is committed to improving the competence of employees involved in the oil, gas, and fuel transportation by conducting several safety programs, including: [SHS-4.C3][SHS-4.A4, 4-A7] [EM-MD-540a.3][EM-MD-540a.4]

- PT Pertamina Patra Niaga Subholding Commercial & Trading and the Ministry of Transportation regularly conduct training and Certification of Dangerous Goods Transport Crews to strengthen safety operations and excellent performance. Trainees will receive two certificates, namely a Hazardous and Toxic Material (B3) certificate and a Defensive Driving Training (DDT) certificate.

Information disclosure on the performance of oil, gas, and fuel transportation is presented in the Sustainability Report of each subsidiary. This report does not disclose the number of incidents that occurred during the year, information on accidents involving oil and gas/fuel transportation motor vehicle, the number of aviation incidents recorded and the rate of aviation incidents per 100,000 flying hours. [SHS-4.A1, 4-A2, 4-A3]

Through its subsidiaries, the Company is an active member of the association of oil, gas, and fuel transportation operators. PERTAMINA ensures the condition of oil, gas, and fuel transportation vehicles undergo periodic testing from the Transportation Department. [SHS-4.A5, 4.A6, 4.A8]

Pengelolaan Sumber Daya Manusia untuk Bisnis Berkelanjutan

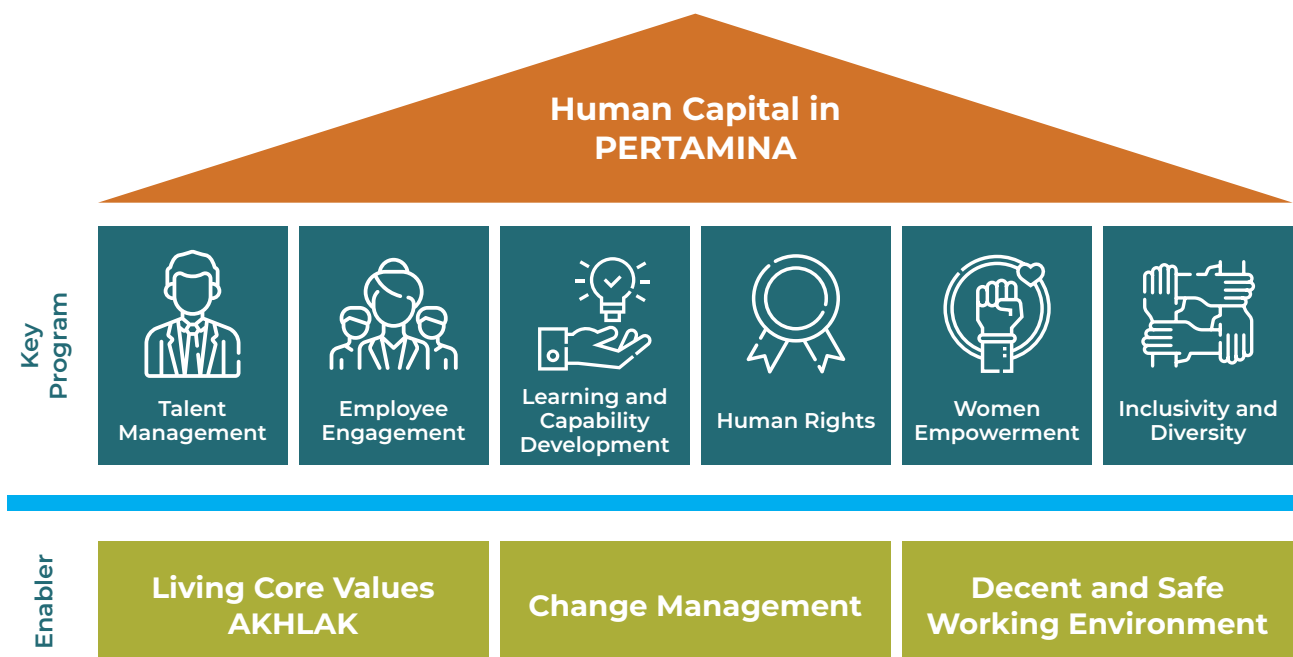
Human Capital Management for Sustainable Business

Sumber daya manusia (*human capital* atau HC) memiliki peran strategis sebagai aset terpenting bagi pertumbuhan dan kesuksesan PERTAMINA dalam jangka panjang. Perseroan berkomitmen mendukung dan menjamin pengembangan serta peningkatan HC secara berkelanjutan, demi mencapai visi sebagai perusahaan energi nasional kelas dunia.

Komitmen Perseroan dalam pengelolaan HC dijabarkan dalam Kerangka Human Capital Di PERTAMINA. Sesuai kerangka tersebut, Perseroan menyelenggarakan pengelolaan HC pada beberapa program utama yakni pengelolaan talenta termasuk meningkatkan porsi generasi milenial, pelibatan pegawai, pelatihan dan pengembangan kapabilitas, hak asasi manusia (HAM), penguatan peran perempuan, serta keberagaman dan inklusi.

Human capital (HC) has a strategic role as the most important asset for PERTAMINA's long-term growth and success. The Company is committed to sustainably supporting and ensuring the HC development and improvement to achieve its vision as a world-class national energy company.

The Company's commitment to HC management is outlined in the PERTAMINA Human Capital Framework. Adhering to the framework, the Company organizes the HC management in several main programs, namely talent management including increasing the portion of the millennial generation, employee engagement, training and capability development, human rights (HAM), strengthening the role of women as well as diversity and inclusion.



Pengelolaan Talenta dan Keterikatan Pekerja [SOC-5.A3]

Talent Management and Employee Engagement

Kesetaraan Kesempatan [OJK F.18]

Pengelolaan talenta dilaksanakan sejak proses rekrutmen. Perseroan memberikan kesempatan setara kepada setiap warga negara Indonesia (WNI) untuk bekerja di PERTAMINA, tanpa melihat latar belakang individu yang dapat bersifat diskriminatif. Proses rekrutmen berlangsung terbuka, berkeadilan, dan dilakukan tersentral melalui website <https://recruitment.pertamina.com/> sehingga bisa diakses oleh siapa saja.

Rekrutmen dan Perputaran Pekerja [GRI 401-1]

[OG 11.10.2][SOC-4.C1]

Pada tahun 2023, PERTAMINA merekrut 2.542 pegawai baru, terdiri dari 1.660 laki-laki dan 882 perempuan atau 65% pegawai laki-laki dan 35% pegawai perempuan. Dengan demikian *recruitment rate* atau persentase perbandingan pegawai baru terhadap total pegawai sebesar 7,59%. Para pegawai baru tersebut ditempatkan di wilayah operasi yang dikelola entitas anak.

Equal Opportunity [OJK F.18]

Talent management is enforced since the recruitment process. Equal opportunities are provided to every Indonesian citizen (WNI) to work in PERTAMINA, without any discriminatory looking at individual backgrounds. The recruitment process is open, fair, and centralized through the website of <https://recruitment.pertamina.com/> so that it can be accessed by anyone.

Employee Recruitment and Turnover [GRI 401-1]

[OG 11.10.2][SOC-4.C1]

In 2023, PERTAMINA recruited 2,542 new employees, consisting of 1,660 men and 882 women, or 65% male employees and 35% female employees. Thus, the recruitment rate or the percentage ratio of new employees to total employees is 7.59%. The new employees were placed in the operating areas managed by subsidiaries.



Rekrutmen Pekerja Baru PERTAMINA Grup Berdasarkan Penempatan dan Gender

Recruitment of New Employees in PERTAMINA Group Based on Placement and Gender

Uraian Description	2023			2022			2021		
	Laki-laki Men	Perempuan Women	Total	Laki-laki Men	Perempuan Women	Total	Laki-laki Men	Perempuan Women	Total
Rekrutmen Reguler Regular Recruitment									
Holding	-	-	-	15	3	18	1,042	33	1,075
	-	-	-	83%	17%	100%	97%	3%	100%
Upstream	428	58	486	392	101	493	1,727	259	1,986
	88%	12%	100%	80%	20%	100%	87%	13%	100%
Refining & Petrochemical	350	76	426	291	47	338	130	9	139
	82%	18%	100%	86%	14%	100%	94%	6%	199%
Commercial & Trading	181	76	257	606	110	716	508	107	615
	70%	30%	100%	85%	15%	100%	83%	17%	100%
Power & Renewable Energy	21	13	34	35	9	44	22	5	27
	62%	38%	100%	80%	20%	100%	82%	18%	100%
Gas	64	30	94	64	8	72	25	7	32
	68%	32%	100%	89%	11%	100%	78%	22%	100%
Integrated Marine Logistics	27	19	46	2,729	65	2,794	1,732	41	1,773
	59%	41%	100%	98%	2%	100%	98%	2%	100%
AP Services & Portofolio	589	610	1,199	2,093	675	2,768	1,382	476	1,858
	49%	51%	100%	76%	24%	100%	74%	26%	100%
Jumlah Rekrutmen Reguler Total Regular Recruitment	1,660	882	2,542	6,225	1,018	7,243	6,568	937	7,505
	65%	35%	100%	86%	14%	100%	88%	12%	100%
Pengalihan Blok Rokan Rokan Block Transfer	-	-	-	-	-	-	2,348	341	2,689
	-	-	-	-	-	-	87%	13%	100%
Jumlah Total	1,660	882	2,542	6,225	1,018	7,243	8,916	1,278	10,194
	65%	35%	100%	86%	14%	100%	87%	13%	100%

Tujuan rekrutmen adalah mendapatkan pegawai sesuai kualifikasi yang telah ditentukan, untuk memenuhi kebutuhan organisasi termasuk menggantikan pegawai yang meninggalkan Perseroan. Selama tahun 2023, ada 904 pegawai yang meninggalkan PERTAMINA, terdiri dari 735 orang atau 2,25% pegawai laki-laki dan 169 orang atau 2,19% pegawai perempuan. Dengan demikian tingkat perputaran (*turnover rate*) atau persentase pegawai yang meninggalkan PERTAMINA terhadap total pegawai sebesar 2,24%. [SOC-6.A1]

Recruitment is aimed to procure employees who are up par with the determined qualifications and to meet the organization's needs, including replacing those who have resigned. In 2023, 904 employees resigned from PERTAMINA, consisting of 735 male employees, or 2.25%, and 169 female employees, or 2.19%. Hence, the turnover rate or percentage ratio of employees resigning to total employees was 2.24%. [SOC-6.A1]

Jumlah Pegawai Meninggalkan PERTAMINA Grup Berdasarkan Kelompok Usia dan Gender

Total Employees Resigning from PERTAMINA Group Based on Age Group and Gender

Kelompok Usia Age Group	2023			2022			2021		
	Laki-laki Men	Perempuan Women	Total	Laki-laki Men	Perempuan Women	Total	Laki-laki Men	Perempuan Women	Total
20-29 Tahun 20-29 Years Old	39	28	67	174	79	253	435	46	481
30-39 Tahun 30-39 Years Old	555	93	648	234	71	305	971	101	1,072
40-49 Tahun 40-49 Years Old	67	13	80	216	44	260	785	29	814
50-59 Tahun 50-59 Years Old	74	35	109	384	60	444	665	41	706
Total	735	169	904	1,008	254	1,262	2,856	217	3,073

Jumlah Pegawai Meninggalkan PERTAMINA Grup Berdasarkan Lokasi Penempatan dan Gender

Total Employees Resigning from PERTAMINA Group Based on Placement Location and Gender

Lokasi Penempatan Placement Location	2023			2022			2021		
	Laki-laki Men	Perempuan Women	Total	Laki-laki Men	Perempuan Women	Total	Laki-laki Men	Perempuan Women	Total
Holding	57	13	70	297	52	349	2,534	72	2,606
Subholding	678	156	834	711	202	913	322	145	467
Total	735	169	904	1,008	254	1,262	2,856	217	3,073

Informasi Mengenai Pegawai [GRI 2-7][OG 11.11.4] [SOC-5.C2, 5.C3]

Pegawai PERTAMINA terdiri dari Pekerja Waktu Tidak Tertentu (PWTT)/Pegawai Tetap dan Pekerja Waktu Tertentu (PWT)/Pegawai Kontrak. Pada tahun 2023, pegawai Perseroan berjumlah 40.415 orang, berkurang 3.251 orang atau 7,4% dari tahun 2022 sebanyak 43.666 orang. Berdasarkan kelompok usia, pegawai PERTAMINA saat ini didominasi generasi milenial, yakni mereka yang lahir pada rentang waktu 1981-1996.

Information on Employees [GRI 2-7][OG 11.11.4][SOC-5.C2, 5.C3]

PERTAMINA's employees consist of Permanent Employees (PWTT) and Non-Permanent Employees (Contractors). In 2023, the Company had 40,415 employees, less 3,215 people, or 7.4% than 43,666 employees in 2022. Based on the age group, the employees are currently dominated by the millenials, people who were born between 1981 and 1996.

Tabel Komposisi Pekerja Berdasarkan Status Kepegawaian dan Penempatan
Composition of Employees Based on Employment Status and Placement

Status Kepegawaian Employment Status	2023			2022			2021		
	Holding	Subholding	Total	Holding	Subholding	Total	Holding	Subholding	Total
Pekerja Waktu Tidak Tertentu (PWTT) Permanent Employees	12,134	21,318	33,452	12,885	22,915	35,800	13,048	21,093	34,141
Laki-laki Men	10,681	16,597	27,278	11,363	18,043	29,406	11,525	16,389	27,914
Perempuan Women	1,453	4,721	6,174	1,522	4,872	6,394	1,523	4,704	6,227
Pekerja Waktu Tertentu (PWT) Non-Permanent Employees	37	6,926	6,963	36	7,830	7,866	33	11,138	11,171
Laki-laki Men	20	5,405	5,425	20	5,458	6,478	19	9,348	9,367
Perempuan Women	17	1,521	1,538	16	1,372	1,388	14	1,790	1,804
Total Pekerja Total Employees	12,171	28,244	40,415	12,921	30,746	43,666	13,081	32,231	45,312
Laki-laki Men	10,701	22,002	32,703	11,383	24,501	35,884	11,544	25,737	37,281
Perempuan Women	1,470	6,242	7,712	1,538	6,244	7,782	1,537	6,494	8,031

Tabel Komposisi Pegawai Tetap (PWTT) Berdasarkan Kelompok Usia dan Penempatan
Composition of Permanent Employees Based on Age Group and Placement

Status Kepegawaian Employment Status	2023			2022			2021		
	Holding	Subholding	Total	Holding	Subholding	Total	Holding	Subholding	Total
<26 Tahun <26 Years Old	511	686	1,197	748	525	1,273	1,307	429	1,736
Laki-laki Men	505	479	984	735	422	1,157	1,271	360	1,631
Perempuan Women	6	207	213	13	103	116	36	69	105
26-35 Tahun 26-35 Years Old	4,989	4,930	9,919	5,583	5,985	11,568	5,869	5,752	11,621
Laki-laki Men	4,434	3,660	8,094	4,937	4,455	9,332	5,136	4,161	9,297
Perempuan Women	555	1,270	1,825	646	1,530	2,176	733	1,591	2,324
36-45 Tahun 36-45 Years Old	4,686	8,768	13,454	4,448	9,459	13,907	3,686	8,939	12,625
Laki-laki Men	3,950	6,815	10,765	3,744	7,440	11,184	3,088	6,978	10,066
Perempuan Women	736	1,953	2,689	704	2,019	2,723	598	1,961	2,559
46-55 Tahun 46-55 Years Old	1,907	6,152	8,059	2,078	6,426	8,504	2,172	5,728	7,900
Laki-laki Men	1,756	4,969	6,725	1,920	5,272	7,192	2,016	4,673	6,689

Status Kepegawaian Employment Status	2023			2022			2021		
	Holding	Subholding	Total	Holding	Subholding	Total	Holding	Subholding	Total
Perempuan Women	151	1,183	1,334	158	1,154	1,312	156	1,055	1,211
>55 Tahun >55 Years Old	41	782	823	28	520	548	14	245	259
Laki-laki Men	36	674	710	27	454	481	14	217	231
Perempuan Women	5	108	113	1	66	67	-	28	28
Total Pegawai Total Employees	12,134	21,318	33,452	12,885	22,915	35,800	13,048	21,093	34,141

Tabel Komposisi Pegawai Tetap (PWTT) Berdasarkan Latar Belakang Pendidikan dan Penempatan [SD1]
Composition of Permanent Employees Based on Educational Background and Placement

Status Kepegawaian Employment Status	2023			2022			2021		
	Holding	Subholding	Total	Holding	Subholding	Total	Holding	Subholding	Total
SMP/Sederajat Junior High/Equivalent	35	39	74	0	45	45	0	38	38
Laki-laki Men	34	35	69	0	41	41	0	34	34
Perempuan Women	1	4	5	0	4	4	0	4	4
SLTA/Sederajat High School/Equivalent	2,378	4,016	6,394	2,532	4,363	6,895	2,522	3,859	6,381
Laki-laki Men	2,358	3,508	5,866	2,510	3,958	6,468	2,502	3,520	6,022
Perempuan Women	20	508	528	22	405	427	20	403	403
Diploma & Sarjana Diploma & Graduate	8,527	14,083	22,610	9,155	15,368	24,523	9,266	14,308	23,574
Laki-laki	7,356	10,504	17,860	7,917	11,534	19,451	8,018	10,580	18,598
Perempuan Women	1,171	3,579	4,752	1,238	3,834	5,072	1,248	3,728	4,976
PascaSarjana Postgraduate (S2 & S3)	1,194	3,181	4,374	1,198	3,139	4,337	1,260	2,862	4,122
Laki-laki Men	933	2,553	3,486	936	2,510	3,446	1,005	2,289	3,294
Perempuan Women	261	628	889	262	629	891	255	573	828
Total Pegawai Total Employees	12,134	21,318	33,452	12,885	22,915	35,800	13,048	21,098	34,141

Komposisi Pekerja Non-Pegawai [GRI 2-8][SOC-5.C2, 5.C3]

Pekerja non-pegawai terdiri dari pekerja magang dan tenaga kerja jasa penunjang (TKJP). Pekerja magang adalah mahasiswa tingkat akhir yang masih menempuh pendidikan di perguruan tinggi, yang diterima dalam program magang

Composition of Non-Employee Workers [GRI 2-8][SOC-5.C2, 5.C3]

The non-employee workers consist of interns and manpower supply service (TKJP). Interns are final-year students who are still pursuing education in universities and accepted in a certified internship program in PERTAMINA Group. In 2023, there were

bersertifikat di PERTAMINA Grup. Pada tahun 2023, pekerja magang berjumlah 798 orang, terdiri dari 319 orang atau 39,97% laki-laki dan 479 orang atau 60,03% perempuan.

798 interns, consisting of 319 men, or 39.97%, and 479 women, or 60.03%.

Tabel Komposisi Pekerja Magang Berdasarkan Gender dan Penempatan

Composition of Interns Based on Gender and Placement

Penempatan Placement	2023			2022			2021		
	Laki-laki Men	Perempuan Women	Total	Laki-laki Men	Perempuan Women	Total	Laki-laki Men	Perempuan Women	Total
Holding	185	291	476	226	331	557	184	294	478
Subholding	134	188	322	279	104	672	104	155	259

PERTAMINA juga mempekerjakan TKJP, yakni pekerja suatu proyek pada waktu tertentu. Jumlah TKJP pada tahun 2023 ada 53.056 orang, dengan penempatan terbanyak pada Subholding Upstream, sebanyak 21.346 orang atau 40% dari total TKJP di PERTAMINA.

PERTAMINA also recruits TKJP, workers for a certain project for a specific period of time. In 2023, there were 53,056 people working for the Company as TKJP, with Subholding Upstream accommodating the largest placement at 21,346 people, or 40% of total TKJP in PERTAMINA.

Tabel Komposisi Pekerja TKJP

Composition of TKJP Employees

Penempatan Placement	2023	2022	2021
Holding	1,330	1,373	1,362
Upstream	21,346	11,418	10,615
Refining & Petrochemical	5,735	4,180	4,429
Commercial & Trading	12,033	8,404	8,793
Power & Renewable Energy	1,142	1,077	69
Integrated Marine Logistics	3,451	3,283	248
Gas	5,107	5,779	3,243
AP Services & Portofolio	2,831	-	-
Jumlah Total	52,975	35,514	28,759

Keterangan: Untuk data AP Services & Portofolio konsolidasi data baru dilakukan di tahun 2023.
Note: For AP Services & Portfolio data, data consolidation will only be carried out in 2023.

Retensi dan Kesejahteraan Pegawai

PERTAMINA senantiasa berupaya mempertahankan talenta-talenta terbaik. Langkah yang dilakukan adalah memenuhi kesejahteraan, di antaranya dalam bentuk pemberian imbal jasa pekerjaan/remunerasi yang disesuaikan dengan status kepegawaian. Beberapa komponen dalam imbal jasa pekerjaan yang tidak diberikan kepada

Employee Retention and Welfare

PERTAMINA always strives to retain the best talents. One way is to fulfill the welfare, by providing remuneration that is adjusted to the employment status. Some components in the remuneration that are not given to non-permanent employees (PWT) are those related to the Award for Service (PAP), which includes severance pay, Long Service

pekerja tidak tetap (PWT) adalah komponen terkait Penghargaan Atas Pengabdian (PAP) yang meliputi antara lain pesangon, Uang Penghargaan Masa Kerja (UPMK), dan Uang Penggantian Hak (UPH). [GRI 401-2][OG 11.10.3]

Award Money (UPMK), and Right Replacement Money (UPH). [GRI 401-2][OG 11.10.3]

Secara berkala Perseroan melakukan pengukuran keterikatan pegawai (*employee engagement*) untuk melihat keterikatan mereka dengan Perseroan dan antusiasme terhadap pekerjaan. Pengukuran dikelompokkan ke dalam enam dimensi, yaitu reputasi organisasi, kepemimpinan, karir dan pengembangan diri, pekerjaan, kebutuhan dasar, dan hubungan sosial. Berdasarkan pengukuran yang dilakukan tahun 2023 diperoleh hasil Skor Keterikatan Pegawai adalah 87,60 (skala 100). Pencapaian tersebut naik dari tahun 2022 sebesar 83,23. [SOC-4.C2][SOC-6.C1]

The Company periodically measures employee engagement to observe their attachment to the Company and enthusiasm for work. The measurement is grouped into six dimensions, namely organizational reputation, leadership, career and self-development, work, basic needs, and social relationships. Based on the measurement conducted in 2023, the Employee Engagement Score was 87.60 (scale of 100), showing an increase from 83.23 in 2022. [SOC-4.C2][SOC-6.C1]

Tabel Hasil Survei Keterikatan Pegawai (*Employee Engagement*)
Results of Employee Engagement Survey

Uraian Description	2023	2022	2021
Skor Score	87.60	83.23	80.68

Perseroan terus berupaya meningkatkan keterikatan pegawai, dengan menyelenggarakan Program *Human Capital Counseling Assistance for Employees* (HC CARE). Selama tahun 2022-2023 telah dilaksanakan sesi *one-on-one counseling* untuk pegawai Perseroan melalui HC CARE. Ada beberapa program yang dijalankan PsyCARE: [SOC-6.C2]

The Company continues to improve employee engagement by organizing the Human Capital Counseling Assistance for Employees (HC CARE) Program. During 2022-2023, one-on-one counseling sessions were conducted for the Company's employees through HC CARE. There were several programs run by PsyCARE: [SOC-6.C2]

- Program untuk meningkatkan kesehatan mental bagi pekerja *Holding*;
- Program konseling untuk meningkatkan *well-being* pekerja *Holding*;
- Peningkatan peran Sumber Daya Manusia (HC) sebagai mitra pekerja;
- Mendukung terciptanya budaya gembira bekerja untuk meningkatkan produktivitas pekerja.

- A program to improve mental health for Holding employees;
- A counseling program to improve the well-being of Holding employees;
- Enhanced the role of Human Capital (HC) as a partner of workers;
- Supported the creation of a happy-to-work culture to increase employees' productivity.

Cuti Melahirkan [GRI 401-3][OG 11.10.4, 11.11.3]

Ketentuan cuti melahirkan diatur dalam Perjanjian Kerja Bersama (PKB) 2022-2024, dan diberikan kepada pegawai tetap (PWTT) maupun pegawai tidak tetap (PWT), yang telah menikah. Perseroan memberikan cuti selama 90 hari kalender kepada pegawai perempuan yang melahirkan, disertai jaminan bekerja kembali sesuai jabatan semula. Cuti melahirkan juga diberikan selama tiga hari kerja kepada pegawai laki-laki untuk mendampingi proses persalinan istri mereka. Selama tahun 2023, ada 197 pegawai perempuan cuti melahirkan, dan seluruhnya telah bekerja kembali pada jabatan semula usai cuti melahirkan. Tidak ada pegawai perempuan yang berhenti bekerja dan meninggalkan PERTAMINA usai cuti melahirkan.

Perubahan Operasi [GRI 402-1][OG 11.10.5]

Sesuai PKB 2022-2024, Perseroan berkewajiban menyampaikan pemberitahuan kepada pekerja terkait perubahan operasi. Ketentuan yang diatur dalam PKB antara lain:

- Pemberitahuan mutasi/rotasi penugasan minimal 30 hari kalender sebelum pelaksanaan;
- Pemberitahuan penghentian operasi/pemutusan kontrak kerja/pemutusan hubungan kerja (PHK) minimal 30 hari kalender sebelum pelaksanaan sebagaimana tercantum dalam Perjanjian Kerja Bersama yang berlaku.

Maternity Leave [GRI 401-3][OG 11.10.4, 11.11.3]

The stipulation on maternity leave is regulated in the Collective Labor Agreement (CLA) 2022-2024 and is given to married permanent employees (PWTT) and non-permanent employees (PWT). A 90 calendar days of leave is given to female employees who give birth, with a guarantee to return to work according to their original position. Maternity leave is also granted for three working days to male employees to accompany their wives' labor. In 2023, 197 female employees went on maternity leave, and all of them returned to their original positions after completing their leave. No female employees stopped working and resigned from PERTAMINA after the maternity leave.

Changes in Operations [GRI 402-1][OG 11.10.5]

Per the CLA 2022-2024, the Company is obliged to notify employees on the changes in operations. The provisions stipulated in the CLA include:

- Notification of assignment mutation/rotation at least 30 calendar days prior to commencement;
- Notification of termination of operations/termination of employment contracts/termination of employment (PHK) at least 30 calendar days prior to commencement, as stated in the applicable Collective Labor Agreement.

Pelatihan dan Pengembangan Kapabilitas Pekerja

 [OJK F.22][SOC-7.C1]
Employees Capability Training and Development

Perseroan terus meningkatkan kompetensi dan kapabilitas pekerja melalui pendidikan dan pelatihan yang diselenggarakan secara rutin. Peningkatan kompetensi pekerja menjadi tanggung jawab Fungsi HC, didukung PERTAMINA Corporate University (PCU) serta PT Pertamina Training & Consulting (PTC), dan diukur melalui target KPI. Selama tahun 2023, kami melanjutkan kegiatan pendidikan dan pelatihan, yang mengedepankan metode pembelajaran dengan memanfaatkan teknologi, di antaranya *mobile learning* dan *e-learning*.

Routine education and training provided by the Company help enhance employees' competence and capability. The improvement of employees' competence is the responsibility of the HC Function with the support of PERTAMINA Corporate University (PCU) and PT Pertamina Training & Consulting (PTC), and it can be measured based on the KPIs target. In 2023, we continued to organize education and training activities that prioritized a technology-based learning method, such as mobile learning and e-learning.



Tabel Realisasi Program Pendidikan dan Pelatihan
Realization of Education and Training Program

Jenis Pelatihan dan Pendidikan Types of Training and Education	2023		2022*		2021*	
	Jumlah Program Total Programs	Jumlah Total Participants	Jumlah Program Total Programs	Jumlah Total Participants	Jumlah Program Total Programs	Jumlah Total Participants
Pre-employee Program	2	420	4	560	2	167
Program Pendidikan Lanjutan (Tugas Belajar) Advanced Education Program (Tugas Belajar)	2	9	2	4	2	27
Program Pelatihan Jangka Panjang dan Pendek Long- and Short-Term Training Program	868	38,014	763	28,934	376	32,187
Program E-learning/Mobile Learning E-Learning/Mobile Learning Program	63	48,384	53	35,024	30	29,039

*Terdapat penyajian kembali dari data 2022 dan 2021 yang dikarenakan perubahan metode perhitungan
*There is a restatement of 2022 and 2021 data due to a change in the calculation method.

Perseroan juga memberdayakan para pimpinan untuk memiliki tanggung jawab dalam melakukan transfer pengetahuan, melalui kegiatan *coaching* dan pendampingan (*mentoring*). Ada beberapa program/kegiatan yang dilaksanakan selama tahun 2023.

The Company also empowers the leaders to carry responsibilities in knowledge transfer through coaching and mentoring. There were programs/activities held in 2023.

Tabel Realisasi Program Transfer Pengetahuan
Realization of Knowledge Transfer Program

Jenis Program Type of Program	2023		2022		2021	
	Jumlah Program Total Programs	Jumlah Total Participants	Jumlah Program Total Programs	Jumlah Total Participants	Jumlah Program Total Programs	Jumlah Total Participants
Program Fungsional Functional Program	914	75,781	803	49,652	401	47,525
Manajerial/Program Kepemimpinan Managerial/Leadership Program	13	2,445	10	2,021	4	2,799
Program Nilai-Nilai Perusahaan Corporate Values Program	2	6,815	2	11,665	1	10,902
Program Penguatan Komitmen Nasional Strong National Commitment Program	3	1,357	1	620	0	0

Rerata Jam Pelatihan per Total Pegawai [GRI 404-1][OG 11.10.6, 11.11.7][SOC-7.C2]

Jumlah jam pelatihan selama tahun 2023 mencapai 1.472.248 jam, dengan jumlah peserta 86.398 orang. Rerata jam pelatihan per total karyawan untuk masing-masing entitas anak disampaikan dalam tabulasi berikut.

Average Hours of Training per Total Employees [GRI 404-1][OG 11.10.6, 11.11.7][SOC-7.C2]

The average training hours in 2023 amounted to 1,472,248 hours with a total participants reaching 86,398 people. The table below shows the average training hours per total employees for each subsidiary.

Rerata Jam Pelatihan per Total Karyawan
Average Hours of Training per Total Employees

Entitas Anak Subsidiary	2023			2022	2021
	Jam Pelatihan Training Hours	Jumlah Pegawai Number of Employees	Rerata Average	Rerata Average	
Holding	233,768	5,781	40.44	15.63	81.62
Upstream	411,402	31,486	13.07	19.72	19.24
Refining & Petrochemical	352,005	20,645	17.05	15.29	14.31
Commercial & Trading	272,284	18,880	14.42	11.79	18.51
Power & Renewable Energy	14,005	1,100	12.73	10.56	23.62
Integrated Marine Logistics	60,825	4,147	14.67	15.97	17.28
Gas	112,341	4,101	27.39	14.08	24.86
AP Services & Portofolio	15,618	258	60.53	29.71	26.16

Leadership Development Program

Untuk mempersiapkan talenta-talenta terbaik, Perseroan memiliki program akselerasi pekerja dalam bentuk *Leadership Development Program*. Penyelenggaraan LDP ditujukan untuk mengembangkan *Human Capital Readiness*; mengembangkan dan meningkatkan kompetensi para talenta, serta menjamin terlaksananya pengembangan kompetensi kepemimpinan yang sistematis, konsisten, dan berkesinambungan. Program ini terdiri dari Program Wajib, Program Pengayaan, Program Akselerasi, Program Talenta Global.

Leadership Development Program

To prepare the best talents, the Company has an employee acceleration program in the form of *Leadership Development Program*. The LDP is aimed at developing *Human Capital Readiness*; developing and improving the talents' competence, and ensuring the implementation of systematic, consistent, and sustainable leadership competency development. This program consists of Mandatory Program, Enrichment Program, Acceleration Program, Global Talent Program.

Program Wajib | Mandatory Program

Merupakan program yang ditujukan untuk memenuhi *Generic Skills/Perilaku Leadership* yang dibutuhkan di setiap jenjang untuk menjalankan tugas dan tanggung jawabnya, antara lain *Effective Working Attitude (EWA)*, *Junior Management Development Program (JMDP)*, dan *Senior Management Development Program (SMDP)*.

Mandatory program: a program aimed at fulfilling the *Generic Skills/Leadership Behavior* required at every level to carry out their duties and responsibilities, including *Effective Working Attitude (EWA)*, *Junior Management Development Program (JMDP)*, and *Senior Management Development Program (SMDP)*.

Realisasi tahun 2023: Total peserta 2.629 dengan jumlah jam pelatihan mencapai 51.583 jam.
The 2023 realization: 2,629 participants with a total of 51,583 training hours.

Program Pengayaan -NRE Champion General Modul Program | Enrichment Program – NRE Champion General Module Program

Merupakan program yang ditujukan melengkapi *skills* tertentu pada pekerja untuk mengoptimalkan kinerja. Program ini difokuskan pada *skillset* unik/baru yang dibutuhkan bisnis di masa yang akan datang.

Enrichment program: a program aimed at completing certain skills in employees to optimize performance. This program is focused on unique/new/skillset needed by businesses in the future.

Realisasi tahun 2023: Total peserta 293 dengan jumlah jam pelatihan mencapai 4.688 jam.
The 2023 realization: 293 participants with a total of 4,688 training hours.

Program Akselerasi | Acceleration Program

Merupakan program yang ditujukan untuk memfasilitasi pengembangan akselerasi pekerja agar siap untuk menjadi suksesor posisi kunci di berbagai level jabatan, antara lain program *Trailblazer*, *Catalyzer*, *PRIME*.

Acceleration program: a program aimed at facilitating accelerated development of employees so that they are ready to become successors to key positions at various levels of positions such as *Trailblazer*, *Catalyzer*, *PRIME*.

Realisasi tahun 2023: Total peserta 142 dengan jumlah jam pelatihan mencapai 7.464 jam.
The 2023 realization: 142 participants with a total of 7,464 training hours.

Program Talenta Global | Global Talent Program

Program penugasan pekerja ke luar negeri dengan tujuan untuk mendapatkan *exposure* dalam lingkungan multikultural dengan tujuan meningkatkan kapabilitas dan mempersiapkan pekerja yang siap *go global*, antara lain program *International Sales & Purchase of Vessel*, *MMSA International Methanol*, dan *LNG Expert Training*.

A program for assigning employees abroad with the aim of gaining exposure in a multicultural environment with the aim of increasing capabilities and preparing employees who are ready to go global, such as *International Sales & Purchase of Vessel*, *MMSA International Methanol*, and *LNG Expert Training* Programs.

Realisasi tahun 2023: Total peserta 109 dengan jumlah jam pelatihan mencapai 4.708 jam.
The 2023 realization: 109 participants with a total of 4,708 training hours.

Pelatihan untuk Persiapan Masa Pensiun [GRI 404-2][OG 11.10.7]

Sesuai PKB 2022-2024, usia pensiun pegawai PERTAMINA adalah 56 tahun. Perseroan memiliki program atau kegiatan untuk mempersiapkan pegawai yang akan pensiun, sehingga tetap dapat produktif dan melanjutkan hidup setelah tidak bekerja di PERTAMINA. Program/kegiatan yang diselenggarakan tahun 2023 adalah pelatihan Pembekalan Masa Purna Karya dengan jumlah jam pelatihan mencapai 16.367 jam, dengan total 422 peserta.

Penilaian Kinerja dan Pengembangan Karir [GRI 404-3][SOC-5.A4]

Perseroan memberikan kesempatan setara kepada setiap pekerja untuk mengembangkan karir. Promosi jabatan didasarkan pada hasil penilaian kinerja, dengan mempertimbangkan kebutuhan organisasi. Pada tahun 2023 penilaian dilakukan terhadap seluruh (100%) pekerja. Berdasarkan hasil penilaian ada 5.272 pegawai yang mendapatkan promosi jabatan, terdiri dari 4.487 orang atau 85% laki-laki, dan 785 orang atau 15% perempuan.

Kesempatan untuk menjadi pemimpin di Perseroan juga difasilitasi melalui mekanisme lelang jabatan. Kebijakan ini mendorong keberagaman komposisi pejabat perseroan, di antaranya berdasarkan *gender*, dan kelompok usia. Pengungkapan informasi keberagaman komposisi pejabat perseroan untuk setiap entitas anak dan setiap unit operasi/unit bisnis-nya, disampaikan dalam Laporan Keberlanjutan masing-masing perusahaan.

Training for Retirement Preparedness [GRI 404-2][OG 11.10.7]

The CLA 2022-2024 states that 56 years old marks the retirement age of PERTAMINA employees. The Company has programs or activities to prepare employees who will retire so that they can lead a productive life post working. The program/activity held in 2023 was the Retirement Debriefing training with a total of 16,367 training hours and a total of 422 participants.

Performance Appraisal and Career Development [GRI 404-3][SOC-5.A4]

The Company provides equal opportunities for every employee to develop their career. Promotions are based on the results of performance appraisals, taking into account the needs of the organization. In 2023, appraisals were conducted on all employees (100%). The appraisal results show there were 5,272 employees who were promoted, consisting of 4,487 people or 85% men, and 785 people or 15% women.

The opportunity to become a leader in the Company is also facilitated through a position auction mechanism. This policy encourages diversity in the composition of company officials based on gender and age group. Information disclosure on the diversity of the composition of company officials for each subsidiary and each operating unit/business unit is presented in each company's Sustainability Report.

