DEKARBONISASI

Emisi GRK

ANTAM berkomitmen untuk mendukung Pemerintah Indonesia dalam mewujudkan target *Net Zero Emission* pada 2060. Bersama MIND ID, ANTAM berupaya mengurangi emisi Gas Rumah Kaca (GRK) melalui kebijakan penurunan emisi GRK dan penyusunan *roadmap* dekarbonisasi dengan *baseline* 2019.

ANTAM juga telah mengidentifikasi sumber emisi, beban emisi, data aktivitas faktor emisi, serta menjalankan berbagai inisiatif dekarbonisasi di setiap unit bisnis seperti menggunakan energi baru terbarukan, bahan bakar ramah lingkungan, efisiensi pada kegiatan operasi dan produksi, hingga melakukan laporan serapan karbon tiap semester di area reklamasi dan revegetasi.

Seluruh upaya dan kegiatan pengendalian emisi yang dilakukan ANTAM telah sesuai dengan aturan pemerintah, yaitu Peraturan Presiden Nomor 61/2011 tentang Rencana Aksi Penurunan Gas Rumah Kaca (GRK) dan Peraturan Presiden Nomor 71/2011 tentang Pencatatan Inventarisasi GRK Nasional serta Peraturan Presiden Nomor 98 Tahun 2021 tentang Penyelenggaraan Nilai Ekonomi Karbon untuk Pencapaian Target Kontribusi yang Ditetapkan secara Nasional dan Pengendalian Emisi Gas Rumah Kaca dalam Pembangunan Nasional. [OJK F.5][OJK F.7][OJK F.12]

Sejak 2022, ANTAM menggunakan pendekatan dan metodologi yang lebih komprehensif, termasuk penambahan titik pantau sesuai dengan perhitungan dan pendekatan GHG Inventory yang menggunakan standar internasional Intergovernmental Panel on Climate Change (IPCC) Guidelines yang dikeluarkan United Nations Environment Programme (UNEP) 2006, GHG Protocol for for Corporate Accounting (WBCSD/WRI), Direktorat Jenderal Ketenagalistrikan Kementerian ESDM dan ISO 14064.

Beberapa upaya dekarbonisasi telah dilakukan dalam operasional ANTAM. Seperti perubahan metode penambangan bawah tanah dan instalasi sistem pengendalian emisi di pabrik feronikel, pemakaian bahan bakar B30 dan B35 untuk kendaraan operasional tambang, penggunaan panel surya untuk penerangan jalan tambang di beberapa unit bisnis, serta sedang melakukan upaya penggantian bahan bakar dalam kegiatan pengolahan bijih nikel dari *Marine Fuel Oil* menjadi jaringan Listrik dari PLN yang berpotensi

DECARBONIZATION

GHG Emissions

ANTAM is committed to supporting the Government of Indonesia in realizing the Net Zero Emission target by 2060. Together with MIND ID, ANTAM seeks to reduce Greenhouse Gas (GHG) emissions through GHG emission reduction policies and the preparation of a decarbonization roadmap with a 2019 baseline.

ANTAM has also identified emission sources, emission load, and emission factor activity data as well as carried out various decarbonization initiatives in each business unit, such as using renewable energy, environmentally friendly fuels, efficiency in operations and production activities, to conducting carbon sequestration reports every semester in reclamation and revegetation areas.

All emission control efforts and activities carried out by ANTAM are in accordance with government regulations, namely Presidential Regulation No. 61/2011 concerning the Greenhouse Gas (GHG) Reduction Action Plan, Presidential Regulation No. 71/2011 concerning National GHG Inventory Recording, and Presidential Regulation No. 98 of 2021 concerning the Implementation of Carbon Economic Value for Achieving Nationally Determined Contribution Targets and Controlling Greenhouse Gas Emissions in National Development. [OJK F.5] [OJK F.7][OJK F.12]

Since 2022, ANTAM has used a more comprehensive approach and methodology, including the addition of monitoring points in accordance with the GHG Inventory calculation and approach that uses the international standards of the Intergovernmental Panel on Climate Change (IPCC) Guidelines issued by the United Nations Environment Programme (UNEP) 2006, GHG Protocol for Corporate Accounting (WBCSD/WRI), Directorate General of Electricity of the Ministry of EMR, and ISO 14064.

