APBI-ICMA
ASOSIASI PERTAMBANGAN BATUBARA INDONESIA
INDONESIAN COAL MINING ASSOCIATION

Indonesia's Coal Sector in the Energy Transition Era

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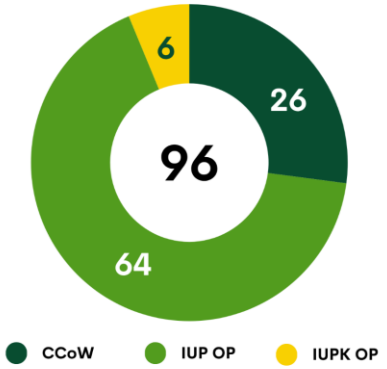
Visit our website
www.apbi-icma.org

ABOUT APBI-ICMA

Thirty Six Years of Dedication
Founded on 20 September 1989 in response to the challenges of member economies coal mining industry

66.5% Members of association contribute of total production in 2024

Primary Members Based on the Business License

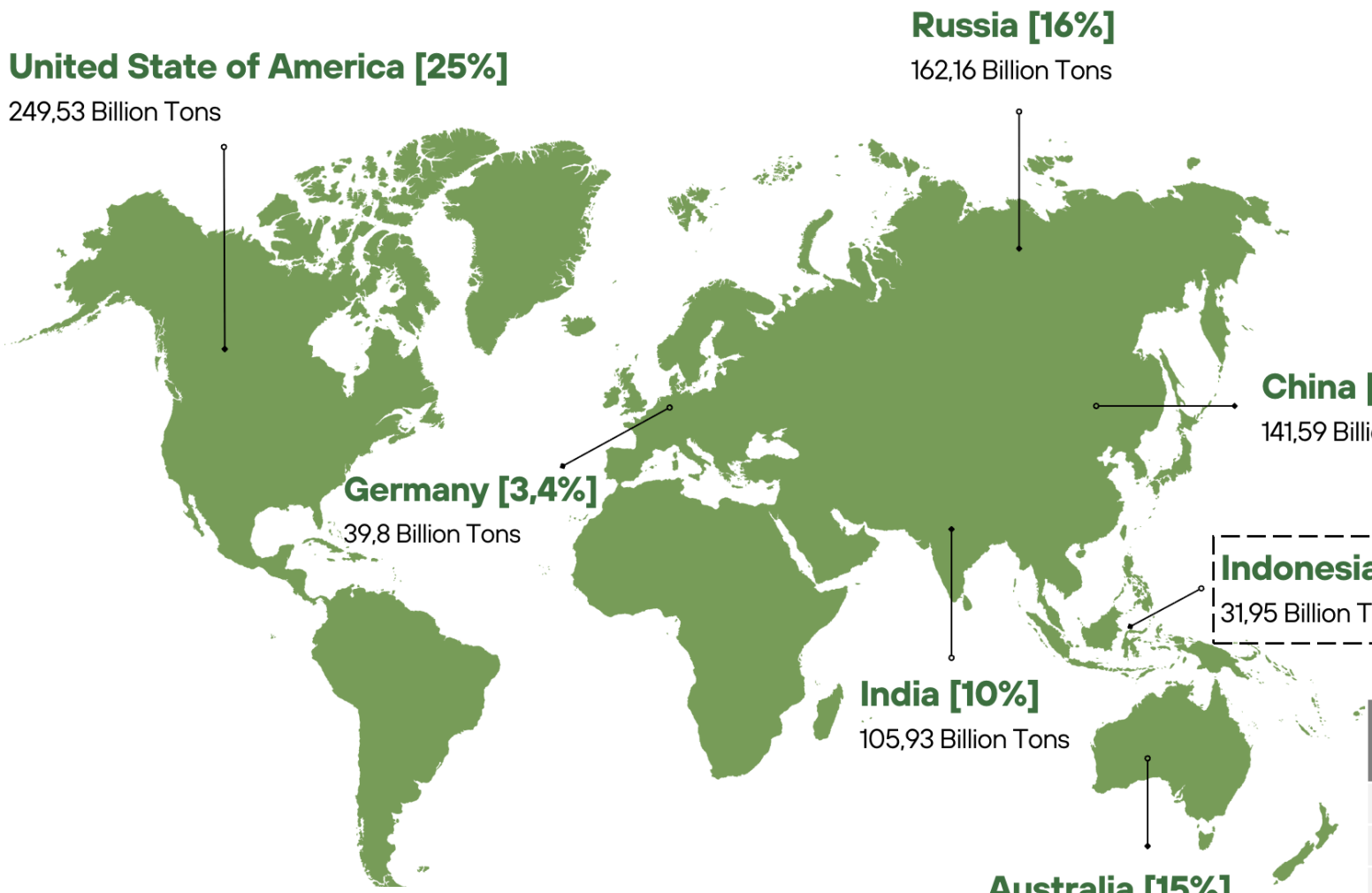


Associate Members Based on the Business License

Some of APBI-ICMA Members