Jumlah Pekerja Mendapat Promosi Jabatan Berdasarkan Gender

Total Employees Promoted Based on Gender

Jenis Program Types of Program	2023		2022		2021	
	Jumlah Total	%	Jumlah Total	%	Jumlah Total	%
Laki-laki Men	4,487	85	6,927	86	5,716	84
Perempuan Women	785	15	1,091	14	864	16
Jumlah Total	5,272	100	8,018	100	6,625	100

HAM, Kepemimpinan Perempuan, Keberagaman dan Inklusivitas

[SOC-5.C1]

Human Rights, Women's Leadership, Diversity and Inclusiveness

Uji Tuntas HAM dan Sertifikasi PRISMA [GRI 412-1, 412-3][SOC-1.C1][EM-EP-210a.3]

PERTAMINA memiliki komitmen kuat dalam penegakan hak asasi manusia (HAM). Komitmen tersebut diwujudkan dengan menjalankan Uji Tuntas HAM (*Human Rights Due Diligence*) pada tahun 2022, menggunakan alat ukur Penilaian Risiko Bisnis dan HAM (PRISMA) yang dikembangkan Kementerian Hukum dan HAM. Berdasar hasil uji tuntas yang dilakukan, pada tahun 2023 Kementerian Hukum dan HAM memberikan Sertifikat PRISMA kepada: PT Pertamina (Persero), Subholding Upstream, Subholding Gas, Subholding Power & Renewable Energy, Subholding Refining & Petrochemical, Subholding Commercial & Trading, Subholding Integrated Marine & Logistics, PT Pertamina Geothermal Energy dan PT Pertamina Retail.

Melalui penerapan PRISMA, Perseroan melalui Direksi dengan pengawasan Dewan Komisaris, memastikan penyertaan aspek-aspek penegakan HAM dalam setiap investasi dan kontrak kerja yang disepakati. Dengan demikian investasi dan kontrak kerja yang dijalankan PERTAMINA, akan memberikan jaminan terhadap kepemilikan masyarakat terutama terkait tanah/lahan yang menjadi lokasi kegiatan migas, menjamin keberlanjutan kelestarian lingkungan hidup, dan mengedepankan konsep penyelesaian HAM dalam setiap konflik yang terjadi dengan berbagai pihak dalam menjalankan kegiatan operasi. Evaluasi dari setiap investasi dan kontrak kerja dilakukan melalui pelaporan berkala kepada Direksi. [SOC-1.C3, 1.C5]

PERTAMINA juga melakukan sejumlah inisiatif termasuk pelatihan, untuk mendukung penegakan HAM. Selama tahun 2023 ada 6 pelatihan dengan jumlah jam pelatihan mencapai 33.332 jam, dan peserta 7.896 orang atau 24% dari total pekerja PERTAMINA. Kegiatan pelatihan yang diselenggarakan, di antaranya: [GRI 412-2][SOC-1.C4]

Human Rights Due Diligence and PRISMA Certification [GRI 412-1, 412-3][SOC-1.C1][EM-EP-210a.3]

PERTAMINA is strongly committed to upholding human rights. This commitment was realized through Human Rights Due Diligence implementation in 2022, using the Business and Human Rights Risk Assessment (PRISMA) measuring instrument developed by the Ministry of Law and Human Rights. In 2023, based on the results of the implemented due diligence, the Ministry of Law and Human Rights awarded a PRISMA Certificate to: PT Pertamina (Persero), Subholding Upstream, Gas Subholding, Power & Renewable Energy Subholding, Subholding Refining & Petrochemical, Subholding Commercial & Trading, Subholding Integrated Marine & Logistics, PT Pertamina Geothermal Energy and PT Pertamina Retail.

By implementing PRISMA, the Company through the Board of Directors, under the supervision of the Board of Commissioners, ensures the inclusion of human rights enforcement aspect in every investment and work contract agreement. Therefore, PERTAMINA's investments and work contracts will guarantee community ownership, especially over land/site where the oil and gas activities located, ensure environmental sustainability, and prioritize the concept of human rights resolution in any conflicts that occur involving various parties in conducting operational activities. Evaluation of each investment and work contract is carried out through periodic reporting to the Board of Directors. [SOC-1.C3, 1.C5]

PERTAMINA also conducts a number of initiatives including training, to support human rights enforcement. During 2023 there were 6 trainings with total training hours reaching 33,332 hours, and 7,896 participants or 24% of total PERTAMINA workers. Training activities organized, among others: [GRI 412-2][SOC-1.C4]

- Pelatihan *Workplace Violence and Harassment Prevention* yang diikuti oleh 85 peserta. Tujuan pelatihan adalah untuk meningkatkan kesadaran, pemahaman, dan keterampilan dalam mengenali, mencegah, dan menangani kasus kekerasan dan pelecehan di tempat kerja, sehingga menciptakan lingkungan kerja yang aman, nyaman, dan produktif bagi semua karyawan.
- Pelatihan Uji Tuntas Hak Asasi Manusia (HAM) yang diikuti oleh 3 peserta. Tujuan pelatihan adalah untuk meningkatkan pemahaman dan keterampilan dalam memahami, menerapkan, dan memperjuangkan hak asasi manusia, serta memastikan bahwa semua individu memiliki pengetahuan yang cukup untuk melindungi dan memperjuangkan hak-hak mereka.
- Pelatihan Gender Mainstreaming yang diikuti oleh 26 peserta. Tujuan pelatihan adalah untuk meningkatkan pemahaman tentang pentingnya integrasi perspektif gender dalam kebijakan, program, dan praktik organisasi, serta mengembangkan keterampilan dalam menerapkan pendekatan yang inklusif dan berkeadilan gender untuk mencapai kesetaraan gender dan pembangunan yang berkelanjutan.
- Pelatihan Bias Gender in Interview Process yang diikuti oleh 25 peserta. Tujuan pelatihan adalah untuk memastikan bahwa seleksi karyawan didasarkan pada kualifikasi dan kompetensi, bukan pada faktor gender.
- Pelatihan Disability Awareness yang diikuti oleh 24 peserta. Tujuan pelatihan adalah untuk meningkatkan pemahaman, sensitivitas, dan inklusivitas terhadap individu dengan disabilitas, sehingga tercipta lingkungan kerja yang inklusif dan saling menghormati.
- Workplace Violence and Harassment Prevention training attended by 85 participants. The training was aimed at raising awareness, understanding, and skills in recognizing, preventing, and handling cases of violence and harassment in the workplace, thus creating a safe, comfortable, and productive work environment for all employees.
- Human Rights Due Diligence Training attended by 3 participants. The purpose of the training was to improve awareness and skills in understanding, applying, and upholding human rights, as well as ensuring that all individuals have sufficient knowledge to protect and fight for their rights.
- Gender Mainstreaming Training attended by 26 participants. The purpose of the training was to increase understanding of the importance of integrating gender perspectives in organizational policies, programs, and practices, as well as develop skills in applying gender-inclusive and equitable approaches to achieve gender equality and sustainable development.
- Gender Bias in Interview Process training attended by 25 participants. The purpose of the training was to ensure that employee selection is based on qualifications and competencies, not on gender factors.
- Disability Awareness Training attended by 24 participants. The purpose of the training was to increase understanding, sensitivity, and inclusiveness towards individuals with disabilities, to create an inclusive and respectful work environment.

Perseroan mengembangkan perangkat audit PERTAMINA *Industrial Peace Level* (PIPL), yang ditujukan untuk menjamin keberlanjutan dan keselarasan pengelolaan *industrial peace*. Di tahun 2023, tidak dilaksanakan audit PIPL dikarenakan audit dilaksanakan dua tahun sekali.

The Company developed the PERTAMINA *Industrial Peace Level* (PIPL) audit tool, which is intended to ensure the sustainability and alignment of industrial peace management. In 2023, no PIPL audit was conducted because the audit is conducted every two years.

Perseroan memiliki Kebijakan *Respectful Workplace* yang wajib ditaati seluruh pekerja, maupun pihak-pihak yang berinteraksi dengan PERTAMINA termasuk kontraktor/mitra/vendor. Kebijakan *Respectful Workplace* disusun sesuai ILO Convention No. 111 tentang *Discrimination in Employment and Occupation*; serta ILO Convention No. 190 tentang *Violence and Harassment in The World of Work*. Seluruh pekerja PERTAMINA berkewajiban melaporkan tindakan diskriminasi, kekerasan, dan pelecehan yang terjadi di lingkungan kerja, melalui media pelaporan yang telah disediakan yaitu respect@pertamina.com. Perseroan melindungi setiap pelapor dari tindakan pembalasan maupun diskriminasi. Selama tahun 2023, ada tiga laporan yang seluruhnya diberikan sanksi PHK terhadap pelaku terkait dugaan diskriminasi, kekerasan, dan pelecehan dalam bekerja maupun terhadap pegawai. Sesuai dengan prosedur, setiap laporan akan ditindaklanjuti, dan diberikan sanksi sesuai ketentuan yang berlaku di PERTAMINA, dengan sanksi maksimum berupa PHK. Untuk korban tindakan kekerasan pelecehan seksual di lingkungan PERTAMINA akan diberikan pendampingan psikologis dan pendampingan oleh tim HC. PERTAMINA juga melakukan beberapa strategi seperti sosialisasi *respectful workplace* di seluruh entitas PERTAMINA dan memberikan training terkait *respectful workplace*. [GRI 406-1][SOC-1.A1][SOC-2.C1][SOC-8.C1]

Kesempatan Setara kepada Penyandang Disabilitas

Perseroan memberi kesempatan bagi penyandang disabilitas/difabel untuk bekerja di PERTAMINA Grup, melalui program afirmasi rekrutmen penyandang disabilitas. Hal ini bertujuan untuk meningkatkan populasi difabel hingga 2% dari total demografi Perseroan pada tahun 2024. Sampai dengan akhir tahun 2023 jumlah difabel yang menjadi pegawai Perseroan mencapai 57 orang, atau 1,97% dari total pegawai.

The Company has a *Respectful Workplace Policy* that must be adhered to by all employees, as well as parties who interact with PERTAMINA including contractors/partners/vendors. *Respectful Workplace Policy* is prepared in accordance with ILO Convention No. 111 on *Discrimination in Employment and Occupation*; and ILO Convention No. 190 on *Violence and Harassment in the World of Work*. All PERTAMINA employees are obliged to report acts of discrimination, violence, and harassment that occur in the work environment, through the reporting media, respect@pertamina.com. The Company protects every whistleblower from retaliation or discrimination. During 2023, there were three reports, with all of the perpetrators receiving termination of employment over allegations of discrimination, violence, and harassment at work or against employees. In accordance with the procedure, each report will be followed up, and sanctioned according to the applicable provisions in PERTAMINA, with the maximum sanction of termination of employment. Victims of violent acts of sexual harassment within PERTAMINA will be given psychological support and mentoring by the HC team. PERTAMINA also carries out several strategies such as socializing *respectful workplaces* in all PERTAMINA entities and providing training related to *respectful workplaces*. [GRI 406-1][SOC-1.A1][SOC-2.C1][SOC-8.C1]

Equal Opportunities for Persons with Disabilities

The Company provides opportunities for persons with disabilities to work in PERTAMINA Group, through an affirmation program for persons with disabilities. The program aims to increase the population of persons with disabilities to 2% of the Company's total demographics by 2024. Until the end of 2023, the number of persons with disabilities working for the Company reached 57 employees, or 1.97% of total employees.

Komposisi Pegawai Penyandang Disabilitas

Composition of Employees with Disabilities

Tahun Year	Tuna Daksa Physically Disabled		Tuna Netra Blind		Tuna Rungu Deaf		Tuna Wicara Mute		Jumlah	
	Jumlah Total	%	Jumlah Total	%	Jumlah Total	%	Jumlah Total	%	Jumlah Total	%
2023	30	52	5	10	19	33	3	5	57	100
2022	21	43	1	2	17	35	10	20	49	100
2021	21	51	1	2,5	18	44	1	2,5	41	100

Komposisi Pegawai Penyandang Disabilitas Berdasarkan Kelompok Usia dan Gender

Composition of Employees with Disabilities by Gender and Age

Kelompok Usia Age Group	Jenis Kelamin Gender	2023		2022		2021	
		Jumlah Total	%	Jumlah Total	%	Jumlah Total	%
<30 Tahun Years old	Laki-laki Men	12	22	12	24	6	15
	Perempuan Women	17	32	16	33	14	34
30-50 Tahun Years old	Laki-laki Men	17	28	13	27	13	32
	Perempuan Women	11	18	8	16	8	20
>50 Tahun Years old	Laki-laki Men	0	0	0	0	0	0
	Perempuan Women	0	0	0	0	0	0
Jumlah Total		57	100	49	100	41	100
Jumlah Total	Laki-laki Men	29	50	25	51	19	55
	Perempuan Women	28	50	24	49	22	44

Selain rekrutmen terhadap difabel/penyandang disabilitas, Perseroan memiliki kebijakan penyediaan kesempatan kerja bagi masyarakat lokal dan masyarakat adat setempat termasuk dari Papua. Hal ini selaras dengan komitmen Kementerian BUMN untuk menyediakan kesempatan setara kepada masyarakat lokal dan masyarakat adat.

In addition to recruiting persons with disabilities, the Company has a policy of providing employment opportunities for local communities and local indigenous peoples, including those from Papua region. This is in line with the commitment of the Ministry of SOEs to provide equal opportunities to local communities and indigenous peoples.

Akumulasi Jumlah Pegawai Putra Daerah Papua Berdasarkan Gender

Accumulated Number of Papuan Regional Male Officer Based on Gender

Jenis Kelamin Gender	2023		2022		2021		
	Jumlah Total	%	Jumlah Total	%	Jumlah Total	%	
Laki-laki Men	19	63	18	64	17	59	
Perempuan Women	11	37	10	36	12	41	
Jumlah Total		30	100	28	100	29	100

Kesetaraan Gender dan Kepemimpinan Perempuan

Perseroan berkomitmen tinggi menerapkan kesetaraan *gender* dalam pengelolaan sumber daya manusia. Komitmen tersebut diiringi dengan penerapan *Women Empowerment Principles* (WEP) UNGC. Perseroan juga berkolaborasi dengan para pemangku kepentingan untuk mendorong praktik bisnis yang memberdayakan perempuan.

Female Leadership and Talent Pipeline

Perseroan berkomitmen terus mendorong kepemimpinan perempuan di PERTAMINA Grup. Hal ini diwujudkan dalam pengukuran target KPI persentase *Women as a Leader*, sebagai bagian dari tindakan afirmasi dalam rangka meningkatkan peluang pekerja perempuan sebagai pemimpin di Perseroan. Pada tahun 2023, persentase Perempuan Pemimpin (*Women as a Leader*) adalah 16,67%. Perseroan juga melaksanakan program *coaching* untuk pekerja perempuan dalam rangka meningkatkan kesiapan kepemimpinan pekerja perempuan.

Gender Equality and Women's Leadership

The Company is highly committed to implementing gender equality in human capital management. This commitment is supported by adopting Women Empowerment Principles (WEP) of UNGC. The Company also collaborates with stakeholders to encourage business practices that empower women.

Female Leadership and Talent Pipeline

The Company is committed to continuously encouraging women's leadership in PERTAMINA Group. This is realized in the KPI target measurement of the Women as a Leader percentage, as part of affirmative action to increase opportunities for female employees as leaders in the Company. In 2023, the percentage of Women as a Leader was 16.67%. The Company also implemented a coaching program for female employees to improve their leadership readiness.

Tabel Komposisi Pekerja PWT Berdasarkan Level Jabatan dan Gender

Table of Permanent Employee Composition by Gender and Position Level

Level Jabatan Position Level	2023				2022				2021			
	Holding	Sub-Holding	Total	%	Holding	Sub-Holding	Total	%	Holding	Sub-Holding	Total	%
L1 (SVP Setara) L1 (SVP Equivalent)	19	8	27	1.16	14	10	24	1.59	17	5	22	1.19
Laki-laki Men	18	7	25	1.08	13	8	21	1.39	17	5	22	1.18
Perempuan Women	1	1	2	0.09	1	2	3	0.20	0	0	0	0
L2 (VP Setara) L2 (VP Equivalent)	236	155	391	16.85	163	88	251	16.59	187	81	268	14.35
Laki-laki Men	196	114	310	13.36	136	66	202	13.35	162	60	222	11.89
Perempuan Women	40	41	81	3.49	27	22	49	3.24	25	21	46	2.46
L3 (Manajer Setara) L3 (Manager Equivalent)	1,055	848	1,903	81.99	626	612	1,238	81.82	965	612	1,577	84.47
Laki-laki Men	886	713	1,599	68.89	505	511	1,016	67.15	820	541	1,361	72.90
Perempuan Women	169	135	304	13.10	121	101	222	14.67	145	71	216	11.57
Total L1-L3	1,310	1,011	2,321	100	803	710	1,513	100	1,169	698	1,867	100
% Women Leader				16.67				18.11				14

Level Jabatan Position Level	2023				2022				2021			
	Holding	Sub-Holding	Total	%	Holding	Sub-Holding	Total	%	Holding	Sub-Holding	Total	%
L4 dan Lainnya L4 and others	10,829	20,307	31,136	100	12,082	22,205	34,287	100	11,879	20,396	32,274	100
Laki-laki Men	9,585	15,763	25,348	81.41	10,709	17,458	28,167	82.15	10,526	15,783	26,309	81.52
Perempuan Women	1,244	4,544	5,788	18.59	1,373	4,747	6,120	17.85	1,353	4,612	5,965	18.48
Total L1-L4	12,139	21,318	33,452	100	12,885	22,915	35,800	100	13,048	21,093	34,141	100

Kesetaraan dan Keseimbangan Remunerasi

PERTAMINA menerapkan prinsip kesetaraan dalam menentukan besaran imbal jasa pekerjaan (upah dan remunerasi), baik kepada pegawai perempuan maupun laki-laki. Namun demikian besaran imbal jasa pekerjaan yang diterima pegawai perempuan dan laki-laki, untuk tingkat jabatan yang sama dapat saja berbeda, karena mempertimbangkan masa kerja, kinerja dan lokasi penempatan. Hasil kalkulasi rasio upah dan remunerasi pada tahun 2023 memperlihatkan pada jabatan tertentu ada pegawai perempuan yang menerima imbal jasa pekerjaan lebih besar dari pekerja laki-laki. [GRI 405-2][OG 11.11.5][SOC-5.A2]

Equal Pay and Gender Pay Parity

PERTAMINA applies the principle of equality in determining the amount of compensation (wages and remuneration), both to women and men employees. However, the amount of remuneration received by women and men employees, for the same level of position may differ, due to the length of service, performance and location of placement. The wage and remuneration ratio in 2023 show that women employees in certain positions receive higher compensation than men employees. [GRI 405-2][OG 11.11.5][SOC-5.A2]

Tabel Rasio Gaji Pokok dan Remunerasi Pegawai Perempuan Dibanding Pegawai Laki-laki
Table of the Ratio of Male's Wages to Female's Wages

Tingkat Jabatan Position Level	2023			2022			2021		
	Laki-laki Men	Perempuan Women	Rasio Ratio	Laki-laki Men	Perempuan Women	Rasio Ratio	Laki-laki Men	Perempuan Women	Rasio Ratio
L1 (SVP Setara) L1 (SVP Equivalent)	1.09	1	0.91	1.27	1	0.79	1	-	-
L2 (VP Setara) L2 (VP Equivalent)	1.12	1	0.89	1.03	1	0.97	0.00	1	1.00
L3 (Manager Setara) L3 (Manager Equivalent)	1	1	1.00	0.99	1	1.01	1.02	1	0.98
L4 dan Lainnya L4 and others	0.98	1	1.02	1.01	1	0.99	0.99	1	1.00

Rasio Gaji Pokok dan Remunerasi Pegawai Perempuan Dibanding Pegawai Laki-laki Tahun 2023 Berdasarkan Lini Bisnis Signifikan

Basic Salary and Remuneration Ratio of Female Compared to Male based on Significant Business Line in 2023

Tingkat Jabatan Position Level	Upstream			Refining & Petrochemical			Commercial & Trading		
	Laki-laki Men	Perempuan Women	Rasio Ratio	Laki-laki Men	Perempuan Women	Rasio Ratio	Laki-laki Men	Perempuan Women	Rasio Ratio
L1 (SVP Setara) L1 (SVP Equivalent)	-	-	-	-	-	-	-	-	-
L2 (VP Setara) L2 (VP Equivalent)	0.97	1	1.03	1.40	1	0.71	0.87	1	1.15
L3 (Manager Setara) L3 (Manager Equivalent)	1.01	1	0.99	1.15	1	0.87	1	1	1
L4 dan Lainnya L4 and others	1.05	1	0.92	0.92	1	1.09	0.84	1	1.19

Keterangan: Terkait dengan informasi L1 (SVP Setara) atau setara dengan Direksi pada Subholding tidak dapat disajikan dalam tabel ini dikarenakan memiliki ketentuan yang berbeda.

Note: Information related to L1 (SVP Equivalent) or equivalent to the Board of Directors in Subholding cannot be presented in this table because have different conditions.

Rasio Gaji Pokok dan Remunerasi Pegawai Perempuan Dibanding Pegawai Laki-laki Tahun 2023 Berdasarkan Lini Bisnis Signifikan

Basic Salary and Remuneration Ratio of Female Compared to Male based on Significant Business Line in 2023

Tingkat Jabatan Position Level	Power & New Renewable Energy			Integrated Marine Logistics			Gas		
	Laki-laki Men	Perempuan Women	Rasio Ratio	Laki-laki Men	Perempuan Women	Rasio Ratio	Laki-laki Men	Perempuan Women	Rasio Ratio
L1 (SVP Setara) L1 (SVP Equivalent)	-	-	-	-	-	-	-	-	-
L2 (VP Setara) L2 (VP Equivalent)	0.87	1	0.15	0.91	1	1.10	0.99	1	1.01
L3 (Manager Setara) L3 (Manager Equivalent)	0.97	1	1.03	1.03	1	0.97	0.95	1	1.05
L4 dan Lainnya L4 and others	1.10	1	0.91	1.05	1	0.95	1	1	1

Keterangan: Terkait dengan informasi L1 (SVP Setara) atau setara dengan Direksi pada Subholding tidak dapat disajikan dalam tabel ini dikarenakan memiliki ketentuan yang berbeda.

Note: Information related to L1 (SVP Equivalent) or equivalent to the Board of Directors in Subholding cannot be presented in this table because have different conditions.

Tingkat remunerasi yang diberikan kepada pekerja, mengacu pada kemampuan perusahaan dan *competitiveness* posisi upah sesuai pasar. Berdasarkan Peraturan Pemerintah, remunerasi diberikan berbeda menurut status kepegawaian. Beberapa komponen dalam imbal jasa pekerjaan yang tidak diberikan kepada Pekerja Waktu Tertentu (PWT)/pekerja tidak tetap adalah komponen terkait Penghargaan Atas Pengabdian (PAP) yang meliputi pesangon, Uang Penghargaan Masa Kerja (UPMK), Uang Penggantian Hak (UPH), serta komponen penggantian biaya lainnya

The remuneration amount provided to employees refers to the Company's ability and the competitiveness of the wage position according to the market. Based on Government Regulations, remuneration is given differently according to employment status. Some components in the remuneration that are not given to specified time (PWT)/non-permanent employees are components related to Service Rewards (PAP) which include severance pay, Long Service Pay (UPMK), Compensation of Rights (UPH), and other compensation components related to PAP.

terkait PAP. Secara keseluruhan besaran imbal jasa pekerjaan terendah yang diterima pekerja PERTAMINA, masih lebih besar daripada upah minimum yang ditetapkan pemerintah daerah di setiap wilayah operasi. [OJK F.20][GRI 202-1]

Sexual Harassment Policies

Perseroan berupaya menciptakan lingkungan kerja yang bebas diskriminasi, kekerasan, dan pelecehan, dalam rangka menciptakan lingkungan yang lebih inklusif dan produktif bagi para pekerja untuk mendorong keberlanjutan perusahaan. Hal ini diwujudkan melalui *Respectful Workplace Policy*. Penerapan kebijakan tersebut dilaksanakan dalam beberapa kegiatan:

- Peluncuran *Respectful Workplace Policy* (RWP) dan *Handbook for a Respectful Workplace* di tahun 2021;
- Pelaksanaan RWP *campaign & training*, bagi seluruh pekerja dengan capaian 15.654 pekerja telah mengikuti pelatihan di tahun 2023 dan modul RWP menjadi *mandatory module* pada *Pre-Employment Training Program*;
- Peluncuran jalur pelaporan RWP menggunakan *Whistleblowing System* (WBS);
- Pendampingan dan konseling bagi korban *harassment*;
- RWP *Audit & Assessment* melalui mekanisme internal (PERTAMINA *Industrial Peace Level Audit*) dan *external* (*Gender Equality Assessment Results & Strategy*).

Budaya Inklusivitas

Untuk mendorong inklusi gender, Perseroan mendirikan komunitas PERTIWI (Perempuan PERTAMINA Tangguh Inspiratif Wibawa dan Integritas), yaitu komunitas pekerja PERTAMINA yang bertujuan menggabungkan aspek inklusif, khususnya di bidang gender dalam bisnis dan kepemimpinan. PERTIWI bekerja sama dengan UNGC, UN Women, IBCWE, USAID, dan weempowerasia. Beberapa program unggulan yang dijalankan antara lain:

- *Gender Equality Accelerator Program*. Perseroan bekerja sama dengan beberapa organisasi multilateral dan internasional seperti USAID dan USEA untuk mengembangkan agen perubahan gender di dalam Perseroan;

Overall, the lowest amount of compensation received by PERTAMINA employees is greater than the minimum wage set by the local government in each operating area. [OJK F.20][GRI 202-1]

Sexual Harassment Policies

The Company makes its best effort to create of a work environment that is free of discrimination, violence and harassment, for a more inclusive and productive environment for employees to promote the company's sustainability. This is realized through the *Respectful Workplace Policy*. The policy is implemented in the following activities:

- Launch of *Respectful Workplace Policy* (RWP) and *Handbook for a Respectful Workplace* in 2021;
- Implementation of RWP *campaign & training*, for all employees, with 15,654 employees participating in the training by 2023 and the RWP module becoming a *mandatory module* in the *Pre-Employment Training Program*;
- Launch of RWP reporting channel using *Whistleblowing System* (WBS);
- Assistance and counseling for victims of *harassment*;
- RWP *Audit & Assessment*, conducted internally (PERTAMINA *Industrial Peace Level Audit*) and externally (*Gender Equality Assessment Results & Strategy*).

Inclusive Culture

To encourage gender inclusion, the Company established the PERTIWI (Perempuan PERTAMINA Tangguh Inspiratif Wibawa dan Integritas), a community of PERTAMINA employees that aims to incorporate inclusive aspects, especially in the field of gender in business and leadership. PERTIWI collaborates with UNGC, UN Women, IBCWE, USAID, and weempowerasia. Some of its flagship programs include:

- *Gender Equality Accelerator Program*. The Company collaborates with several multilateral and international organizations, such as USAID and USEA, to develop gender change agents within the Company;

- *Respectful Workplace Initiative.* PERTIWI turut serta dalam penyusunan kebijakan dan panduan *respectful workplace* di Perseroan termasuk juga melakukan berbagai kegiatan sosialisasi dan kampanye kebijakan untuk mendukung terciptanya lingkungan kerja yang bebas diskriminasi, kekerasan, dan pelecehan.

PERTIWI mendukung pencapaian target perempuan pemimpin di PERTAMINA Grup, yakni menjadi lebih dari 20% sesuai target dari Menteri BUMN. Demi mencapai target tersebut, PERTIWI menjalankan pelatihan dan pendampingan untuk *Aspiring Women Leaders* di PERTAMINA, dengan total 95 kepelatihan dan 402 peserta, serta memiliki 173 sesi konseling sebagai langkah nyata mendorong implementasi *respectful workplace*.

Pro-Women Brand

Perseroan menunjukkan kesetaraan *gender* dalam meningkatkan *brand* perusahaan pada masyarakat. Hal ini ditunjukkan dengan adanya pegawai perempuan dalam berbagai kegiatan pemasaran dan hubungan dengan masyarakat.

Pencapaian Kepemimpinan Perempuan

Salah satu pencapaian dalam peran kepemimpinan perempuan di PERTAMINA, adalah pengakuan dunia terhadap Nicke Widyawati, Direktur

- *Respectful Workplace Initiative.* PERTIWI participates in the preparation of respectful workplace policies and guidelines in the Company as well as conducting various dissemination activities and policy campaigns to support the creation of a work environment free of discrimination, violence, and harassment.

PERTIWI supports the achievement of women leaders target in PERTAMINA Group, which aims to reach more than 20% , as targeted by the Minister of SOEs. In bid to achieve this target, PERTIWI organized training and mentoring for Aspiring Women Leaders at PERTAMINA, with a total of 95 training programs and 402 participants, as well as 173 counseling sessions as a tangible move to encourage the implementation of respectful workplace.

Pro-Women Brand

The Company demonstrates gender equality in enhancing the Company's brand in the community. This is demonstrated by the presence of female employees in various marketing and community relations activities.

Women Leadership Achievement

One of the achievements in the leadership role of women at PERTAMINA, is the world recognition of Nicke Widyawati, President Director of the



Utama Perseroan yang masuk dalam daftar 100 Perempuan Berpengaruh (*Most Powerful Women*) di Dunia versi Majalah Fortune pada tahun 2023. Ibu Nicke Widyawati berada di peringkat 67, dan menjadi satu-satunya perempuan dari kawasan Asia Tenggara. Pencapaian ini menegaskan pengakuan dunia terhadap kepemimpinan perempuan dalam memimpin perusahaan energi terbesar di Indonesia dan salah satu perusahaan energi terkemuka di dunia.

Kebebasan Berserikat [GRI 407-1][OG 11.13.2]

Sepanjang tahun 2023, tidak ada hal-hal yang dapat dikategorikan sebagai bentuk-bentuk penghalangan kebebasan berserikat bagi pekerja Perseroan. Selama periode pelaporan, terdapat 3 federasi serikat pekerja di PERTAMINA Group, yaitu Federasi Serikat Pekerja Pertamina Bersatu (FSPPB), Federasi Serikat Pekerja PERTAMINA Hulu (FSPPH), dan Federasi Serikat Pekerja PERTAMINA Hilir Indonesia (FSPPHI). Adapun Serikat Pekerja anggota FSPPB yang merupakan Federasi di lingkungan Perseroan saat penandatanganan Perjanjian Kerja Bersama (PKB) berjumlah 24 Serikat Pekerja dengan jumlah pekerja anggota seluruh serikat pekerja mencapai 9.625 orang, atau 73,02% dari total pekerja Perseroan.

Melalui keterwakilan di serikat pekerja, para pekerja bersama manajemen menyusun PKB yang diperbarui setiap dua tahun. Saat ini yang berlaku adalah PKB Periode 2022-2024, dan melindungi seluruh (100%) pekerja di PERTAMINA Grup, baik anggota serikat pekerja maupun bukan anggota serikat pekerja.

Tenaga Kerja Anak dan Tenaga Kerja Paksa [OJK F.19][GRI 408-1, 409-1][OG 11.12.2]

Perseroan berkomitmen tidak mempekerjakan pekerja anak dan pekerja paksa di seluruh kegiatan operasi PERTAMINA. Ketentuan ini juga berlaku bagi kontraktor/mitra/vendor dalam rantai pasok Perseroan. Komitmen ini dituangkan dalam Kebijakan HAM yang merujuk pada konvensi ILO nomor C-29, C-105, C-138, dan C-182. Perseroan juga merujuk pada Undang-Undang No.13 Tahun 2003 tentang Ketenagakerjaan, terutama Pasal 68 tahun 2003 bahwa tidak mempekerjakan anak di bawah usia 18 tahun.

Company who was listed as one of 100 Most Powerful Women in the World by Fortune Magazine in 2023. Nicke Widyawati is ranked 67th, and is the only woman from Southeast Asia. This achievement confirms the world's recognition of women's leadership in leading Indonesia's largest energy company and one of the world's leading energy companies.

Freedom of Association [GRI 407-1][OG 11.13.2]

Throughout 2023, there were no cases that can be categorized as forms of obstruction of freedom of association for the Company's employees. During the reporting period, there were 3 trade union federations in PERTAMINA Group, namely the Federation of United Pertamina Trade Unions (FSPPB), the Federation of PERTAMINA Upstream Workers Union (FSPPH), and the Federation of Indonesian PERTAMINA Downstream Workers Union (FSPPHI). FSPPB, which is a federation within the Company, has 24 trade unions as its members with total number of employees joined all trade unions at the time of Collective Labor Agreement (CLA) signing, reaching 9,625 people, or 73.02% of the Company's total employees.

Through representation in the trade unions, the employees together with management prepare the CLA which is renewed every two years. The current CLA in force is from the period 2022-2024, and protects all employees (100%) in the PERTAMINA Group, both union and non-union members.

Child Labor and Forced Labor [OJK F.19][GRI 408-1, 409-1][OG 11.12.2]

The Company is committed to not employing child labor and forced labor in all PERTAMINA operations. This provision also applies to contractors/partners/vendors in the Company's supply chain. This commitment is outlined in the Human Rights Policy which refers to ILO conventions number C-29, C-105, C-138, and C-182. The Company also refers to Law No.13 of 2003 on Manpower, especially Article 68 of 2003 that it does not employ children under the age of 18.

Praktik Keamanan [GRI 410-1][OG 11.18.2][SOC-1.3C1, 4.3C2, 4.3C3][SOC-4.A3]

Salah satu aspek penting dalam penegakan HAM adalah praktik keamanan. Perseroan memastikan petugas keamanan telah memiliki pengetahuan mendasar tentang HAM, melalui pendidikan dan sertifikasi satuan pengamanan (satpam) dari Kepolisian Republik Indonesia (Polri). Untuk praktik pengamanan di mancanegara, Perseroan menyesuaikan dengan ketentuan yang berlaku di setiap negara.

Sampai dengan akhir tahun 2023, 69 petugas keamanan Perseroan melalui pelatihan keamanan dan hak asasi manusia (*Voluntary Principles on Security and Human Rights* PERTAMINA).

Security Practices [GRI 410-1][OG 11.18.2][SOC-1.3C1, 4.3C2, 4.3C3][SOC-4.A3]

One of crucial aspects of upholding human rights is security practices. The Company ensures that security personnel have basic knowledge of human rights, through education and certification of security personnel from the Indonesian National Police (Polri). For security practices in foreign countries, the Company complies with the applicable provisions in each country.

Until the end of 2023, a total of 69 security personnel of the Company have undergone security and human rights training (*PERTAMINA Voluntary Principles on Security and Human Rights*).

Membangun Masyarakat Berdaya di Wilayah Operasi

Developing Empowered Communities in Operational Areas

PERTAMINA berkomitmen membangun masyarakat berdaya di seluruh wilayah operasi melalui pemenuhan tanggung jawab sosial dan lingkungan (TJSL). Seluruh upaya yang dijalankan mengedepankan dialog dengan masyarakat dan mematuhi hukum yang berlaku.

PERTAMINA is committed to develop empowered communities in all operational areas through the fulfillment of corporate social and environmental responsibility (CSR). All efforts carried out prioritize dialog with the community and comply with applicable laws.

Pemenuhan TJSL Masyarakat di Wilayah Operasi [OJK F.23, F.25][OG 11.15.2]

Community CSR Fulfillment in the Area of Operation

Perseroan memahami kegiatan operasi yang dijalankan memberikan pengaruh terhadap masyarakat setempat, sehingga harus dikelola dengan baik melalui pemenuhan TJSL. Sejak awal PERTAMINA telah melakukan identifikasi serta pemetaan pengaruh terhadap masyarakat setempat dan menjadi bagian dari dokumen Analisis Mengenai Dampak Lingkungan (Amdal), sebagai kelengkapan perizinan sesuai regulasi berlaku. PERTAMINA memastikan seluruh unit operasi/unit bisnis yang dikelola entitas anak telah dilengkapi dengan dokumen Amdal.

The Company understands that the operations have an impact on the local community, therefore it must be managed properly through the fulfillment of CSR. Since the beginning, PERTAMINA has identified and mapped the impact on local communities and become part of the Environmental Impact Analysis (Amdal) document, to complete of licensing requirements according to applicable regulations. PERTAMINA ensures that all operating units/business units managed by subsidiaries are equipped with Amdal documents.