Several decarbonization efforts have been made in ANTAM's operations. Such as changes in underground mining methods and the installation of emission control systems at the ferronickel plant, B30 and B35 fuel usage for mining operational vehicles, and solar panels usage for mine road lighting in several business units. ANTAM is also making efforts to replace fuel in nickel ore processing activities from Marine Fuel Oil to Electricity networks from PLN which have

mengurangi emisi GRK pada proses produksi feronikel. Selain itu juga terdapat aksi mitigasi dalam dekarbonisasi berupa penggunaan *co-firing* untuk PLTU di anak usaha ANTAM [OJK F.7][OJK F.12]

ANTAM juga telah melakukan penghitungan Cakupan 3 yang dimulai dari perjalanan bisnis para direksi, komisaris dan BOD-1. Selain itu juga telah dilakukan pengumpulan data untuk logistik, distribusi dan pemasaran, serta pengapalan (*Supply Chain* dan *Marketing*).

Pada tahun 2023, ANTAM telah memulai inventarisasi emisi Cakupan 3 dari aktivitas rantai pasokan dari bahan-bahan baku utama ANTAM (BBM, calsium carvide, batu bara) dan pemasaran produk ANTAM (bijih nikel, bijih feronikel, dan logam mulia), baik menggunakan moda darat, laut, dan udara, serta perjalanan dinas untuk komisaris. Total emisi yang dihasilkan dari kegiatan cakupan 3 ini sebesar 83,6 ribu ton CO_2e. [GRI 305-3]

Pada proses pengangkutan untuk moda laut, ANTAM menghitung konsumsi energi spesifik berdasarkan jenis kapal dan mempertimbangkan sharing muatan milik ANTAM. Pada moda darat, jika menggunakan transportasi pihak ketiga maka dihitung dengan asumsi jarak, konsumsi energi berdasarkan jenis kendaraan, dan *sharing* muatan milik ANTAM. Sedangkan pada moda udara dihitung dengan asumsi jarak dan nilai jejak karbon/muatan. Sementara untuk perjalanan dinas, pada moda udara dan darat dihitung dengan asumsi jarak dan nilai jejak karbon/penumpang pada masing-masing moda transportasi.

the potential to reduce GHG emissions in the ferronickel production process. In addition, there are also mitigation actions in decarbonization in the form of the use of co-firing for CFPP in ANTAM's subsidiaries. [OJK F.7][OJK F.12]

ANTAM has also conducted calculations for our Scope 3 emission, which firstly consist of business trips of the directors, commissioners and BOD-1. In addition, data collection for this emission has also been carried out for logistics, distribution and marketing, and shipping (Supply Chain and Marketing).

In 2023, ANTAM has further expand our calculation and initiated Scope 3 Scope 3 emissions inventory for supply chain activities of ANTAM's main raw materials (fuel, calcium carvide, coal) and marketing of ANTAM's products (nickel ore, ferronickel ore and precious metals), using land, sea and air modes, as well as business trips for our Board of Commissioners. The total emissions generated from this Scope 3 activity amounted to 83.6 thousand ton CO_2e. [GRI 305-3]

For sea transportation, ANTAM calculates the specific energy consumption based on the type of vessel and considers ANTAM's cargo sharing. For land transportation, if third party transportation is used, it is calculated by assuming the distance, energy consumption based on the type of vehicle, and ANTAM's cargo sharing. For air transportation, it is calculated assuming distance and carbon footprint value/load. While for business travel by air and land are calculated with the assumption of distance and carbon footprint/passenger value in each mode of transportation.