adaro ENERGY, KIDECO, KPC COAL FROM INDONESIA PT KALTIM PRIMA COAL, mhucoal, PT ARUTMIN INDONESIA, ITM, BukitAsam beyondcoal, KUTAENERGI, BAYAN, MANAMBANG MUARA ENIM, UCOAL, berau coal, OORJA, TANITOcoal, DIZAMATRA POWERINDO, bp PT. Batara Perkasa, PELINDO JASA MARITIM, PAMA, SUCOFINDO

Member Economies Coal Resources and Reserves in a Global Context



Indonesia Ranks 7TH in Global Coal Reserves

With reserves of 31.95 billion tons and an average annual production of around 700 million tons, domestic coal reserves are projected to last approximately **45 years.**

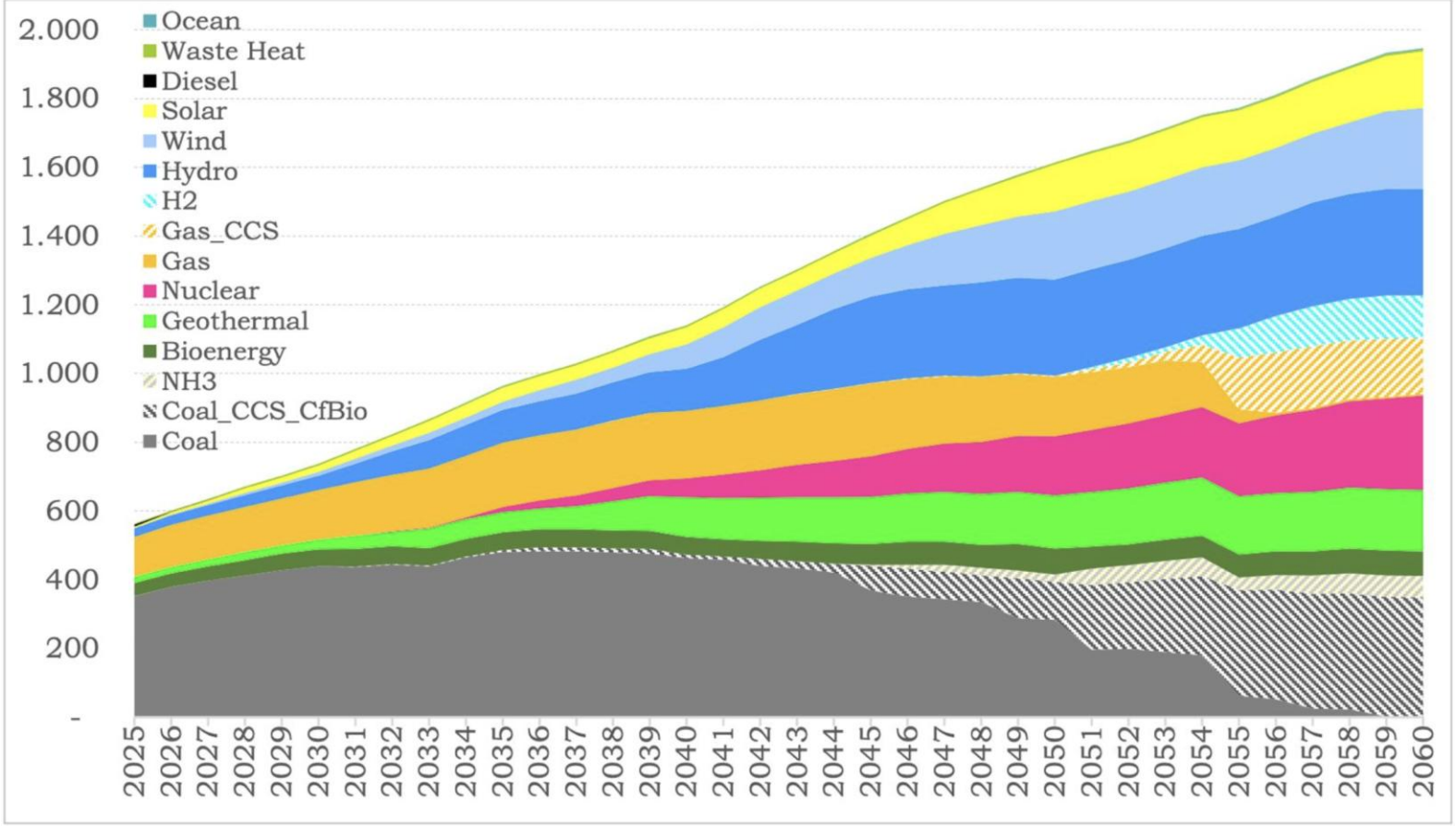
Quality	Reserve (Billion Tons)	Percentage Reserve
	Total	
Low Calorie	24.05	74%
Medium Calorie	4.54	11.16%
High Calorie	3.35	14.06%
Total	**31.95**	**100%**