Pemenuhan TJSL dijalankan terintegrasi dengan bidang usaha, kondisi dan potensi di setiap unit

The fulfillment of CSR is integrated with the lines of business, conditions and potential in each

operasi/unit bisnis, serta mengacu ISO 26000. Pemenuhan TJSL mencakup 4 Pilar dengan program pendukung masing-masing. Perseroan mengalokasikan dana TJSL dengan realisasi tahun 2023 sebesar Rp551,70 miliar, berkurang Rp85,89 miliar atau 13,47% dari tahun 2022 sebesar Rp637,59 miliar. Realisasi dana TJSL mencapai 100,85% dari RKAP tahun 2023, dengan jumlah terbesar untuk Pilar Ekonomi senilai Rp295,75 miliar atau 53,60% dari total realisasi dana TJSL. Perseroan juga memberikan bantuan kemanusiaan kepada Palestina sebesar Rp3 miliar yang diserahkan kepada Kedutaan Palestina untuk Indonesia. [GRI 413-1][SOC-13.C2][SOC-13.A3][SOC-13.A2]

operating unit/business unit, and refers to ISO 26000. The fulfillment of CSR includes 4 pillars with their respective supporting programs. The Company allocated CSR funds with a realization of Rp551.70 billion in 2023, a decrease of Rp85.89 billion or 13.47% from Rp637.59 billion in 2022. The realization of CSR funds reached 100.85% of the 2023 RKAP, with the largest amount for the Economic Pillar amounting to Rp295.75 billion or 53.60% of the total realization of CSR funds. The Company also provided humanitarian aid to Palestine amounting to Rp3 billion which was handed over to the Palestinian Embassy to Indonesia. [GRI 413-1][SOC-13.C2][SOC-13.A3][SOC-13.A2]

RKA dan Realisasi Pembiayaan Pilar TJSL (Rp Juta)

RKA and Realization of CSR Pillar Financing (Rp Million)

Pilar Pillar	2023		2022	2021
	RKA	Realisasi Realization	Realisasi Realization	
Pilar Ekonomi Economic Pillar	290,157	295,794	322,109	342,719
Pilar Sosial Social Pillar	122,759	165,147	192,083	152,582
Pilar Lingkungan Environmental Pillar	119,430	88,522	121,223	100,811
Pilar Hukum & Tata Kelola Legal & Governance Pillar	3,720	2,280	2,169	-
Total	547,057	551,700	637,586	596,113

Pemenuhan TJSL PERTAMINA

PERTAMINA CSR Fulfillment

Pilar Pillar	Program/Kegiatan Program/Activity	Bentuk Pelaksanaan Form of Implementation	Tujuan Goal
Ekonomi Economy	<ul style="list-style-type: none"> • Pembinaan UMK • Desa Energi Berdikari • Enduro Entrepreneurship Program • Kolaborasi PUMK BRI dan BPJS Ketenagakerjaan dan Kesehatan untuk kesejahteraan Pekerja PERTAMINA 	<ul style="list-style-type: none"> • MSE Development • Desa Energi Berdikari • Enduro Entrepreneurship Program • Collaboration of PUMK BRI and BPJS Ketenagakerjaan dan Kesehatan for the welfare of PERTAMINA Workers 	 <ul style="list-style-type: none"> • Pemetaan Sosial & FGD • Inovasi Sosial • Kolaborasi <p>Kemandirian Masyarakat Community Self-sufficiency</p> <p>Bisnis Berkelanjutan (CSV) Sustainable Business (CSV)</p>
Sosial Social	<ul style="list-style-type: none"> • Beasiswa • Sarana Prasarana Pendidikan • Peningkatan Kualitas Kesehatan dan Prasarana Kesehatan 	<ul style="list-style-type: none"> • Scholarships • Education Infrastructure • Health Quality Improvement and Health Infrastructure 	
Lingkungan Hidup Environment	<ul style="list-style-type: none"> • Carbon Project Collaboration • Pengelolaan Limbah • Sarana Prasarana Umum • Sanitasi dan Air Bersih 	<ul style="list-style-type: none"> • Carbon Project Collaboration • Waste Management • Public Infrastructure • Sanitation and Clean Water 	
Hukum dan Tata Kelola Legal and Governance	Program Tata Kelola Perusahaan	Corporate Governance Program	

Realisasi Penyaluran Dana TJSL (Rp Juta)

Realization of CSR Fund Disbursement (Rp Million)

2023	2022	2021
551,700	637,586	596,113

Realisasi Penyaluran Dana TJSL Berdasar Tujuan Pembangunan Berkelanjutan Tahun 2023 (Rp Juta)

Realization of CSR Fund Disbursement Based on Sustainable Development Goals in 2023 (Rp Million)

A	Pilar Sosial Social Pillar	2023	2022	2021
1	TPB 1: Kemiskinan SDG 1: No Poverty	41,596	87,287	58,472
2	TPB 2: Tanpa Kelaparan SDG 2: Zero Hunger	3,281	2,954	-
3	TPB 3: Kesehatan yang Baik dan Kesejahteraan SDG 3: Good Health and Well-being	37,682	24,799	25,974
4	TPB 4: Pendidikan Berkualitas SDG 4: Quality Education	81,207	75,039	67,002
5	TPB 5: Kesetaraan Gender SDG 5: Gender Equality	1,379	32,022	1,132
Jumlah Total		165,147	192,083	152,582
B	Pilar Ekonomi Economic Pillar	2023	2022	2021
6	TPB 7: Energi Bersih dan Terjangkau SDG 7: Affordable and Clean Energy	12,236	6,035	4,598
7	TPB 8: Pekerjaan Layak & Pertumbuhan Ekonomi SDG 8: Decent Work & Economic Growth	232,212	315,758	338,120
8	TPB 9: Industri, Inovasi, Infrastruktur SDG 9: Industry, Innovation, Infrastructure	4,397	100	-
9	TPB 10: Berkurangnya Kesenjangan SDG 10: Reduced Inequalities	42,640	215	-
10	TPB 17: Kemitraan untuk Mencapai Tujuan SDG 17: Partnerships for the Goals	4,262	-	-
Jumlah Total		295,749	322,109	342,719
C	Pilar Lingkungan Environmental Pillar	2023	2022	2021
11	TPB 6: Air Bersih dan Sanitasi Layak SDG 6: Clean Water and Sanitation	8,897	2,066	-
12	TPB 11: Kota dan Permukiman Berkelanjutan SDG 11: Sustainable Cities and Communities	35,505	55,859	78,662
13	TPB 12: Konsumsi & Produksi Bertanggung Jawab SDG 12: Responsible Consumption & Production	3,652	5,234	1,183
14	TPB 13: Perubahan Iklim SDG 13: Climate Change	4,287	6,963	1,073
15	TPB 14: Ekosistem Lautan SDG 14: Life Below Water	26,230	22,974	1,776
16	TPB 15: Ekosistem Daratan SDG 15: Life on Land	9,949	28,125	18,115
Jumlah Total		88,522	121,223	100,811
D	Pilar Hukum dan Tata Kelola Legal and Governance Pillar	2023	2022	2021
17	TPB 16: Perdamaian, Keadilan dan Kelembagaan Tangguh SDG 16: Peace, Justice and Strong Institutions	2,280	2,169	-
E	Jumlah Total	551,700	637,586	596,113

Penerima Manfaat Program TJSL Tahun 2023 | Beneficiaries of CSR Program in 2023Program Kesehatan
Health Program**>17,000**Ibu dan Anak
Mothers and ChildrenAspek Kemandirian
Self-Sufficiency Aspect**>14,000**Perempuan Pelaku UMK
Women MSE EntrepreneursAspek Pangan Sosial
Social Food Aspect**>12,000**Kepala Keluarga
Heads of HouseholdAspek Pemberdayaan
Empowerment Aspects**>2,600**

Petani | Farmers

>500Penyandang Disabilitas
Persons with DisabilitiesAspek Pendidikan
Education Aspect**>1,500**Pelajar
StudentsAspek Penyerapan
Absorption Aspect**>4,000**Tenaga Kerja
Workforce

Pilar Ekonomi: Pembinaan UMKM menjadi Go Global [SOC-9.C1, 9.C2]

Pemberdayaan masyarakat di wilayah operasi antara lain dilakukan dengan pengembangan usaha mikro kecil dan menengah (UMKM). Di tahun 2023, dana yang dikeluarkan untuk pembinaan usaha mikro kecil (UMK) mencapai Rp36,86 miliar dengan empat program utama yang dipayungi RKA BUMN yakni Rumah BUMN (RB), PERTAMINA SMEXPO, UMK Academy, dan Enduro Entrepreneurship Program (EEP).

Economic Pillar: SME Development to Go Global [SOC-9.C1, 9.C2]

Community empowerment in the operational areas is carried out, among others, by developing micro, small and medium enterprises (MSMEs). In 2023, the funds spent on fostering micro and small enterprises (MSEs) reached Rp36.86 billion with three main programs under the RKA BUMN, namely Rumah BUMN, PERTAMINA SMEXPO, UMK Academy, and Enduro Entrepreneurship Program.

RKA dan Realisasi Pembiayaan Program Prioritas Pengembangan UMK Tahun 2023 (Rp)

RKA and Realization of Priority Program Financing for MSE Development in 2023 (Rp)

Program	2023		Lokasi Location
	RKA	Realisasi Realization	
Rumah BUMN	20,400,000,00	14,775,544,306	Aceh, Riau, Sumatra Utara, Sumatra Selatan, Jambi, Bengkulu, Lampung, DKI Jakarta, Jawa Tengah, Jawa Timur, Bali, NTB, Kalimantan Barat, Kalimantan Selatan, Kalimantan Tengah, Kalimantan Timur, Gorontalo, Sulawesi Utara, Sulawesi Tengah
Enduro Entrepreneurship Program	3,000,000,000	4,635,864,739	Seluruh Indonesia All regions of Indonesia
SMEXPO	8,000,000,000	9,478,722,600	Jakarta, Balikpapan, Semarang, Pekanbaru, Dumai
UMK Academy	5,700,000,000	7,971,040,502	Online
Jumlah Total	34,100,000,000	32,225,307,408	

Enduro Entrepreneurship Program

Enduro Entrepreneurship program (EEP) adalah salah satu program TJSL PERTAMINA yang bertujuan mencetak wirausahawan muda di Indonesia secara cepat namun tetap berdampak berkelanjutan. Melalui EEP, PERTAMINA membekali peserta melalui program-program pelatihan *softskill* dan juga *hardskill*. PERTAMINA juga memberikan dukungan dalam bentuk lain seperti pendanaan dan pembinaan pengembangan usaha masyarakat di bidang otomotif perbengkelan. Di tahun 2023, program EEP memberikan *value creation* berupa penjualan produk pelumas PERTAMINA sebanyak 25.760 botol dengan total pendapatan sekitar Rp3,3 miliar.

Enduro Entrepreneurship Program

The Enduro Entrepreneurship program (EEP) is one of PERTAMINA's CSR programs which aims to produce young entrepreneurs in Indonesia quickly but still have a sustainable impact. Through EEP, PERTAMINA equips participants through soft skills and hard skills training programs. PERTAMINA also provides support in other forms such as funding and coaching for community business development in the automotive repair sector. In 2023, the EEP program will provide value creation in the form of sales of 25,760 bottles of PERTAMINA lubricant products with total revenue of around Rp3.3 billion.

Rumah BUMN

Rumah BUMN tersebar di 30 kota/kabupaten di seluruh Indonesia, berfungsi sebagai sarana berkumpul, berdiskusi, serta belajar para pelaku UMKM, serta wadah kolaborasi BUMN dalam menciptakan *Digital Economy Ecosystem*. Sampai dengan akhir tahun 2023, PERTAMINA melalui Rumah BUMN telah melaksanakan kegiatan 381 pameran, 330 pelatihan, 262 klinik bisnis, serta 8.466 sertifikasi dan perizinan. Kami memfasilitasi jalur pasok PaDi (Pasar Digital) UMKM bagi 2.749 UMKM dengan 618 UMKM sudah menembus pasar global.

PERTAMINA SMEXPO

PERTAMINA SMEXPO atau PERTAMINA *Small Medium Enterprise Expo* adalah upaya strategis sebagai wujud kontribusi Perseroan terhadap pembinaan dan pengembangan UMKM Indonesia. Sejak tahun 2020 PERTAMINA telah mengembangkan aplikasi digital sebagai salah satu upaya untuk mendorong penjualan produk UMKM binaan secara daring (*online*). PERTAMINA SMEXPO 2023 digelar dengan tema 'Melangkah dari Lokal ke Global', dan hadir di Jakarta, Balikpapan, Semarang, Pekanbaru, serta Dumai. Penyelenggaraan PERTAMINA SMEXPO 2023 diikuti 122 UMKM dan mencatatkan transaksi Rp1,78 miliar, dengan sebagian besar pembeli dari mancanegara.

Rumah BUMN

Rumah BUMN centers are spread in 30 cities/regencies across Indonesia, as a facility for gathering, discussing, and learning for MSME actors, as well as a forum for collaboration of SOEs in creating a Digital Economy Ecosystem. Until the end of 2023, PERTAMINA through Rumah BUMN has held 381 exhibitions, 330 training programs, 262 business clinics, and 8,466 assistance for certifications and licenses. We facilitate PaDi (Digital Market) supply lines for 2,749 MSMEs with 618 MSMEs already penetrating the global market.

PERTAMINA SMEXPO

PERTAMINA SMEXPO or PERTAMINA Small Medium Enterprise Expo is a strategic move for the Company in contributing to fostering and developing Indonesian MSMEs. Since 2020, PERTAMINA has developed digital applications to promote online sales of fostered MSME products. PERTAMINA SMEXPO 2023 carried the theme 'Melangkah dari Local ke Global' (from Local to Global), and was held in Jakarta, Balikpapan, Semarang, Pekanbaru, and Dumai. A total of 122 MSMEs participated in the PERTAMINA SMEXPO 2023 event and recorded transactions of Rp1.78 billion, with most buyers from abroad.

Jumlah UMKM, Pembeli, dan Nilai Transaksi pada PERTAMINA SMEXPO 2023

Number of MSMEs, Buyers, and Transaction Value at PERTAMINA SMEXPO 2023

Kegiatan Location	Jumlah UMKM Peserta Number of Participating MSMEs	Nilai Transaksi (Rp juta) Transaction Value (Rp million)
Balikpapan, Kalimantan Timur Balikpapan, East Kalimantan	10	56.95
Semarang, Jawa Tengah Semarang, Central Java	30	272.52
Pekanbaru, Riau	27	132.45
Dumai, Kepulauan Riau Dumai, Riau Islands	14	9.82
Jakarta	41	1,313.21
Jumlah Total	122	1,784.95

UMK Academy

Langkah lain PERTAMINA mengembangkan UMK dilaksanakan dengan membentuk UMK Academy pada tahun 2020 dan terus berkesinambungan hingga saat ini. UMK Academy dibentuk untuk mendorong UMKM naik kelas menjadi modern (*Go Modern*), menerapkan digital (*Go Digital*), pemasaran luring (*Go Online*) dan mancanegara (*Go Global*). UMK Academy berlangsung selama empat bulan.

Pada saat UMK sudah berhasil *Go Global*, mereka akan diikutsertakan di *Pertapreneur Aggregator* supaya menjadi agregator bagi yang lainnya dan menjadi jangkar UMK lainnya dalam hal menuju ekspor melalui kolaborasi yang terbangun. Pada tahun 2023 ada 820 UMK peserta UMK Academy, dengan 573 UMK dinyatakan lulus dan naik kelas, meningkat 12% dari realisasi tahun 2022 sebanyak 511 UMK. Untuk tahun 2023, UMK yang dinyatakan lulus dari UMK Academy terdiri atas *Go Modern* 178 UMK, *Go Digital* 240 UMK, *Go Online* 91 UMK, dan *Go Global* 64 UMK. Dengan demikian sejak dimulai tahun 2020, UMK Academy telah meluluskan 1.802 UMK.

Pendanaan UMK

Program pengembangan UMK lain adalah Pendanaan Usaha Mikro Kecil (PUMK) untuk membantu pemberdayaan dan pengembangan UMK agar tangguh dan mandiri, sekaligus memberikan efek berantai bagi peningkatan kesejahteraan masyarakat dan penyerapan tenaga kerja. Program Pendanaan UMK diwujudkan melalui dukungan pembiayaan lunak pada UMK. PERTAMINA melakukan sinergi kerja sama dengan Bank Rakyat Indonesia (BRI) untuk penyaluran program Pendanaan UMK Tahun 2023. Penyaluran Pendanaan UMK PERTAMINA telah menjangkau 24 provinsi, 98 kota/kabupaten, 386 kecamatan dan 501 kelurahan/desa. Lokasi kedudukan calon mitra binaan menjadi dasar penyaluran berbasis kecamatan.

UMK Academy

Another PERTAMINA step to develop MSEs was carried out by forming the UMK Academy in 2020 and continues to this day. UMK Academy was formed to encourage MSMEs to upgrade to modern (*Go Modern*), apply digital (*Go Digital*), offline marketing (*Go Online*) and abroad (*Go Global*). UMK Academy lasts for four months.

When MSEs have successfully gone global, they will be included in the *Pertapreneur Aggregator* so that they become aggregators for others and become anchors for other MSEs in terms of going to export through built collaboration. In 2023 there were 820 MSEs participating in the UMK Academy, with 573 MSEs graduating and upgrading, an increase of 12% from the 2022 realization of 511 MSEs. For 2023, MSEs that have graduated from the UMK Academy consist of *Go Modern* 178 MSEs, *Go Digital* 240 MSEs, *Go Online* 91 MSEs, and *Go Global* 64 MSEs. Thus, since it began in 2020, the UMK Academy has graduated 1,802 MSEs.

MSE Funding

Another MSE development program is the Micro and Small Business Funding (PUMK) to help empower and develop MSEs to be resilient and independent, while providing a chain effect for improving community welfare and employment. The MSE Funding Program is realized through soft financing support to MSEs. PERTAMINA synergizes cooperation with Bank Rakyat Indonesia (BRI) for the distribution of MSE Funding program in 2023. The distribution of PERTAMINA MSE Funding has reached 24 provinces, 98 cities/districts, 386 sub-districts and 501 villages. The location of prospective fostered partners is the basis for sub-district-based distribution.

PUMK tahun 2023 sebesar Rp171 miliar atau 100% dari RKA tahun 2023, disalurkan melalui BRI pada 29 Desember 2023 dan akan disampaikan pada para UMKM di tahun 2024. Sementara itu, realisasi penyaluran PUMK dari BRI ke UMKM yang dilaksanakan pada 2023, berasal dari dana PUMK yang disalurkan pada Desember 2022 sebesar Rp142 miliar. Peningkatan jumlah UMK penerima manfaat Dana PUMK PERTAMINA di 2023 disebabkan oleh adanya perubahan kebijakan penyaluran Dana PUMK dari Kementerian BUMN dimana sejak akhir Desember 2022, seluruh BUMN direkomendasikan untuk melakukan penyaluran Dana PUMK secara terpusat kepada BRI dan tidak diperkenankan melakukan penyaluran Dana PUMK secara mandiri. BRI yang akan melakukan penyaluran Dana PUMK milik BUMN kepada para UMK dengan nilai penyaluran maksimal Rp50.000.000 per UMK. Penyaluran PUMK dengan skema baru ini efektif dijalankan pada tahun 2023.

PUMK in 2023 amounted to Rp171 billion or 100% of the 2023 RKA, which was channeled through BRI on December 29, 2023 and to be disbursed to MSMEs in 2024. However, the PUMK disbursement from BRI to MSMEs was realized in 2023, from PUMK funds allocated in December 2022 amounted to Rp142 billion. The increase in the number of MSEs benefiting from the PERTAMINA PUMK Fund in 2023 was due to a change in the policy of distributing PUMK Funds from the Ministry of SOEs, where since the end of December 2022, all SOEs are recommended to centralize their distribution of PUMK Funds through BRI and are not allowed to distribute PUMK Funds independently. BRI will distribute the PUMK Fund owned by SOEs to MSEs with a maximum value of Rp50,000,000 per MSE. The distribution of PUMK with this new scheme is effective in 2023.

Tujuan 8: Pekerjaan Layak dan Pertumbuhan Ekonomi

Goal 8: Decent Work and Economic Growth

Metadata TPB Kementerian PPN/Bappenas SDG Metadata of Ministry of National Development Planning/Bappenas		Dukungan PERTAMINA PERTAMINA Support	
Target	Indikator Indicator	Realisasi 2023 2023 Realization	Target 2024 2024 Target
8.3 Mempromosikan kebijakan pembangunan yang mendukung kegiatan produktif, penciptaan lapangan kerja yang layak, kewirausahaan, kreativitas dan inovasi, dan mendorong formalisasi dan pertumbuhan usaha mikro, kecil dan menengah, termasuk melalui akses pada layanan keuangan.	8.3.1(a) Persentase akses UMKM (Usaha Mikro, Kecil, dan Menengah) ke layanan keuangan.	Realisasi Pendanaan UMK tahun 2023 sebesar Rp171 miliar atau 100% dari RKA tahun 2023, yang disalurkan kepada 5.116 UMK melalui BRI selaku BUMN penyalur.	Target penyaluran Dana PUMK ke BRI di tahun 2024: Rp51,5 miliar
Promote development policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro, small and medium enterprises, including through access to financial services.	Percentage of MSME (Micro, Small, and Medium Enterprises) access to financial services.	The realization of MSE Funding in 2023 amounted to Rp171 billion or 100% of the 2023 RKA, which was distributed to 5,116 MSEs through BRI as the channeling SOE.	Target distribution of PUMK funds to BRI in 2024: Rp51.5 billion

Pilar Ekonomi: Desa Energi Berdikari

Program Desa Energi Berdikari (DEB) digulirkan tahun 2019 dan terus berkelanjutan. Melalui program ini, PERTAMINA memberikan dukungan kepada masyarakat agar mandiri energi dan ekonomi secara berkelanjutan dengan memberikan akses energi bersih. Pada tahun 2023,

Economic Pillar: Desa Energi Berdikari

The energy self-sufficient village program called Desa Energi Berdikari (DEB) was rolled out in 2019 and continues to be sustainable. Through this program, PERTAMINA supports the community to be energy and economically self-sufficient in a sustainable manner by providing access to

ada tambahan 19 lokasi Program DEB, sehingga total jumlah lokasi Program DEB mencapai 85 lokasi di berbagai wilayah di Indonesia. Pelaksanaan program disesuaikan dengan potensi sumber energi yang dimiliki, yakni pembangkit Listrik tenaga surya (PLTS), mikro hidro, gas metana dan biogas, sampai dengan sumber energi *hybrid* serta biodiesel berbasis konversi limbah rumah tangga.

clean energy. In 2023, there were an additional 19 locations for DEB Program, so that the total number of DEB Program locations reached 85 locations in various regions in Indonesia. The implementation of the program is adjusted to the potential energy sources, namely solar power plants (PLTS), micro hydro, methane gas and biogas, as well as hybrid energy sources and biodiesel based on household waste conversion.

Realisasi Program Desa Energi Berdikari Berdasar Sumber Energi Tahun 2023

Realization of the Desa Energi Berdikari Program Based on Energy Sources in 2023

Sumber Energi Energy Source	PLTS Solar Power Plant	Mikro Hidro Micro Hydro	Gas Metana dan Biogas Methane Gas and Biogas	Hibrida (Surya dan Angin) Hybrid (Solar and Wind)	Biodiesel
Jumlah Total	17 program programs	1 program	1 program	0	0
Kapasitas Capacity	100.66 kWp	5,000 Watt	4 m ³ /tahun/year		

Realisasi Program Desa Energi Berdikari Berdasar Sumber Energi sampai dengan Tahun 2023

Realization of the Desa Energi Berdikari Program Based on Energy Sources until 2023

Sumber Energi Energy Source	PLTS Solar Power Plant	Mikro Hidro Micro Hydro	Gas Metana dan Biogas Methane Gas and Biogas	Hibrida (Surya dan Angin) Hybrid (Solar and Wind)	Biodiesel
Jumlah Total	64	6	12	1	2
Kapasitas Capacity	324.04 kWp	28,000 Watt	609,000 m ³ /tahun/year	16,500 Wp	6,500 L/tahun/year



Melalui Program DEB, PERTAMINA mengajak serta masyarakat meningkatkan pemahaman tentang perubahan iklim, serta optimalisasi pengembangan EBT dari sumber daya lokal. Program DEB juga mendukung pengurangan emisi karbon setara 565.855 ton CO₂e per tahun, dan memberikan *multiplier effect* Rp1,8 miliar per tahun bagi 2.750 rumah tangga.

EBT dari Program DEB diharapkan dapat mendorong peningkatan produktivitas UMKM dan BumDes, sehingga berdampak pada peningkatan taraf hidup dan kesejahteraan masyarakat di masing-masing desa. PERTAMINA terus melakukan pendampingan dan pelatihan untuk masyarakat setempat, seperti pelatihan teknis pengelolaan sistem EBT yang dipergunakan sehingga mampu melakukan instalasi dan perawatan infrastruktur EBT. Perseroan juga menerapkan evaluasi untuk mengetahui tingkat keberhasilan Program DEB, dengan memberikan peringkat, yakni Program DEB Hijau, Program DEB Biru, dan Program Desa Energi PERTAMINA.

Through the DEB Program, PERTAMINA has been encouraging the community to increase understanding of climate change, as well as optimizing the development of NRE from local resources. The DEB Program also has contributed to the reduction of carbon emissions equivalent to 565,855 tons CO₂e per year, and provided a multiplier effect of Rp1.8 billion per year for 2,750 households.

NRE from the DEB Program is expected to boost productivity of MSMEs and BumDes, thus having an impact on improving the standard of living and welfare of the people in each village. PERTAMINA continues to provide assistance and training for local communities, such as technical training on the NRE management systems used so that they are able to install and maintain NRE infrastructure. The Company also performs an evaluation to determine the success rate of the DEB Program, by rating them with Green DEB Program, Blue DEB Program, and Desa Energi PERTAMINA Program.

Peringkat Program Desa Energi Berdikari | Ratings of Desa Energi Berdikari Program

60

Program Desa Energi Berdikari Hijau
Green Desa Energi Berdikari Program

21

Program Desa Energi Berdikari Biru
Blue Desa Energi Berdikari Program

4

Program Desa Energi PERTAMINA
Desa Energi PERTAMINA Program

Tujuan 7: Energi Bersih dan Terjangkau Goal 7: Affordable and Clean Energy

Metadata TPB Kementerian PPN/Bappenas SDG Metadata of Ministry of National Development Planning/Bappenas		Dukungan PERTAMINA PERTAMINA Support	
Target	Indikator Indicator	Realisasi 2023 2023 Realization	Target 2024 2024 Target
7.2 Pada tahun 2030, meningkat secara substansial pangsa energi terbarukan dalam bauran energi global. By 2030, substantially increase the share of renewable energy in the global energy mix.	7.2.1* Bauran energi terbarukan Renewable energy mix	Total kapasitas produksi energi DEB mencapai 2.529.167 kWh/tahun atau 0,00063% dari total produksi energi nasional. Total energy production capacity of DEB reached 2,529,167 kWh/year or 0.00063% of the total national energy production.	Total kapasitas produksi energi DEB mencapai 2.917.096 kWh/tahun atau 0,00072% dari total produksi energi nasional. Total energy production capacity of DEB reached 2,917,096 kWh/year or 0.00072% of the total national energy production.

Pilar Ekonomi: Kolaborasi PUMK BRI dan BPJS Ketenagakerjaan dan Kesehatan untuk Kesejahteraan Pekerja PERTAMINA

Program yang dilaksanakan salah satunya adalah realisasi pembayaran BPJS Ketenagakerjaan dan BPJS Kesehatan. Total realisasi pembayaran sebesar Rp42,64 miliar atau sama dengan 119,65% dari RKAP tahun 2023 sebesar Rp35,63 miliar.

Pilar Sosial: Bantuan Beasiswa, Sarana dan Prasarana Pendidikan

Bantuan secara total terealisasi sebesar Rp286,51 miliar, dengan prioritas antara lain untuk Program Kolaborasi Bantuan Pendidikan, Beasiswa dan Program Inovasi Pelajar (Kerja sama PERTAMINA Foundation/PF), dan Sekolah Adiwiyata.

Economic Pillar: Collaboration of PUMK BRI and BPJS Employment and Health for the Welfare of PERTAMINA Employees

One of the programs implemented is the realization of BPJS Employment and BPJS Health payments. The total realization of payments amounted to Rp42.64 billion or equal to 119.65% of the 2023 RKAP of Rp35.63 billion.

Social Pillar: Scholarship Assistance, Educational Facilities and Infrastructure

Total realization of assistance was Rp286.51 billion, with priorities on the Collaboration Program for Education Assistance, Scholarship and Student Innovation Program (PERTAMINA Foundation/PF cooperation), and Adiwiyata School.

RKA dan Realisasi Pembiayaan Program Prioritas di Bidang Pendidikan (Rp)

WP&B and Realization of Priority Program Financing in the Education Sector (Rp)

Program	2023		Lokasi Location
	RKA WP&B	Realisasi Realization	
Program Kolaborasi Bantuan Pendidikan Collaboration Program for Education Assistance	33,670,000,000	26,936,000,000	Seluruh Wilayah Indonesia All regions of Indonesia
Beasiswa dan Program Inovasi Pelajar (Kerja sama PERTAMINA Foundation) Scholarship and Student Innovation Program (PERTAMINA Foundation cooperation)	31,400,000,000	25,000,000,000	Seluruh Wilayah Indonesia All regions of Indonesia
Sekolah Adiwiyata Adiwiyata School	5,000,000,000	1,995,000,000	Jakarta Utara, Cirebon, Dumai, Bandung, Palembang, Cilacap, Semarang dan Tidore. North Jakarta, Cirebon, Dumai, Bandung, Palembang, Cilacap, Semarang and Tidore.
Jumlah Total	70,000,000,000	53,931,000,000	

Program Kolaborasi Bantuan Pendidikan

Fokus program/kegiatan adalah pemberdayaan difabel atau penyandang disabilitas. Selama tahun 2023 ada beberapa program/kegiatan yang telah dijalankan termasuk oleh entitas anak dan unit operasi/unit bisnis masing-masing. Secara keseluruhan, program/kegiatan yang dijalankan menysasar 1.900 penerima manfaat.

Collaboration Program for Education Assistance

The focus of the program/activity is the empowerment of persons with disabilities. During 2023 there were several programs/activities that have been carried out including by subsidiaris and their respective operating units/business units. Overall, the programs/activities carried out targeted 1,900 beneficiaries.

Jumlah Penerima Manfaat Program Pelatihan bagi Difabel

Number of Beneficiaries of Training Program for Persons with Disabilities

Program/Kegiatan Program/Activity	Lokasi Location	Penerima Manfaat Beneficiaries
Difabel Friends Project	SLBN 6 DKI Jakarta	Pemberian bantuan perlengkapan praktik keterampilan tata busana berupa 4 unit mesin jahit dan perlengkapan ecoprint. Distribution of practical equipment for fashion skills in the form of 4 units of sewing machines and ecoprint equipment
Pertadaya (PERTAMINA Bersama Disabilitas Berkarya)	Banjarmasin, Kalimantan Selatan Banjarmasin, South Kalimantan	Berlangsung sejak tahun 2021. Lebih dari 40 difabel di Kota Banjarmasin, dengan empat lokasi usaha yang dikelola kelompok dan pendapatan kelompok hingga Rp18 juta per bulan. It has been running since 2021. More than 40 persons with disabilities in Banjarmasin City, with four business locations managed by the group and group income of up to Rp18 million per month.
Difablepreneur	Boyolali, Jawa Tengah Boyolali, Central Java	Dimulai sejak 2018, program ini telah memberdayakan 350 difabel di Kabupaten Boyolali. Pelatihan pada 2023 diberikan untuk 20 difabel di Desa Klewor, Kemusu, Kab. Boyolali, berupa pelatihan jahit dan manajemen, serta pemberian bantuan peralatan jahit/konveksi Started in 2018, this program has empowered 350 persons with disabilities in Boyolali Regency. Training in 2023 was provided for 20 persons with disabilities in Klewor Village, Kemusu, Boyolali Regency, in the form of sewing and management training, as well as providing sewing/convection equipment assistance.

Beasiswa dan Program Inovasi Pelajar

Perseroan melalui PERTAMINA Foundation (PF) telah menyalurkan beasiswa untuk 948 mahasiswa, terdiri atas:

- 422 mahasiswa eksisting (*intake* 2022);
- 465 mahasiswa *intake* 2023;
- 15 mahasiswa Beasiswa PERTAMINA Prestasi Natuna;
- 19 mahasiswa Beasiswa *Local Hero*;
- 20 siswa/mahasiswa Beasiswa Khusus;
- 7 mahasiswa Beasiswa Masyarakat Adat.

Sekolah Adiwiyata

Program Sekolah Adiwiyata atau Sekolah Energi Berdikari bertujuan mengenalkan energi baru terbarukan kepada generasi muda dalam rangka mendukung Pemerintah menangani perubahan iklim di Indonesia. Program ini dijalankan di delapan lokasi di Indonesia yakni Jakarta Utara, Cirebon dan Bandung di Jawa Barat, Dumai di Riau, Palembang di Sumatera Selatan, Cilacap dan Semarang di Jawa Tengah, serta Tidore di Maluku Utara Dumai. Perseroan melibatkan Perwira PERTAMINA dan mahasiswa Sobat

Scholarship and Student Innovation Program

The Company through PERTAMINA Foundation (PF) has distributed scholarships to 948 students, consisting of:

- 422 existing students (2022 intake);
- 465 students of 2023 intake;
- 15 students of PERTAMINA Prestasi Natuna Scholarship;
- 19 students of Local Hero Scholarship;
- 20 Special Scholarship students;
- 7 Indigenous Peoples Scholarship students.

Adiwiyata School

The Adiwiyata School Program or Sekolah Energi Berdikari aims to introduce new renewable energy to the younger generation to support the Government in tackling climate change in Indonesia. The program is run in eight locations in Indonesia, including North Jakarta, Cirebon and Bandung in West Java, Dumai in Riau, Palembang in South Sumatra, Cilacap and Semarang in Central Java, and Tidore in North Maluku. The Company involves PERTAMINA Officers and Sobat Bumi students to take part in campaigns and various

Bumi untuk turut berperan dalam kampanye dan sesi berbagai kepada para siswa di Sekolah Adiwiyata dengan harapan agar para siswa dapat mengimplementasikan kampanye dan aksi yang selama ini dilakukan bersama sekolah.

Pilar Sosial: Peningkatan Kualitas Kesehatan dan Prasarana Kesehatan

PT Pertamina Bina Medika – Indonesia Healthcare Corporation (IHC)/Holding Rumah Sakit (RS) BUMN menggelar kegiatan deteksi dini kanker serviks melalui pemeriksaan HPV DNA berbasis urin. Kegiatan dilakukan serentak di 18 RS IHC Group seluruh Indonesia dan menjangkau 2.023 peserta perempuan hingga memecahkan rekor Museum Rekor Indonesia (MURI). Pada waktu yang sama, juga diadakan kegiatan *health talk* serentak di 37 rumah sakit IHC Group dengan mengangkat topik “Peduli Infeksi HPV dan Kanker Serviks” yang dihadiri lebih dari 5.000 peserta seluruh Indonesia. Berhasilnya kegiatan ini, hingga meraih rekor dunia MURI, merupakan wujud nyata dukungan PERTAMINA bagi peningkatan kesehatan di Indonesia.

Pilar Lingkungan Hidup

Prioritas program TJSJ pada Pilar Pembangunan Lingkungan meliputi tiga hal, yakni keanekaragaman hayati yang menjadi bagian dari Program *Carbon Project Collaboration*, Desa Energi Berdikari (DEB), dan pengelolaan limbah. Khusus DEB dalam pelaksanaannya bersinergi dengan Pilar Ekonomi.

sessions to students in Adiwiyata Schools with the hope that students can implement the campaigns and actions that have been carried out with the school.

Social Pillar: Improving Health Quality and Health Infrastructure

PT Pertamina Bina Medika - Indonesia Healthcare Corporation (IHC)/Holding of BUMN Hospitals (RS) held an early detection of cervical cancer through urine-based HPV DNA testing. The activity was carried out simultaneously in 18 IHC Group hospitals across Indonesia and reached 2,023 female participants to break the record of the Indonesian Record Museum (MURI). At the same time, health talks were also held simultaneously in 37 IHC Group hospitals on the topic of “Peduli Infeksi HPV dan Kanker Serviks” (Awareness of HPV Infection and Cervical Cancer) which was attended by more than 5,000 participants across Indonesia. The success of this program, which achieved the MURI world record, is a manifestation of PERTAMINA's support for health promotion in Indonesia.

Environmental Pillar

The CSR program priorities in the Environmental Development Pillar include three things, namely biodiversity which is part of the Carbon Project Collaboration Program, Independent Energy Villages (DEB), and waste management. Specifically, DEB synergizes with the Economic Pillar in its implementation.

RKA dan Realisasi Pembiayaan Program Prioritas di Bidang Lingkungan (Rp)

WP&B and Realization of Financing for Priority Programs in the Environmental Sector (Rp)

Program	2023		Lokasi Location
	RKA WP&B	Realisasi Realization	
Keanekaragaman Hayati Biodiversity	50,000,000,000	36,180,089,300	Seluruh Wilayah Indonesia All regions of Indonesia
Desa Energi Berdikari	9,200,000,000	10,312,609,957	Seluruh Wilayah Indonesia All regions of Indonesia
Pengelolaan Limbah Waste Management	5,000,000,000	3,652,305,383	Seluruh Wilayah Indonesia All regions of Indonesia
Total	64,200,000,000	50,145,004,640	

Pilar Lingkungan Hidup: Carbon Project Collaboration

Program *Carbon Project Collaboration* dalam Pilar Lingkungan Hidup diwujudkan melalui Hutan PERTAMINA, yang merupakan program konservasi dan reforestrasi hutan melalui penanaman pohon mangrove dan daratan. Keberadaan Hutan PERTAMINA telah memberikan manfaat kepada 4.783 masyarakat dan berkontribusi terhadap pengurangan emisi. Sampai dengan akhir tahun 2023 ada beberapa Hutan PERTAMINA, antara lain:

1. Hutan PERTAMINA UGM, dibentuk melalui kerja sama PERTAMINA dengan Universitas Gadjah Mada (UGM). Kerja sama meliputi konservasi 3.000 hektar area hutan. Reforestasi Hutan PERTAMINA UGM akan mengurangi CO₂ dan berpotensi memangkas emisi gas rumah kaca (GRK) setara 170.544 ton CO₂ selama 10 tahun. Skema penanaman agroforestri diterapkan pada hutan ini, sehingga dapat memberdayakan 8.000 penggarap lahan. Pada tahun 2023, realisasi Program Hutan PERTAMINA UGM adalah melakukan replikasi pompa berbasis panel surya (PLTS) untuk meningkatkan produktivitas hasil hutan, serta edukasi operasional PLTS dan motor listrik sebagai fasilitas patroli hutan.
2. Hutan PERTAMINA Mahakam berlokasi di Kawasan PPKH (Persetujuan Penggunaan Kawasan Hutan) PT Pertamina Hulu Mahakam, yang melibatkan kerja sama antara PERTAMINA Foundation dengan Universitas Mulawarman. Kegiatan di Hutan PERTAMINA Mahakam antara lain adalah rehabilitasi dan konservasi mangrove seluas 2.303,46 hektar dengan estimasi pengurangan emisi GRK 120 ribu ton CO₂e per tahun. Selain itu, dilakukan konservasi terhadap bekantan (*Nasalis larvatus*) yang merupakan hewan endemik Kalimantan, serta pengembangan energi terbarukan mendukung program DEB. Untuk tahun 2023, realisasi kegiatan adalah pembinaan masyarakat dalam pengolahan atas hasil hutan mangrove, dan pelestarian hutan mangrove di tambak masyarakat dengan skema *silvofishery*.