1.618.030,05 ton CO_2e

Penurunan total emisi ANTAM dari tahun sebelumnya. Pada 2022 tercatat total emisi yang dihasilkan sebesar 1.697.806,85 ton CO_2e, sedangkan pada 2023 sebesar 1.618.030,05 ton CO_2e atau mengalami penurunan 4,70%

A decrease in ANTAM's total emissions from the previous year. In 2022, the total emissions were recorded at 1,697,806.85 ton CO_2e, while in 2023 it was 1,618,030.05 ton CO_2e or a decrease of 4.70%.

ANTAM Tuntaskan *Roadmap* Dekarbonisasi dengan Sumber Emisi dari Lahan dan Non-lahan [GRI 305-5]

ANTAM Completes Decarbonization Roadmap with Land and Non-land Emission Sources [GRI 305-5]

Pemerintah Indonesia memiliki komitmen dalam upaya penurunan emisi Gas Rumah Kaca (GRK) untuk mencapai *net zero emission* GRK pada 2060. Sebagai wujud kontribusi dalam komitmen pemerintah Indonesia mencapai *net zero emission* tersebut, pada tahun 2023, ANTAM telah menyelesaikan *Roadmap* Dekarbonisasi. *Roadmap* tersebut juga mencakup rencana aksi per unit bisnis yang berasal dari sektor lahan dan non-lahan.

Roadmap Dekarbonisasi ini memberikan gambaran peta jalan dan tahapan detail dalam melaksanakan aksi-aksi mitigasi yang dapat mengurangi tingkat emisi karbon di seluruh kegiatan operasi ANTAM. *Roadmap* Dekarbonisasi diawali dengan penyusunan *baseline* inventarisasi emisi GRK melalui sumber energi dan emisi GRK dari lahan atau *Forestry and Other Land Use* (FOLU), menyusun program dekarbonisasi, dan menyusun program penurunan emisi GRK ke dalam KPI Perusahaan.

Dalam *Roadmap* tersebut, secara garis besar ANTAM merumuskan 4 area strategis untuk melaksanakan dekarbonisasi, yakni
1. Memperbesar porsi penggunaan *biofuel* (B30/B35),
2. Memperbesar bauran energi baru terbarukan sebagai sumber energi,
3. Memperbesar serapan karbon (*carbon sequestration*),
4. Menyusun skenario *carbon offset* untuk kompensasi sisa emisi dari sektor lahan dan non-lahan hingga 2060.

Pada dekarbonisasi sektor FOLU, upaya mitigasi disusun dalam tiga skenario hingga 2050. Sementara pada dekarbonisasi sektor lahan (FOLU), ANTAM berupaya melakukan *improvement* terhadap kegiatan penanaman reklamasi lahan bekas tambang dan penanaman rehabilitasi DAS, salah satunya dengan meningkatkan persentase penyerapan/stok karbon di area-area reklamasi dan rehabilitasi DAS hingga memperbanyak jenis-jenis flora dan fauna endemik. Selain itu, ANTAM juga melakukan penanaman bakau yang dapat dikategorikan sebagai aksi mitigasi FOLU.

ANTAM juga memuat rencana aksi untuk sumber emisi non-lahan, terutama dari kegiatan operasional dan penggunaan bahan bakar yang mencakup konversi bahan bakar menggunakan biodiesel, serta rencana implementasi energi terbarukan dari *solar panel* ataupun *hydropower* secara ekstensif untuk masing-masing unit bisnis.

The Indonesian government is committed to reducing greenhouse gas (GHG) emissions to achieve net zero GHG emissions by 2060. As a form of contribution to the Indonesian government's commitment to achieve net zero emission, ANTAM has completed the Decarbonization Roadmap in 2023. The roadmap also includes action plans per business unit from the land and non-land sectors.

The Decarbonization Roadmap provides a detailed roadmap and stages in implementing mitigation actions that can reduce the level of carbon emissions in all ANTAM operations. The Decarbonization Roadmap begins with the preparation of a baseline inventory of GHG emissions through energy sources and GHG emissions from land or Forestry and Other Land Use (FOLU), compiling a decarbonization program, and compiling a GHG emission reduction program into the Company's KPIs.