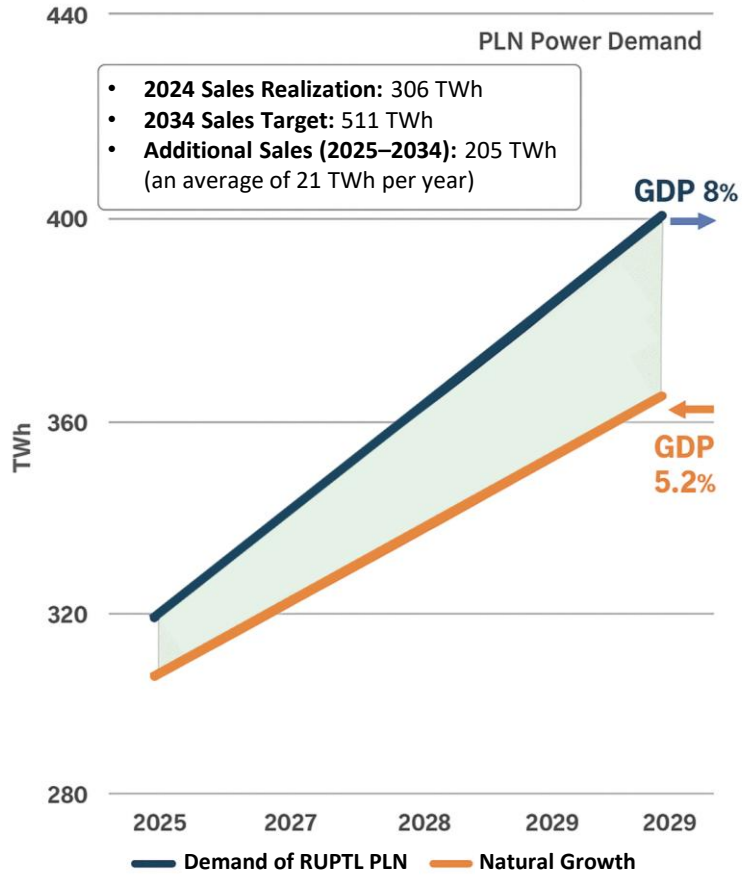
NOTE:

- Low Calorie = <4.200 Cal/gr
- Medium Calorie = 4.200 – 5.200 Cal/gr
- High Calorie = >5.200 Cal/gr

Source: MEMR 2025 and Various Sources Processed by APBI-ICMA

The Role of Coal in the Member Economies Energy Transition and Electricity Supply Planning

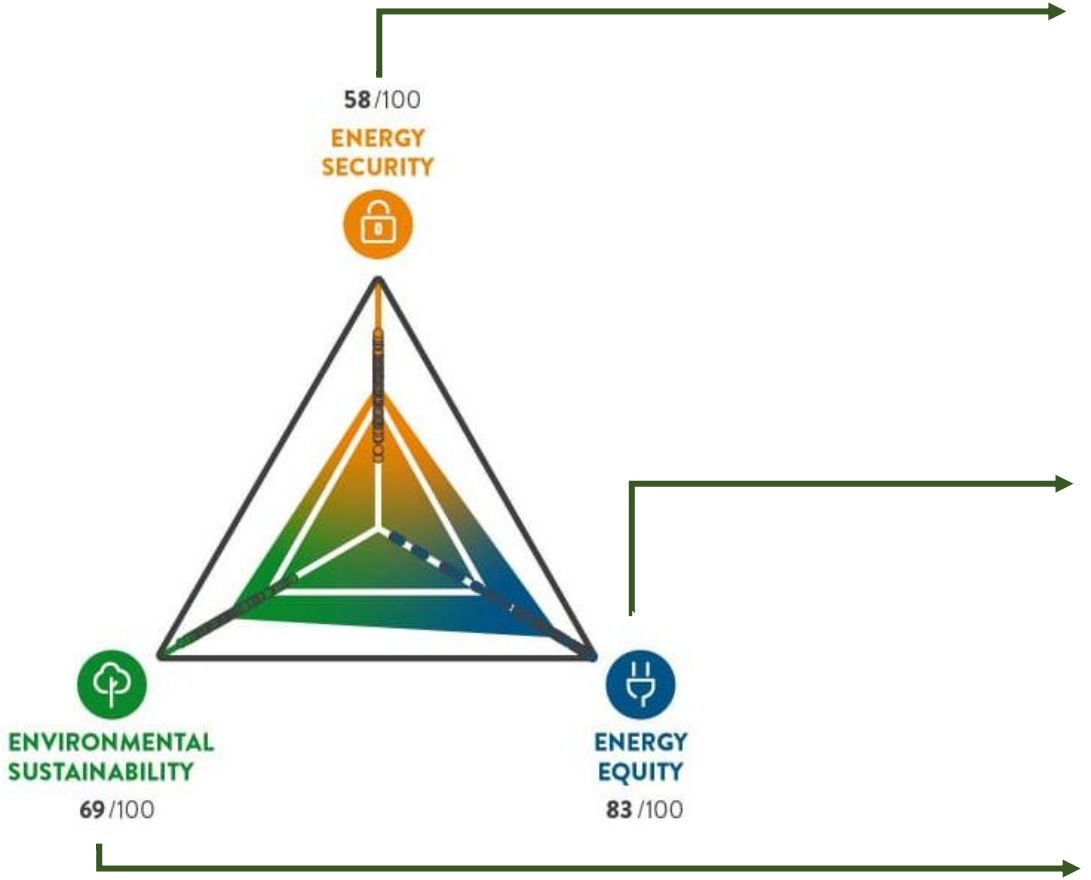




NOTE:
The continued use of coal in coal-fired power plants plays a direct role in supporting the achievement of domestic GDP targets in 2029, despite the government's plan for a gradual transition toward cleaner energy. Coal is expected to remain a significant part of the energy mix until around the 2040s, but will gradually be replaced by cleaner technologies, such as carbon capture and storage (CCS) and biomass co-firing, and is projected to be nearly phased out of the domestic energy mix by 2050–2060.