Environmental Pillar: Carbon Project Collaboration

The Carbon Project Collaboration program in the Environment Pillar is realized through PERTAMINA Forest, which is a forest conservation and reforestation program through mangrove and mainland tree planting. The existence of PERTAMINA Forest has provided benefits to 4,783 communities and contributed to emission reduction. Until the end of 2023 there are several PERTAMINA Forests, among others:

1. PERTAMINA UGM Forest, established through cooperation between PERTAMINA and Gadjah Mada University (UGM). The cooperation includes conservation of 3,000 hectares of forest area. Reforestation of PERTAMINA UGM Forest will reduce CO₂ and potentially cut greenhouse gas (GHG) emissions equivalent to 170,544 tons of CO₂ for 10 years. The agroforestry planting scheme is applied to this forest, thus empowering 8,000 land cultivators. In 2023, the realization of PERTAMINA UGM Forest Program is to replicate solar panel-based pumps (PLTS) to increase the productivity of forest products, as well as PLTS operational education and electric motors as forest patrol facilities.
2. PERTAMINA Mahakam Forest is located in the PPKH Area (Forest Area Use Approval) of PT Pertamina Hulu Mahakam, which involves cooperation between PERTAMINA Foundation and Mulawarman University. Activities in PERTAMINA Mahakam Forest include mangrove rehabilitation and conservation covering an area of 2,303.46 hectares with an estimated GHG emission reduction of 120 thousand tons CO₂e per year. In addition, conservation of proboscis monkeys (*Nasalis larvatus*) which are endemic to Kalimantan, as well as the development of renewable energy to support the DEB program. For 2023, the realization of activities is community development in processing mangrove forest products, and preservation of mangrove forests in community ponds with *silvofishery* schemes.

Tujuan 15: Ekosistem Daratan

Goals 15: Life on Land

Metadata TPB Kementerian PPN/Bappenas Ministry of National Development Planning/Bappenas SDG Metadata		Dukungan PERTAMINA PERTAMINA Support	
Target	Indikator Indicator	Realisasi 2023 2023 Realization	Target 2024
15.a Memobilisasi sumber daya penting dari semua sumber dan pada semua tingkatan untuk membiayai pengelolaan hutan yang berkelanjutan dan memberikan insentif yang memadai bagi negara berkembang untuk memajukan pengelolaannya, termasuk untuk pelestarian dan reforestasi.	15.a.1.(a) Bantuan pembangunan resmi untuk konservasi dan pemanfaatan keanekaragaman hayati secara berkelanjutan.	Hutan PERTAMINA UGM dan Hutan PERTAMINA Mahakam melindungi 60 spesies avifauna, 6 jenis reptil, 2 jenis hewan amphibi, 17 jenis insekta, dan 10 jenis mamalia.	<ol style="list-style-type: none"> 1. Meningkatkan kapasitas produksi berbasis kelompok usaha berbasis hasil hutan. 2. Pengolahan biji kebu/nyamplung sebagai <i>feedstock</i> biodiesel. 3. Masyarakat dapat merasakan manfaat ganda dari penanaman mangrove dan pengolahan hasil tambak. 4. Pembinaan olahan produk hasil tambah. 5. Pengolahan sampah sungai Mahakam.
15.a Mobilize critical resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives for developing countries to advance their management, including for conservation and reforestation.	15.a.1.(a) Official development assistance for the conservation and sustainable use of biodiversity.	PERTAMINA UGM Forest and PERTAMINA Mahakam Forest protect 60 species of avifauna, 6 types of reptiles, 2 types of amphibian animals, 17 types of insects, and 10 types of mammals.	<ol style="list-style-type: none"> 1. Increasing production capacity based on forest product-based business groups. 2. Processing kebu/nyamplung seeds as biodiesel feedstock. 3. Communities can feel the dual benefits of mangrove planting and processing of pond products. 4. Guidance on processing of added products. 5. Mahakam river waste processing.

Pilar Lingkungan Hidup: Pengelolaan Limbah

Program/kegiatan yang dilaksanakan adalah PERTAMINA Peduli Sampah Kita, yang bertujuan menjaga kebersihan lingkungan baik di daratan maupun perairan, dan dapat mengelola sampah dengan metode 3R (*Reduce, Reuse, Recycle*). Upaya yang dilakukan antara lain mengadakan penyuluhan kepada warga tentang pengelolaan sampah rumah tangga sehingga permasalahan sampah dapat teratasi, penyediaan tempat sampah, hingga mendorong masyarakat untuk memilah dan mengelola sampah untuk dijual ke bank sampah. Dengan demikian, masyarakat dapat memperoleh penghasilan tambahan.

Environmental Pillar: Waste Management

PERTAMINA Peduli Sampah Kita is the program which aims to maintain environmental cleanliness both on land and water, and can manage waste with the 3R method (*Reduce, Reuse, Recycle*). Efforts made include conducting counseling to residents about household waste management so that waste problems can be resolved, providing trash bins, and encouraging people to sort and manage waste to be sold to waste banks. Thus, the community can earn additional income.

Pilar Lingkungan Hidup: Bantuan Sarana dan Prasarana Umum

PERTAMINA berkontribusi dalam perbaikan atau pembangunan sarana umum untuk menunjang kegiatan masyarakat sehari-hari. Beberapa bentuk bantuan yang direalisasikan adalah pembangunan jalan, pembangunan sarana ibadah, penerangan jalan, serta saluran Irigasi bagi pertanian.

Pilar Lingkungan Hidup: Sanitasi dan Air Bersih

PERTAMINA melaksanakan 77 program akses air bersih dan telah menjangkau lebih dari 11 ribu kepala keluarga (KK) di seluruh Indonesia, mengingat air bersih sebagai kebutuhan hidup dasar. Realisasi tahun 2023 di antaranya program air bersih mengalir di Desa Tendambepa di Kecamatan Nangapanda, dan Desa Wolosoko di Kecamatan Wolowaru, Kabupaten Ende, Nusa Tenggara Timur (NTT). PERTAMINA membangun bak reservoir dan pipanisasi untuk mengalirkan air dari sumber mata air menuju bak reservoir. Jarak instalasi dari mata air menuju bak reservoir mencapai 7 kilometer, dan air bersih dialirkan ke pemukiman warga dengan menggunakan sistem hidrolik.

Environmental Pillar: Public Facilities and Infrastructure Assistance

PERTAMINA contributes to the improvement or construction of public facilities to support the daily activities of the community. Some forms of assistance realized are road construction, construction of worship facilities, street lighting, and irrigation channels for agriculture.

Environmental Pillar: Sanitation and Clean Water

PERTAMINA implemented 77 clean water access programs and has reached more than 11 thousand heads of families (KK) throughout Indonesia, considering clean water as a basic life need. Realization in 2023 includes clean water program in Tendambepa Village in Nangapanda District, and Wolosoko Village in Wolowaru District, Ende Regency, East Nusa Tenggara (NTT). PERTAMINA built a reservoir and pipeline to drain water from the spring to the reservoir. The installation distance from the spring to the reservoir reaches 7 kilometers, and clean water is flowed to residential areas using a hydraulic system.

Tujuan 6: Air Bersih dan Sanitasi Layak

Goal 6: Clean Water and Sanitation

Metadata TPB Kementerian PPN/Bappenas Ministry of National Development Planning/Bappenas SDG Metadata		Dukungan PERTAMINA PERTAMINA Support	
Target	Indikator Indicator	Realisasi 2023 2023 Realization	Target 2024
6.1 Pada tahun 2030, mencapai akses universal dan merata terhadap air minum yang aman dan terjangkau bagi semua.	6.1.1* Persentase rumah tangga yang menggunakan layanan air minum yang dikelola secara aman.	PERTAMINA merealisasikan 77 program akses air bersih, dengan jumlah penerima manfaat mencapai 11 ribu kepala keluarga (KK)	Mendukung target Pemerintah dalam Rencana Pembangunan Jangka Menengah Nasional (RPJMN), untuk mewujudkan 90% akses sanitasi layak, memiliki 100% akses air minum layak dan 15% akses air minum aman pada 2024.
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.	6.1.1* Percentage of households using safely managed drinking water services.	PERTAMINA realized 77 clean water access programs, with the number of beneficiaries reaching 11 thousand heads of families (KK).	Supporting the Government's target in the National Medium-Term Development Plan (RPJMN), to realize 90% access to proper sanitation, have 100% access to proper drinking water and 15% access to safe drinking water by 2024.

Pilar Hukum & Tata Kelola

Realisasi Program Tata Kelola Perusahaan tahun 2023 sebesar Rp2,28 miliar melalui kegiatan Surveillance Sistem Manajemen Anti Penyuapan dan revisi pedoman GCG serta Anggaran Dasar. Program/kegiatan yang dilaksanakan selama tahun 2023, di antaranya:

1. Rapat Koordinasi *Compliance & Corporate Administration*
2. *Audit Internal 37001:2016 SMAP*
3. *Audit Surveillance 37001:2016 SMAP*
4. Revisi Anggaran Dasar PT Pertamina (Persero)
5. *Assessment GCG 2022*
6. Pelaksanaan Hari Anti Korupsi Sedunia (Hakordia) 2023

Legal & Governance Pillar

The realization of the Corporate Governance Program in 2023 amounted to Rp2.28 billion through the Anti-bribery Management System Surveillance activities and revision of GCG guidelines and Articles of Association. Programs/activities implemented during 2023 include:

1. Compliance & Corporate Administration Coordination Meeting
2. Internal Audit 37001:2016 SMAP
3. Audit Surveillance 37001:2016 SMAP
4. Revision of Articles of Association of PT Pertamina (Persero)
5. GCG Assessment 2022
6. Implementation of World Anti-Corruption Day (Hakordia) 2023

Keberpihakan pada Penduduk Asli/Masyarakat Adat [GRI 411-1][SOC-10.A1]

Favorability to Indigenous Peoples

Perseroan memiliki keberpihakan pada penduduk asli atau masyarakat adat dalam menjalankan kegiatan operasionalnya. Masyarakat adat memiliki hak atas sumber daya alam yang berada di wilayahnya, dan PERTAMINA memahami bahwa kesinambungan operasional dipengaruhi hubungan yang baik dengan masyarakat adat. Untuk itu Perseroan melakukan pendekatan dan membangun komunikasi dengan masyarakat adat, serta berupaya melibatkan masyarakat adat dalam kegiatan yang dijalankan. Kami juga berkomitmen memberikan kontribusi berkelanjutan untuk peningkatan kesejahteraan masyarakat adat, melalui program/kegiatan sosial yang diselenggarakan dengan pemenuhan TJSL.

PERTAMINA menghindari segala bentuk kekerasan dalam menyelesaikan perselisihan dan/atau sengketa dengan masyarakat adat, serta mengedepankan pendekatan dialog guna mendapatkan solusi saling menguntungkan. Perseroan berkomitmen meniadakan segala hal yang dapat berimplikasi pada terjadinya kekerasan maupun pelanggaran hak asasi manusia (HAM) dalam menyelesaikan perselisihan dan/atau sengketa dengan masyarakat adat. Selama tahun 2023 tidak ada kegiatan operasional Perseroan

The Company favors the indigenous people in carrying out its operational activities. Indigenous peoples have rights to natural resources in their territory, and PERTAMINA understands that operational sustainability is influenced by good relations with indigenous peoples. For this reason, the Company approaches and builds communication with indigenous peoples, and seeks to involve indigenous peoples in the activities carried out. We are also committed to making a sustainable contribution to improving the welfare of indigenous peoples, through social programs/activities that are aligned with the fulfillment of CSR.

PERTAMINA avoids all forms of violence in resolving disputes and/or disputes with indigenous peoples, and prioritizes a dialog approach to obtain mutually beneficial solutions. The Company is committed to eliminating all things that can have implications for violence and human rights violations in resolving disputes and/or disputes with indigenous peoples. During 2023 there are no operational activities of the Company followed by the relocation and resettlement of residents from the operation area to a new place. PERTAMINA'S



yang diikuti dengan pemindahan dan pemukiman kembali warga dari wilayah operasi ke tempat baru. Proses pengadaan lahan PERTAMINA berpedoman pada Undang-Undang (UU) No.11 Tahun 2020 tentang Cipta Kerja perubahan atas UU No.12 Tahun 2012 tentang Pengadaan Tanah Bagi Pembangunan Untuk Kepentingan Umum, dan UU No.20 Tahun 1961 tentang Pencabutan Hak Atas Tanah dan Benda-Benda yang Ada di Atasnya.

[OG 11.16.2, 11.17.2][SOC-11.C1, 11.C2]

Selama tahun 2023 Perseroan membangun dialog dengan beberapa masyarakat adat dalam proses mendapatkan persetujuan dan perizinan, serta solusi atas perselisihan dan/atau sengketa yang terjadi. Perseroan masih menindaklanjuti perselisihan dengan pemilik hak ulayat tanah marga Maifilit terkait wilayah operasional PT Pertamina Asset 4 Papua Field pada Sumur Eco 1, Eco 2, Eco 3, dan Eco 4, di Distrik Salawati Tengah, Kabupaten Sorong, Papua Barat Daya. Hingga saat laporan ini dibuat, kasus tersebut masih dalam proses hukum. [EM-EP-210a.1][OG 11.17.3, 11.17.4]

land acquisition process is guided by Law (UU) No.11 of 2020 concerning Job Creation to amend Law No.12 of 2012 concerning Land Acquisition for Development for Public Interest, and Law No.20 of 1961 concerning Revocation of Land Rights and Objects Above. [OG 11.16.2, 11.17.2][SOC-11.C1, 11.C2]

During 2023 the Company established dialog with several indigenous communities in the process of obtaining approvals and permits, as well as solutions to disputes and/or disputes that occurred. The Company is still following up on a dispute with the owner of customary land rights of Maifilit clan related to the operational area of PT Pertamina Asset 4 Papua Field at Eco 1, Eco 2, Eco 3, and Eco 4 Wells, in Central Salawati District, Sorong Regency, Southwest Papua. Until the time of this report, the case is still in the legal process. [EM-EP-210a.1][OG 11.17.3, 11.17.4]

Inovasi Sosial Kokolomboi Lestari Masyarakat Adat Togong Tanga [SOC-10.A1, 10.A2]

Perseroan percaya bahwa dialog yang terbangun mampu menciptakan keharmonisan antara PERTAMINA dengan masyarakat adat. Perseroan melibatkan mereka dalam program/kegiatan pemberdayaan, yang dapat meningkatkan taraf hidup dan kesejahteraan mereka. PT Pertamina EP Asset 4 Donggi Matindok Field melakukan program inovasi sosial Kokolomboi Lestari, yakni konservasi hutan dengan memberdayakan masyarakat adat setempat, Togong Tanga, berbasis budidaya lebah (*apiculture*). Program ini untuk menjawab penurunan kualitas lingkungan akibat aktivitas masyarakat Desa Leme-Leme Darat, Kecamatan Buko, Kabupaten Banggai Kepulauan, Provinsi Sulawesi Tengah.

Program Kokolomboi Lestari melibatkan dan memberdayakan masyarakat adat Togong-Tanga. Program ini mengintegrasikan tiga pendekatan, yakni ekologi, sosial-ekonomi, dan sosial-budaya, yang diwujudkan melalui inovasi budidaya lebah madu batu dan dahan di dalam kawasan Taman Kehati Kokolomboi. Budidaya lebah madu ini menjadi mata pencaharian dari yang sebelumnya menjual kayu hasil hutan dan berburu satwa. Petani madu yang terlibat mencapai 10 orang dengan kemampuan panen 800–1.200 liter/tahun. Saat ini terdaftar 245 anggota dengan produksi 8.400 liter per tahun.

Selain dari budidaya lebah madu, masyarakat adat setempat juga mendapatkan tambahan penghasilan dari jasa wisata Pengelolaan Taman Kehati Kokolomboi. Masyarakat adat setempat bersama dengan masyarakat lain di sekitar Taman Kehati Kokolomboi mendapatkan penghasilan tambahan dari penyedia jasa lingkungan, dengan ketentuan tamu domestik sebesar Rp60.000/orang/hari dan tamu asing Rp200.000/orang/hari.

Social Innovation of Kokolomboi Lestari of Togong Tanga Indigenous People [SOC-10.A1, 10.A2]

The Company believes that the dialog can create harmony between PERTAMINA and indigenous people. The Company involves them in empowerment programs/activities, which can improve their standard of living and welfare. PT Pertamina EP Asset 4 Donggi Matindok Field conducts the Kokolomboi Lestari social innovation program, which is forest conservation by empowering the local indigenous community, Togong Tanga, based on apiculture. This program is to answer the decline in environmental quality due to community activities in Leme-Leme Darat Village, Buko District, Banggai Islands Regency, Central Sulawesi Province.

The Kokolomboi Lestari program involves and empowers the Togong-Tanga indigenous community. The program integrates three approaches, namely ecology, socio-economy, and socio-culture, which are realized through the innovation of stone and branch honey bee cultivation in the Kokolomboi Biodiversity Park area. This honey bee cultivation has become a livelihood from previously selling forest timber and hunting animals. There are 10 honey farmers involved with the ability to harvest 800-1,200 liters/year. Currently, 245 members are registered with a production of 8,400 liters per year.

Apart from honey bee cultivation, the local indigenous community also earns additional income from tourism services in the management of the Kokolomboi Biodiversity Park. The local indigenous community along with other communities around the Kokolomboi Biodiversity Park get additional income from environmental service providers, with the provision of domestic guests at Rp60,000/person/day and foreign guests Rp200,000/person/day.

Inovasi Sosial Asih Loinang

Joint Operation Body (JOB) Pertamina-Medco E&P Tomori Sulawesi (JOB Tomori), membuka akses air bersih bagi masyarakat Dusun Tombi Obong, Desa Maleo Jaya, Kabupaten Banggai, Sulawesi Tengah. Dusun Tombiobong ditinggali komunitas adat terpencil (KAT) Loinang. Program penyediaan akses air bersih dilaksanakan melalui program inovasi sosial Asih Loinang (Pengelolaan Air Bersih Berkelanjutan Berbasis Komunitas Adat Loinang).

JOB Tomori membangun fasilitas distribusi air dengan metode *Mata Nui Eco Water Elevator* (Metavor), yakni sistem jaringan transmisi dan distribusi air memanfaatkan perbedaan elevasi, sehingga air dapat dialirkan dari lokasi pengambilan (*intake*) menuju lokasi yang dituju (*end point*). Tujuan dari program ini adalah memberikan akses bersih kepada masyarakat kelompok adat Loinang di Tombiobong yang dipergunakan untuk fasilitas umum dan domestik berupa pos kesehatan desa (poskesdes), pendidikan anak usia dini (PAUD), sekolah, masjid, gereja, serta rumah warga.

Asih Loinang Social Innovation

Joint Operation Body (JOB) Pertamina-Medco E&P Tomori Sulawesi (JOB Tomori), opened access to clean water for the people of Tombi Obong Hamlet, Maleo Jaya Village, Banggai Regency, Central Sulawesi. Tombiobong Hamlet is inhabited by the Loinang remote indigenous community (KAT). The program to provide access to clean water is implemented through the Asih Loinang social innovation program (Sustainable Clean Water Management Based on Loinang Indigenous Community).

JOB Tomori built a water distribution facility using the Mata Nui Eco Water Elevator (Metavor) method, which is a water transmission and distribution network system utilizing elevation differences, so that water can be delivered from the intake location to the intended location (end point). The purpose of this program is to provide clean access to the community of the Loinang indigenous group in Tombiobong which is used for public and domestic facilities in the form of village health posts (poskesdes), early childhood education (PAUD), schools, mosques, churches, and residents' homes.

Pengaduan Masyarakat [OJK F.24][SOC-12.C1, 12.C2]

Community Complaints

PERTAMINA memberikan akses kepada masyarakat untuk menyampaikan pengaduan/keluhan terkait dengan pelaksanaan TJSL. Pengaduan/keluhan dapat disampaikan melalui:

- Pertemuan berkala dengan pegawai PERTAMINA yang bertanggung jawab atas pelaksanaan TJSL.
- Melalui *hotline* PCC 135.

Sesuai prosedur, segala pengaduan/keluhan yang disampaikan akan ditindaklanjuti oleh fungsi-fungsi yang bertanggung jawab. Selama tahun 2023 ada 16.067 pengaduan/keluhan yang disampaikan, dan seluruhnya telah ditindaklanjuti Perseroan. [SOC-12.A1]

PERTAMINA provides access to the public to submit complaints/complaints related to the implementation of CSR. Complaints/complaints can be submitted via:

- Regular meetings with PERTAMINA employees responsible for implementing CSR.
- PCC hotline 135.

In accordance with the procedure, all complaints/grievances submitted will be followed up by the responsible functions. During 2023 there were 16,067 complaints/grievances submitted, and all of them have been followed up by the Company. [SOC-12.A1]

Namun demikian PERTAMINA juga memahami adanya keluhan/pengaduan dari masyarakat yang disampaikan kepada pihak-pihak berwenang, dan kini dalam proses penyelesaian, di antaranya: Pengaduan dan pelaporan warga Tanah Merah ke Komisi Nasional Hak Asasi Manusia (Komnas HAM), terkait tindak lanjut penyelesaian insiden kebakaran Depo Plumpang. Selain ke Komnas HAM, warga Tanah Merah juga telah mendaftarkan gugatan perdata ke Pengadilan Negeri Jakarta Selatan, terkait pemberian ganti rugi atas kebakaran Depo Plumpang;

Penanganan Masyarakat Terdampak Insiden Skala Besar [GRI 413-2][OG 11.15.3] [SOC-1.C2]

Selama periode pelaporan, Perseroan menindaklanjuti dampak negatif aktual yang ditimbulkan dari insiden skala besar yang terjadi pada tahun 2023:

- PT Kilang Pertamina Internasional *Refinery Unit* (RU) Dumai menyelesaikan proses verifikasi dan appraisal, yang dilanjutkan pembayaran kompensasi dampak sosial akibat gangguan operasional terbakarnya RU Dumai pada 1 April 2023. Kompensasi yang diberikan meliputi biaya perbaikan rumah warga terdampak, dengan nilai yang telah disetujui bersama warga terdampak dan jajaran pemerintahan di Kota Dumai.
- PT Pertamina Patra Niaga *Subholding Commercial & Trading*, memberikan kompensasi kepada warga terdampak peristiwa kebakaran Depo Plumpang di Jakarta Utara. Kompensasi yang diberikan berupa bantuan biaya pemakaman warga yang meninggal dunia, uang untuk ahli waris dari warga yang meninggal dunia, serta bantuan biaya tempat tinggal sementara bagi warga yang selamat namun tempat tinggalnya hangus terbakar. Biaya kompensasi diberikan mulai 10 Maret 2023, kepada setiap kepala keluarga (KK) terdampak.

However, PERTAMINA also understands that there are complaints from the public submitted to the authorities, and are now in the process of being resolved, including the complaint and reporting of Tanah Merah residents to the National Commission on Human Rights (Komnas HAM), related to the follow-up settlement of the Plumpang Depot fire incident. In addition to Komnas HAM, Tanah Merah residents have also filed a civil lawsuit with the South Jakarta District Court, regarding compensation for the Plumpang Depot fire.

Community Response to Large Scale Incidents [GRI 413-2][OG 11.15.3] [SOC-1.C2]

During the reporting period, the Company followed up on actual negative impacts caused by large-scale incidents that occurred in 2023:

- PT Pertamina International Refinery Unit (RU) Dumai completed the verification and appraisal process, followed by the payment of social impact compensation due to the operational disruption of the RU Dumai fire on April 1, 2023. The compensation provided includes the cost of repairing the houses of affected residents, with a value that has been agreed with affected residents and government officials in Dumai City.
- Pertamina Patra Niaga Subholding Commercial & Trading, provided compensation to residents affected by the Plumpang Depot fire in North Jakarta. The compensation provided is in the form of assistance for the funeral costs of residents who died, money for the heirs of residents who died, and assistance with temporary housing costs for residents who survived but whose homes were burned down. Compensation costs are provided starting March 10, 2023, to each affected family head (KK).

Pelibatan Pekerja dan Pemasok Lokal dan Manfaat Tidak Langsung

[SOC-14.C1]

Engagement of Local Workers and Suppliers and Indirect Benefits

PERTAMINA berkomitmen melibatkan sebanyak-banyaknya warga negara Indonesia (WNI) sebagai pekerja. Sampai dengan akhir tahun 2023, seluruh atau 100% pekerja PERTAMINA adalah WNI, dan tidak ada pekerja asing (WNA). Namun demikian untuk beberapa proyek strategis yang bersifat kerja sama dengan pihak asing, ada beberapa tenaga kerja asing (TKA) yang terlibat dengan pertimbangan sifat pekerjaan yang membutuhkan keahlian khusus. Sampai dengan akhir periode pelaporan, seluruh atau 100% jabatan utama di PERTAMINA Grup, dijabat oleh pekerja WNI. Beberapa pejabat perusahaan merupakan tenaga kerja yang berasal dari wilayah operasi masing-masing unit operasi/unit bisnis. Pengungkapan informasi tentang hal ini disampaikan dalam Laporan Keberlanjutan masing-masing unit operasi/unit bisnis. [GRI 202-2][OG 11.11.2, 11.14.3][SOC-15.A1, 15.A4]

PERTAMINA is committed to involving as many Indonesian citizens (WNI) as possible as workers. Until the end of 2023, all or 100% of PERTAMINA workers are Indonesian citizens, and there are no foreign workers. However, for some strategic projects that are in cooperation with foreign parties, there are some foreign workers involved with consideration of the nature of work that requires special expertise. Until the end of the reporting period, all or 100% of the main positions in PERTAMINA Group are held by Indonesian workers. Some company officials are workers who come from the operating area of each operating unit/business unit. Disclosure of information on this matter is submitted in the Sustainability Report of each operating unit/business unit. [GRI 202-2][OG 11.11.2, 11.14.3][SOC-15.A1, 15.A4]

Jumlah Pekerja PERTAMINA dan Persentase Pekerja WNI Berdasarkan Penempatan

Number of PERTAMINA Workers and Percentage of Indonesian Workers Based on Placement

Penempatan Placement	2023		2022		2021	
	Jumlah Total	% WNI % Indonesian	Jumlah Total	% WNI % Indonesian	Jumlah Total	% WNI % Indonesian
Holding	1,522	100	1,513	100	1,513	100
Upstream	14,229	99.98	5,782	99	5,794	99.60
Refining & Petrochemical	5,965	99.97	3,129	100	3,061	100
Commercial & Trading	5,989	98.91	3,853	100	3,786	99.95
Power & Renewable Energy	609	100	716	100	708	100
Gas	2,802	100	7,248	100	5,833	99.98
Integrated Marine Logistics	3,384	99.88	14,939	100	14,390	99.99
AP Services & Portfolio	5,836	99.97	6,445	100	10,198	99.98
Total	40,336	99.84	43,625	99.91	45,283	99.94

Pelibatan Tenaga Kerja Lokal [SOC-15.C1]

Dengan wilayah operasi tersebar di seluruh Indonesia, PERTAMINA berupaya melibatkan pekerja lokal dari setiap unit operasi/unit bisnis. Upaya tersebut dilakukan dengan tetap memperhatikan kompetensi dan kapabilitas dalam proses rekrutmen, mengingat Perseroan bergerak di sektor energi yang membutuhkan standar tinggi keselamatan, kesehatan dan keamanan kerja. Dengan kondisi ini, Perseroan memahami keterbatasan rekrutmen terhadap pekerja lokal sebagai pegawai PERTAMINA.

Untuk mengoptimalkan pelibatan pekerja lokal, PERTAMINA melakukan beberapa inisiatif, sehingga warga setempat dapat merasakan manfaat tidak langsung signifikan dari keberadaan Perseroan. Inisiatif yang dilakukan pada tahun 2023 di antaranya:

1. Mendorong pemasok lokal untuk menggunakan pekerja lokal.
 - Pemeliharaan besar atau *turn around* kilang PT Kilang Pertamina Internasional/KPI RU III Plaju Palembang, Sumatra Selatan yang berlangsung 40 hari dari Oktober hingga November 2023, melibatkan sekitar 8.000 tenaga kerja lokal. Kegiatan *turn around* merupakan kegiatan pemeliharaan besar yang dilakukan secara rutin di kilang-kilang KPI, dan melibatkan banyak pekerja lokal dari sekitar wilayah operasi masing-masing kilang.
 - PT Pertamina Hulu Mahakam melibatkan 293 orang pekerja lokal dalam Proyek Bekapai *Artificial Lift* (BKPAL) yang dimulai 1 Desember 2022, dan dijadwalkan selesai pada bulan Februari 2024. Total jumlah pekerja lokal yang terlibat sebanyak 293 orang.

Local Worker Involvement [SOC-15.C1]

With operating areas spread throughout Indonesia, PERTAMINA seeks to involve local workers from each operating unit/business unit. These efforts are made while still paying attention to competence and capability in the recruitment process, considering that the Company is engaged in the energy sector which requires high standards of occupational safety, health and security. With this condition, the Company understands the limitations of recruitment of local workers as PERTAMINA employees.

To optimize the involvement of local workers, PERTAMINA conducts several initiatives, so that local residents can feel significant indirect benefits from the Company's presence. Initiatives carried out in 2023 include:

1. Encouraging local suppliers to use local workers.
 - Major maintenance or turn around of PT Kilang Pertamina Internasional/KPI RU III Plaju Palembang refinery, South Sumatra which lasted 40 days from October to November 2023, involving around 8,000 local workers. The turn around activity is a major maintenance activity carried out routinely at KPI refineries, and involves many local workers from around the operating area of each refinery.
 - PT Pertamina Hulu Mahakam involved 63% local workers in the Bekapai Artificial Lift Project (BKPAL) which started on December 1, 2022, and is scheduled to be completed in February 2024. The total number of local workers involved is 293 people.

2. Melakukan kerja sama dengan badan usaha lokal.

PT Pertamina Hulu Rokan bekerja sama dengan Koperasi Kharisma Jaya Global Service Oil and Gas, untuk menampung produksi minyak bumi dari 41 sumur tua di Kampung Minyak Desa Karang Jaya, Kecamatan Muara Enim, Kabupaten Muara Enim, Sumatera Selatan. Seluruh sumur tua tersebut dioperasikan warga setempat. Kerja sama ini juga mencakup pembinaan terhadap aspek keselamatan, kesehatan dan keamanan kerja guna mengurangi risiko terhadap keselamatan masyarakat serta kerusakan lingkungan. Jumlah warga lokal yang terlibat dalam kegiatan produksi minyak sumur tua di Kampung Minyak mencapai 17 orang.

3. Penyelenggaraan Event Internasional

PERTAMINA mempekerjakan tenaga kerja lokal dalam ajang balap dunia PERTAMINA *Grand Prix of Indonesia 2023* di Lombok, Nusa Tenggara Barat. Penyelenggaraan kegiatan tahunan ini melibatkan sekitar 4.600 tenaga kerja lokal, sehingga berdampak ikutan bagi peningkatan ekonomi warga setempat. Tenaga kerja lokal yang membantu jalannya acara didapuk menjadi penjaga gerbang masuk, *crew* atau *usher hospitality*, *marshal* hingga tenaga pendukung lainnya.

Proporsi Pemasok Lokal (Dalam Negeri)

[GRI 204-1][OG 11.14.6][SOC-14.A1]

Sejalan dengan komitmen melibatkan lebih banyak tenaga kerja lokal, Perseroan mendorong pelibatan badan usaha yang berbadan hukum dan berkedudukan di Indonesia, sebagai bagian dari rantai pasok PERTAMINA. Secara keseluruhan tahun 2023 ada 13.417 pemasok dalam negeri atau 94,87% dari total pemasok sebanyak 14.474, dengan jumlah tenaga kerja lokal yakni WNI diperkirakan 805.020 orang berdasar asumsi setiap pemasok mempekerjakan 60 orang.

2. Collaborating with local business entities.

PT Pertamina Hulu Rokan is working with Kharisma Jaya Global Service Oil and Gas Cooperative, to accommodate oil production from 41 old wells in Kampung Minyak, Karang Jaya Village, Muara Enim District, Muara Enim Regency, South Sumatra. All of the old wells are operated by local residents. This cooperation also includes guidance on occupational safety, health and security aspects to reduce risks to community safety and environmental damage. The number of local residents involved in old well oil production activities in Kampung Minyak reaches 17 people.

3. Organizing International Events

PERTAMINA employs local labor in the PERTAMINA Grand Prix of Indonesia 2023 world racing event in Lombok, West Nusa Tenggara. This annual event involves around 4,600 local workers, which has a knock-on effect on improving the economy of local residents. Local workers who help run the event are appointed as entrance gate guards, hospitality crew or ushers, marshals and other supporting personnel.

Proportion of Local Suppliers (Domestic)

[GRI 204-1][OG 11.14.6][SOC-14.A1]

In line with the commitment to involve more local worker, the Company encourages the involvement of business entities incorporated and domiciled in Indonesia, as part of the PERTAMINA supply chain. Overall in 2023 there are 13,417 local suppliers or 94.87% of the total 14,474 suppliers, with the number of local workers, namely Indonesian citizens, estimated at 805,020 people based on the assumption that each supplier employs 60 people.

Jumlah pemasok dalam negeri tahun 2023 berkurang 2 pemasok atau 0,015% dari tahun 2022 sebanyak 13.419 pemasok. Berdasar nilai kontrak pengadaan barang dan jasa, jumlah nilai kontrak untuk pemasok dalam negeri sebesar USD215,61 juta atau 94,88% dari total pengadaan sebesar USD227,23 juta, dan bertambah USD29,41 juta atau 15,8% dari tahun 2022 sebesar USD186,2 juta.

The number of local suppliers in 2023 decreased by 2 suppliers or 0.015% from 2022 of 13,419 suppliers. Based on the value of procurement contracts, the total contract value for local suppliers amounted to USD215.61 million or 94.88% of the total procurement of USD227.23 million, and increased by USD29.41 million or 15.8% from 2022 of USD186.2 million.

Proporsi Pengadaan Barang dan Jasa

Proportion of Goods & Services Procurement

Uraian Description	Satuan Unit	2023		2022		2021	
		Jumlah Total	%	Jumlah Total	%	Jumlah Total	%
Jumlah Pemasok Number of Suppliers							
Dalam Negeri (Nasional) National		13,417	94.87	13,419	95.50	11,632	95.04
Internasional International	Pemasok Supplier	726	5.13	632	4.50	607	4.96
Jumlah Total		14,474	100.00	14,051	100.00	12,239	100.00
Nilai Kontrak Contract Value							
Dalam Negeri (Nasional) National		215.61	94.88	186.2	96.72	147.9	96.85
Internasional International	USD Juta Million USD	11.62	5.12	6.31	3.28	4.81	3.15
Jumlah Total		227.23	100.00	192.51	100.00	152.71	100.00

Asesmen Sosial Pemasok dan Evaluasi [OG

11.12.3][SOC-2.C2][SOC-4.C3]

Pelibatan pemasok disertai asesmen sosial terhadap pemasok baru, untuk memastikan komitmen dan kepatuhan terhadap praktik-praktik keberlanjutan. Selama tahun 2023 ada 405 pemasok baru atau 2,04% dari total pemasok yang menjalani asesmen sosial, melalui pemeriksaan kelengkapan administrasi terkait aspek keselamatan dan kesehatan kerja (K3) meliputi juga *Contractor Safety Management System* (CSMS), serta aspek ketenagakerjaan termasuk pelatihan bagi pekerja mereka. [GRI 414-1][OG 11.10.8][SOC-4.A1, 4.A3]

Supplier Social Assessment and Evaluation

[OG 11.12.3][SOC-2.C2][SOC-4.C3]

Supplier engagement is accompanied by social assessments of new suppliers, to ensure commitment and compliance with sustainability practices. During 2023, 405 new suppliers or 2.04% of the total suppliers underwent social assessment, through checking the completeness of administration related to occupational safety and health (OHS) aspects including the Contractor Safety Management System (CSMS), as well as labor aspects including training for their workers. [GRI 414-1][OG 11.10.8][SOC-4.A1, 4.A3]

Secara berkala, PERTAMINA melakukan evaluasi kinerja pemasok termasuk pengelolaan dampak sosial negatif. Evaluasi dilakukan Fungsi Pengguna dan Fungsi Procurement. Metode evaluasi sesuai ketentuan dalam TKO No. B5-005/100100/2019-S9 kecuali Subholding Upstream yang mengacu kepada ketentuan Pedoman Tata Kerja (PTK-007). Berdasarkan evaluasi yang dilakukan tahun 2023 diperoleh hasil ada 223 pemasok yang dikenai sanksi berupa sanksi hitam. [GRI 414-2][OG 11.10.9]

Periodically, PERTAMINA evaluates supplier performance including the management of negative social impacts. The evaluation is carried out by the User Function and Procurement Function. The evaluation method is in accordance with the provisions in TKO No. B5-005/100100/2019-S9 except Upstream Subholding which refers to the provisions of the Work Procedure Guidelines (PTK-007). Based on the evaluation carried out in 2023, it was found that there were 223 suppliers who were sanctioned in the form of black sanctions. [GRI 414-2][OG 11.10.9]

Tingkat Komponen Dalam Negeri (TKDN)

PERTAMINA mendukung pelaksanaan Program Peningkatan Penggunaan Produk Dalam Negeri (P3DN) untuk menambah tingkat komponen dalam negeri (TKDN). Di tingkat Holding, peningkatan TKDN dikelola Fungsi *Local Content Utilization Management*, dan didukung Fungsi P3DN di masing-masing *Subholding*. Fungsi P3DN bertanggung jawab melakukan pemantauan dan evaluasi penerapan TKDN serta melakukan fasilitasi terhadap perbedaan penafsiran TKDN.

Domestic Component Level (TKDN)

PERTAMINA supports the implementation of the Domestic Product Use Improvement Program (P3DN) to increase the level of domestic components (TKDN). At the Holding level, the increase in TKDN is managed by the Local Content Utilization Management Function, and supported by the P3DN Function in each Subholding. The P3DN function is responsible for monitoring and evaluating the implementation of TKDN and facilitating differences in TKDN interpretation.

Secara bertahap PERTAMINA berupaya menambah TKDN, hingga mencapai 50% pada tahun 2026. Sampai dengan akhir tahun 2023, Perseroan mampu melakukan percepatan dengan realisasi konsolidasi TKDN PERTAMINA Grup mencapai 73,2%.