ANTAM formulates 4 strategic areas to implement decarbonization in the Roadmap, namely
1. Increasing the portion of biofuel use (B30/B35),
2. Increasing the mix of renewable energy as an energy source,
3. Increasing carbon sequestration,
4. Developing a carbon offset scenario to compensate for remaining emissions from the land and non-land sectors until 2060.

In the FOLU sector decarbonization, mitigation efforts are arranged in three scenarios until 2050. While in the decarbonization of the land sector (FOLU), ANTAM seeks to improve the planting activities in the reclamation of post-mining areas and the rehabilitation of watersheds, such as increasing the percentage of carbon sequestration/stocks in reclamation and watershed rehabilitation areas to reproduce endemic species. In addition, ANTAM also conducts mangrove planting which can be categorized as a FOLU mitigation action.

ANTAM also contains action plans for non-land-based emission sources, mainly from operational activities and fuel usage including fuel conversion using biodiesel, as well as plans for extensive implementation of renewable energy from solar panels or hydropower for each business unit.

Total Emisi Berdasarkan Unit Bisnis & Cakupan Sumber Energi yang Digunakan
[OJK F.11][GRI 305-1][GRI 305-2] [GRI 305-3]

Total Emission Based on Business Unit & Coverage of Energy Sources [OJK F.11][GRI 305-1][GRI 305-2] [GRI 305-3]

Unit Bisnis Business Unit	**Emisi** | Emission **(Ton CO_2 e)**	**2022**	**2023**
UBP Nikel Kolaka Kolaka Nickel Mining Business Unit	Cakupan 1 | Scope 1	1.504.764,18	1.427.145,21
	Cakupan 2 | Scope 2	-	
	Cakupan 3 | Scope 3	73.780,00	72.470,00
	Total Emisi Total Emissions	1.578.544,18	1.499.615,21
UBP Nikel Maluku Utara North Maluku Nickel Mining Business Unit	Cakupan 1 | Scope 1	20.085,68	8.523,84
	Cakupan 2 | Scope 2	383,39	964,92
	Cakupan 3 | Scope 3	2.890,00	5.960,00
	Total Emisi Total Emissions	23.359,07	15.448,76
UBP Emas Gold Mining Business Unit	Cakupan 1 | Scope 1	2.716,89	3.723,00
	Cakupan 2 | Scope 2	61.269,07	59.607,00
	Cakupan 3 | Scope 3	2,00	2,00
	Total Emisi Total Emissions	63.987,96	63.332,00
UBPP Logam Mulia Precious Metals Processing and Refinery Business Unit	Cakupan 1 | Scope 1	253,29	183,77
	Cakupan 2 | Scope 2	2834,69	2.970,14
	Cakupan 3 | Scope 3	0	0
	Total Emisi Total Emissions	3.087,98	3.153,91
UBP Bauksit Kalimantan Barat West Kalimantan Bauxite Mining Business Unit	Cakupan 1 | Scope 1	13.686,04	15.492
	Cakupan 2 | Scope 2	3.312,62	8.622,43
	Cakupan 3 | Scope 3	6.350,00	5.000,00
	Total Emisi Total Emissions	23.348,66	29.114,59
UBP Nikel Konawe Utara* North Konawe Nickel Mining Business Unit	Cakupan 1 | Scope 1	5.439,00	7.130,99
	Cakupan 2 | Scope 2		54,60
	Cakupan 3 | Scope 3	40,00	10,00
	Total Emisi Total Emissions	5.479,00	7.195,59
Perjalanan Bisnis BOD BOC BOD and BOC Business Trips	Cakupan 3 | Scope 3		170,00
TOTAL	Cakupan 1 | Scope 1	1.546.945,0	1.462.198,97
	Cakupan 2 | Scope 2	67.799,77	72.219,08
	Cakupan 3 | Scope 3	83.062,00	83.612,00
	Total Emisi Total Emissions	1.697.806,85	1.618.030,05