Sources: MEMR 2025 and National Electricity Supply Business Plan [RUPTL] 2025 - 2034

World Energy Trilemma Index



Energy Security
Reflects the energy system's ability to meet current and future energy demand reliably, withstand and bounce back swiftly from system shocks with minimal disruption to supplies.

Energy Equity
Assesses the energy system's ability to provide universal access to affordable, fairly priced, and abundant energy for domestic and commercial use.

Environmental Sustainability
Represents the transition of the energy system towards mitigating and avoiding potential environmental harm and climate change impacts.

Source: Various Sources Processed by APBI-ICMA

Corporate Decarbonization Strategy

1 Reduction

Increasing **efficiency** in the use of resources that produce carbon emissions and **replacing** these energy resources with more environmentally friendly products

Operational Excellence

Improving operational efficiency to reduce energy use, for example, by optimizing transportation, reducing waiting times for goods, and optimizing coal inventory.

Energy Management

Energy management, such as fuel consumption data, fleet systems, coal transportation data through data optimization and evaluation

Energy Replacement

Replacing energy sources with more carbon-effective sources, such as newer biofuel options, or a higher renewable energy mix

2 Removal

Carbon absorption from green areas

Carbon Sequestration

Carbon sequestration through green areas, for example, mine rehabilitation and water catchment areas

Carbon Management

Increasing carbon reduction, for example, having more accurate carbon data and carbon offsets

3 Green" New "Business

Exploring **eco-friendly business opportunities**

Nature-Based Solutions (NBS)

Study of the potential for carbon trading, forestry products, and energy (biomass) plantations

Other Businesses

Taking advantage of opportunities in more environmentally friendly business sectors, such as renewable energy, energy technology, and smart agriculture

Source: Various Sources Processed by APBI-ICMA

Energy Transition Pathways and Business Diversification of Member's Coal Companies