Gradually PERTAMINA seeks to increase TKDN, until it reaches 50% in 2026. Until the end of 2023, the Company was able to accelerate with the consolidated realization of TKDN PERTAMINA Group reaching 72.5%.

Target dan Realisasi TKDN PERTAMINA Grup (%)

Target and Realization of TKDN PERTAMINA Group (%)

Tahun Year	2020	2021	2022	2023	2024	2025	2026
Target	25	30	40	45	47	48	48.5
Realisasi Realization	55.60	60	60.59	73.19	-	-	-

Target dan Realisasi TKDN PERTAMINA Berdasar Entitas Anak

Target and Realization of TKDN PERTAMINA Based on Subsidiaries

Entitas Anak Subsidiaries	2023		2022	2021
	Target (%)	Realisasi (%) Realization (%)	Realisasi (%) Realization (%)	
Holding	35	86.4	53.3	56.5
Upstream	50	74.4	63.9	68.0
Refining & Petrochemical	33	50.1	44.9	63.6
Commercial & Trading	35	56.7	59.4	51.5
Power & Renewable Energy	40	47.0	53.0	36.1
Gas	40	53.1	50.2	31.2
Integrated Marine Logistics	30	67.3	49.5	32.6

Manfaat Tidak Langsung Signifikan [OG 11.14.5]

Pelibatan pemasok dalam negeri juga mendorong manfaat tidak langsung signifikan yang dirasakan masyarakat di wilayah operasi Perseroan. Sesuai ketentuan yang berlaku, pemasok berkewajiban membayarkan pajak dan Penerimaan Negara Bukan Pajak (PNBP) yang sebagian disetorkan kepada pemerintah daerah, sebagai pendapatan asli daerah (PAD), untuk mendukung ekonomi lokal. Keberadaan pekerja pemasok lokal juga turut mendukung ekonomi lokal, karena mereka akan membelanjakan imbal jasa pekerjaan/upah yang diterima untuk memenuhi kebutuhan hidup, sehingga mendorong masyarakat menyediakan warung kelontong, tempat makan, tempat tinggal dan lainnya. [GRI 203-2]

Manfaat tidak langsung signifikan lain adalah pembangunan infrastruktur untuk mendukung operasi unit operasi/unit bisnis, yang dapat dimanfaatkan masyarakat secara pro-bono. Sebagian unit operasi/unit bisnis PERTAMINA Grup berada di *remote area*, sehingga mengharuskan adanya pembangunan infrastruktur untuk mendukung kegiatan operasi. Pada tahun 2023 ada beberapa infrastruktur yang dibangun PERTAMINA untuk mendukung kegiatan operasi, tapi juga dimanfaatkan juga masyarakat, yaitu perbaikan infrastruktur mobilisasi *Project Lumut Balai Unit 2*. [OG 11.14.4][GRI 203-1]

Significant Indirect Benefits [OG 11.14.5]

The involvement of domestic suppliers also drives significant indirect benefits to the communities in which the Company operates. In accordance with applicable regulations, suppliers are obliged to pay taxes and non-tax state revenues (PNBP), some of which are deposited to the local government, as local revenue (PAD), to support the local economy. The presence of local supplier workers also supports the local economy, because they will spend the work fees/wages received to meet the needs of life, thus encouraging the community to provide grocery stalls, places to eat, places to live and others. [GRI 203-2]

Another significant indirect benefit is the development of infrastructure to support the operation of operating units/business units, which can be utilized by the community on a pro-bono basis. Some of PERTAMINA Group's operating units/business units are located in remote areas, thus requiring infrastructure development to support operations. In 2023 there are several infrastructures built by PERTAMINA to support operations, but also utilized by the community, namely the improvement of mobilization infrastructure for *Project Lumut Balai Unit 2*. [OG 11.14.4][GRI 203-1]

05

Tata Kelola Keberlanjutan
Sustainability Governance

Menjadi Motor Keberlanjutan Indonesia

Become the Driving Force of Indonesia's Sustainability

Pengawasan pengelolaan aspek ESG dilakukan oleh Komite Keberlanjutan yang diketuai oleh Direksi. Secara sinergis, Komite Keberlanjutan mendelegasikan tanggung jawab pengelolaan praktik keberlanjutan ke fungsi-fungsi terkait pada setiap tingkatan di Holding, serta kepada Direktur Utama dari setiap Subholding dan entitas anak lainnya sebagai Ketua Komite.

The management of ESG aspects is overseen by the Sustainability Committee. This committee is chaired by the Board of Directors. To ensure effective management of sustainability practices, the committee delegates the responsibility to relevant functions at every level within the Holding, as well as to the President Director of each Subholding and other subsidiaries as Chairman of the Committee.





PT Pertamina (Persero) berkomitmen menjadi pemain energi global yang ramah lingkungan, bertanggung jawab secara sosial, dan menjunjung tinggi tata kelola perusahaan yang baik dalam penerapan keberlanjutan. PERTAMINA terus berikhtiar menjadi motor pendorong keberlanjutan di Indonesia.

PT Pertamina (Persero) is committed to becoming an eco-friendly and socially responsible global energy company that upholds good corporate governance in implementing sustainability. PERTAMINA strives to be the driving force of Indonesia's sustainability.

Struktur dan Komposisi Tata Kelola Keberlanjutan

[GRI 2-9, 2-11][GOV 1.C1]

Structure and Composition of Sustainability Governance

Sesuai Undang-Undang No. 40 tahun 2007 tentang Perseroan Terbatas, organ tata kelola PERTAMINA terdiri dari:

- Rapat Umum Pemegang Saham (RUPS), sebagai organ tertinggi tata kelola;
- Dewan Komisaris, bertanggung jawab mengawasi Direksi dalam mengelola Perseroan. Dewan Komisaris dipimpin Komisaris Utama, serta dibantu Komite Audit; Komite Nominasi dan Remunerasi; Komite Perencanaan Investasi dan Manajemen Resiko; serta Komite Tata Kelola Terintegrasi;
- Direksi, bertanggung jawab mengelola Perseroan. Direksi dipimpin Direktur Utama dan dibantu Sekretaris Perusahaan; Fungsi Legal Counsel and Compliance; Satuan Pengawasan Internal; dan Fungsi Health, Safety, Security, and Environmental (HSSE).

Direktur Utama juga menjabat sebagai *Chief Executive Officer* (CEO), yang merupakan pimpinan tertinggi di Perseroan, dan bertugas mengambil keputusan penting pembangunan berkelanjutan PERTAMINA. Pelaksanaan tugas, tanggung jawab dan kewenangan sebagai CEO diatur dalam *Board Manual* sebagaimana Surat Keputusan Direktur Utama No. Kpts-50/C00000/2017-S0 Tanggal 14 September 2017.

Per Law No. 40 of 2007 on the Limited Liability Company, PERTAMINA's governance organs comprise:

- General Meeting of Shareholders (GMS), as the highest governance organ;
- Board of Commissioners is responsible for overseeing the Board of Directors in running the Company. The Board of Commissioners is led by President Commissioner and is aided by Audit Committee, Nomination and Remuneration Committee, Investment Planning and Risk Management Committee, and Integrated Governance Committee;
- Board of Directors is responsible for managing the Company. The Board of Directors is led by President Director and aided by Corporate Secretary, Legal Counsel and Compliance Function; Internal Audit Unit, and Health, Safety, Security, and (HSSE) Environmental Function.

President Director also serves as Chief Executive Officer (CEO), the Company's highest leader, whose task is to make significant decisions concerning PERTAMINA's sustainable development. Duties, responsibilities, and authority as the CEO is regulated in a Board Manual as stated in President Director's Decree No. Kpts-50/C00000/2017-S0 of 14 September 2017.

Pengungkapan informasi lain mengenai Dewan Komisaris dan Direksi terkait struktur tata kelola, komposisi dan profil setiap anggota Dewan Komisaris serta Direksi, termasuk keanggotaan eksekutif/non eksekutif, independensi, masa jabatan, kompetensi, serta keterwakilan kelompok sosial tertentu, disampaikan dalam Laporan Tahunan PT Pertamina (Persero) 2023.

Other information disclosure on the Board of Commissioners and the Board of Directors with due regard to the governance structure, composition and profile of the members of the Board of Commissioners and the Board of Directors, including executive/non-executive membership, independence, term of office, competency, and specific social group representation are presented in the 2023 Annual Report of PT Pertamina (Persero).

Nominasi dan Seleksi Dewan Komisaris Dan Direksi [GRI 2-10][GOV 1.A1]

Nomination and Selection of the Board of Commissioners and Board of Directors

Sebagai BUMN, proses nominasi dan seleksi anggota Dewan Komisaris dan Direksi serta prosedur pengangkatan Direksi PERTAMINA mengacu pada Peraturan Menteri Badan Usaha Milik Negara Nomor PER-3/MBU/03/2023.

As SOEs, the nomination and selection process of the Board of Commissioners' and Board of Directors' members and the appointment of the Board of Directors PERTAMINA adheres to the Regulation of Minister of State-Owned Enterprises Number PER-3/MBU/03/2023.

Seluruh calon anggota Dewan Komisaris dan/atau Direksi PERTAMINA harus memenuhi persyaratan formil dan materil sesuai ketentuan tersebut, dengan tetap mempertimbangkan pendapat dari pemangku kepentingan, keberagaman, independensi, dan kompetensi masing-masing. Pengungkapan informasi kriteria dan syarat nominasi calon anggota Direksi dan Dewan Komisaris diungkapkan pada Laporan Tahunan PT Pertamina (Persero) 2023. Untuk Komite Keberlanjutan yang membantu Direksi dalam penerapan keberlanjutan di Perseroan, diangkat berdasarkan Surat Keputusan No Kpts-21/C00000/2021-S0.

All prospective members of the Board of Commissioners and/or the Board of Directors of PERTAMINA are obliged to meet formal and material requirements stated in the said regulations while still respecting opinions from stakeholders, diversity, independence, and competency. Information disclosure on criteria and requirements regarding the nomination of the Board of Directors and the Board of Commissioners are disclosed in the 2023 Annual Report of PT Pertamina (Persero). Sustainability Committee, which assists the Board of Directors in implementing sustainability in the Company, was appointed based on Decree No Kpts-21/C00000/2021-S0.

Pengawasan Dampak dan Pendelegasian Tanggung Jawab [OJK E.1][GRI

2-9, 2-12, 2-13, 2-14][GOV 1.C3][GOV 2.C1, 2.C2, 2.C4][CDSB REQ-01]

Overseeing Impacts and Delegating Responsibilities

Dalam mengawasi pengelolaan dampak dan penerapan keberlanjutan, Direksi dibantu serta memberikan kewenangan kepada Komite Keberlanjutan, yang dipimpin Direktur Utama sebagai Ketua Komite. Keanggotaan Komite Keberlanjutan terdiri dari Direktur Keuangan, Direktur Strategi, Portofolio & Usaha Baru, dan Direktur integrasi Logistik & Infrastruktur. Komite Keberlanjutan dilengkapi Sekretaris Komite yang dijabat VP Sustainability.

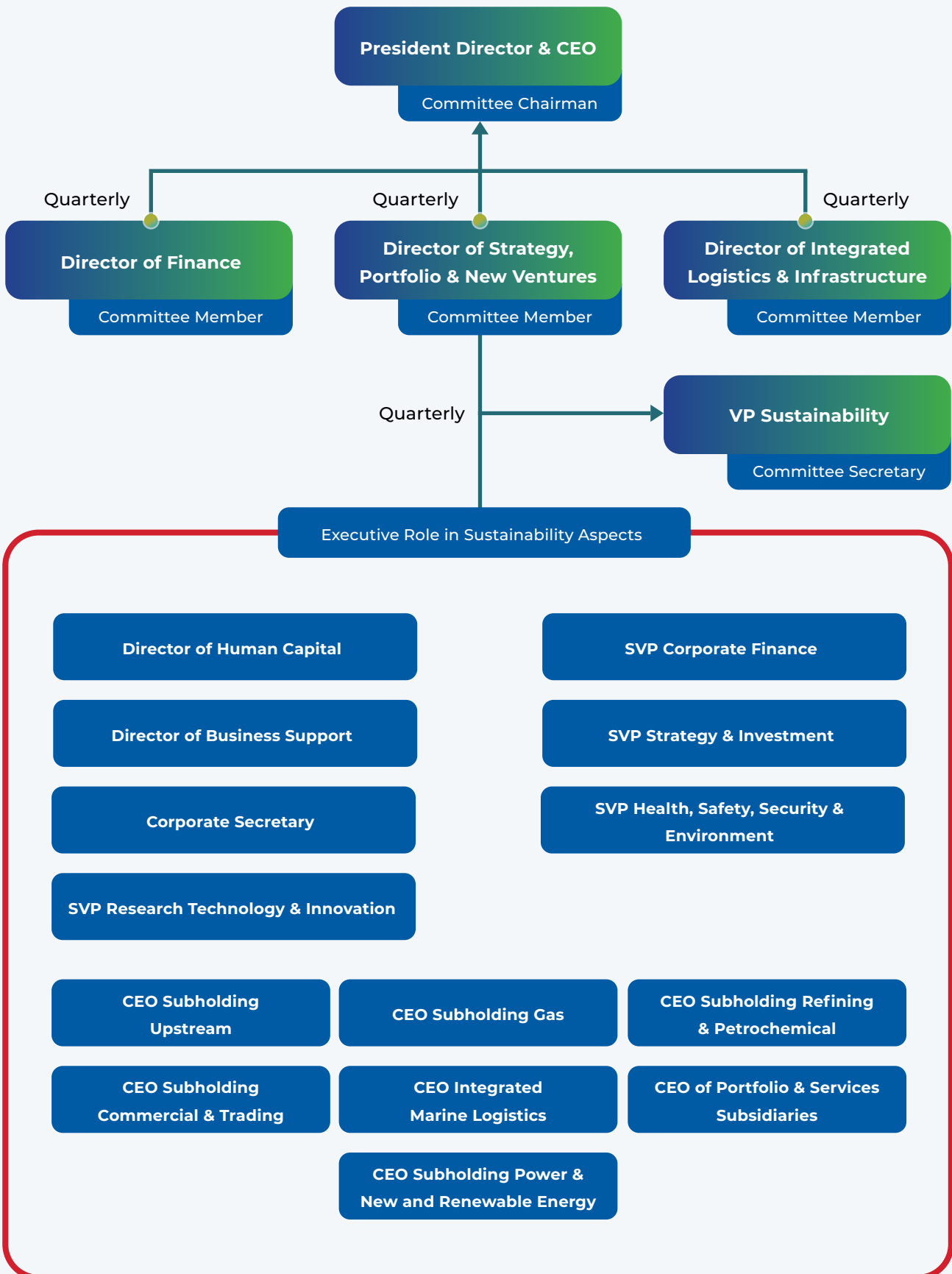
Komite Keberlanjutan mendelegasikan tanggung jawab pengelolaan dampak dan keberlanjutan kepada fungsi berkepentingan pada setiap tingkatan di *Holding*, serta CEO setiap *Subholding* maupun entitas anak lain. Secara berkala fungsi berkepentingan memberikan laporan kepada Komite Keberlanjutan Perseroan.

Overseeing impacts management and sustainability implementation, the Board of Directors is assisted by and grants authorization to the Sustainability Committee, which is led by President Director as Chairman of the Committee. Membership of the Sustainability Committee comprises Financial Director, Strategy, Portfolio & New Business Director, and Logistics & Infrastructure integration Director. The Sustainability Committee is equipped with a Secretary of Committee, which is occupied by VP Sustainability.

The Sustainability Committee delegates responsibilities in impacts and sustainability management to functions concerned on each level of the Holding and the CEO on each Subholding and other subsidiaries. These functions periodically report to the Company's Sustainability Committee.



Struktur Organisasi Komite Keberlanjutan
Organizational Structure of Sustainability Committee



Komite Keberlanjutan memiliki tugas dan tanggung jawab terkait keberlanjutan, yaitu:

- Mengawasi, menetapkan, dan memberikan arahan mengenai ambisi, strategi, peta jalan, kebijakan, inisiatif, dan ukuran kinerja;
- Mengidentifikasi dampak dan risiko operasional Perseroan terhadap perekonomian, sosial dan lingkungan, serta memantau upaya pencegahan risiko;
- Memantau pencapaian target dan hasil penerapan aspek keberlanjutan sesuai jangka waktu yang ditentukan;
- Memantau pencapaian kinerja Perseroan di bidang keberlanjutan berdasarkan penilaian pihak ketiga;
- Mengarahkan dan memantau komunikasi eksternal terkait aspek keberlanjutan;
- Memberikan arahan mengenai pelaksanaan pendanaan eksternal berbasis keberlanjutan bagi Perseroan;
- Berkoordinasi dengan Dewan Komisaris, Direksi, Direktorat atau Subholding dalam penerapan aspek keberlanjutan;
- Melaksanakan peran Komite TJSL BUMN.

Selama periode pelaporan, Komite Keberlanjutan telah merealisasikan pelaksanaan tugas dan tanggung jawabnya, antara lain:

- Memberikan arahan untuk *Sustainability Focus 2023*;
- Persetujuan *ESG Initiatives 2023*;
- Memberikan arahan terkait dengan bursa karbon;
- Memberikan arahan terkait *ESG rating*;
- Memberikan arahan terkait dengan target reduksi emisi dalam RJPP 2025-2029.

Peran Direksi dalam Laporan Keberlanjutan

Direksi memiliki peran dalam peninjauan dan persetujuan Laporan Keberlanjutan, termasuk penetapan topik material pelaporan. Dalam pelaksanaannya, Direksi mendelegasikan peran tersebut kepada VP Sustainability sebagai penanggung jawab penyusunan dan penerbitan Laporan Keberlanjutan Perseroan.

The Sustainability Committee has duties and responsibilities, such as follows:

- Overseeing, establishing and providing direction regarding ambitions, strategies, roadmaps, policies, initiatives and performance measures;
- Identifying the impacts and risks of the Company's operations on the economy, social and environment, as well as monitoring efforts to prevent risks;
- Monitoring the achievement of targets and results of implementing the sustainability aspect per the period agreed;
- Monitoring the achievement of the Company's performance in sustainability based on a third party assessment;
- Directing and monitoring external communications related to sustainability aspects;
- Providing direction regarding the implementation of external sustainability-based funding for the Company;
- Coordinating with the Board of Commissioners, Board of Directors, Directorates or Subholdings in implementing the Sustainability Aspect; and
- Conducting the role of the SOE CSR Committee.

During the reporting period, the Sustainability Committee has accomplished its duties and responsibilities, which are:

- Providing direction on *Sustainability Focus 2023*;
- Approving *ESG Initiatives 2023*;
- Providing direction related to carbon exchange;
- Providing direction on *ESG rating*;
- Providing direction related to emission reduction targets in RJPP 2025-2029.

Role of the Board of Directors in the Sustainability Report

The Board of Directors has its hand in reviewing and approving the Sustainability Report, including determining the reporting's material topic. Upon running its business, the Board of Directors delegates its roles to VP Sustainability as a person in charge of compiling and publishing the Company's Sustainability Report.

Proses Mengurangi Dampak Negatif, serta Pengelolaan Risiko dan Peluang

[OJK E.3][GRI 2-25][GOV-1.C3][GOV-1.A3][GOV 2.A4] [CDSB REQ-03]
[CDSB REQ-06]

PERTAMINA memahami kegiatan operasional dan usaha yang dijalankan memberikan dampak negatif terhadap lingkungan maupun sosial kemasyarakatan. Perseroan berkomitmen meminimalkan dampak negatif melalui pengelolaan risiko dan melakukan mitigasi. Pengungkapan informasi mengenai pengelolaan risiko selama tahun 2023 disampaikan dalam Laporan Tahunan PT Pertamina (Persero) 2023. Pengungkapan informasi dalam Laporan ini bersifat umum terkait pengelolaan risiko terhadap LST/ESG dalam penerapan praktik-praktik keberlanjutan yang dijalankan PERTAMINA.

Proses identifikasi, pengukuran, pemantauan dan pengendalian risiko dari dampak negatif terhadap LST/ESG, dijalankan sesuai Pedoman Manajemen Risiko PERTAMINA yang mengacu pada ISO 31000:2018 dan tertuang dalam Traktat Manajemen Risiko PERTAMINA dan Sistem Kerja Manajemen Risiko. Dari sisi pengawasan, Dewan Komisaris sesuai Surat Keputusan Dewan Komisaris Nomor 008/KPTS/K/DK/2021 tanggal 19 Juli 2021 membentuk Komite Pemantauan Investasi dan Manajemen Risiko (KPIMR), dengan tujuan untuk mendukung pelaksanaan tugas dan tanggung jawab Dewan Komisaris terkait penerapan dan pengawasan manajemen risiko terhadap kebijakan dan jalannya pengurusan serta usaha Perseroan yang dilaksanakan oleh Direksi. Selain itu, KPIMR juga membantu melakukan evaluasi dan pemantauan terutama penerapan manajemen risiko korporasi oleh Fungsi Enterprise Risk Management (*2nd line of defense*) di *Holding*.

Process Reducing Negative Impacts and Managing Risks and Opportunities

PERTAMINA understands its operations and business activities have negative impacts on the environment and community society. The Company is committed to minimizing said negative impacts by managing risks and performing mitigation. Information disclosure on risk management throughout 2023 is presented in the 2023 Annual Report of PT Pertamina (Persero). The information is general in nature and it is related to the ESG-related risk management occurring in the PERTAMINA's sustainability practices.

The process of identifying, measuring, monitoring, and controlling risk from ESG negative impacts is executed in accordance with PERTAMINA's Risk Management Guideline that refers to ISO 31000:2018 and is stated in PERTAMINA's Risk Management Treaty and Risk Management Work System. In terms of oversight, the Board of Commissioners per Decree of the Board of Commissioners Number 008/KPTS/K/DK/2021 of 9 July 2021 formed an Investment and Risk Management Oversight Committee (KPIMR) with the aim of supporting the duties and responsibilities of the Board of Commissioners pertaining to risk management implementation and oversight towards the Company's policies, management, and business navigated by the Board of Directors. In addition, KPIMR helps with the evaluation and monitoring of corporate risk management implementation by Enterprise Risk Management Function (*2nd line of defense*) in *Holding*.

Mitigasi Risiko Aspek Ekonomi, Lingkungan, Sosial, dan Tata Kelola

Risk Mitigation in Economic, Environmental, Social, and Governance Aspects

Risiko Risk	Dampak Risiko Risk Impact	Upaya Mitigasi Mitigation Efforts
Ekonomi Economic		
<p>Strategi Transisi Energi Rencana strategi perusahaan terkait perubahan iklim & dekarbonisasi tidak sesuai dengan perubahan tren industri</p> <p>Energy Transition Strategy The Company's strategic plan regarding climate change & decarbonization is not in accordance with changing industry trends</p>	<ol style="list-style-type: none"> 1. Target pertumbuhan perusahaan menjadi tidak tercapai. 2. Kemampuan perusahaan memenuhi kewajibannya menurun. 	<ol style="list-style-type: none"> 1. Melakukan review terhadap RJPP setiap tahun dan melakukan revisi RJPP apabila terjadi deviasi >20% dari asumsi dan parameter sebelumnya. 2. Melakukan riset untuk menyusun/updating asumsi, parameter, dan target finansial pada RJPP periode berjalan menyesuaikan dengan konsensus internasional dan tren industri terbaru. 3. Koordinasi dengan Direktorat/Unit Bisnis/<i>Subholding</i> terkait untuk memperoleh update strategi bisnis sebagai <i>corrective action</i> dalam penanggulangan perubahan kondisi yang terjadi.
<p>Inovasi Keberlanjutan Potensi risiko kegagalan menyusun riset dan kajian rendah karbon.</p> <p>Sustainability Innovation Potential risk of failure to compile research and studies related to low carbon.</p>	<p>Hasil riset dan kajian tidak akurat dan tidak dapat diterapkan.</p> <p>The results of research and studies are inaccurate and not applicable.</p>	<ol style="list-style-type: none"> 1. Menyusun Kerangka Acuan Kerja secara detail dan tahapan pembuatan riset dan kajian. 2. Menyusun program kerja dan melakukan evaluasi kajian secara berkala. <ol style="list-style-type: none"> 1. Prepare the Terms of Reference in detail and the stages of making research and studies. 2. Develop a work program and conduct evaluation studies on a regular basis.
Lingkungan Environment		
<p>Emisi GRK Meningkatnya emisi dari operasional perusahaan sehingga tidak tercapainya target penurunan emisi.</p>	<p>Mempercepat Perubahan iklim.</p>	<ol style="list-style-type: none"> 1. Mengevaluasi <i>roadmap</i> dekarbonisasi. 2. Penetapan Pedoman Reduksi Emisi. 3. Implementasi upaya reduksi emisi. 4. <i>Monitoring</i> beban emisi dan program reduksi emisi.
<p>GHG Emissions Increased emissions from the Company's operations, resulting in a failure to meet the emission reduction target.</p>	<p>Accelerate Climate Change.</p>	<ol style="list-style-type: none"> 1. Evaluate the decarbonization roadmap. 2. Determine Emission Reduction Guidelines. 3. Implement emission reduction efforts. 4. Monitor emission load and emission reduction program.

Risiko Risk	Dampak Risiko Risk Impact	Upaya Mitigasi Mitigation Efforts
Sosial Social		
<p>Kinerja K3 Terjadinya Kecelakaan Kerja & Fatality.</p> <p>OHS Performance Occurrence of work accidents & fatalities.</p>	<p>Terjadinya Kasus <i>Fatality</i> (Tidak tercapainya HSSE Excellence - <i>Fatality</i>) & <i>Recordable Incident</i>.</p> <p>Occurrence of <i>Fatality Case</i> (Not achieved HSSE Excellence - <i>Fatality</i>) & <i>Recordable Incident</i>.</p>	<ol style="list-style-type: none"> Melakukan evaluasi terkait implementasi Pedoman Pengelolaan <i>Human Factor, Behavior Based Safety</i>. Pelatihan dan <i>drill</i> insiden mayor di level korporasi. Pelaksanaan Audit HSSE secara berkala dan <i>monitoring</i> rekomendasi hasil audit. Penilaian dan <i>monitoring</i> risiko setiap bulan. Pengelolaan & <i>monitoring major accident barrier management/MERRAT</i> dan ERCCM, serta <i>Business Continuity System</i>. <ol style="list-style-type: none"> Conduct an evaluation related to the implementation of Human Factor Management Guidelines, Behavior Based Safety. Major Accident drill & exercise at corporate level. Implementation of periodic HSSE Audits and monitoring of audit recommendations. Monthly monitoring Risk Management. Management & Monitoring of major accident barrier management/MERRAT and ERCCM and Business Continuity System.
<p>Produk Ramah Lingkungan Terjadi potensi tidak akuratnya proses pemetaan produk dan jasa ramah lingkungan serta potensi keterlambatan dalam kajian, analisa, inovasi desain pengembangan produk dan jasa.</p> <p>Environmentally Friendly Products There is a risk that the mapping process for environmentally friendly products and services is inaccurate and potential delays in conducting studies, analysis, and design innovations.</p>	<p>Pelaporan perubahan produk/jasa ramah lingkungan dibatalkan oleh Pemerintah dan proses pengembangan atau pelaporan perubahan produk/jasa ramah lingkungan dimulai dari awal.</p> <p>Reporting of changes to environmentally friendly products/ services is canceled by the Government and the process of developing or reporting changes to environmentally friendly products/services starts from the beginning.</p>	<ol style="list-style-type: none"> Mempercepat proses pemetaan, penyusunan kajian, dan pengembangan inovasi produk ramah lingkungan. Meningkatkan koordinasi dengan fungsi terkait dalam rangka pemenuhan dokumen atau menyampaikan tanggapan pelaporan produk/jasa baru atau pelaporan perubahan produk/jasa ramah lingkungan. <ol style="list-style-type: none"> Accelerate the process of mapping, compiling studies, and developing innovations for environmentally friendly products. Improving coordination with related functions in order to fulfill documents or submit responses for reporting new products/services or reporting changes to environmentally friendly products/ services.

Risiko Risk	Dampak Risiko Risk Impact	Upaya Mitigasi Mitigation Efforts
<p>Kesiapan SDM Tidak tersedianya talenta muda dan perempuan untuk suksesor posisi strategis sesuai kebutuhan bisnis perusahaan.</p> <p>Human Capital Readiness The lack of young and female talents for strategic position successors according to the Company's business needs.</p>	<ol style="list-style-type: none"> 1. Target strategis perusahaan tidak tercapai. 2. Tertundanya pengambilan keputusan. 3. Terjadinya kesalahan prosedur dalam pekerjaan. 4. Kegiatan operasional perusahaan terganggu. <ol style="list-style-type: none"> 1. The Company's strategic targets are not achieved. 2. Delayed decision making. 3. Occurrence of procedural errors in the work. 4. The Company's operational activities are disrupted. 	<ol style="list-style-type: none"> 1. Pengembangan <i>mapping & talent identification</i> yang setara bagi seluruh pekerja. 2. Peningkatan program pengembangan kapasitas dan pengelolaan talenta di perusahaan. 3. Menyiapkan <i>Successor List</i> untuk tiap <i>Delta Positions</i>. <ol style="list-style-type: none"> 1. Development of equal mapping & talent identification for all employees. 2. Improvement of capability building and talent management programs at the Company. 3. Prepare a Successor List for each Delta Position.
<p>Korupsi Munculnya gugatan/tuntutan hukum atas kasus korupsi yang dilakukan oleh pekerja.</p> <p>Corruption The emergence of lawsuits/lawsuits over corruption cases committed by workers.</p>	<ol style="list-style-type: none"> 1. Menurunnya reputasi perusahaan. 2. Menurunnya kepercayaan pemangku kepentingan. <ol style="list-style-type: none"> 1. Decreased Company reputation. 2. Decreasing stakeholders' trust. 	<ol style="list-style-type: none"> 1. Mengimplementasikan <i>anti-fraud awareness program</i>. 2. Melakukan pelatihan dan sosialisasi secara berkala terkait etika perusahaan. 3. Mewajibkan pekerja untuk mengimplementasikan GCG secara menyeluruh meliputi Col, CoC, LHKPN, Gratifikasi. <ol style="list-style-type: none"> 1. Implementing an anti-fraud awareness program. 2. Conduct regular training and outreach regarding corporate ethics. 3. Requiring employees to fully implement GCG including Col, CoC, LHKPN, Gratification.
<p>Kecurangan Program <i>Anti-fraud</i> untuk meningkatkan kesadaran pekerja PERTAMINA terhadap kecurangan yang tidak tercapai sesuai target.</p> <p>Fraud Anti-Fraud Program to raise PERTAMINA employees' awareness of fraud that has not been achieved as planned.</p>	<ol style="list-style-type: none"> 1. Potensi peningkatan kasus <i>fraud</i> di lingkungan perusahaan. 2. Menurunnya reputasi dan kepercayaan pemangku kepentingan terhadap Internal Audit atas efektivitas <i>anti-fraud</i>. <ol style="list-style-type: none"> 1. Potential increase in fraud cases within the Company. 2. A decrease in reputation and stakeholders' trust in Internal Audit for the effectiveness of the anti-fraud program. 	<ol style="list-style-type: none"> 1. Melakukan monitoring terhadap <i>fraud awareness program</i> secara periodik dan melaporkan hasilnya kepada Chief Audit Executive. 2. Melakukan sertifikasi ISO 37001:2016. <ol style="list-style-type: none"> 1. Periodically monitor the fraud awareness program and report the results to the Chief Audit Executive. 2. Perform ISO 37001:2016 certification.

Risiko Risk	Dampak Risiko Risk Impact	Upaya Mitigasi Mitigation Efforts
<p>Cybersecurity Gangguan pada semua layanan IT dan kelumpuhan sistem informasi akibat serangan siber & phishing.</p> <p>Cybersecurity Disruption to all IT services and paralysis of information systems due to cyber & phishing attacks.</p>	<p>Terjadinya gangguan pada operasional bisnis PERTAMINA yang menggunakan layanan IT karena sistem informasi tidak bisa diakses.</p> <p>PERTAMINA's business operations that rely on IT services are disrupted because the information system cannot be accessed.</p>	<ol style="list-style-type: none"> 1. Melakukan <i>security assessment</i> untuk pengujian terhadap keandalan suatu sistem atau keamanan informasi dari sisi infrastruktur, aplikasi, atau jaringan. 2. Meningkatkan keterampilan dan keahlian dengan memberikan pelatihan/sertifikasi terkait keamanan siber kepada pekerja IT. 3. Monitoring implementasi/operasional inisiatif keamanan siber. 4. Meningkatkan kewaspadaan terkait keamanan siber kepada seluruh insan PERTAMINA/<i>human firewall</i>. <ol style="list-style-type: none"> 1. Conduct Security Assessment to test the reliability of a system or information security in terms of infrastructure, application, or network. 2. Improve skills and expertise by providing training/certification related to cyber security to IT employees 3. Monitor Implementation/Operations of Cyber Security Initiatives. 4. Raise the awareness of cyber security for all PERTAMINA personnel/human firewall.

Selama tahun 2023, PERTAMINA ada beberapa kejadian/insiden yang berpotensi memberikan dampak terhadap pengelolaan LST/ESG. Melalui penerapan manajemen risiko, Perseroan mampu mengelola dengan baik setiap risiko yang timbul sehingga dampak akibat kejadian/insiden yang terjadi telah dapat dikendalikan dan diminimalkan.

In 2023, several incidents occurred in the Company that potentially impacted the ESG management. Implementing risk management enables the Company to well manage any arising risk, so that the impacts can be controlled and minimized.



Kejadian/Insiden Incident	Mitigasi dan Pencegahan Mitigation and Prevention
<p>Kebakaran Depo Plumpang, di Kelurahan Rawa Badak Selatan, Kecamatan Koja, Jakarta Utara pada 3 Maret 2023 pukul 20:10 WIB.</p> <p>Fire in Depo Plumpang, South Rawa Badak Sub-District, Koja District, North Jakarta on 3 March 2023 at 20:10 WIB.</p>	<ul style="list-style-type: none"> • Meningkatkan implementasi Proses <i>Safety & Asset Integrity Management</i>. • Melakukan integrasi sistem instrumentasi jalur pipa penerimaan Balongan-Jakarta. • Meningkatkan kompetensi aspek operasional, HSSE, dan tanggap darurat. • Meningkatkan sistem proteksi & tanggap darurat di area pipa penerimaan. • Memastikan terpenuhinya kebutuhan <i>buffer zone</i> sesuai dengan standar dan <i>best practice</i> yang berlaku. • Meningkatkan sosialisasi risiko operasional terminal kepada masyarakat sekitar dan menyediakan <i>public announcer</i>. • Pertamina juga memiliki komitmen yang tinggi dalam memberikan pelayanan terhadap masyarakat terdampak dalam bentuk bantuan berupa kebutuhan dasar seperti makanan dan pakaian, dapur umum, perawatan korban, serta bantuan tempat tinggal sementara (kontrakan) bagi warga terdampak selama untuk membantu meringankan pemulihan yang disalurkan melalui PT Pertamina Patra Niaga Subholding Commercial & Trading. • Improve the implementation of Safety & Asset Integrity Management Process. • Integrate the instrumentation system of Balongan-Jakarta receiving pipeline. • Improve competency in operational, HSSE and emergency response aspects. • Improve the protection & emergency response system in the receiving pipeline area. • Ensure buffer zone requirements are met in accordance with applicable standards and best practices. • Increase the socialization of terminal operational risks to the surrounding community and provide a public announcer. • Pertamina also has a high commitment in providing services to affected communities in the form of assistance in the form of basic needs such as food and clothing, public kitchens, victim care, and temporary housing assistance (rented) for affected residents as long as it helps ease the recovery channeled through PT Pertamina Patra Niaga Subholding Commercial & Trading.
<p>Refinery Unit (RU) II Dumai meledak dan terbakar pada 1 April 2023 pukul 22.40 WIB.</p> <p>Refinery Unit (RU) II Dumai exploded and was on fire on 1 April 2023 at 22.40 WIB.</p>	<ul style="list-style-type: none"> • Meningkatkan implementasi Proses <i>Safety & Asset Integrity Management</i> dan memastikan implementasi <i>risk-based inspection</i> guna mencegah terjadinya korosi pada peralatan. • Penanganan dampak sosial berupa kerusakan fasilitas umum seperti sekolah, rumah ibadah, dan kantor pemerintahan serta kerusakan rumah warga telah selesai dilakukan dengan melakukan perbaikan atau penggantian nilai kerusakan. RU II Dumai juga menyediakan tenaga kesehatan untuk memeriksa warga serta diberikan bantuan ke fasilitas kesehatan jika terdapat cedera tubuh. • Improve the implementation of Safety & Asset Integrity Management Process and ensure the implementation of risk-based inspection to prevent corrosion of equipment. • Handling of social impacts in the form of damage to public facilities such as schools, houses of worship, and government offices as well as damage to residents' homes has been completed by repairing or replacing the value of the damage. RU II Dumai also provided health workers to examine residents and provided assistance to health facilities if there were bodily injuries.

Pengelolaan Peluang, Prospek Usaha, dan Pangsa Pasar [EM-RM-410a.2]

Dalam mengelola aspek keberlanjutan, Perseroan berupaya meminimalisir dampak negatif (risiko) dan mengembangkan dampak positif (peluang) guna mendukung bisnis berkelanjutan di masa depan. Potensi peluang yang dikelola yaitu pengembangan EBT, mencakup proyek peningkatan energi hingga 23% pada tahun 2026, dan mendukung pencapaian NZE tahun 2060. Perseroan mewujudkan hal tersebut dengan melakukan kolaborasi dan kerja sama dengan berbagai pihak untuk menguatkan PERTAMINA mengembangkan bisnis baru di berbagai lini, seperti ekosistem kendaraan bermotor listrik berbasis baterai (KBLBB), produksi hidrogen hijau atau biru, pelaksanaan *nature based solution*, produksi biofuel serta menjalankan bisnis di pasar karbon.