Catatan:
- Emisi GRK dihitung berdasarkan metode perhitungan yang dikembangkan ANTAM berdasarkan studi yang dilakukan di masing-masing unit. Perhitungan emisi GRK menggunakan metode Intergovermental Panel on Climate Change (IPCC) *Guidelines* yang dikeluarkan oleh United Nations Environment Programme (UNEP) 2006 Fifth Assessment Report (AR5), GHG Protocol for Corporate Accounting (WBCSD/WRI), ESDM dan ISO 14064.
- Cakupan-1: emisi bruto GRK langsung dari operasional yang dimiliki atau dikendalikan oleh organisasi (termasuk penambangan, pemakaian energi, pengolahan limbah, dan proses kimia) dari Unit Bisnis ANTAM yang termasuk dalam batasan laporan ini.
- Cakupan-2: emisi GRK tidak langsung dari pemakaian energi yang dibeli dari luar (PLN) Unit Bisnis ANTAM yang termasuk dalam batasan laporan ini.
- Cakupan-3 : emisi dari perjalanan dinas Direksi, Komisaris dan BOD-1, rantai pasokan dan pemasaran produk ANTAM
- Gas Rumah Kaca yang termasuk dalam perhitungan diatas adalah CO_2, CH_4, N_2O.
- Tidak termasuk perhitungan *biogenic emission*.
- Penentuan *base year* masih dalam proses seiring dengan pengembangan *roadmap* dekarbonisasi ANTAM.
- Belum mencakup data dari Kantor Pusat ANTAM dan Unit Geomin.
- Mencakup data dari UBP Bauksit Kalimantan Barat, UBP Emas, UBP Nikel Kolaka, UBP Nikel Konawe Utara, UBP Nikel Maluku Utara, dan UBPP Logam Mulia.

Notes:
- GHG emissions are calculated using a calculation method developed by ANTAM based on studies conducted in each unit. GHG emission calculation uses the Intergovermental Panel on Climate Change (IPCC) Guidelines issued by the United Nations Environment Programme (UNEP) 2006 Fifth Assessment Report (AR5), the GHG Protocol for CorporateAccounting (WBCSD/WRI), ESDM and ISO 14064.
- Scope-1: gross direct GHG emissions from operations owned or controlled by the organization (including mining, energy use, waste treatment and chemical processes) of ANTAM Business Units included within the boundaries of this report.
- Scope-2: indirect GHG emissions from the use of energy purchased from outside (PLN) of ANTAM Business Units included in the boundaries of this report.
- Scope-3: emissions from official travel of Directors, Commissioners and BOD-1, supply chain and marketing of ANTAM products.
- Greenhouse gases included in the above calculation are CO_2, CH_4, N_2O.
- Excluding biogenic emission calculation.
- The base year is still being determined in line with the development of ANTAM's decarbonization roadmap.
- Does not include data from ANTAM Head Office and Geomin Unit.
- Includes data from West Kalimantan Bauxite Mining Business Unit, Gold Mining Business Unit, Kolaka Nickel Mining Business Unit,North Konawe Nickel Mining Business Unit, North Maluku Nickel Mining Business Unit, and Precious Metals Processing and Refinery Business Unit.

Intensitas Emisi GRK ANTAM Berdasarkan Unit Bisnis [OJK F.11][GRI 305-4]
ANTAM's GHG Emission Intensity Based on Business Unit [OJK F.11][GRI 305-4]