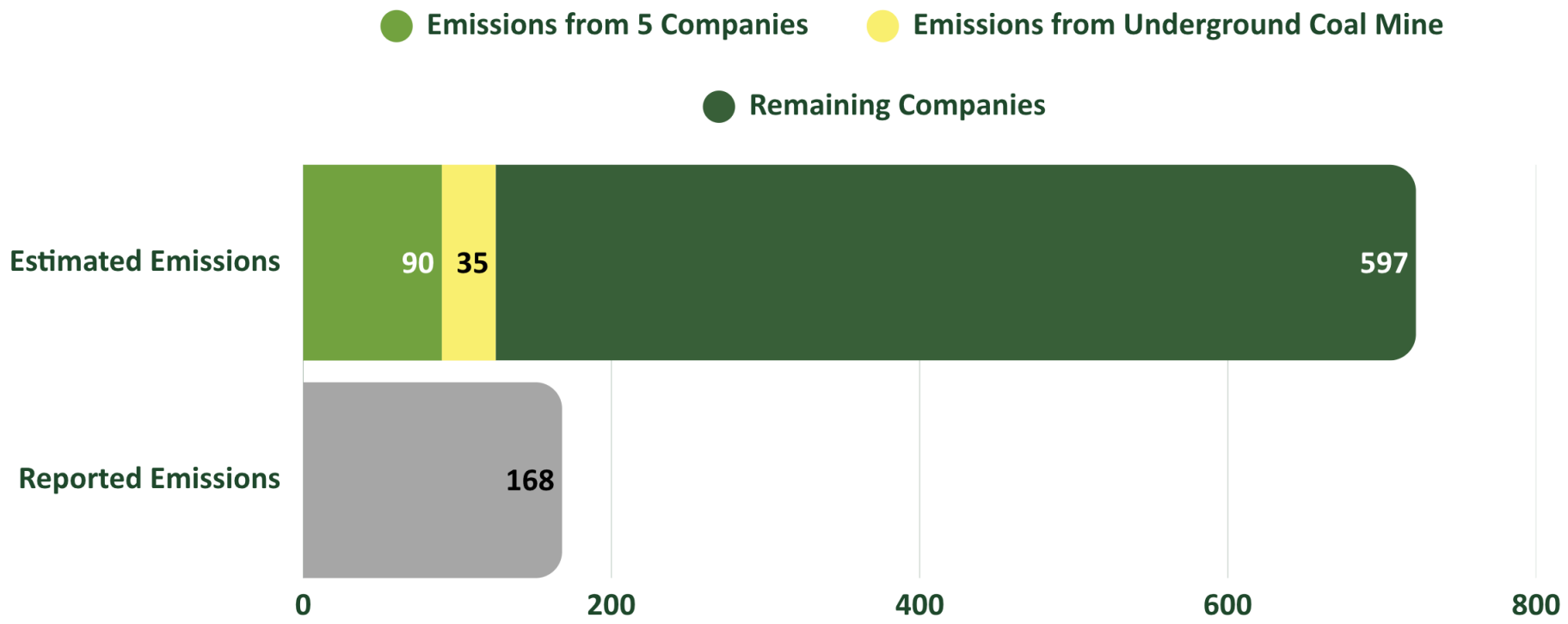
BukitAsam beyondcoal	CCS/CCUS, Electric Vehicle, Solar Power Plants, Hydroelectric Power Plants, Digital Monitoring System
INDIKA ENERGY	Solar Power Plants, Electric Battery Industry, Electric Vehicle Industry Development, Solar PV Installations
ITM	Solar Panel Installation, Solar power plant (PLTS) construction project, Hydroelectric Power Plant (HPP)
adaro	Aluminum Smelter, Electric Vehicles, Wind Power Plants (PLTB), Hydroelectric Power Plants (PLTA), Solar PV, BESS.
PT BUMI ResourceS Tbk.	CCS and CCUS, Electric Vehicles
HARUM energy	Electric vehicles, Nickel smelters, Logistics (Tugboats and Barges)
TBS Energi Utama	Electric Vehicles, Micro-Power Plants, Wind-Power Plants, Solar-Power Plants, Waste Management
PT. BAYAN RESOURCES, Tbk	Petrochemicals, Solar Cells, Solar Power-Plants

Source: Various Sources Processed by APBI-ICMA

Estimated and Reported Coal Mine Methane Emissions at The Member Level

Five companies alone account for half of reported emissions, revealing major underreporting.

Coal Mine Methane Emissions in 2024 (kt CH4)