Pengembangan bisnis baru disertai pengembangan infrastruktur EBT, diharapkan akan mampu menghasilkan pendapatan sebesar US\$30-40 miliar pada tahun 2060. Hal tersebut membuka peluang perubahan kontribusi *revenue* PERTAMINA di masa depan. Saat ini kontribusi *revenue* dari energi fosil masih sekitar 82%, dan dengan bisnis baru di bidang EBT maka kontribusi pendapatan energi fosil menurun jadi 60% di tahun 2030, dan akan terus mengecil hingga 30-35% di tahun 2060. Dengan demikian pada tahun 2060 kontribusi pendapatan PERTAMINA dari energi hijau bisa mencapai sekitar 65-70%.

PERTAMINA menargetkan kapasitas EBT mencapai 60 GW dari solar, hidro, angin, dan panas bumi, untuk dapat memenuhi pangsa pasar 15% pada 2060. Sebagai bentuk dukungan, Perseroan menyiapkan belanja modal untuk bisnis hijau hingga tahun 2060, diperkirakan mencapai USD40 miliar untuk *biofuel*, sumber energi terbarukan, CCS/CCUS, ekosistem KBLBB, bisnis hidrogen dan karbon.

Managing Opportunities, Business Prospects, and Market Share [EM-RM-410a.2]

In managing sustainability aspects, the Company's seeks to minimize negative impacts (risks) and develop positive impacts (opportunities) which will strengthen sustainability business in the future. Potential opportunity that are managed are the development of new and renewable energy sector whose project was to increase energy up to 23% by 2026 and support the achievements of the 2060 NZE. The Company realized this plan by collaborating and cooperating with various parties to bolster PERTAMINA's position in developing new businesses in various lines of business, such as ecosystem for battery electric vehicles (KBLBB), green or blue hydrogen production, nature-based solutions implementation, biofuel production, and creating business in the carbon market.

New business development coupled with advancements in new and renewable energy infrastructure are hoped to generate US\$30-40 billion revenue by 2060. This will broaden the changes of contributions to PERTAMINA's revenue in the future. Currently, fossil energy is contributing around 82% to the revenue; with the new business in new and renewable energy, contribution to the fossil energy revenue will drop to 60% by 2030 and will continuously decrease to around 30-35% by 2060. Hence, PERTAMINA's revenue contribution from green energy could have reached to approximately 65-70%.

PERTAMINA targeted the new and renewable energy capacity to achieve 60 GW from solar, hydro, wind, and geothermal to be able to meet the 15% market share by 2060. To show support, the Company has prepared capital expenditure for the green business up to 2060, estimating USD40 billion for biofuel, renewable energy resources, CCS/CCUS, KBLBB ecosystem, as well as hydrogen and carbon business.

Peningkatan Kompetensi Keberlanjutan untuk Pejabat Tata Kelola

[OJK E.2][GRI 2-17][GOV 1.A6]

Sustainability Competency Improvement for Governance Officers

Sepanjang tahun 2023 Perseroan menyertakan anggota Dewan Komisaris dan Direksi PERTAMINA dalam kegiatan untuk meningkatkan pengetahuan, kompetensi, dan pengalaman kolektif terkait keberlanjutan. Secara keseluruhan, Dewan Komisaris telah melakukan 32 kegiatan dan Direksi melakukan 41 kegiatan. Setiap anggota Dewan Komisaris maupun Direksi yang selesai mengikuti kegiatan, akan melakukan kegiatan berbagi pengetahuan kepada yang lain.

Pengembangan kompetensi berkelanjutan juga dijalankan Direksi *Subholding* dan entitas anak. Perseroan mengadakan *PRIME Directorship Program* yang merupakan salah satu program dalam piramida *PERTAMINA Leadership Model*, dan diperuntukkan bagi Direksi *Subholding* maupun entitas anak untuk mencapai *world class energy company*.

In 2023, the Company had members of the Board of Commissioners and Board of Directors participated in activities to expand their knowledge, competence, and collective experience related to sustainability. Overall, the Board of Commissioners and the Board of Directors have conducted 32 and 41 activities respectively. Those who have completed their activities will impart their experience and knowledge to the other members.

The Subholding's Board of Directors and its entities also develop sustainability competency. The Company has *PRIME Directorship Program*, a part of *PERTAMINA Leadership Model* pyramid which is aimed for the Subholding's Board of Directors and entities to achieve world class energy company.

Evaluasi serta Penilaian Kinerja Dewan Komisaris dan Direksi [GRI 2-18]

[GOV 1.C5][GOV 1.A5][GOV 2.A2]

Performance Assessment on the Board of Commissioners and Board of Directors

Kinerja keberlanjutan Dewan Komisaris dan Direksi dievaluasi melalui pencapaian target dalam indikator kinerja utama (*key performance indicator* atau KPI) yang telah ditetapkan pemegang saham. Proses evaluasi dilaksanakan berkala dengan penetapan akhir melalui mekanisme Rapat Umum Pemegang Saham (RUPS) Tahunan. Berdasarkan KPI Direksi terdapat beberapa indikator yang berkaitan dengan kinerja keberlanjutan, antara lain target laba bersih untuk pengelolaan ekonomi, target pengurangan emisi untuk pengelolaan lingkungan, serta target kesehatan dan keselamatan kerja (K3) dan tanggung jawab sosial perusahaan (TJSL) pada pengelolaan sosial. Berdasarkan penilaian tahun 2023 diperoleh hasil

The sustainability performance of the Board of Commissioners and Board of Directors is evaluated based on their target achievements on Key Performance Indicators (KPI), which have been established by shareholders. The evaluation process is carried out periodically and a final decision is made by the Annual General Meeting of Shareholders (AGMS). According to the Board of Directors KPIs, there are several sustainability-related indicators, such as net profit targets for economic management, emissions reduction targets for environmental management, and occupational health and safety (OHS) and corporate social responsibility (CSR) targets on social management. The 2023 assessment shows

bahwa anggota Dewan Komisaris dan Direksi telah memenuhi target KPI. Pengungkapan informasi hasil penilaian tersebut disampaikan dalam Laporan Tahunan PT Pertamina (Persero) 2023.

PERTAMINA juga melakukan pengukuran terhadap penerapan GCG keseluruhan, untuk memperoleh gambaran kondisi kesesuaian penerapan GCG termasuk praktik-praktik keberlanjutan. Pengukuran berupa penilaian (*assessment*) dilakukan pihak eksternal independen dua tahun sekali, dan di antara periode tersebut dilaksanakan evaluasi (*review*) atas tindak lanjut hasil penilaian GCG pada tahun sebelumnya.

that members of the Board of Commissioners and Board of Directors have met the KPIs target. Information disclosure on the assessment results is presented in the 2023 Annual Report of PT Pertamina (Persero).

PERTAMINA also measures the overall GCG implementation to acquire its conformance outlook, including sustainability practices. The measurement, in the form of assessment, is led by an independent external party twice a year, and in between those periods a review is necessary to follow up the previous GCG assessment results.

Hasil Penilaian GCG

GCG Assessment Results

Uraian Description	2023	2022	2021
GCG Score (%)	95.25	95.06	96.94
Predikat Rank	Sangat Baik Very Good	Sangat Baik Very Good	Sangat Baik Very Good

Kebijakan Remunerasi Dewan Komisaris dan Direksi [GRI 2-19, 2-20, 2-21][GOV

1.A5][GOV 4.C1]

Remuneration Policies for the Board of Commissioners and Board of Directors

Besaran remunerasi anggota Dewan Komisaris dan Direksi Perseroan ditetapkan oleh Menteri BUMN sebagai Rapat Umum Pemegang Saham (RUPS). Penetapan mengacu pada Peraturan Menteri Badan Usaha Milik Negara Nomor PER-3/MBU/03/2023 tentang Organ dan Sumber Daya Manusia Badan Usaha Milik Negara. Pertimbangan usulan penetapan remunerasi antara lain kinerja dan pencapaian target KPI, laba bersih perusahaan, pencapaian tata kelola perusahaan, kontribusi ke negara termasuk dalam pengelolaan lingkungan, sosial dan tata kelola (LST/ESG), serta faktor eksternal seperti namun tidak terbatas pada inflasi dan *salary survey*.

The amount of remuneration of members of the Company's Board of Commissioners and Board of Directors is determined by the SOE Minister as the General Meeting of Shareholders (GMS). The stipulation refers to the Regulation of SOE Minister Number PER-3/MBU/03/2023 on Organs and Human Resources of State-Owned Enterprises. Determining remuneration reflects on the performance and achievement of KPI targets, the Company's net profit, Corporate Governance achievements, and contributions to the nation, including environmental, social, and governance (ESG) management, and external factors, such as but not limited to inflation and salary survey.

Pengungkapan informasi mengenai kebijakan dan besaran remunerasi Dewan Komisaris dan Direksi untuk tahun 2023, disampaikan dalam Laporan Tahunan PT Pertamina (Persero) 2023. Laporan ini hanya mengungkapkan informasi rasio total gaji pekerja dengan level tertinggi terhadap total gaji tahunan rata-rata untuk semua karyawan. Perseroan juga melaporkan rasio persentase kenaikan total gaji tahunan untuk pekerja dengan level tertinggi terhadap rasio peningkatan persentase median total gaji untuk semua karyawan.

Information disclosure on policies and amount of remuneration of the Board of Commissioners and Board of Directors for the year 2023 is presented in the 2023 Annual Report of PT Pertamina (Persero). This report only discloses information on the ratio of the total salary of highest-level employees to the total average annual salary for all employees. The Company also reports the percentage ratio of total annual salary increase for highest-level employees to the percentage ratio of total median salary for all employees.

Rasio Persentase Kenaikan Gaji Tahun 2023

Ratio of Salary Increase Percentage in 2023

Uraian Description	Nilai Score
Rasio total gaji pekerja dengan level tertinggi terhadap total gaji tahunan rata-rata untuk semua karyawan. The ratio of the total salary of the highest-level worker to the average annual total salary for all employees.	1.07 : 1
Rasio persentase kenaikan total gaji tahunan untuk pekerja dengan level tertinggi terhadap rasio peningkatan persentase median total gaji untuk semua karyawan. The ratio of the percentage increase in total annual salary for the highest level worker to median percentage increase ratio of total salary for all employees.	1 : 1.83

Pelibatan Pemangku Kepentingan [OJK E.4][GRI 2-29][GOV 2.A][GOV 9.C1]

Stakeholder Engagement

Pemangku kepentingan memiliki peran penting dalam kesinambungan PERTAMINA, sehingga harus dikelola dengan melibatkan mereka pada penerapan praktik-praktik keberlanjutan. Pendekatan yang dilakukan adalah dengan memenuhi kepentingan mereka melalui metode pelibatan yang mempertimbangkan signifikansi pengaruh terhadap Perseroan. Asesmen untuk memetakan pemangku kepentingan dilakukan berdasarkan Standar AA1000 *Stakeholder Engagement Standard* (SES) 2015, dan disajikan dalam tabulasi berikut.

Stakeholders play an important role in PERTAMINA's sustainability; therefore, it must be managed by involving them in implementing sustainability practices. The approach taken is by fulfilling their interests through engagement methods that considers the significance of influence on the Company. The assessment to map stakeholders was conducted based on the AA1000 Stakeholder Engagement Standard (SES) 2015, and it is presented in the following table.

Pelibatan Pemangku Kepentingan, Tujuan, Metode *Engagement*, Issue, dan Concern

Stakeholder Engagement, Purpose, Engagement Method, Issue, and Concern

Pemangku Kepentingan dan Signifikansinya Stakeholders and Their Significance	Tujuan Purpose	Metode <i>Engagement</i> Engagement Method	Isu dan Kepedulian Issue and Concern
<p>Pemegang Saham Pemegang saham sebagai pemilik modal, sehingga diperlukan dialog komunikasi terkait strategi dan kinerja Perseroan untuk membangun kepercayaan.</p> <p>Shareholders Shareholders are the owners of capital, a communication dialog about the Company's strategy and performance is required to build trust.</p>	<p>Mengomunikasikan kinerja pengelolaan perusahaan yang efisien serta berkelanjutan.</p> <p>To communicate the performance of the company's efficient and sustainable management.</p>	<p>Pelaporan kinerja rutin sesuai kebutuhan, termasuk penyelenggaraan Rapat Umum Pemegang Saham (RUPS) Tahunan, RUPS Sirkuler, dan RUPS Luar Biasa.</p> <p>Routine performance reporting as needed, including by Holding the Annual General Meeting of Shareholders (GMS), Circular GMS, and Extraordinary GMS.</p>	<p>Informasi tentang arahan strategis, kinerja keuangan dan operasional, serta aksi Perseroan.</p> <p>Information on the Company's strategic direction, financial, operational performance, and actions.</p>
<p>Pelanggan Memberikan produk yang aman, setara kepada seluruh pelanggan Perseroan.</p> <p>Customers Providing safe and equal products to all the Company's customers.</p>	<p>Memastikan ketersediaan produk dan jasa dengan memperhatikan aspek mutu, keselamatan dan kesehatan pelanggan, serta memberikan informasi transparan terkait produk dan jasa</p> <p>To ensure the availability of products and services by paying attention to quality, safety and health of customers, as well as to provide clear information about products and services.</p>	<ul style="list-style-type: none"> Layanan respon pengaduan terpusat 24/7 dan pelaksanaan survei kepuasan pelanggan. Kegiatan dan program <i>engagement</i> khusus dengan pelanggan. 24/7 centralized complaint response service and customer satisfaction survey implementation. Special engagement activities and programs with customers. 	<ul style="list-style-type: none"> Pelayanan pengaduan pelanggan. Kepuasan pelanggan. Praktik pemasaran yang etis. Customer complaint service. Customer satisfaction. Ethical marketing practices.
<p>Pekerja Pekerja merupakan suatu hal yang fundamental bagi Perseroan, sehingga diperlukan perbaikan aspek Kesehatan dan Keselamatan Kerja (K3), kesejahteraan serta pengembangan kompetensi.</p> <p>Employees Employees are a fundamental matter for the Company, so it is important to improve the aspects of Occupational Health and Safety (OHS), welfare and competence development.</p>	<ul style="list-style-type: none"> Memenuhi hak-hak normatif pekerja, kebebasan berserikat, kesempatan yang setara, dan non-diskriminasi. Menjamin upaya melindungi kesehatan dan keselamatan kerja (K3). Peningkatan kompetensi melalui pelatihan, pendidikan dan pengembangan pekerja. To fulfill employees' normative rights, freedom of association, equal opportunity, and nondiscrimination. To ensure efforts to protect occupational safety and health (OHS). To improve employee competence through training, education and development. 	<ul style="list-style-type: none"> Penyusunan Perjanjian Kerja Bersama (PKB) secara berkala. Pelaksanaan Survei Indeks Keterikatan Karyawan. Pembuatan kebijakan terkait sumber daya manusia serta penciptaan iklim kerja yang positif. Penerapan pedoman pengelolaan dan protokol HSE kepada seluruh pekerja. Regularly comply with the Collective Labor Agreements (CLA). Implement the Employee Engagement Index Survey. Making policies related to human resources and creating a positive work climate. Apply the management guidelines and HSE protocols to all employees. 	<ul style="list-style-type: none"> Perlindungan hak pekerja. Kesehatan dan keselamatan kerja. Protection of employees' rights. Occupational health and safety (OHS).

Pemangku Kepentingan dan Signifikansinya Stakeholders and Their Significance	Tujuan Purpose	Metode Engagement Engagement Method	Isu dan Kepedulian Issue and Concern
<p>Investor Investor sebagai entitas yang berperan dalam menunjang penyediaan permodalan untuk pertumbuhan Perseroan, sehingga diperlukan komunikasi dua arah untuk membangun kepercayaan.</p> <p>Investors Investors are entities that play a role in supporting the provision of capital for the growth of the Company, so that two-way communication is required to build trust.</p>	<p>Mengomunikasikan kesinambungan usaha dan operasional, kinerja finansial, serta pengelolaan LST untuk potensi investasi di masa depan.</p> <p>To communicate business and operational continuity, financial performance, and ESG management for potential future investments.</p>	<ul style="list-style-type: none"> • Komunikasi dan korespondensi dilaksanakan secara berkala. • Menyampaikan dan menerbitkan laporan tahunan yang didalamnya termasuk Laporan Keuangan serta Laporan Keberlanjutan. • Communication and correspondence are conducted regularly. • Deliver and publish annual reports such as Financial and sustainability Reports. 	<ul style="list-style-type: none"> • Informasi terkait kinerja keuangan dan operasional. • Kinerja keberlanjutan. • Information related to financial and operational performance. • Sustainability performance.
<p>Regulator, Legislatif dan Lembaga Pengawas. Perseroan senantiasa bermitra dengan regulator dalam meningkatkan standar industri pada praktik keberlanjutan.</p> <p>Regulators, Legislatures, and Supervisory Agency The Company always partners with regulators to improve industry standards on sustainability practices.</p>	<p>Mengomunikasikan kepatuhan regulasi, termasuk pelaksanaan tanggung jawab sosial dan lingkungan (TJSL), serta penerapan GCG.</p> <p>To communicate compliance with all regulations, including implementation of social and environmental responsibility (CSR), as well as implementation of GCG.</p>	<ul style="list-style-type: none"> • Melakukan Rapat Dengar Pendapat, kunjungan kerja, FGD, audiensi, <i>courtesy call</i>. • Pelaporan pelaksanaan kinerja dan GCG. • Conduct hearings, working visits, FGD, courtesy calls, and other forums. • Submit reporting on performance and GCG implementation 	<ul style="list-style-type: none"> • Kepatuhan hukum. • Program untuk menumbuhkan praktik tempat kerja yang bertanggung jawab. • Legal compliance. • Programs to foster responsible workplace practices.
<p>Masyarakat di Sekitar Wilayah Usaha Perseroan Perseroan berkomitmen untuk mengembangkan dan bekerja sama dengan masyarakat sekitar wilayah operasional dalam mewujudkan Tujuan Pembangunan Berkelanjutan.</p> <p>Communities Around the Company's Business Area The Company is committed to developing and collaborating with communities around its operational areas to achieve the Sustainable Development Goals.</p>	<p>Kepatuhan dalam pengelolaan dampak sosial terkait peningkatan kesejahteraan dan Pemberdayaan masyarakat, melalui pelaksanaan TJSL.</p> <p>Compliance in managing social impacts related to increased welfare and community empowerment through the implementation of Social and Environmental Responsibility (CSR).</p>	<p>Melaksanakan program TJSL di seluruh wilayah operasi Perseroan, dengan menyertakan konsultasi publik dan musyawarah perencanaan pembangunan (musrenbang) rutin.</p> <p>Implement CSR program in all the Company's operational areas, including regular public consultations and development planning meetings.</p>	<p>Implementasi Program TJSL.</p> <p>Implementation of CSR Programs.</p>

Pemangku Kepentingan dan Signifikansinya Stakeholders and Their Significance	Tujuan Purpose	Metode Engagement Engagement Method	Isu dan Kepedulian Issue and Concern
<p>Media Massa Perseroan senantiasa melibatkan media massa secara rutin untuk mempublikasikan kinerja keberlanjutan Perseroan.</p> <p>Mass Media The Company always involves the mass media regularly to publish the Sustainability performance.</p>	<p>Menyediakan keterbukaan informasi kinerja dan aksi korporasi Perseroan. To provide disclosure of information regarding the Company's performance and corporate actions</p>	<p>Melakukan komunikasi dengan media melalui <i>press release</i>, <i>press conference</i>, wawancara, serta lainnya. Communicate with the media through press releases, press conferences, interviews, and others.</p>	<p>Pemberitaan terkait berbagai informasi yang dimiliki Perseroan. News about the Company's various Information.</p>
<p>Kontraktor Perseroan bekerja sama dengan mitra guna memastikan bahwa kegiatan operasional Perseroan telah dilakukan selaras dengan K3, serta kepentingan terbaik kedua pihak.</p> <p>Contractors The Company always collaborates with partners to ensure that the Company's operational activities are carried out in accordance with OHS, as well as the best interests of both parties.</p>	<p>Menjalin hubungan kerja sama yang saling menguntungkan dan berkelanjutan, serta memperhatikan aspek K3. To establish mutually beneficial and sustainable cooperative relationships that prioritize OHS aspects.</p>	<p>Penerapan <i>Contractor Safety Management System (CSMS)</i>, disertai evaluasi secara berkala sesuai kebutuhan. Implementation of the Contractor Safety Management System (CSMS), accompanied by periodic evaluations as needed.</p>	<ul style="list-style-type: none"> • Kesehatan dan keselamatan kerja (K3). • Pengadaan barang dan jasa yang bertanggung jawab. • Occupational health and safety (OHS). • Responsible procurement of goods and services.
<p>Lembaga Swadaya Masyarakat (LSM) Perseroan bekerja sama dengan LSM dalam meninjau kinerja keberlanjutan yang telah dilakukan Perseroan.</p> <p>Non-Governmental Organization (NGO) The Company cooperates with NGOs in reviewing the sustainability performance that has been carried out by the Company.</p>	<p>Menyediakan informasi terkait pengelolaan LST yang dilakukan Perseroan To provide information related to the management of ESG by the Company.</p>	<p>Menyampaikan kinerja Perusahaan melalui media dan saluran informasi lainnya. Melakukan komunikasi, FGD dan kerja sama program. Communicate the Company's performance through media and other information channels. Conduct communication, FGD and program cooperation.</p>	<ul style="list-style-type: none"> • Informasi terkait kinerja keberlanjutan. • Pelaksanaan TJSL. • Information related to sustainability performance. • Implementation of CSR.

Pemangku Kepentingan dan Signifikansinya Stakeholders and Their Significance	Tujuan Purpose	Metode <i>Engagement</i> Engagement Method	Isu dan Kepedulian Issue and Concern
<p>Lembaga Penelitian dan Perguruan Tinggi Perseroan bekerja sama dengan Lembaga Penelitian dan Perguruan tinggi untuk melakukan eksplorasi dan inovasi terkait produk rendah karbon.</p> <p>Research Institutes and Universities The Company cooperates with Research Institutes and Universities to explore and innovate low carbon products.</p>	<p>Riset dan pengembangan teknologi yang mendukung kegiatan usaha dan kelangsungan bisnis Perusahaan.</p> <p>Technology research and development that support the Company's business activities and continuity.</p>	<p>Kerja sama riset, kegiatan, dan publikasi ilmiah.</p> <p>Cooperation on research, activities, and scientific publications.</p>	<ul style="list-style-type: none"> • Penelitian dan pengembangan. • <i>Sharing of industry best practices.</i> • Research and development. • Sharing of industry best practices.



Perjanjian Kerja Bersama [GRI 2-30]

PERTAMINA bersama perwakilan pekerja dalam Federasi Serikat Pekerja PERTAMINA Bersatu (FSPPB) telah menyusun Perjanjian Kerja Bersama (PKB). Sampai dengan akhir tahun 2023, PKB yang berlaku adalah PKB Periode 2022-2024, dan diperbaharui setiap dua tahun. PKB melindungi seluruh (100%) pekerja di PERTAMINA Group, baik anggota serikat pekerja maupun yang bukan anggota serikat pekerja.

Kontribusi pada Kebijakan Publik [GRI 415-1][OG 11.22.2][GOV 5.C1, 5.C2][GOV 5.A1, 5.A2, 5.A3]

Sebagai BUMN energi, PERTAMINA turut berkontribusi pada kebijakan publik terkait dengan ketahanan energi nasional, melalui beberapa mekanisme:

- Rapat Dengar Pendapat (RDP) dengan Dewan Perwakilan Rakyat (DPR).
- Materi tahun 2023 antara lain pelaporan kinerja operasional Perseroan, penyertaan modal negara nontunai (barang milik negara/BMN) untuk PT Pertamina Patra Niaga melalui 14 paket sarana prasarana bahan bakar nabati beserta jalur pipa, dan penetapan kuota dan subsidi jenis bahan bakar khusus penugasan (JBKP).
- Rapat dan koordinasi dengan Satuan Kerja Khusus Pelaksana Kegiatan Usaha Hulu Minyak dan Gas Bumi (SKK Migas), serta Badan Pengatur Hilir Minyak dan Gas Bumi (BPH Migas).
- Materi tahun 2023 antara lain penetapan target produksi dan *lifting* migas, Program BBM Satu Harga, dan pengawasan distribusi BBM subsidi tepat sasaran.
- Pertemuan dengan asosiasi baik tingkat nasional maupun global.
- PERTAMINA bersama Asosiasi Perusahaan Migas (Aspermigas) menghadiri RDP dalam rangka Harmonisasi RUU tentang Perubahan Kedua atas UU Nomor 22 Tahun 2001 tentang Minyak dan Gas Bumi.

PERTAMINA memiliki kebijakan tidak memberikan kontribusi dana politik, sumbangan apapun termasuk penggunaan fasilitas Perseroan, untuk kegiatan politik maupun individu politisi.

Collective Labour Agreement [GRI 2-30]

PERTAMINA along with the employee representatives of PERTAMINA's United Federation of Trade Unions (FSPPB) have prepared a Collective Labour Agreement (CLA). As of the end of 2023, the prevalent CLA was the 2022-2024 CLA, and it is renewed every two years. CLA protects all (100%) employees of PERTAMINA Group, both members and non-members of trade unions.

Contributions to Public Policies [GRI 415-1][OG 11.22.2][GOV 5.C1, 5.C2][GOV 5.A1, 5.A2, 5.A3]

As an energy-focused SOE, PERTAMINA has its part to contribute to public policies related to national energy resilience through several mechanisms:

- Conduct Hearings (RDP) with the House of Representatives.
- The 2023 materials included the Company's operations report, the state's non-cash equity participation (state-owned goods/BMN) for PT Pertamina Patra Niaga through 14 packages of biofuel facilities and infrastructure as well as pipelines, and determination of quota and subsidy of Special Assignment Fuel Type (JBKP).
- Meeting and coordinating with the Special Task Force for Upstream Oil and Gas (SKK Migas) and Downstream Oil and Gas Regulatory Agency (BPH Migas).
- The 2023 materials included determining oil and gas production and lifting target, One Price Fuel Program, and overseeing the distribution of targeted subsidized fuel.
- Organizing meetings with at both national and global level
- PERTAMINA and the National Oil and Gas Companies Association (ASPERMIGAS) attended the RDP for Draft Laws Harmonization on Second Amendment of Law Number 22 of 2001 on Oil and Gas.

PERTAMINA's policies prohibit all forms of political funds contributions and donations, including the use of the Company's facilities for political cause, both its activities and independent politicians.

Perseroan juga memiliki ketentuan bagi pegawai yang mencalonkan diri sebagai anggota legislatif atau kepala daerah, harus mengundurkan diri sebagai pegawai PERTAMINA.

Penyampaian Keluhan [SOC 12.C1, 12.C2]

PERTAMINA memiliki mekanisme lain untuk mengurangi dampak negatif, dengan memberikan akses kepada masyarakat untuk menyampaikan keluhan mereka. Akses untuk menyampaikan keluhan antara lain PERTAMINA Call Center (PCC) 135. Pengungkapan informasi tentang PCC 135 dan penyampaian keluhan dari masyarakat disampaikan pada bab Pengaduan Masyarakat di Laporan ini.

The Company also obliges employees who are running for legislative office or regional heads to resign as PERTAMINA's employees.

Grievance Mechanism [SOC 12.C1, 12.C2]

Another means to mitigate negative impacts, PERTAMINA provides an access for the community to convey their grievances. The access is called PERTAMINA Call Center (PCC) 135. Information disclosure on PCC 135 and the grievance mechanism are presented in the Community Complaints chapter of this Report.

Praktik Bisnis Beretika dan Kepatuhan [GRI 2-23, 2-24] **Ethical Business and Compliance Practices**

PERTAMINA berkomitmen memastikan kebijakan dan kepatuhan terhadap semua persyaratan hukum yang ditetapkan. Perseroan menjunjung tinggi standar praktik tata kelola yang baik termasuk dalam penerapan keberlanjutan.

PERTAMINA is committed to ensuring policies and compliance are implemented based on all of the legal requirements set forth. The Company upholds high standards of good corporate governance practices, including the sustainability implementation.

Kepatuhan Hukum dan Persaingan Usaha Sehat [GRI 2-27][OG 11.19.2][EM-MD-520a.1] **Legal Compliance and Healthy Business Competition**

Selama tahun 2023, PERTAMINA tidak pernah mendapatkan sanksi denda maupun sanksi hukum lain, karena sangkaan ketidakpatuhan hukum dan regulasi terkait penerapan GCG, termasuk dalam hal persaingan usaha, pengaturan pipa dan penyimpanan nasional. Perseroan mendukung persaingan usaha yang sehat, yang memacu peningkatan kinerja dan kreativitas bisnis untuk memberikan yang terbaik bagi pelanggan dan para pemangku kepentingan.

In 2023, PERTAMINA had zero penalties or other legal sanctions due to the alleged legal non-compliance made against GCG regulations, including business competition, pipeline setting, and national storage. The Company supports healthy business competition that stimulates growth in performance and business creativity for best results for customers and stakeholders.

Etika Perusahaan dan Pencegahan Benturan Kepentingan [GRI 2-15][GOV

1.C2][GOV 1.A7]

Corporate Ethics and Prevention of Conflicts of Interests

Perseroan telah menyusun Pedoman Perilaku atau *Code of Conduct* (CoC) sebagai dasar sikap, perilaku dan tindakan bagi Insan PERTAMINA, dalam melakukan interaksi hubungan bisnis maupun hubungan kerja. Pedoman Perilaku menerapkan prinsip-prinsip dasar yang ada pada visi, misi, dan nilai-nilai utama Perseroan, serta memperhatikan kepatuhan peraturan internal maupun eksternal yang berlaku, termasuk penghormatan hak asasi manusia (HAM). Dokumen Pedoman Perilaku ditetapkan berdasarkan Surat Keputusan Direktur Utama No. Kpts-15/C00000/2022-SO dan dapat diakses pada situs Perseroan.

Pedoman Perilaku menjadi panduan bagi:

- Insan Perseroan, yaitu Direksi, Dewan Komisaris, pekerja waktu tertentu, pekerja waktu tidak tertentu, dan tenaga kerja jasa penunjang yang bekerja di lingkungan Perseroan;
- Pihak eksternal yang bertindak untuk dan atas nama Perseroan;
- Anak Perusahaan dan struktur perusahaan di bawahnya, yaitu badan hukum/usaha lain yang dikendalikan oleh Perseroan, baik secara langsung maupun tidak langsung;
- Mitra Kerja yang bekerja sama dengan Perseroan.

Selama tahun 2023, Perseroan telah melakukan sosialisasi Pedoman Perilaku kepada 1.402 pekerja.

Pencegahan Benturan Kepentingan

PERTAMINA berkomitmen menerapkan pencegahan benturan kepentingan sesuai Pedoman Benturan Kepentingan No. A9.1-01/N00000/2023-S9 tentang Pencegahan Pelanggaran Konflik Kepentingan. Pencegahan benturan kepentingan juga dilakukan dengan mewajibkan insan PERTAMINA menandatangani surat pernyataan setiap tahun, tentang bebas

The Company has a Code of Conduct (CoC) as the foundation for attitude, behavior, and action of PERTAMINA's personnels. The CoC implements basic principles which are inherent in the Company's vision, mission, and main values; and it adheres to prevalent internal and external regulations, including human rights acknowledgment. The document of CoC was stipulated based on President Director's Decree No. Kpts-15/C00000/2022-SO and it can be accessed on the Company's website.

The Code of Conduct serves as a guide for:

- The Company's personnels, namely the Board of Directors, Board of Commissioners, non-permanent employees, permanent employees, and supporting service workers working in the Company;
- External parties acting for and on behalf of the Company;
- The subsidiaries and corporate structures under them, namely legal entities/other businesses controlled by the Company, either directly or indirectly;
- Business Partners cooperating with the Company.

Throughout 2023, the Company performed a socialization of the Code of Conduct to 1,402 employees.

Prevention of Conflicts of Interests

PERTAMINA is committed to preventing any conflict of interests per Guideline of Conflict of Interests No. A9.1-01/N00000/2023-S9 on Prevention of Conflict of Interests Violation. Other ways to prevent conflict of interests are by obligating the Company's personnels to sign a statement letter every year; a statement that elucidates free of conflict of interests, zero tolerance to bribery,

benturan kepentingan, tidak menoleransi suap, menjunjung tinggi kepercayaan, dan berpedoman pada asas-asas tata kelola korporasi yang baik, dengan mengacu ISO 37001:2016 Sistem Manajemen Anti Penyuapan (SMAP).

Untuk mencegah benturan kepentingan, Insan PERTAMINA di antaranya:

1. Wajib mematuhi hukum dan regulasi yang berlaku pada wilayah penugasannya, baik tingkat nasional maupun internasional, termasuk peraturan internal Perseroan;
2. Bertanggung jawab untuk memastikan bahwa kepentingan pribadi di luar pekerjaan tidak mengganggu pelaksanaan tugas dan tanggung jawabnya terhadap Perseroan;
3. Menghindari segala bentuk benturan kepentingan, baik secara langsung maupun tidak langsung;
4. Dilarang terlibat dalam segala bentuk tindakan korupsi, kolusi, dan nepotisme;
5. Dilarang menawarkan, memberi, dan/atau menerima sesuatu yang tidak sesuai dengan Ketentuan Gratifikasi untuk tujuan memperoleh manfaat/imbalan/kontraprestasi dan perlakuan istimewa dari pihak-pihak tertentu.

trust, and good corporate governance principles, which refer to ISO 37001:2016 on the Anti-Bribery Management System (SMAP).

To prevent any conflict of interests, PERTAMINA's personnels must:

1. Comply with laws and regulations prevalent in their areas of assignment, both at national and international levels, including the Company's internal regulations;
2. Be accountable for ensuring that personal interests outside of work do not interfere with the implementation of their duties and responsibilities to the Company;
3. Avoid any form of conflict of interests, either directly or indirectly;
4. Not be involved in all forms of corruption, collusion, and nepotism acts;
5. Not offer, give, and/or accept anything that is not in accordance with the Gratification Terms for the purpose of obtaining benefits/rewards/consideration and special treatment from certain parties.



Komunikasi Hal-hal Kritis [GRI 2-16]

Communicating Critical Issues

Perseroan memiliki beberapa mekanisme yang dapat digunakan pemangku kepentingan, untuk menyampaikan hal-hal kritis ke Direksi. Seluruh hal-hal kritis yang disampaikan ditindaklanjuti sesuai prosedur yang berlaku di PERTAMINA.

Sistem Pelaporan Pelanggaran

Salah satu mekanisme yang disediakan adalah Sistem Pelaporan Pelanggaran atau WBS, untuk menyampaikan laporan dugaan pelanggaran prinsip-prinsip GCG serta nilai-nilai etika (*fraud and irregularities*) yang berlaku di Perseroan. Laporan disampaikan melalui saluran pelaporan yang tersedia 24 jam, dan dikelola oleh Fungsi *Investigation Audit*, WBS dan *Fraud Prevention* (IWF), bekerja sama dengan konsultan independen (Deloitte). Untuk mendukung WBS, Perseroan menerbitkan kebijakan perlindungan dan menjaga kerahasiaan pelapor. Selama tahun 2023 terdapat 257 pengaduan dengan 124 pengaduan masuk dalam kategori *fraud* dan 133 pengaduan masuk kategori *irregularities*.

Efektivitas pelaksanaan WBS dilaporkan secara berkala kepada Direksi dan Dewan Komisaris. Penilaian kinerja pengelolaan pengaduan diukur secara akumulasi berdasarkan jumlah laporan pengaduan yang diterima dan telah dilakukan analisis awal oleh Fungsi WBS. Jumlah laporan pengaduan kategori *in scope* sampai dengan tahun 2023 yang diterima Fungsi WBS sebanyak 803 pengaduan. Dari jumlah tersebut, pengaduan yang telah dilakukan analisis awal (telah terbit LHAA) sebanyak 721 pengaduan. Dengan menggunakan rumus KPI pengelolaan pengaduan, maka capaian KPI Fungsi WBS tahun 2023 adalah sebesar 89,79% (melebihi target KPI 81%). Pengungkapan informasi mengenai penerapan WBS selama periode pelaporan disampaikan dalam Laporan Tahunan PT Pertamina (Persero) 2023.

The Company has several mechanisms that can be used by stakeholders to present critical issues to the Board of Directors. All critical issues reported are followed up based on the procedure prevalent in PERTAMINA.

Whistleblowing System (WBS)

Whistleblowing System or WBS is a mechanism provided to report any alleged violations to the GCG principles and ethical values (*fraud and irregularities*) prevalent in the Company. Reports are conveyed through a 24-hour reporting channel, managed by the Investigation Audit, WBS and Fraud Prevention (IWF) Function together with an independent consultant (Deloitte). To support the WBS, the Company issued a policy on protecting whistleblowers' identities. In 2023, of the 257 complaints received, 124 were categorized as fraud, and 133 were irregularities.

The effectiveness of WBS is regularly reported to the Board of Directors and Board of Commissioners. Performance evaluation of the grievance management is measured accumulatively based on the number of grievances received and with preliminary analysis. Total grievances reports categorized in scope until 2023 received by the WBS Function amounted to 803. Of the total, the number of grievances with preliminary analysis (LHAA has been issued) amounted to 721. By using the complaint management KPI formula, the achievement of the WBS Function KPI in 2023 is 89.79% (exceeding the KPI target of 81%). Information disclosure on the implementation of WBS during the reporting period is presented in the 2023 Annual Report of PT Pertamina (Persero).

Mekanisme Penanganan Pengaduan [OJK F.23, F.30][SOC 12.C1, 12.C2][SOC 12.A1]

Secara berkala PERTAMINA melakukan evaluasi efektivitas mekanisme pengaduan dan proses remediasi lainnya melalui survei kepuasan pelanggan terhadap PCC 135, dengan hasil survei pada 2023 mencapai 4,26 dari skala likert 5, meningkat dari tahun 2022 sebesar 4,22. Perseroan juga menyertakan PCC 135 pada ajang *Contact Center World Global Awards 2023* di Lisbon, Portugal, dengan pencapaian memenangkan 11 penghargaan Gold dari 12 kategori yang diikuti, satu penghargaan Silver, dan satu penghargaan *Certified World Class Contact Center*.