Unit Bisnis Business Unit		Satuan Unit	Intensitas Emisi Emissions Intensity	
			2022	2023
UBP Nikel Kolaka Kolaka Nickel Mining Business Unit	Total Emisi Total Emission	Ton CO_2e	1.578.544,18	1.499.615,21
	Total Produksi Total Production	TNi	24.334	21.463
	Intensitas Emisi Emissions Intensity	Ton CO_2e/Tni	64,87	69,87
UBP Nikel Maluku Utara North Maluku Nickel Mining Business Unit	Total Emisi Total Emission	Ton CO_2e	23.359,07	15.448,76
	Total Produksi Total Production	WMT	3.014.608	2.109.572
	Intensitas Emisi Emissions Intensity	Ton CO_2e/WMT	0,00775	0,00732
UBP Emas Gold Mining Business Unit	Total Emisi Total Emission	Ton CO_2e	63.987,96	63.332,00
	Total Produksi Total Production	WMT	397.793	344.903
	Intensitas Emisi Emissions Intensity	Ton CO_2e/WMT	0,16	0,18
UBPP Logam Mulia Precious Metals Processing and Refinery Business Unit	Total Emisi Total Emission	Ton CO_2e	3.087,98	3.153,91
	Total Produksi Total Production	Kg	142.487	125.877
	Intensitas Emisi Emissions Intensity	Ton CO_2e/Kg	0,02167	0,02506
UBP Bauksit Kalimantan Barat West Kalimantan Bauxite Mining Business Unit	Total Emisi Total Emission	Ton CO_2e	23.348,66	29.114,59
	Total Produksi Total Production	WMT	1.486.002	1.719.271
	Intensitas Emisi Emissions Intensity	Ton CO_2e/WMT	0,01571	0,01693
UBP Nikel Konawe Utara North Konawe Nickel Mining Business Unit	Total Emisi Total Emission	Ton CO_2e	5.479,00	7.195,59
	Total Produksi Total Production	WMT	1.090.006	1.042.266
	Intensitas Emisi Emissions Intensity	Ton CO_2e/WMT	0,00503	0,00690
TOTAL	Total Emisi Total Emission	Ton CO_2e	1.697.806,85	1.618.030,05
	Total Produksi Total Production	Rp juta	45.930.356	41.047.693
	Intensitas Emisi Emissions Intensity	Ton CO_2e/Rp juta	0,04	0,04

Catatan:
- Emisi GRK dihitung berdasarkan metode perhitungan yang dikembangkan ANTAM berdasarkan studi yang dilakukan di masing-masing unit. Perhitungan emisi GRK menggunakan metode Intergovermental Panel on Climate Change (IPCC) *Guidelines* yang dikeluarkan oleh United Nations Environment Programme (UNEP) 2006 Fifth Assessment Report (AR5), GHG Protocol for Corporate Accounting (WBCSD/WRI), ESDM dan ISO 14064.
- Cakupan-1: emisi bruto GRK langsung dari operasional yang dimiliki atau dikendalikan oleh organisasi (termasuk penambangan, pemakaian energi, pengolahan limbah, dan proses kimia) dari Unit Bisnis ANTAM yang termasuk dalam batasan laporan ini.
- Cakupan-2: emisi GRK tidak langsung dari pemakaian energi yang dibeli dari luar (PLN) Unit Bisnis ANTAM yang termasuk dalam batasan laporan ini.
- Cakupan-3 : emisi dari perjalanan dinas Direksi, Komisaris dan BOD-1, rantai pasokan dan pemasaran produk ANTAM.
- Gas Rumah Kaca yang termasuk dalam perhitungan diatas adalah CO_2, CH_4, N_2O.
- Tidak termasuk perhitungan *biogenic emission*.
- Penentuan *base year* masih dalam proses seiring dengan pengembangan *roadmap* dekarbonisasi ANTAM.
- Belum mencakup data dari Kantor Pusat ANTAM dan Unit Geomin.
- Mencakup data dari UBP Bauksit Kalimantan Barat, UBP Emas, UBP Nikel Kolaka, UBP Nikel Konawe Utara, UBP Nikel Maluku Utara, dan UBPP Logam Mulia.