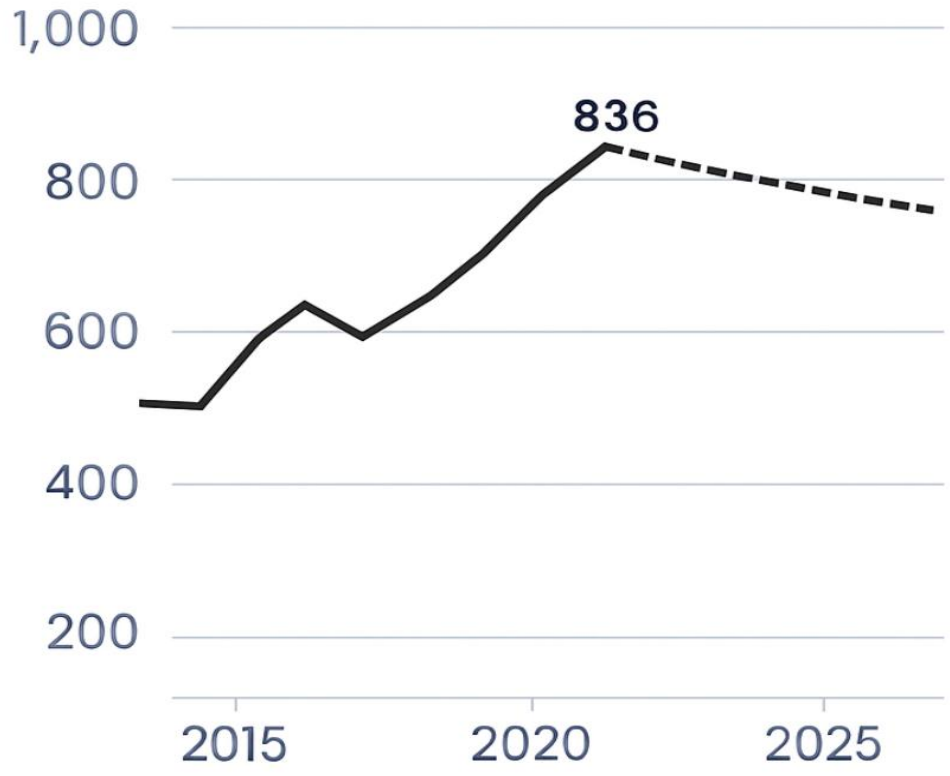


NOTE:
The five companies reporting CMM emissions are Bukit Asam Tbk., Golden Energy Mines Tbk., Indo Tambangraya Megah Tbk., Kideco Jaya Agung, and TBS Energi Utama Tbk. All of them are APBI-ICMA members.

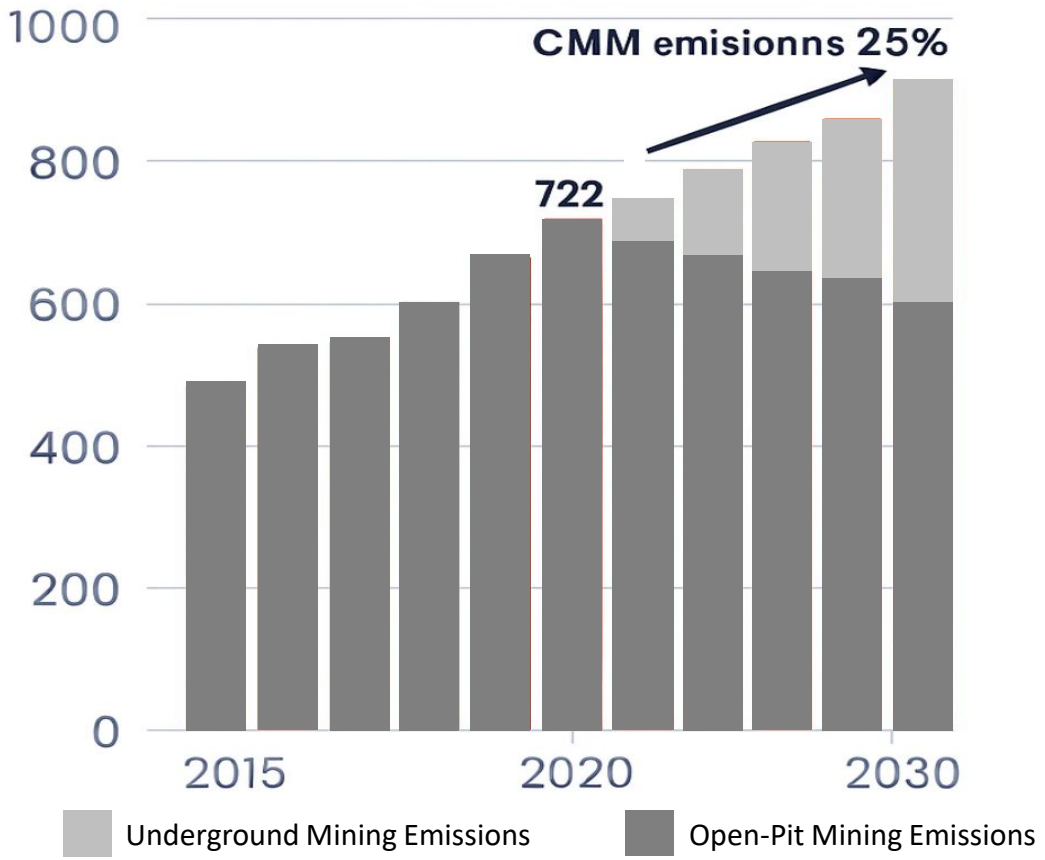
Source: Ember Analysis, Handbook of Energy and Economic Statistic of Indonesia

Underground Mining Will Increase CMM Emissions.