Dalam kondisi tertentu, masyarakat maupun pemangku kepentingan lain juga dapat menyampaikan hal-hal kritis maupun pengaduan/keluhan secara langsung kepada pimpinan dan/atau pejabat perusahaan di PERTAMINA Group. Mekanisme yang disediakan, antara lain:

- *Town Hall Meeting* dan *Management Walkthrough*: pertemuan dengan pekerja.
- *Vendor Day*: pertemuan dengan pemasok/vendor.
- *Customer Day*: pertemuan dengan pelanggan.
- Rapat Koordinasi: pertemuan dengan pemerintah, regulator/SKK Migas.
- *Press Tour/Press Visit*: pertemuan dengan media massa.

Mekanisme untuk Meningkatkan Kepedulian [GRI 2-26]

Selama tahun 2023 PERTAMINA menyelenggarakan beberapa kegiatan untuk meningkatkan kepedulian pemangku kepentingan, di antaranya kerja sama dengan lembaga penegak hukum. Kegiatan yang diselenggarakan antara lain:

- Kolaborasi bersama POLRI terkait rapat koordinasi tahunan terkait satgas hari raya, serta saat natal dan tahun baru.

Grievance Handling Mechanism [OJK F.23, F.30][SOC 12.C1, 12.C2][SOC 12.A1]

PERTAMINA periodically evaluates the effectiveness of grievance mechanism and other remediation processes through a customer satisfaction survey on PCC 135. The result of the 2023 survey shows 4.26 out of 5 Likert scale, increasing from 4.22 in 2022. The Company also had PCC 135 participated in the 2023 *Contact Center World Global Awards* in Lisbon, Portugal, winning 11 Gold awards of the 12 categories participated, one Silver award, and one *Certified World Class Contact Center* award.

In certain circumstances, community and other stakeholders may also report critical issues and complaints/grievances directly to the leaders and/or corporate officials in PERTAMINA Group. Below are the available mechanisms:

- *Town Hall Meeting* and *Management Walkthrough*: meeting the employees.
- *Vendor Day*: meeting the vendors.
- *Customer Day*: meeting the customers.
- *Coordination Meeting*: meeting the government, regulators/SKK Migas.
- *Press Tour/Press Visit*: meeting the mass media.

Mechanism for Awareness Improvement [GRI 2-26]

During 2023, PERTAMINA held several activities to raise awareness among stakeholders, one of which was cooperation with law enforcement. The following are said activities:

- Collaboration with POLRI related to the annual coordination meeting related to the holiday task force, as well as during Christmas and New Year.

- Kolaborasi bersama Intelkam POLRI terkait rapat kerja teknis (Rakernis) pengembangan Personil dalam rangka penanganan pengamanan wilayah operasional PERTAMINA.
- Kolaborasi dengan penegak hukum terkait penegakan hukum dan tata tertib di lingkungan kerja PERTAMINA.
- Kolaborasi dengan TNI terkait optimalisasi dan sinergitas dalam penyelenggaraan pengamanan objek vital nasional strategis dan objek lainnya di lingkungan kerja PERTAMINA.
- Kolaborasi dengan TNI terkait dukungan data, informasi dan pengamanan kepada PERTAMINA.
- Collaboration with POLRI Intelkam related to technical work meetings (Rakernis) on personnel development in the context of handling security of PERTAMINA operational areas.
- Collaboration with law enforcement related to law enforcement and order in the PERTAMINA work environment.
- Collaboration with TNI related to optimization and synergy in the implementation of security of strategic national vital objects and other objects in PERTAMINA's work environment.
- Collaboration with TNI related to data, information and security support to PERTAMINA.



Dukungan pada Antikorupsi [GRI 205-1, 205-2, 205-3][OG 11.20.2, 11.20.3, 11.20.4][EM-EP-510a.2][EM-SV-510a.2]

[GOV 3.C1, 3.C2, 3.C3, 3.C4][GOV 3.A1, 3.A2, 3.A3, A4][GOV 4.A3, 4.A4]

Support for Anti-Corruption

PERTAMINA memiliki beberapa pedoman lain yang mendukung antikorupsi. Perseroan telah memperoleh sertifikasi ISO 37000:2016 Sistem Manajemen Anti-Penyuapan (SMAP), sehingga seluruh jajaran manajemen dan pegawai memiliki komitmen menerapkan kebijakan antikorupsi. Penerapan SMAP juga mencakup kontraktor/mitra/pemasok/vendor di rantai pasok Perseroan.

Laporan Harta Kekayaan Penyelenggara Negara (LHKPN) dan Gratifikasi

Perseroan telah melakukan penilaian atas kegiatan operasi yang memiliki risiko korupsi, dengan hasil seluruh (100%) kegiatan operasi memiliki risiko korupsi, baik risiko tinggi, risiko sedang/menengah, maupun risiko rendah. PERTAMINA berkomitmen melakukan pencegahan korupsi melalui pengawasan dan sosialisasi budaya anti-gratifikasi dan anti-suap di Perseroan dan entitas anak, di antaranya memastikan kepatuhan LHKPN dan pelaporan gratifikasi.

Sesuai UU Nomor 28 Tahun 1999 tentang Penyelenggaraan Negara yang Bersih dan Bebas dari Korupsi, Kolusi dan Nepotisme, para anggota Dewan Komisaris, Direksi dan pejabat struktural PERTAMINA harus melaporkan kekayaan masing-masing kepada Komisi Pemberantasan Korupsi (KPK). Penetapan wajib lapor LHKPN di PERTAMINA didasarkan pada Surat Keputusan Direktur Utama Nomor Kpts-03/C00000/2021-S0 Tanggal 1 Februari 2021 tentang Kewajiban Penyampaian Laporan Harta Kekayaan Penyelenggara Negara (LHKPN) di PT Pertamina (Persero) dan Anak Perusahaan dan Pedoman No. A13-001/N00200/2021-S9 Tanggal 1 Februari 2021 tentang Pengelolaan Kewajiban Penyampaian LHKPN. Selama tahun 2023 penyampaian LHKPN mencapai 100% dari total 9.809 jumlah pejabat perusahaan yang menjadi Wajib Lapor (WL) menyampaikan LHKPN.

PERTAMINA has several other anti-corruption guidelines. By gaining the ISO 37000:2016 certification on the Anti-Bribery Management System (SMAP), all management and employees of PERTAMINA assume the commitment to implement anti-corruption policies. The implementation of SMAP also encompasses contractors/partners/suppliers/vendors, which are included in the Company's supply chain.

Obligation of State Official Wealth Report (LHKPN) and Gratification

The Company has assessed operations with corruption risks with the result showing that all (100%) operations were laden with corruption risks, either high, medium, or low. The Company is committed to preventing corruption by exercising oversight and socializing the culture of anti-gratification and anti-bribery in the Company and its subsidiaries, including compliance with LHKPN and gratification reporting.

In accordance with Law Number 28 of 1999 on the Implementation of a Clean and Corruption-, Collusion-, and Nepotism-Free State, members of the Board of Commissioners, Board of Directors, and structural officials of PERTAMINA must report their wealth respectively to the Corruption Eradication Commission (KPK). The establishment of LHKPN taxpayers in PERTAMINA is based on the President Director's Decree Number Kpts-03/C00000/2021-S0 of 1 February 2021 on the Obligation of State Official Wealth Report (LHKPN) in PT Pertamina (Persero) and Subsidiaries and Guideline No. A13-001/N00200/2021-S9 of 1 February 2021 on the Management of Mandatory LHKPN. In 2023, LHKPN was reported to its fullest (100%) of the total 9,809 state officials who have become taxpayers.

Perseroan juga memiliki Pedoman Gratifikasi No. A09-001/N00000/2021-S0 Revisi I, yang memuat ketentuan mengenai gratifikasi. PERTAMINA telah membentuk Unit Pengendalian Gratifikasi (UPG), yang dibentuk berdasarkan Tata Kerja Organisasi Unit Pengendalian Gratifikasi No. A09-001/N00200/2022-S0. UPG menyampaikan laporan secara berkala dan berkoordinasi dengan KPK untuk laporan gratifikasi.

The Company also has the 1st Revision of Gratification Guideline No. A09-001/N00000/2021-S0, which stipulates gratification. A Gratification Control Unit (UPG) was established based on the Organizational Work Procedure of the Gratification Control Unit No. A09-001/N00200/2022-S0. UPG reports periodically and coordinates with KPK for gratification reporting.

Pembentukan Budaya *Anti-Fraud* PERTAMINA

Strategi pelaksanaan kegiatan *anti-fraud* yang dilakukan oleh perusahaan mencakup rangkaian program yang sistematis dan menyeluruh. Program-program tersebut dibuat dan dilaksanakan sejalan dengan nilai, visi, misi, dan tujuan perusahaan. Untuk memastikan program tersebut berjalan dengan efektif, serangkaian kegiatan *anti-fraud* telah disusun dan dikomunikasikan kepada para pekerja, di antaranya:

Building PERTAMINA's *Anti-Fraud* Culture

A strategy enforced by the Company for executing *anti-fraud* activities consists of a series of systematic and thorough programs. These programs are made and carried out in accordance with the Company's values, vision, missions, and objectives. For them to run effectively, a set of *anti-fraud* activities has been prepared and communicated to employees, some of which were as follows:

<p>±32 kegiatan dengan ±3.186 pekerja di seluruh PERTAMINA Group yang mengikuti <i>sharing session</i>/sosialisasi <i>fraud awareness</i> dan <i>anti-fraud program</i></p>	<p>2 kali <i>broadcast anti-fraud</i> setiap bulan</p>	<p>8.981 pekerja mengikuti <i>anti-fraud training</i> melalui Aplikasi <i>Mobile Learning Traco</i> dan <i>classroom</i> daring maupun luring</p>
<p>±32 activities with ±3,186 employees across PERTAMINA Group which participated in a <i>sharing session</i>/socialization of <i>fraud awareness</i> and <i>anti-program</i></p>	<p>2 times of <i>anti-fraud broadcasts</i> every month</p>	<p>8,981 employees attended the <i>anti-fraud training</i> through the <i>Mobile Learning Traco</i> application and both online and offline classrooms</p>
<p>Pembentukan <i>Anti-Fraud Agent</i> (AFA) di setiap entitas PERTAMINA Grup</p>	<p>78,50 nilai indeks PERFECT atau dalam kategori "Baik"</p>	<p>70 mitra dan vendor mengikuti sosialisasi <i>anti gratifikasi</i> dan <i>anti penyuapan</i></p>
<p>Established an <i>Anti-Fraud Agent</i> (AFA) in each entity of PERTAMINA Group</p>	<p>Scored 78.50, PERFECT index value, or in the category of "Good"</p>	<p>70 partners and vendors joined the socialization of <i>anti-gratification</i> and <i>anti-bribery</i></p>
<p>98 orang pengurus dan anggota Persatuan Wanita Patra mengikuti <i>Workshop Keluarga Berintegritas</i> PERTAMINA Grup</p>	<p>700 pekerja mengikuti sosialisasi <i>anti gratifikasi</i> dan SMAP</p>	
<p>98 staff administrators and members of Wanita Patra Association joined a <i>Workshop</i> by PERTAMINA Group, which was called <i>Families with Integrity Workshop</i></p>	<p>700 employees joined the <i>anti-gratification socialization</i> and SMAP</p>	

Insiden *Fraud* yang Terbukti dan Tindakan Diambil

Selama tahun 2023 PERTAMINA melakukan pemeriksaan terkait *fraud dan irregularities* dengan jumlah 20 laporan penelaahan dan audit investigasi, sesuai informasi dari Fungsi *Investigation Audit*, WBS dan *Fraud Prevention*. Dari seluruh laporan tersebut, ada 14 laporan merupakan laporan yang terkait dengan kasus *fraud* di lingkungan PERTAMINA Grup.

Laporan-laporan insiden kasus *fraud* yang terbukti, ditindaklanjuti berupa pemberian sanksi kepada karyawan yang terlibat, melalui prosedur hubungan industrial sesuai Perjanjian Kerja Bersama (PKB) yang berlaku di PERTAMINA. Fungsi *Industrial Relation* akan melakukan evaluasi dan proses pemberian sanksi kepada pegawai yang terbukti bersalah. Sanksi terbagi beberapa jenis sesuai tindakan yang terbukti dilakukan pegawai, antara lain teguran, surat peringatan, penurunan jabatan sampai dengan pemutusan hubungan kerja (PHK).

Selama tahun 2023 ada 14 kasus *fraud*, dengan 18 pegawai yang terlibat dan sebanyak 8 pegawai mendapatkan sanksi, sedangkan lainnya masih dalam proses penetapan sanksi oleh tim terkait sesuai kewenangan. Selain itu, tidak ada sangkaan perbuatan *fraud* yang terbukti dilakukan mitra bisnis, sehingga mengakibatkan kontrak diakhiri atau tidak dilanjutkan. Pada periode pelaporan tidak ada kasus hukum terkait korupsi yang diajukan oleh publik terhadap PERTAMINA, dan saat ini masih dalam proses penyelidikan yang dilakukan oleh pihak ketiga.

Proven Incidents of Fraud and Actions Taken

Throughout 2023, PERTAMINA conducted an audit of fraud and irregularities based on 20 review and audit reports in accordance with information from the Investigation Audit, WBS, and Fraud Prevention Function. Of the total reports, 14 were reports related to fraud incidents occurred in PERTAMINA Group.

Follow-up on reports of fraud incidents is carried out in the form of imposing sanctions on employees that are proven to be involved, through Industrial Relations procedures in accordance with the Collective Labor Agreement (CLA) between the Company and the employees. The Industrial Relations function will evaluate and impose sanctions on employees who are proven guilty. There are several types of sanctions categorized by the actions taken by employees. The types of sanctions imposed include reprimands, warning letters, PERTAMINA Reference Level (PRL) demotion up to Termination of Employment (PHK).

Throughout 2022, there were 14 fraud cases, with 18 employees involved and 8 employees receiving sanctions, while others are still in the process of determining sanctions by the relevant team according to authority. There were no proven incidents resulting in termination or discontinuation of contracts with business partners due to violations related to fraud. During the reporting period, there were no legal cases related to corruption filed by the public against the Company, and they are still under investigation by a third party.

Riset, Inovasi Produk Berkelanjutan, dan Pengembangan Teknologi Informasi [OJK F.26][GOV 2.A1]

Research, Sustainable Product Innovations, and Information Technology Advancements

Riset, inovasi, dan pengembangan teknologi informasi yang berkelanjutan menjadi kunci dalam pengembangan bisnis energi PT Pertamina (Persero).

Research, innovation, and sustainable information technology developments are key to PT Pertamina (Persero) energy business advancements.

Riset, Inovasi, dan Pengembangan Produk Ramah Lingkungan [OJK F.28]

Research, Innovation, and Eco-Friendly Products Development

Riset dan inovasi berkelanjutan di PERTAMINA dijalankan fungsi *Research & Technology Innovation* (RTI). Sampai dengan akhir tahun 2023, RTI menghasilkan berbagai produk inovasi. Sebanyak 52 produk inovasi telah mendapatkan kekayaan intelektual (paten dan hak cipta) *granted*, dan beberapa di antaranya sudah diterapkan secara komersial. Pada tahun 2023, komersialisasi produk inovasi telah menciptakan nilai hingga USD13,88 juta atau sekitar Rp215 miliar.

PERTAMINA's sustainable researches and innovations are conducted by the Research & Technology Innovation (RTI) function. As of the end of 2023, RTI generated various innovation products. As many as 52 innovation products have been granted intellectual property (patents and copyrights), and some of which have been used commercially. In 2023, commercialization of the innovation products created a value up to USD13.88 million, or Rp215 billion approximately.

APQA dan Pembangunan Pusat Riset Energi Berkelanjutan

Bentuk dukungan PERTAMINA pada tumbuhnya budaya riset dan inovasi berkelanjutan diwujudkan melalui penyelenggaraan *Annual PERTAMINA Quality Award* (APQA), ajang internal untuk menjangkau inovasi dari Perwira PERTAMINA Group. APQA telah berjalan rutin sejak tahun 2010, dan pada tahun 2023 ada 2.562 risalah *Continuous Improvement Program* (CIP), dengan 154 program unggulan untuk enam kategori. Dari 154 risalah unggulan program APQA tersebut mampu menciptakan nilai hingga Rp12,02 triliun, serta mendukung pencapaian target *Net Zero Emission* 2060 dan Tujuan Pembangunan Berkelanjutan (TPB/SDGs).

APQA and Development of the Energy Research Center Sustainable

PERTAMINA's support for the growing culture of sustainable research and innovation is shown in the Annual PERTAMINA Quality Award (APQA), an internal event to obtain innovations from Perwira PERTAMINA Group. APQA has been organized routinely since 2010, and in 2023 there were 2,562 Continuous Improvement Program (CIP) summaries with 154 flagship programs for six categories. The 154 summaries were able to bring in up to Rp12.02 trillion worth of value and they supported the achievement of the 2060 Net Zero Emission and Sustainable Development Goals (SDGs).

Beberapa program unggulan APQA juga memperoleh apresiasi internasional, di antaranya program Cucuba yang menjadi *Gold Winner* pada *34th International Invention, Innovation and Technology Exhibition 2023* di Malaysia. Cucuba berhasil menciptakan *Marine Fuel Oil Low Sulphur* (MFO LS) dengan nilai kandungan belerang/sulfur terbaik di kelasnya.

Bentuk dukungan lain pada riset dan inovasi berkelanjutan adalah mengembangkan PERTAMINA Sustainable Energy Center/PSEC (Pusat Energi Berkelanjutan) di Ibukota Nusantara (IKN). PSEC dilengkapi sejumlah fasilitas yakni PERTAMINA Sustainability Academy; PERTAMINA Training Institute; PERTAMINA Research and Innovation Center for Sustainable and Low Carbon Technologies; serta PERTAMINA Vocational Education Center, Shared Green Infrastructure, Laboratorium, dan Sustainability Start-up Hub.

Inovasi Produk Energi Ramah Lingkungan

Sampai dengan akhir tahun 2023 ada beberapa energi ramah lingkungan yang dikembangkan PERTAMINA, di antaranya hidrogen hijau. Hidrogen bersih adalah salah satu bisnis energi masa depan, sehingga layak dikembangkan, karena didukung besarnya potensi panas bumi di Indonesia, dengan kapasitas terpasang saat ini 1,8 GW yang dapat digunakan untuk proses elektrolisis produksi hidrogen. Sampai dengan akhir tahun 2023, ada beberapa kerja sama yang dilakukan PERTAMINA:

- Pertamina NRE dan Tokyo Electric Power Company Holdings, Incorporated (TEPCO HD), menandatangani nota kesepahaman pengembangan hidrogen hijau dan amonia hijau. Studi bersama yang dilakukan telah disetujui New Energy and Industrial Technology Development Organization (NEDO), untuk mendapatkan hibah dalam pengembangan proyek tersebut.
- Pertamina NRE dan Chevron New Energies International Pte. Ltd. (Chevron New Energies), menandatangani Joint Study Agreement (JSA) untuk mengkaji kelayakan CCUS/CCS di Kalimantan Timur, Indonesia, serta pengembangan proyek hidrogen hijau dan amonia hijau.

Several APQA flagship programs gained internal acknowledgment, one of which was Cucuba program which became the Gold Winner in the 34th International Invention, Innovation, and Technology Exhibition in 2023 in Malaysia. The Cucuba Program managed to create a Marine Fuel Oil Low Sulphur (MFO LS) with excellent deposits of sulphur in their class.

Another form of support for sustainable research and innovation is developing PERTAMINA Sustainable Energy Center (PSEC) in the Capital of Nusantara (IKN). PSEC is equipped with a number of facilities, namely PERTAMINA Sustainability Academy; PERTAMINA Training Institute; PERTAMINA Research and Innovation Center for Sustainable and Low Carbon Technologies; as well as PERTAMINA Vocational Education Center, Shared Green Infrastructure, Laboratory, and Sustainability Start-up Hub.

Eco-Friendly Energy Product Innovation

As of the end of 2023, there have been several environmentally friendly energies developed by PERTAMINA, including green hydrogen. Clean hydrogen is one of the future energy businesses that is worth developing as it is supported by the large geothermal potential in Indonesia, with a current installed capacity of 1.8 GW which can be used for the electrolysis process of hydrogen production. By the end of 2023, there were several collaborations carried out by PERTAMINA:

- Pertamina NRE and Tokyo Electric Power Company Holdings, Incorporated (TEPCO HD), signed a memorandum of understanding for the development of green hydrogen and green ammonia. The joint study has been approved by the New Energy and Industrial Technology Development Organization (NEDO) for a grant to develop the project.
- Pertamina NRE and Chevron New Energies International Pte. Ltd. (Chevron New Energies), signed a Joint Study Agreement (JSA) to assess the feasibility of CCUS/CCS in East Kalimantan, Indonesia, as well as the development of green hydrogen and green ammonia projects.

Produk lain adalah bahan bakar kendaraan yaitu Pertamina Green 95, yang ramah lingkungan karena menggunakan bahan baku terbarukan yaitu bioetanol 5%. Perseroan juga mengembangkan PERTAMINA *sustainable aviation fuel* (PERTAMINA SAF), sebuah solusi bagi industri penerbangan dalam upaya menurunkan emisi yang dihasilkan oleh pesawat udara. Pertamina SAF telah melalui serangkaian pengujian mulai dari *Static Test* pada Jet Engine CFM56-7B di fasilitas milik GMF AeroAsia, hingga pelaksanaan *Ground Run* dan *Flight Test* menggunakan pesawat milik Garuda Indonesia dengan hasil lulus uji, sehingga produk Pertamina SAF dinyatakan layak dari sisi *safety* & *quality* untuk digunakan sebagai bahan bakar minyak penerbangan yang ramah lingkungan.

An eco-friendly product of vehicle fuel, Pertamina Green 95, is another example as it uses renewable raw materials, namely 5% bioethanol. The Company is also developing PERTAMINA sustainable aviation fuel (PERTAMINA SAF), a solution for the aviation industry in an effort to reduce emissions produced by aircraft. Pertamina SAF has gone through a series of tests ranging from the Static Test on the CFM56-7B Jet Engine at GMF AeroAsia's facilities, to the implementation of Ground Run and Flight Test using Garuda Indonesia's aircraft with passing test results, so that Pertamina SAF products are declared feasible in terms of safety & quality to be used as environmentally friendly aviation fuel oil.

Penggunaan Teknologi Operasi Ramah Lingkungan

Use of Eco-Friendly Operations Technology

Teknologi CCUS/CSS

Perseroan terus mengembangkan inovasi teknologi untuk dekarbonisasi operasional, guna mendukung transisi energi di Indonesia. Dekarbonisasi operasional PERTAMINA difokuskan pada pengembangan teknologi *carbon capture utilization and storage* (CCUS) atau *carbon capture and storage* (CCS). Sampai dengan akhir tahun 2023, inisiatif menerapkan CCUS/CCS dilaksanakan melalui injeksi CO₂ di Lapangan Gundih dan Lapangan Sukowati, serta project *Huff & Puff (Pre-Pilot)* di Lapangan Jatibarang. Teknologi tersebut mampu meningkatkan produksi minyak dan gas bumi sekaligus mengurangi emisi GRK.

Bio Refinery/Green Refinery

PERTAMINA juga mengembangkan kilang ramah lingkungan (*bio refinery/green refinery*) di unit pengilangan (*Refinery Unit/RU*) untuk produksi bahan bakar ramah lingkungan. *Green refinery* RU IV Cilacap dikembangkan sejak Februari 2022. Unit ini mampu memproduksi produk rendah emisi GRK. Produk utama unit ini adalah *Green*

CCUS/CSS Technology

The Company continues to develop technological innovations for operational decarbonization to support Indonesia's energy transition. PERTAMINA's operational decarbonization centers on the development of carbon capture utilization and storage (CCUS) or carbon capture and storage (CCS) technology. As of the end of 2023, the initiative to implement CCUS/CCS has been implemented through CO₂ injection in Gundih Field and Sukowati Field, as well as Huff & Puff (Pre-Pilot) project in Jatibarang Field. The technology is able to increase oil and gas production while reducing GHG emissions.

Bio Refinery/Green Refinery

PERTAMINA also develops bio refinery/green refinery in refinery units (RU) for to manufacture eco-friendly fuels. Developed since February 2022, green refinery RU IV Cilacap is capable of producing low greenhouse gas emission products. The main product of this unit is Green Diesel with 100% renewable raw materials with a better sulfur

Diesel dengan bahan baku 100% terbarukan dan memiliki kandungan sulfur lebih baik dari Euro V. Kami juga telah memproduksi Bioavtur-SAF dengan kandungan *renewable* 2,4% dan kapasitas 9 KBPD melalui metode *co-processing*.

Kilang Cilacap merupakan contoh kilang terintegrasi yang sejalan dengan transisi energi. Kilang Cilacap saat ini telah menyelesaikan proyek *green refinery phase 1* dan akan dikembangkan dengan *phase 2* yang bertujuan untuk meningkatkan kapasitas pengolahan *Hydrotreated Vegetable Oil* (HVO) dari saat ini 3 KBPD menjadi 6 KBPD serta kemampuan untuk meningkatkan komponen nabati pada SAF dari 2,4% menjadi 100%.

Stasiun Energi Ramah Lingkungan

Stasiun energi ramah lingkungan/*green energy station* (GES), merupakan konsep baru layanan terintegrasi di stasiun pengisian bahan bakar umum (SPBU) PERTAMINA bagi masyarakat. GES mengusung empat konsep utama, yakni *green*, *future*, *digital*, dan *high tier fuel* sebagai komitmen PERTAMINA mendukung Strategi Induk Nasional pada program transisi energi dan operasional yang lebih ramah lingkungan.

PERTAMINA menawarkan layanan stasiun pengisian kendaraan listrik umum (SPKLU)/*charging station* dan stasiun penukaran baterai kendaraan listrik umum (SPBKLU)/*battery swapping station* (BSS). Sampai dengan akhir tahun 2023, PERTAMINA memiliki 425 GES, tersebar di Sumbagut (41 titik); Sumbagsel (34 titik); JBB (120 titik); JBT (71 titik); Jatim Balinus (120 titik); Kalimantan 22 titik); Sulawesi (15 titik); serta Maluku Papua (2 titik).

Kolaborasi untuk Teknologi Operasi Ramah Lingkungan

Untuk mendukung pembangunan infrastruktur hijau dan penerapan teknologi operasi ramah lingkungan, PERTAMINA menjajaki sembilan potensi kerja sama, di antaranya pembangunan infrastruktur *Integrated Green Terminal* Kalibaru dan *Integrated Terminal* Tapanuli Tengah.

content than Euro V. We have also produced Bioavtur-SAF with 2.4% renewable content and 9 KBPD capacity through *co-processing* method.

The Cilacap refinery is an example of an integrated refinery that adheres to the energy transition. It has now completed the green refinery phase 1 project and will be expanded with phase 2 which aims to increase the processing capacity of Hydrotreated Vegetable Oil (HVO) from the current 3 KBPD to 6 KBPD as well as the ability to increase the vegetable component in SAF from 2.4% to 100%.

Green Energy Station

Green energy stations (GES) is a new concept of integrated services at PERTAMINA's gas stations (SPBU) for the community. GES upholds four main concepts, namely green, future, digital, and high-tier fuel as the company's commitment to support the National Master Strategy on energy transition programs and more environmentally friendly operations.

PERTAMINA offers charging stations (SPKLU) and battery swapping stations (BSS). By the end of 2023, PERTAMINA has had 425 GES across Sumbagut (41 points); Sumbagsel (34 points); JBB (120 points); JBT (71 points); East Java Balinus (120 points); Kalimantan (22 points); Sulawesi (15 points); and Maluku Papua (2 points).

Collaboration for Environmentally Friendly Operation Technology

To support the development of green infrastructure and the application of environmentally friendly operating technology, PERTAMINA is exploring nine potential collaborations, including the infrastructure development of *Integrated Green Terminal* Kalibaru and *Integrated Terminal* Tapanuli Tengah.

Pengembangan Teknologi Informasi dan Perlindungan Data [GRI 418-1]

[SHS-7.C3]

Information Technology Development and Data Protection

PT Pertamina (Persero) melanjutkan transformasi digital, guna mendukung efisiensi biaya, meningkatkan produktivitas dan pendapatan, sehingga akan mendorong keberlanjutan bisnis. Transformasi digital digencarkan dengan pengembangan infrastruktur teknologi informasi, dan digitalisasi.

Pengembangan Infrastruktur Teknologi Informasi dan Digitalisasi

PERTAMINA konsisten menerapkan digitalisasi dan pembangunan infrastruktur teknologi informasi (TI) di seluruh sektor bisnis, mulai dari hulu, pengolahan hingga pemasaran.

- Di sektor hulu, teknologi digital digunakan dari awal hingga akhir proses bisnis (*end-to-end process*), untuk meningkatkan produksi minyak dan gas bumi (migas), mengurangi shutdown tak terduga, dan mengatasi kehilangan produksi.
- Di sektor pengolahan dan petrokimia, digitalisasi berperan dalam mengelola proyek infrastruktur, mengawasi pengolahan minyak mentah, mengelola produk, dan mengoperasikan kilang.
- Di sektor pemasaran dan distribusi, PERTAMINA telah mengadopsi digitalisasi di SPBU, termasuk otomatisasi pemesanan dan pemantauan pengiriman BBM untuk memastikan ketersediaan stok yang cukup di SPBU.
- Transformasi digital juga mencakup pengelolaan perjalanan dinas pekerja PERTAMINA Grup, yang kini dapat dipantau secara *real-time* oleh manajemen menggunakan aplikasi *digital travel management*, sehingga aktivitas individu menjadi lebih transparan.

Penguatan dan Sosialisasi Sistem Keamanan Siber

Sejalan dengan Rencana Induk Teknologi Informasi 2020-2024, PERTAMINA terus memperkuat sistem keamanan data dan informasi. Perseroan menggunakan kerangka kerja *Control Objectives*

PT Pertamina (Persero) continues its digital transformation to support cost efficiency, increase productivity and revenue, so that it will boost business sustainability. Digital transformation is strengthened by the development of information technology infrastructure and digitalization.

Information Technology and Digitalization Infrastructure Development

PERTAMINA consistently implements digitalization and information technology (IT) infrastructure development in all business sectors from upstream, processing to marketing.

- In the upstream sector, digital technology is used from the beginning to the end of the business process (*end-to-end process*), to increase oil and gas production, reduce unexpected shutdowns, and overcome production losses.
- In the processing and petrochemical sector, digitalization plays a role in managing infrastructure projects, overseeing crude oil processing, managing products, and operating refineries.
- In the marketing and distribution sector, PERTAMINA has adopted digitalization at gas stations, including automated fuel ordering and delivery monitoring to ensure sufficient stock availability at gas stations.
- Digital transformation also includes the management of PERTAMINA Group employees' business travel, which can now be monitored in real-time by the management using digital travel management applications, so that individual activities become more transparent.

Strengthening Cyber Security System and its Socialization

In line with the Information Technology Master Plan 2020-2024, PERTAMINA continues to strengthen data and information security systems. The Company uses the Control Objectives for

for Information and Related Technology (COBIT) sebagai praktik terbaik tata kelola TI. Berdasarkan pengukuran atas tata kelola TI yang dilakukan oleh pihak eksternal independen pada akhir tahun 2023, nilai kapabilitas berada pada level *defined*.

Ketentuan keamanan siber Perseroan mengacu pada regulasi yang ditetapkan Pemerintah Republik Indonesia termasuk Peraturan Presiden Nomor 47 Tahun 2023 tentang Strategi Keamanan Siber Nasional dan Manajemen Krisis Siber, serta ISO 27001:2013 dan sudah tersertifikasi ISO 27002:2013. PERTAMINA mewajibkan seluruh pegawai dan mitra kerja menyelesaikan program *e-learning (mandatory) information Security Easy Course (iSEC)* tingkat dasar. Realisasi pada tahun 2023 ada 35.026 peserta yang mengikuti program iSEC.

Pada periode pelaporan, PERTAMINA melalui fungsi Enterprise IT terus memberikan sosialisasi kepada para pegawai mengenai pentingnya memperkuat keamanan pada sistem digital setiap orang. Melalui kegiatan sosialisasi, Perseroan berharap seluruh pekerja, tenaga kerja jasa penunjang (TKJP), mitra kerja, hingga vendor yang berada di lingkungan PERTAMINA bisa memiliki kesadaran terhadap keamanan informasi.

Fungsi Enterprise IT secara rutin mengirimkan *broadcast awareness* dengan topik beragam untuk penguatan kesadaran pentingnya keamanan siber bagi seluruh pekerja yang bekerja di PERTAMINA. Pada tahun 2023 dilakukan 27 *broadcast awareness*.

PERTAMINA rutin melakukan *phishing campaign* untuk mengetahui tingkat kerentanan pekerja terhadap *phishing threats*. Tahun 2023 pekerja semakin *aware* dan *resilience* terhadap *phishing threats*.

Perseroan terus memperkuat tim *Cyber Incident Response Team (CIRT)* guna meningkatkan keamanan siber di PERTAMINA. Berdasarkan *Cyber Security Maturity* Badan Siber dan Sandi Negara (BSSN) Tahun 2023, Perseroan berhasil

Information and Related Technology (COBIT) framework as an IT governance best practice. The measurement of IT governance, which was conducted by an independent external party at the end of 2023, the capability value is at the defined level.

The Company's cybersecurity provisions refer to regulations set by the Government of the Republic of Indonesia, including the Presidential Regulation No. 47 of 2023 on National Cybersecurity Strategy and Cyber Crisis Management, as well as ISO 27001:2013 and has been certified to ISO 27002:2013. PERTAMINA requires all employees and partners to complete the e-learning program (mandatory) Information Security Easy Course (iSEC) basic level. The 2023 realization indicates there were 35,026 participants who participated in the iSEC program.

In the reporting period, PERTAMINA through the Enterprise IT function continued to socialize the importance of strengthening security on everyone's digital system. Through socialization activities, the Company hopes that all workers, supporting service workers (TKJP), work partners, and vendors in PERTAMINA are more aware of the information security.

The Enterprise IT function routinely delivers broadcast awareness with various topics to emphasize the importance of cybersecurity to all workers who work at PERTAMINA. In 2023, 27 broadcast awareness were broadcasted.

PERTAMINA also routinely conducts phishing campaigns to determine the level of vulnerability of workers to phishing threats. In 2023 workers will be more aware and resilience to phishing threats.

The Company continues to strengthen the Cyber Incident Response Team (CIRT) to improve its cyber security. Based on the 2023 Cyber Security Maturity of the National Cyber and Crypto Agency (BSSN), the Company succeeded in obtaining an increase

memperoleh peningkatan nilai indeks. Pencapaian tersebut menandakan pengelolaan siber di PERTAMINA prosesnya sudah terorganisir dengan jelas, memiliki kebijakan/peraturan/pedoman yang sudah diresmikan di internal organisasi, dilakukan secara berulang, dilakukan revidi berkala, dan berkelanjutan.

PERTAMINA juga terus berkoordinasi dengan Badan Siber dan Sandi Negara (BSSN) untuk menjaga keamanan data konsumen, termasuk menindaklanjuti klaim kebocoran data pengguna aplikasi MyPertamina beberapa waktu lalu. Tindak lanjut yang dilakukan Perseroan adalah melakukan investigasi, dengan hasil tidak ditemukan temuan yang mengindikasikan kebocoran data.

in index value. This achievement indicates that the cyber management process at PERTAMINA is clearly organized, has policies/regulations/guidelines that have been formalized in the internal organization, is carried out repeatedly, periodically reviewed, and is sustainable.

PERTAMINA also consistently coordinates with BSSN to maintain consumer data security, including in following up on claims of MyPertamina application user data leakage some time ago. The Company conducted an investigation whose result shows there are no findings that indicate data leakage.

Permasalahan terhadap Penerapan Keberlanjutan

[OJK E.5]

Issues on the Implementation of Sustainability

Komitmen PERTAMINA menerapkan keberlanjutan selama tahun 2023 dihadapkan beberapa permasalahan dan tantangan, di antaranya:

- Dampak perubahan iklim, termasuk tantangan dalam berinovasi, berinvestasi dalam transisi energi, dan berkolaborasi dengan *stakeholders* untuk mengelola risiko iklim.
- Pengukuran jejak karbon menjadi tantangan karena termasuk indikator utama dalam krisis iklim.
- Pelestarian keanekaragaman hayati dan ekosistemnya akibat dampak dari operasional PERTAMINA.
- Risiko kecelakaan kerja, serta tantangan dalam pengawasan terhadap area operasi.
- Tantangan dalam mengelola aspek sosial terutama mengenai isu *diversity, equity, & inclusion* (DEI).
- Tantangan dalam menerapkan berbagai macam teknologi dan upaya memastikan bahwa teknologi yang diinvestasikan dapat membawa dampak signifikan pada upaya dekarbonisasi sekaligus layak secara bisnis.

PERTAMINA's commitment to implementing sustainability in 2023 encountered several issues and challenges, such as the following:

- Climate change impacts, including the challenges of innovating, investing in the energy transition, and collaborating with stakeholders to manage climate risks.
- Carbon footprint measurement is a challenge because it is a key indicator in the climate crisis.
- Preservation of biodiversity and its ecosystem due to the impact of PERTAMINA's operations.
- Risk of occupational accidents, as well as challenges in monitoring the operation area.
- Challenges in managing social aspects, especially regarding diversity, equity, & inclusion (DEI) issues.
- Challenges in implementing various kinds of technology and efforts to ensure that the technology invested can have a significant impact on decarbonization efforts while being business feasible.