Notes:
- GHG emissions are calculated using a method developed by ANTAM based on studies conducted in each unit. GHG emission calculation uses the Intergovermental Panel on Climate Change (IPCC) Guidelines issued by the United Nations Environment Programme (UNEP) 2006 Fifth Assessment Report (AR5), the GHG Protocol for CorporateAccounting (WBCSD/WRI), ESDM and ISO 14064.
- Scope-1: gross direct GHG emissions from operations owned or controlled by the organization (including mining, energy use, waste treatment and chemical processes) of ANTAM Business Units included within the boundaries of this report.
- Scope-2: indirect GHG emissions from the use of energy purchased from outside (PLN) of ANTAM Business Units included in the boundaries of this report.
- Scope-3: emissions from official travel of Directors, Commissioners and BOD-1, supply chain and marketing of ANTAM products.
- Greenhouse gases included in the above calculation are CO_2, CH_4, N_2O.
- Excluding biogenic emission calculation.
- The base year is still being determined in line with the development of ANTAM's decarbonization roadmap.
- Does not include data from ANTAM Head Office and Geomin Unit.
- Includes data from West Kalimantan Bauxite Mining Business Unit, Gold Mining Business Unit, Kolaka Nickel Mining Business Unit,North Konawe Nickel Mining Business Unit, North Maluku Nickel Mining Business Unit, and Precious Metals Processing and RefineryBusiness Unit.

Peningkatan Penggunaan Bahan Bakar *Biodiesel* B30 dan B35
Increased Use of B30/B35 Biodiesel Fuel for Mining Equipment

ANTAM terus meningkatkan penggunaan bahan bakar B30 dan B35 untuk alat-alat penambangan dan kegiatan pendukung serta menggantikan *Industrial Diesel Oil* (IDO) di pabrik kegiatan pengolahan feronikel. Bahan bakar B30 dan B35 merupakan campuran 30% dan 35% biodiesel yang merupakan bahan bakar nabati. Penggunaan bahan bakar B30 dan B35 di UBP Nikel Maluku Utara mencapai 27% dari total penggunaan bahan bakar untuk alat-alat pertambangan. Sedangkan di UBP Nikel Konawe Utara, penggunaan bahan bakar B30 dan B35 mencapai 32% dari total penggunaan bahan bakar untuk alat-alat pertambangan.

UBP Nikel Kolaka juga menggunakan bahan bakar B30 dan B35 untuk menggantikan IDO yang digunakan dalam proses kegiatan ore preparation dan *pre-heating casting* di pabrik feronikel. Inisiatif ini telah mereduksi emisi karbon sebesar 2.560 ton CO_2e selama tahun 2023.

ANTAM continues to increase the use of B30 and B35 fuels for mining equipment and support activities, and to replace Industrial Diesel Oil (IDO) at the ferronickel processing plant. B30 and B35 fuels are a blend of 30% and 35% biodiesel, which is a biofuel. The use of B30 and B35 fuels in the North Maluku Nickel Mining Business Unit reached 27% of the total fuel consumption for mining equipment. Meanwhile, in North Konawe Nickel Mining Business Unit, the use of B30 and B35 fuel reached 32% of the total fuel used for mining equipment.

North Konawe Nickel Mining Business Unit also uses B30 and B35 fuels to replace IDO used in ore preparation and preheating of castings at the ferronickel plant. This initiative has reduced carbon emissions by 2,560 ton CO_2e in 2023.

Penggunaan Bahan Bakar B30 & B35

B30 & B35 Fuel Usage

27%

Operasional UBP Nikel Maluku Utara telah menggunakan bahan bakar B30 dan B35

B30 and B35 fuels have been used in the North Maluku Nickel Mining Business Unit

32%

Operasional UBP Nikel Konawe Utara telah menggunakan bahan bakar B30 dan B35

B30 and B35 fuels have been used in North Konawe Nickel Mining Business Unit

Konversi IDO ke Biodiesel B35 di UBP Nikel Kolaka sepanjang tahun 2023 berhasil mereduksi emisi karbon sebesar

The conversion of IDO to B35 Biodiesel at the Kolaka Nickel Mining Business Unit throughout 2023 has reduced carbon emissions by

2.560
ton CO_2e