Production (Million Tons)



Emission (Thousand Tons CH4)



NOTE:
This position is justifiable. Given the higher emissions associated with underground mining, coal downstreaming is being encouraged as a mitigation strategy. However, the associated costs are still relatively high at this stage.

Source: Ember Analysis

Enhanced NDC, September 2022

Sector	GHG Emission Level 2010* (MTon CO_2-eq)	GHG Emission Level 2030 (MTon CO_2-eq)			GHG Emission Reduction (MTon CO_2-eq) Annual Average Growth BAU (2010–2030)				Annual Average Growth BAU (2010-2030)	Average Growth 2000–2012
		BaU	CM1	CM2	CM1	CM2	(CM1)	(CM2)		
1. Energy*	453.2	1,669	1,31	1,22	358	446	12.5%	15.5%	6.7%	4,5%
2. Waste	88	296	256	253	40	43	1.4%	1.5%	6.3%	4%
3. IPPU	36.9	66.9	63	61	7	9	0.3%	0.3%	3.4%	0,10%
4. Agriculture	110.5	119.66	110	108	10	12	0.3%	0.4%	0.4%	1,3%
5. Forestry and Other Land Uses (FOLU)**	647	714	214	-15	500	729	17.4%	25.4%	0.5%	2,7%
TOTAL	**1,334**	**2,869**	**1,95**	**1,63**	**915**	**1,240**	**31.89%**	**43.20%**	**3.9%**	**3,2%**

CM1 : Counter Measure 1 (Unconditional Mitigation Scenario
CM2 : Counter Measure 2 (Conditional Mitigation Scenario)
*) Including Fugitive
**) Including Emission from Estate and Timber Plantation

~60%

The forestry sector has the LARGEST share in the domestic greenhouse gas emission reduction target.

NOTE: In accordance with Decision 1/CMA 3 (Glasgow Climate Pact), it has been requested to revisit and strengthen their 2030 NDC targets. Indonesia responded by submitting its Enhanced NDC **on 23 September 2022**, raising its emission reduction targets to **31.89%** (unconditional) and **43.20%** (conditional). The Enhanced NDC serves as a transition toward Indonesia's Second NDC.

Source: Various Sources Processed by APBI-ICMA

Four Coal Emission Reduction Strategies

1. Coal Production Control

- Imposition of a moratorium on new coal mining permits.
- Establishment of long-term production limits aligned with energy needs and climate objectives.
- Adjustment of annual production plan approvals (RKAB) in accordance with long-term production limits.

2. Improvement of CMM Monitoring, Reporting, and Verification Mechanisms

- Development of Indonesia's CMM emission factors by incorporating coal basin characteristics, mining depth, and coal calorific value.
- Requiring direct measurements for underground coal mines to reduce uncertainty and enhance safety.
- Mandating facility-level emission reporting as part of the annual production plan (RKAB) approval process.

3. Implementation of CMM Capture and Utilization

- Prioritizing methane drainage in underground mines with high emission levels
- Initiating feasibility studies and pilot projects for other mitigation technologies, such as ventilation air methane (VAM) oxidation and pre-mining drainage in surface mines

4. Facilitating a Just Transition in Coal-Producing Regions

- Establishing a coordination framework between central and regional governments on just transition initiatives
- Developing roadmaps and just transition programs at the regional level
- Mobilizing financing to support the implementation of just transition programs

Source: Ember Analysis

THANK YOU

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