- Pengelolaan aspek sosial terutama dalam hal membangun hubungan baik dengan masyarakat sekitar wilayah operasi.
- Penerapan tata kelola *cyber security* yang baik diperlukan untuk mencegah terjadinya risiko gangguan pada operasional bisnis perusahaan yang menggunakan layanan IT.
- Penerapan tata kelola perusahaan yang baik (*Good Corporate Governance*) untuk menjaga reputasi publik dan kepercayaan *stakeholders*.
- Management of social aspects, especially in terms of building good relationships with communities around the operation area.
- Implementation of good cyber security governance is necessary to prevent the risk of disruption to the company's business operations using IT services.
- Implementation of good corporate governance to maintain public reputation and stakeholder trust.

PERTAMINA telah mengelola seluruh tantangan, risiko, maupun dampak operasional yang disampaikan dalam Bab Kinerja Ekonomi, Kinerja Pengelolaan Lingkungan, Kinerja Pengelolaan Sosial, serta Tata Kelola Keberlanjutan dalam Laporan ini.

PERTAMINA has managed all challenges, risks, and operational impacts presented in the Economic Performance, Environmental Management Performance, Social Management Performance, and Sustainability Governance chapters of this Report.





Independent Assurance Statement

The 2023 Sustainability Report of PT Pertamina (Persero)

Number	: 13/000-758/V/2024/SR-Asia/Indonesia
Assurance Type	: Type 1 and Type 2 for the specific topic of Occupational Health and Safety, Human Capital Management, and Environmental Impact Management
Assurance Level	: Moderate
Reporting Standard	: GRI Universal Standard 2021 Consolidated, GRI 11 Oil & Gas Sector, SASB Oil & Gas Sector (Exploration and Production EM-EP 2023, Refining and Marketing EM-RM 2023, Midstream EM-MD 2023, Services EM-SV 2023), IPIECA Sustainability Reporting Guidance for the Oil and Gas Industry 4 th edition 2020.
Reporting Regulation	: Sustainable Finance Regulation POJK No. 51/POJK.03/2017 (Indonesia)

Dear stakeholders,

Social Responsibility Asia or “SR Asia” is issuing an **Independent Assurance Statement** (“the Statement”) of the **2023 Sustainability Report** (“the Report”) of **PT Pertamina (Persero)** (“the Company”). The Company is a state-owned and Indonesia’s national oil company (NOC). The Report presents the commitment and efforts of the Company in managing its sustainability performance for the reporting period of **January 1st to December 31st, 2023**. As agreed with Management, SR Asia’s responsibility is to make an assessment based on the data and content of the Report for the year.

Intended User and Purpose

The purpose of the Statement is to present our opinion including the findings and recommendations based on the results of assurance work to the Company’s stakeholders. The assessor team in accordance with specific procedures and a specific scope of work carried out the assessment. Except for the areas covered in the scope of the assurance, we encourage all NOT to solely interpret the Statement as the basis to conclude the Company’s overall sustainability performance.

Responsibilities

Our obligations to Management involve assessing the Report’s content, generating findings and recommendations, and issuing a Statement. Additionally, we are tasked with forming conclusions and recommendations according to agreed-upon standards, methods, and approaches. Consequently, SR Asia is solely evaluated based on the most recent editorial and data received as of May 6th, 2024, regarding the final draft. SR Asia’s responsibility lies solely in providing assurance work, distinct from an audit, in accordance with the Non-Disclosure Agreement, the Assurance Engagement Agreement, Representation Letter, and Subsequent Event Testing. Management bears the sole responsibility for presenting data, information, and disclosures within the Report. Therefore, any parties relying on the Report and Statement must assume and manage their own risks.

Independence, Impartiality, and Competency

SR Asia confirms NO relationships between the assessor team and the clients that can influence their independence and impartiality to conduct the assessment and generate the Statements. The assessor team is mandated to follow a particular assurance protocol and professional ethical code of conduct to ensure their objectivity and integrity. We carried out a pre-engagement assessment before the assurance work was taken to verify the risks of engagement as well as the independence and impartiality of the team. The assessor team members have knowledge of ISO 26000, AA1000 AccountAbility standards and principles, and also have experience in sustainability report assessment based on various reporting regulations regarding oil and gas sector.



Type and Level of Assurance Service

1. **Type 1 assurance** on the Report content.
2. **Type 2 assurance** on **Occupational Health and Safety, Human Capital Management, and Environmental Impact Management**
3. **A moderate level of assurance** to the procedure on the Report content and evidence, where the risks of information and conclusions of the Report being error is reduced, but not to very low, but not zero.

Scope and Limitation of Assurance Service

1. Data and information in the Report for the period of January 1st to December 31st, 2023.
2. Material topics presented in the Report: **Economic Performance, Energy Transition, Environmental Impact Management, Occupational Health and Safety, Human Capital Management, Local Community, Ethical Business Practices, and Research and Innovation.**
3. Evaluation of publicly disclosed information, system, and process of the Company to ensure adherence of the Report content to the reporting principles.
4. SR Asia does NOT include financial data, information, and figures in the Report content. We assumed that the Company, independent parties, or other parties associated with the Company have verified and/or audited financial statements, data, and information.
5. Adherence to the following reporting principles, standards, and regulations:
 - a) Consolidated set of GRI Sustainability Reporting Standards 2021 (GRI Universal Standard) issued by the Global Reporting Initiative.
 - b) GRI 11 Oil and Gas Sector (GRI 11 OG) issued by the Global Reporting Initiative.
 - c) Sustainability Accounting Standard for Oil & Gas Sector (Exploration & Production EM-EP 2023, Refining and Marketing EM-RM 2023, Midstream EM-MD 2023, Services EM-SV 2023) issued by the Sustainability Accounting Standard Board (SASB).
 - d) IPIECA Sustainability Reporting Guidance for the Oil and Gas Industry 4th edition 2020 (IPIECA).
 - e) Regulation of Otoritas Jasa Keuangan (OJK) No.51/POJK.03/2017 regarding the Implementation of Sustainable Finance for Financial Service Institutions, Listed, and Public Companies (POJK 51) with reference to OJK Circular Letter (SEOJK) 2022 No.16/SEOJK.04/2021.

Exclusion

1. The expression of opinion, belief, expectation, advertisement, and also forward-looking statements, including future planning of the Company as specified in the Report content.
2. Analysis or assessment against regulations, principles, standards, guidelines, and indicators other than those indicated in the Statement.
3. Topics, data, and information outside the reporting period, or in the public domain not covered in the reporting period.
4. Financial performance data and information as presented in the Company's financial statements and documents, other than those mentioned in the Report.

Methodology and Source Disclosure

1. Form an assessor team composed of individuals proficient in both sustainability report development and assurance standard.
2. Perform the pre-engagement phase to ensure the independence and impartiality of the assessor team.
3. Hold a kick-off meeting and initial analysis of the Report draft based on the SR Asia Protocol on Assurance Analysis refers to the standards, principles, and indicators of AA1000AS v3, AA1000APS (2018), and standards/regulations used in the Report.
4. Discuss online the results of the analysis with the Management and data contributors.
5. Verify evidence and trace data and information as covered in the Report.
6. The company integrated our suggestions into the initial report draft and subsequently published the finalized report content.



7. Prepare the Statement and send it to SR Asia International Director for review to get approval before submitting it to the Company.
8. Prepare a Management Letter detailing all aspects seen, recorded, and observed during the assurance work to the Management of the Company for further improvement of sustainability processes.

Adherence to AA1000AP (2018) and GRI Universal Standards

Inclusivity – The Report appropriately represents the Company's key stakeholders. At a practical level, the Company has engaged with the stakeholders using various methods and procedures across organizational functions.

Materiality – Based on the topic material presented in the report, we conclude that all of the topic materials can describe the sustainability context. We also appreciate that the Company has involved stakeholders and independent parties in mapping material topics.

Responsiveness – The Company has established a whistleblowing system (WBS) with a reporting channel managed by senior management and an independent consultant, where the effectiveness of the WBS is reported to the Board of Directors and Board of Commissioners. The Company continuously evaluates the effectiveness of their grievance handling mechanism through customer satisfaction surveys. They also consider stakeholder feedback in developing responses, as evidenced by their collaboration with law enforcement and engagement activities with various stakeholders. We appreciate that the Company reports the implementation of their WBS and grievance handling mechanism, demonstrating transparency to stakeholders. Overall, the Company discloses their efforts towards establishing mechanisms for stakeholder engagement, response strategy development, and their ongoing communication.

Impact – Based on the Company's economic performance, there was a degression from the previous year in profit in the reporting year. During 2023, the Company experienced an increase in consumption of new renewable energy (EBT) and has sold biodiesel products B35 which contributes to reducing emissions. This aligns with the Government's program to implement B35 biodiesel and shows that the Company supports this program. The Company's commitment to Net Zero Emissions can be seen in implementing decarbonization, accelerating green business, green strategy orientation, developing HR and organizational capabilities, optimizing green financing, implementing green operations, accelerating the use of green technology and digital innovation, developing carbon market businesses and business model innovation. Socially, the Company has reached out to the community regarding village-based clean energy (DEB or Independent Energy Village Program) for community activity and economic needs in line with reducing GHG emissions. Moreover, the Company needs to enhance the prevention of work accidents and fatalities for their contractor because in 2023 there are several cases.

Statement of Use: "In Accordance with the GRI Standards" – We evaluated the Report content is adherence to the GRI Universal Standards principles, disclosures, and requirements for reporting. The Company has referred to the nine requirements: apply the reporting principles, report the disclosures in GRI 2: General Disclosures 2021, determine material topics, report the disclosures in GRI 3: Material Topics 2021, report disclosures from the GRI Topic Standards for each material topic, provide reasons for omission for disclosures and requirements that the organization cannot comply with, publish a GRI content index, provide a statement of use, and notify GRI.

GRI Standards Principles – As the assurance work was taken, the report content indicates its adherence to sustainability reporting principles (accuracy, balance, clarity, comparability, completeness, sustainability context, timeliness, and verifiability). The Management provided sufficient support during the assurance work by submitting evidence/documents as requested.



Type 2 Assurance – The Company demonstrates a robust organizational framework and extensive procedural documentation, covering the implementation of material topics designated for type 2 reporting (Occupational Health and Safety, Human Capital Management, and Environmental Impact Management). Oversight by the board of directors extends to all activities and work plans, encompassing short, medium-, and long-term objectives outlined in the company's RJPP. We recommend that companies specify the desired outcomes for each selected material topic, enabling the creation and realization of these outcomes through strategic planning, monitoring, and tangible actions. This strategy promotes a transparent value creation process that aligns closely with the company's operational endeavors.

Recommendation

1. To enhance the comprehensive information regarding the disclosure of management approach (GRI 3) in the Report.
2. To utilizing tools and information technology to communicate social and environmental performance measurements more quicker, reliable, and valid. As recommended by reporting standards and principles, the communication may be linked across functions and take into account standard methods of data measurement and presentation.
3. To monitor, evaluate, and enhance SDGs target in the sustainability performance.

The assurance provider,
Jakarta, May 6th 2024

Lim Hendra

Country Director for Indonesia
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Referensi POJK No. 51/POJK/03/2017 dan SEOJK No. 16/SEOJK/04/2021 [OJK G.4]

POJK No. 51/POJK/03/2017 and SEOJK No. 16/SEOJK/04/2021 References [OJK G.4]

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Indeks Isi Standar Global Reporting Initiative (GRI) 2021

Global Reporting Initiative (GRI) Standards 2021 Content Index

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Pernyataan Penggunaan Statement of Use	PT Pertamina (Persero) telah melaporkan informasi yang dikutip dalam indeks konten GRI untuk periode 1 Januari hingga 31 Desember 2023 sesuai dengan Standar GRI. PT Pertamina (Persero) has reported the information cited in this GRI content index for the period 1 January – 31 December 2023 in accordance with the GRI Standards.					
GRI 1 yang digunakan GRI 1 used	GRI 1: Foundation 2021 GRI 1: Foundation 2021					
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			Persyaratan yang Tidak Dicantumkan Requirement(s) Omitted	Alasan Reason	Penjelasan Explanation	
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	2-27 Kepatuhan terhadap hukum dan peraturan Compliance with laws and regulations	240				
	2-28 Asosiasi keanggotaan Membership associations	41				
	2-29 Pendekatan keterlibatan pemangku kepentingan Approach to stakeholder engagement	234-238				
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	205-3 Insiden korupsi yang terbukti dan tindakan yang diambil Confirmed incidents of corruption and actions taken	246-248				11.20.4
GRI 206: Perilaku Antipersaingan 2016 GRI 206: Anti-competitive Behavior 2016	206-1 Langkah-langkah hukum untuk perilaku antipersaingan, praktik antipakat dan monopoli Legal actions for anti-competitive behavior, anti-trust, and monopoly practices		Not Applicable	Informasi terkait perilaku antipersaingan tercantum pada Laporan Keberlanjutan masing-masing <i>Subholding</i> . Information regarding anti-competitive behavior is reported in each <i>Subholding's</i> Sustainability Report.		11.19.2
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	302-5 Pengurangan pada energi yang dibutuhkan untuk produk dan jasa Reductions in energy requirements of products and services	116-117				
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	303-2 Manajemen dampak yang berkaitan dengan pembuangan air Management of water discharge-related impacts	125				11.6.3
	303-3 Pengambilan air Water withdrawal	119-120				11.6.4
	303-4 Pembuangan air Water discharge	124-125				11.6.5
	303-5 Konsumsi air Water consumption	119-120, 123-124				11.6.6
GRI 304: Keanekaragaman Hayati 2016 GRI 304: Biodiversity 2016	304-1 Lokasi operasional yang dimiliki, disewa, dikelola, atau berdekatan dengan kawasan lindung dan kawasan dengan nilai keanekaragaman hayati tinggi di luar kawasan lindung Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	138				11.4.2
	304-2 Dampak signifikan dari kegiatan, produk, dan jasa pada keanekaragaman hayati Significant impacts of activities, products, and services on biodiversity	138				11.4.3

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GRI 304: Keanekaragaman Hayati 2016 GRI 304: Biodiversity 2016	304-3 Habitat yang dilindungi atau direstorasi Habitats protected or restored	138, 140-143				11.4.4
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	305-3 Emisi GRK (Cakupan 3) tidak langsung lainnya Other indirect (Scope 3) GHG emissions	106				11.1.7
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	306-1 Timbulan limbah dan dampak signifikan terkait limbah Waste generation and significant waste-related impacts	128-129				11.5.2
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	306-3 Timbulan limbah Waste generated	129-130				11.5.4, 11.8.2
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	308-2 Dampak lingkungan negatif dalam rantai pasokan dan tindakan yang telah diambil Negative environmental impacts in the supply chain and actions taken	145				
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	401-2 Tunjangan yang diberikan kepada karyawan purnawaktu yang tidak diberikan kepada karyawan sementara atau paruh waktu Benefits provided to full-time employees that are not provided to temporary or parttime employees	175-176			11.10.3	
	401-3 Cuti melahirkan Parental leave	177			11.10.4, 11.11.2	
GRI 402: Hubungan Tenaga Kerja/Manajemen 2016 GRI 402: Labor/Management Relations 2016	402-1 Periode pemberitahuan minimum terkait perubahan operasional Minimum notice periods regarding operational changes	177			11.10.5	

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	403-2 Identifikasi bahaya, penilaian risiko, dan investigasi insiden Hazard identification, risk assessment and incident investigation	151-152				
	403-3 Layanan kesehatan kerja Occupational health services	153-154				
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	403-6 Peningkatan kualitas kesehatan pekerja Promotion on worker health	153-154				
	403-7 Pencegahan dan mitigasi dampak dari keselamatan dan kesehatan kerja yang secara langsung terkait hubungan bisnis Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	156-157				
GRI 403: Kesehatan dan Keselamatan Kerja 2018 GRI 403: Occupational Health & Safety 2018	403-8 Pekerja yang tercakup dalam system manajemen K3 Workers covered by an occupational health and safety management system	148-151, 153-154				
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	404-3 Persentase karyawan yang menerima tinjauan rutin terhadap kinerja dan pengembangan karier Percentage of employees receiving regular performance and career development reviews	181				
	405-1 Keanekaragaman badan tata kelola dan karyawan Diversity of governance bodies and employees	172-174				11.11.5
GRI 405: Keanekaragaman dan Kesempatan Setara 2016 GRI 405: Diversity and Equal Opportunity 2016	405-2 Rasio gaji pokok dan remunerasi perempuan dibandingkan laki-laki Ratio of basic salary and remuneration of women to men	187-189				
	406-1 Insiden diskriminasi dan tindakan perbaikan yang dilakukan Incidents of discrimination and corrective actions taken	184				11.11.7
GRI 406: Non-diskriminasi 2016 GRI 406: Non-discrimination 2016	407-1 Operasi dan pemasok di mana hak atas kebebasan berserikat dan perundingan kolektif mungkin berisiko Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	191				11.3.2
GRI 407: Kebebasan Berserikat dan Perlindungan Kolektif 2016 GRI 406: Freedom of Association and Collective Bargaining 2016	408-1 Operasi dan pemasok yang berisiko signifikan terhadap insiden pekerja anak Operations and suppliers at significant risk for incidents of child labor	191				
GRI 408: Pekerja Anak 2016 GRI 406: Child Labor 2016						

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GRI 410: Kerja Paksa atau Wajib Kerja 2016 GRI 410: Forced or Compulsory Labor 2016	410-1 Petugas keamanan yang dilatih mengenai kebijakan atau prosedur hak asasi manusia Security personnel trained in human rights policies or procedures	192				11.18.2
GRI 411: Hak-hak Masyarakat Adat 2016 GRI 411: Rights of Indigenous People 2016	411-1 Insiden pelanggaran yang melibatkan hak-hak masyarakat adat Incidents of violations involving rights of indigenous peoples	207-208				11.17.2
GRI 413: Masyarakat Lokal 2016 GRI 413: Local Communities 2016	413-1 Operasi dengan keterlibatan masyarakat lokal, penilaian dampak, dan program pengembangan Operations with local community engagement, impact assessments, and development programs	193				11.15.2
GRI 413: Masyarakat Lokal 2016 GRI 413: Local Communities 2016	413-2 Operasi yang secara aktual dan yang berpotensi memiliki dampak negatif signifikan terhadap masyarakat lokal Operations with significant actual and potential negative impacts on local communities	211				11.15.3
GRI 414: Penilaian Sosial Pemasok 2016 GRI 413: Supplier Social Assessment 2016	414-1 Seleksi pemasok baru dengan menggunakan kriteria sosial New suppliers that were screened using social criteria	215				11.10.8, 11.12.3
GRI 413: Supplier Social Assessment 2016	414-2 Dampak sosial negatif dalam rantai pasokan dan tindakan yang telah diambil Negative social impacts in the supply chain and actions taken	216				11.10.9

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GRI 415: Kebijakan Publik 2016 GRI 415: Public Policy 2016	415-1 Kontribusi politik Political contributions	239-240				11.22.2
GRI 416: Kesehatan dan Keselamatan Pelanggan 2016 GRI 416: Customer Health and Safety 2016	416-1 Penilaian dampak kesehatan dan keselamatan dari berbagai kategori produk dan jasa Assessment of the health and safety impacts of product and service categories	163-164				
	416-2 Insiden ketidakpatuhan sehubungan dengan dampak kesehatan dan keselamatan dari produk dan jasa Incidents of non-compliance concerning the health and safety impacts of products and services	163				
GRI 417: Pemasaran dan Pelabelan 2016 GRI 417: Marketing and Labeling 2016	417-1 Persyaratan untuk pelabelan dan informasi produk dan jasa Requirements for product and service information and labeling			Not applicable	Seluruh kegiatan terkait kegiatan pelabelan produk dan komunikasi pemasaran dijalankan oleh <i>Subholding</i> , sehingga informasi ini tercantum pada Laporan Keberlanjutan masing-masing <i>Subholding</i> .	
	417-2 Insiden ketidakpatuhan terkait pelabelan dan informasi produk dan jasa Incidents of non-compliance concerning product and service information and labeling			Not applicable	All activities related to product labeling and marketing communication activities are carried out by the <i>Subholding</i> , so this information is reported in each <i>Subholding's</i> Sustainability Report.	
	417-3 Insiden ketidakpatuhan terkait komunikasi pemasaran Incidents of non-compliance concerning marketing communications			Not applicable		
GRI 418: Privasi Pelanggan 2016 GRI 418: Customer Privacy 2016	418-1 Pengaduan yang berdasar mengenai pelanggaran terhadap privasi pelanggan dan hilangnya data pelanggan Substantiated complaints concerning breaches of customer privacy and losses of customer data	253-255				

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Pengungkapan Sektor Tambahan Additional Sector Disclosures	<p>11.2.4 Jelaskan pendekatan organisasi terhadap pengembangan kebijakan publik dan lobi terhadap perubahan iklim Describe the organization's approach to public policy development and lobbying on climate change</p>	86				
	<p>11.16.2 Cantumkan lokasi operasi yang menyebabkan atau berkontribusi pada pemukiman kembali secara paksa atau di mana pemukiman kembali tersebut sedang berlangsung. Untuk setiap lokasi, jelaskan bagaimana mata pencaharian dan hak asasi manusia masyarakat terdampak dan dipulihkan. List the locations of operations that caused or contributed to involuntary resettlement or where such resettlement is ongoing. For each location, describe how peoples' livelihoods and human rights were affected and restored.</p>	207-208				
	<p>11.17.3 Cantumkan lokasi-lokasi operasi di mana masyarakat adat berada atau terdampak oleh kegiatan organisasi List the locations of operations where indigenous peoples are present or affected by activities of the organization</p>	208				
	<p>11.17.4 Laporkan jika organisasi telah terlibat dalam proses meminta persetujuan atas dasar informasi di awal tanpa paksaan (FPIC) dari masyarakat adat untuk setiap kegiatan organisasi, termasuk Report if the organization has been involved in a process of seeking free, prior and informed consent (FPIC) from indigenous peoples for any of the organization's activities</p>	208				

International Petroleum Industry Environmental Conservation Association (IPIECA)

Modul Modules	Isu Issues	Indikator Indicator	Pengungkapan Disclosure	Lokasi Location
Tata kelola dan etika bisnis Governance and business ethics	Tata kelola dan sistem manajemen Governance and management systems	GOV-1	Pendekatan tata kelola Governance approach	225
		GOV-2	Sistem manajemen Management systems	25, 225, 232, 234, 249
	Etika bisnis dan transparansi Business ethics and transparency	GOV-3	Mencegah korupsi Preventing corruption	41
		GOV-4	Transparansi pembayaran kepada pemerintah Transparency of payments to host governments	233, 246
		GOV-5	Advokasi dan lobi publik Public advocacy and lobbying	41, 239
Perubahan iklim dan energi Climate change and energy	Strategi dan risiko iklim Climate strategy and risk	CCE-1	Tata kelola dan strategi iklim Climate governance and strategy	63, 82, 83, 86, 88, 94, 97
		CCE-2	Risiko dan peluang iklim Climate risk and opportunities	83, 87, 104, 105, 107
	Teknologi Technology	CCE-3	Teknologi rendah karbon Lower-carbon technology	63, 94, 97, 107, 108, 110, 111, 112, 114
	Emisi Emissions	CCE-4	Emisi gas rumah kaca (GRK) Greenhouse gas (GHG) emissions	105-107
		CCE-5	Emisi metana Methane emissions	107, 108
		Penggunaan energi Energy use	CCE-6	Penggunaan energi Energy use
	Pembakaran Flaring	CCE-7	Pembakaran gas Flared gas	110
Lingkungan Environment	Air Water	ENV-1	Air tawar Freshwater	119, 120, 122, 124, 125
		ENV-2	Pembuangan ke air Discharges to water	120, 124, 125, 127
	Keanekaragaman hayati Biodiversity	ENV-3	Kebijakan dan strategi keanekaragaman hayati Biodiversity policy and strategy	108, 111, 137, 138, 140
		ENV-4	Kawasan lindung dan prioritas untuk konservasi keanekaragaman hayati Protected and priority areas for biodiversity conservation	138-140
	Emisi udara Air emissions	ENV-5	Emisi ke udara Emissions to air	112-113

Modul Modules	Isu Issues	Indikator Indicator	Pengungkapan Disclosure	Lokasi Location
	Tumpahan Spills	ENV-6	Tumpahan ke lingkungan Spills to the environment	134-137
	Manajemen material Materials management	ENV-7	Manajemen material Materials management	128-131, 134
	Penonaktifan Decommissioning	ENV-8	Penonaktifan Decommissioning	143
Keselamatan, kesehatan dan keamanan Safety, health and security	Perlindungan tenaga kerja Workforce protection	SHS-1	Keterlibatan keselamatan, kesehatan dan keamanan Safety, health and security engagement	148, 150, 151, 154, 155
		SHS-2	Workforce health Workforce health	153, 154, 159
		SHS-3	Insiden cedera dan penyakit akibat kerja Occupational injury and illness incidents	151, 157, 159, 161, 162
		SHS-4	Keamanan transportasi Transport safety	165-168
	Risiko kesehatan, keselamatan, dan lingkungan produk Product health, safety and environmental risk	SHS-5	Pengelolaan produk Product stewardship	163, 164
	Keamanan proses Process safety	SHS-6	Keamanan proses Process safety	151, 161, 162
	Keamanan Security	SHS-7	Manajemen risiko keamanan Security risk management	148, 149, 151, 161, 253
Sosial Social	Manajemen hak asasi manusia Human rights management	SOC-1	Uji tuntas hak asasi manusia Human rights due diligence	182, 184, 192, 193, 207-214, 240, 244
		SOC-2	Pemasok dan hak asasi manusia Suppliers and human rights	184, 215
		SOC-3	Keamanan dan hak asasi manusia Security and human rights	-
	Praktik ketenagakerjaan Labour practices	SOC-4	Praktik ketenagakerjaan berbasis lokasi dan akomodasi pekerja Site-based labour practices and worker accommodation	170, 176, 192, 215
		SOC-5	Keragaman dan inklusi tenaga kerja Workforce diversity and inclusion	170, 172, 174, 181, 182, 187
		SOC-6	Keterlibatan tenaga kerja Workforce engagement	171, 176
		SOC-7	Pelatihan dan pengembangan tenaga kerja Workforce training and development	177, 179
		SOC-8	Mekanisme <i>non-retaliation</i> dan pengaduan tenaga kerja Workforce non-retaliation and grievance mechanisms	184

Modul Modules	Isu Issues	Indikator Indicator	Pengungkapan Disclosure	Lokasi Location
		SOC-9	Dampak dan keterlibatan masyarakat setempat Local community impacts and engagement	195
		SOC-10	Masyarakat adat Indigenous peoples	207, 209
	Keterlibatan masyarakat Community engagement	SOC-11	Pembebasan lahan dan pemukiman kembali secara paksa Land acquisition and involuntary resettlement	208
		SOC-12	Mekanisme pengaduan masyarakat Community grievance mechanisms	210, 240, 244
		SOC-13	Investasi sosial Social investment	193
	Konten lokal Local content	SOC-14	Local procurement and supplier development Local procurement and supplier development	212-214
		SOC-15	Praktik perekrutan lokal Local hiring practices	212-213

Sustainability Accounting Standard Board (SASB)

Topik Topic	Kode Pengungkapan Disclosure Code	Metrik Metric	Lokasi Location
Emisi Gas Rumah Kaca Greenhouse Gas Emissions	EM-EP-110a.1, EM-MD-110a.1, EM-RM-110a.1	Emisi Cakupan 1 global bruto, persentase metana, persentase yang tercakup dalam peraturan pembatasan emisi Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations	105, 107
	EM-EP-110a.2	Jumlah emisi Cakupan 1 global bruto dari: (1) hidrokarbon suar, (2) pembakaran lainnya, (3) emisi proses, (4) emisi berventilasi lainnya, dan (5) emisi buronan Amount of gross global Scope 1 emissions from: (1) flared hydrocarbons, (2) other combustion, (3) process emissions, (4) other vented emissions and (5) fugitive emissions	110
	EM-EP-110a.3, EM-MD-110a.2, EM-RM-110a.2	Pembahasan strategi atau rencana jangka panjang dan jangka pendek untuk mengelola Scope 1 emisi, target penurunan emisi, dan analisis kinerja terhadap target tersebut Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	97, 108-113
Layanan Pengurangan Emisi dan Manajemen Bahan Bakar Emissions Reduction Services & Fuels Management	EM-SV-110a.1	Total bahan bakar yang dikonsumsi, persentase terbarukan, persentase yang digunakan di: (1) on-road peralatan dan kendaraan dan (2) peralatan off-road Total fuel consumed, percentage renewable, percentage used in: (1) onroad equipment and vehicles and (2) offroad equipment	21-22
	EM-SV-110a.2	Pembahasan strategi atau rencana untuk mengatasi risiko terkait emisi udara Discussion of strategy or plans to address air emissions-related risks, opportunities and impacts	112-113
Kualitas Udara Air Quality	EM-EP-120a.1, EM-MD-120a.1	Emisi udara dari polutan berikut: (1) NO _x (tidak termasuk N ₂ O), (2) SO _x , (3) senyawa organik yang mudah menguap (VOC), dan (4) partikel (PM ₁₀) Air emissions of the following pollutants: (1) NO _x (excluding N ₂ O), (2) SO _x , (3) volatile organic compounds (VOCs), and (4) particulate matter (PM ₁₀)	112-113
	EM-RM-120a.1	Emisi udara dari polutan berikut: (1) NO _x (tidak termasuk N ₂ O), (2) SO _x , (3) partikel (PM ₁₀), (4) H ₂ S, dan (5) senyawa organik yang mudah menguap Air emissions of the following pollutants: (1) NO _x (excluding N ₂ O), (2) SO _x , (3) particulate matter (PM ₁₀), (4) H ₂ S, and (5) volatile organic compounds (VOCs)	112-113

Topik Topic	Kode Pengungkapan Disclosure Code	Metrik Metric	Lokasi Location
Manajemen Air Water Management	EM-EP-140a.1 EM-RM-140a.1	(1) Jumlah air bersih yang diambil, (2) jumlah air bersih yang dikonsumsi, persentase masing-masing di daerah dengan Stres Air Dasar Tinggi atau Sangat Tinggi (1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress	119
	EM-SV-140a.1	(1) Total volume air bersih yang ditangani dalam operasi, (2) persentase yang didaur ulang (1) Total volume of water handled in operations, (2) percentage recycled	119, 122
	EM-EP-140a.2	Volume air terproduksi dan aliran balik yang dibangkitkan; persentase (1) habis, (2) disuntikkan, (3) didaur ulang; kandungan hidrokarbon dalam pembuangan air Volume of produced water and flowback generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content in discharged water	127
	EM-RM-140a.2	Jumlah insiden ketidakpatuhan yang terkait dengan izin, standar, dan peraturan kualitas air Number of incidents of non-compliance associated with water quality permits, standards, and regulations	125-126
Manajemen Bahan Berbahaya Hazardous Materials Management	EM-RM-150a.1	(1) Jumlah limbah berbahaya yang dihasilkan, (2) persentase yang didaur ulang (1) Amount of hazardous waste generated, (2) percentage recycled	129
Dampak Kenakeragaman Hayati Biodiversity Impacts	EM-EP-160a.1	Deskripsi kebijakan dan praktik manajemen lingkungan untuk aktif situs Description of environmental management policies and practices for active sites	48-57, 138-140
	EM-EP-160a.2	(1) Jumlah dan (2) volume agregat tumpahan hidrokarbon, (3) volume di Kutub Utara, (4) volume berdampak pada garis pantai dengan peringkat ESI 8-10, dan (5) volume pulih (1) Number and (2) aggregate volume of hydrocarbon spills, (3) volume in Arctic, (4) volume impacting shorelines with ESI rankings 8-10, and (5) volume recovered	134-137
	EM-EP-160a.3	Persentase dari (1) cadangan terbukti dan (2) terduga di dalam atau dekat lokasi dengan status konservasi yang dilindungi atau habitat spesies yang terancam punah Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat	139-140
Dampak Ekologis Ecological Impacts	EM-MD-160a.1	Deskripsi kebijakan dan praktik manajemen lingkungan untuk aktif operasi Description of environmental management policies and practices for active operations	48-57
Keamanan, Hak Asasi Manusia dan Hak Masyarakat Adat Security, Human Rights & Rights of Indigenous Peoples	EM-EP-210a.1	Persentase dari (1) cadangan terbukti dan (2) cadangan di atau dekat wilayah konflik Percentage of (1) proved and (2) probable reserves in or near areas of conflict	208
	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 engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict	182-184

Topik Topic	Kode Pengungkapan Disclosure Code	Metrik Metric	Lokasi Location
Kesehatan dan Keselamatan Tenaga Kerja Workforce Health & Safety	EM-EP-320a.1, EM-RM-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) karyawan tetap, (b) kontrak karyawan, dan (c) karyawan 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) direct employees and (b) contract employees	157-159
	EM-SV-320a.1	(1) Total tingkat insiden yang dapat direkam (TRIR), (2) tingkat kematian, (3) nyaris celaka tingkat frekuensi (NMFR), dan (4) rata-rata jam pelatihan kesehatan, keselamatan, dan tanggap darurat untuk (a) penuh waktu karyawan, dan (b) karyawan kontrak (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) direct employees, and (b) contract employees	157-159
Spesifikasi Produk & Campuran Bahan Bakar Bersih Product Specifications & Clean Fuel Blends	EM-RM-410a.2	Total pasar yang dapat dialamatkan dan pangsa pasar untuk biofuel canggih dan infrastruktur terkait Total addressable market and share of market for advanced biofuels and associated infrastructure	231
Etika Bisnis dan Transparansi Pembayaran Business Ethics & Payments Transparency	EM-EP-510a.2	Uraian tentang sistem manajemen pencegahan korupsi dan penyuapan di seluruh rantai nilai Description of the management system for prevention of corruption and bribery throughout the value chain	246-248
	EM-SV-510a.2	Deskripsi sistem manajemen untuk pencegahan korupsi dan penyuapan di seluruh rantai nilai Description of the management system for prevention of corruption and bribery throughout the value chain	246-248
Manajemen Risiko Insiden Kritis Critical Incident Risk Management	EM-RM-540a.2	Tingkat indikator Tantangan terhadap Sistem Keselamatan (Tier 3) Challenges to Safety Systems indicator rate (Tier 3)	161
Keselamatan Operasional, Kesiapsiagaan dan Tanggap Darurat Operational Safety, Emergency Preparedness & Response	EM-MD-540a.4	Pembahasan tentang sistem manajemen yang digunakan untuk mengintegrasikan budaya keselamatan dan kesiapsiagaan darurat di seluruh rantai nilai dan di seluruh proyek siklus hidup Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout project lifecycles	149
Metrik Aktivitas Activity Metrics	EM-EP-000.A	Produksi: (1) minyak, (2) gas alam, (3) minyak sintetis, dan (4) gas sintetis Production of: (1) oil, (2) natural gas, (3) synthetic oil, and (4) synthetic gas	19



Lembar [OJK G.2] Umpan Balik Feedback Form

Terima kasih telah membaca Laporan Keberlanjutan PT Pertamina (Persero) tahun 2023. Kami mengharapkan masukan, saran, dan kritik dari bapak/ibu sekalian atas laporan keberlanjutan ini melalui *e-mail* atau formulir berikut. Seluruh masukan, saran, dan kritik sangat penting bagi kemajuan penyampaian Laporan Keberlanjutan PERTAMINA kedepannya.

Thank you for reading PT Pertamina (Persero) 2023 Sustainability Report. We look forward to your feedback, suggestions, and criticisms on this sustainability report via e-mail or the following form. All your feedback, suggestions, and criticisms are very important for the progress of PERTAMINA's report deliveries in the future.

Mohon Pilih Jawaban yang Paling Sesuai Please choose the most appropriate answer

- Isi laporan mudah dipahami.
The content of the report is easy to understand.
 Setuju | Agree Netral | Neutral Tidak Setuju | Disagree
- Laporan ini telah menggambarkan informasi positif dan negatif dari Perseroan.
This report has described positive and negative information of the Company
 Setuju | Agree Netral | Neutral Tidak Setuju | Disagree
- Mohon berikan penilaian atas tingkat topik material di bawah (nilai 1 = paling signifikan s/d 8 = kurang signifikan)
Please provide an assessment of the level of materials topics below (value 1 = most significant to 8 = less significant)

<input type="radio"/> Kinerja Ekonomi Economic Performance	<input type="radio"/> Pengelolaan SDM Human Capital Management
<input type="radio"/> Transisi Energi Energy Transition	<input type="radio"/> Komunitas Lokal Local Community
<input type="radio"/> Pengelolaan Dampak Lingkungan Environmental Impacts Management	<input type="radio"/> Praktik Bisnis yang Beretika Ethical Business Practices
<input type="radio"/> Kesehatan dan Keselamatan Kerja Occupational Health and Safety	<input type="radio"/> Riset dan Inovasi Research and Innovation
	<input type="radio"/> Lainnya menurut Anda Other, please specify

Profil Anda Your Identity

Nama | Name :

Institusi | Institution :

Surel | E-mail :

Telp/Hp | Telephone/Mobile :

Golongan Pemangku Kepentingan Stakeholder Group

- | | | |
|--|---|---|
| <input type="radio"/> Pemegang Saham
Shareholders | <input type="radio"/> Pelanggan
Customers | <input type="radio"/> Pekerja
Employees |
| <input type="radio"/> Media Massa
Mass Media | <input type="radio"/> Kontraktor
Contractors | <input type="radio"/> Investor
Investors |
| <input type="radio"/> Regulator, Legislatif, dan Lembaga Pengawas
Regulators, Legislatures, and Supervisory Agency | <input type="radio"/> Lembaga Swadaya Masyarakat (LSM)
Non-Governmental Organization (NGO) | |
| <input type="radio"/> Masyarakat di Sekitar Wilayah Usaha Perseroan
Communitites Around the Company's Business Area | <input type="radio"/> Lembaga Penelitian dan Perguruan Tinggi
Research Institutes and Universities | |

Mohon berikan saran/usul/komentrar Anda atas laporan ini Please give your advice/suggestions/comments on this report

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Terima kasih atas partisipasi Anda. Mohon agar hasil lembar umpan balik ini dikirimkan kembali ke:

Thank you for your participation. Please send the results of this feedback form back to:

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