

The first step towards the energy transition

**PT. Indominco Mandiri
Bontang Site, East Kalimantan
Indonesia**

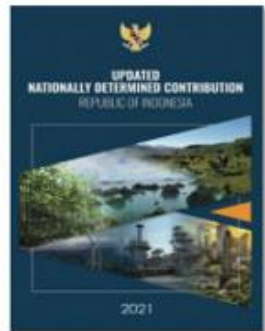
10th Private Sector Forum
On Cooperation In Minerals in ASEAN 2022
December 22, 2022

Global Challenges & Indonesia Strategy



- **Climate change** and **Loss of biodiversity** is number one of top global challenges in 2030, (UNESCO's 'World in 2030' Public Survey)
- **Environment** and **Social issues** as number one risk and **Decarbonization** is a major disrupter in mining business in year 2022, both risks and opportunities, (EY : Top 10 business risks and opportunities for mining and metals in 2022)

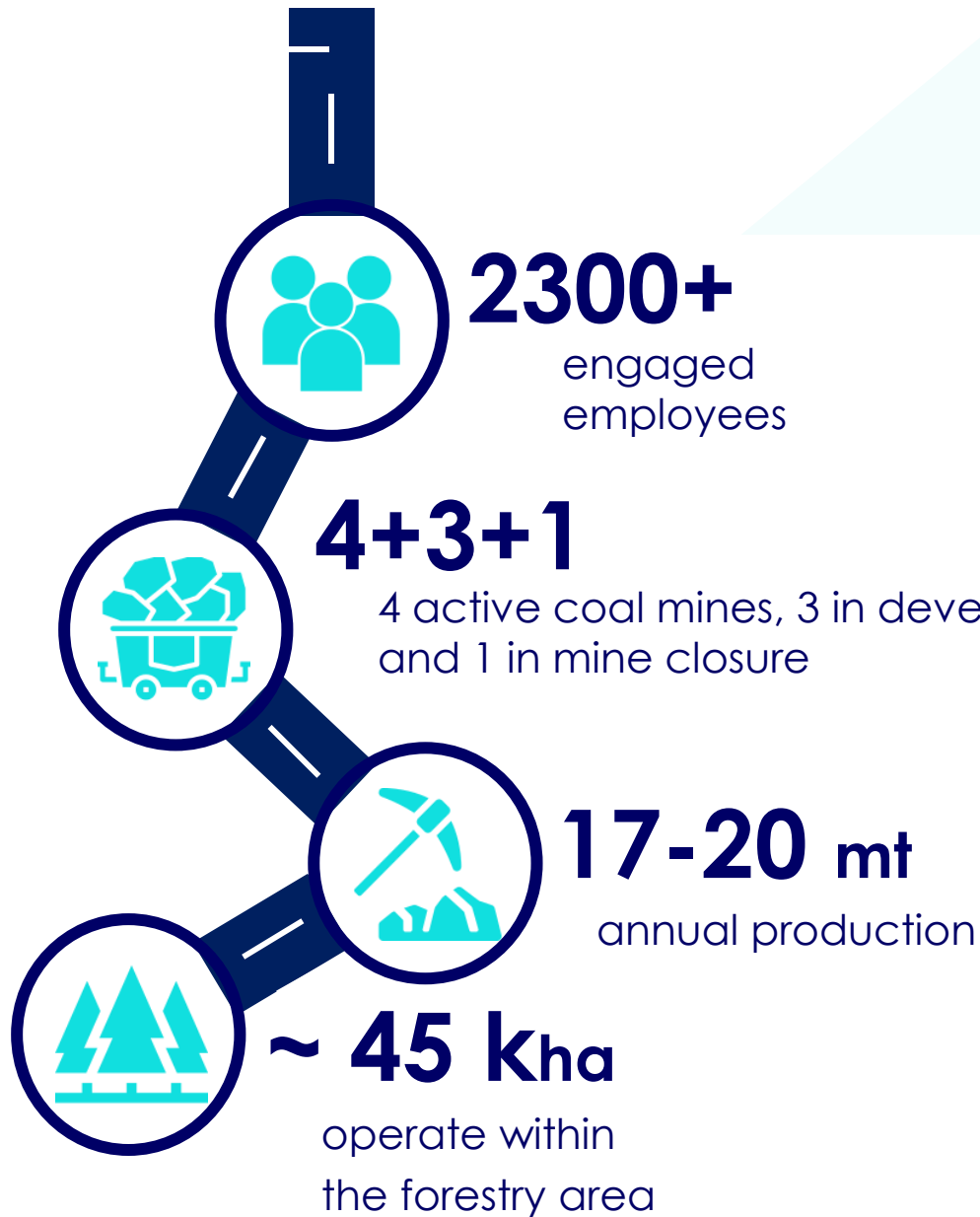
Facing climate change: Indonesia key strategy



The Updated NDC (July, 2021)

- In the First Nationally Determined Contributions (NDC), Indonesia has unconditional GHG emission reduction target of **29%** and conditional target up to **41%** compared to business-as-usual (BAU) scenario in 2030.
- Just recently (23 Sept 2022) Ministry of Environmental and Forestry as the National Focal Point just announced that Government enhanced with updated NDC higher with unconditional becomes **31.89 %** and with the conditional up to **43.20%**.
- **Energy** and **Forestry & other land-used sector** will contribute **96%** of total GHG emission reduction (consist of 37% and 59% each respectively)

PT Indo Tambangraya Megah Tbk.



Our vision

Becoming an **Indonesian energy company** at the heart of **innovation**, **technology**, **inclusion** and **sustainability**.

Establishment of PT Indo Tambangraya Megah

1987

2007

IPO at Indonesian stock market and distributing dividend routine ever since

Digitalization journey is started, strengthening collaboration and the birth of many digital products

2018

2022

Our transformation journey toward greener, smarter energy is going to be unveiled...

PT Indominco Mandiri

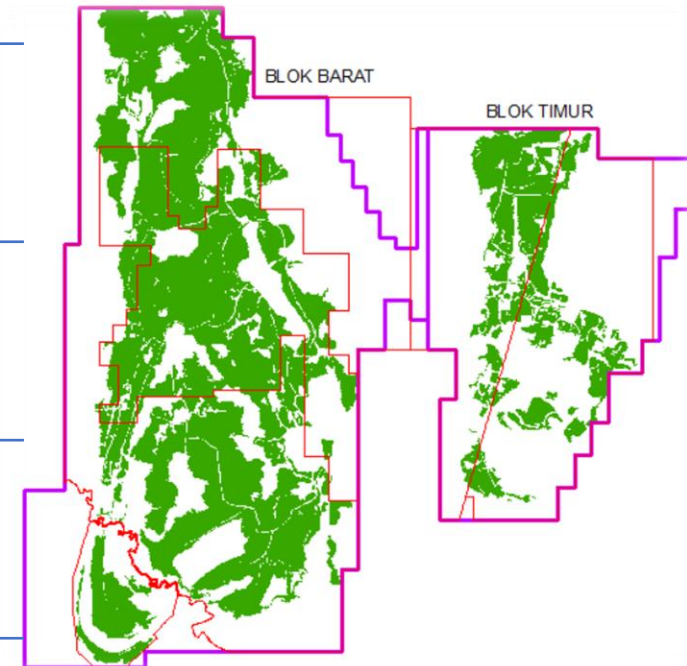
The one of subsidiaries of
PT Indo Tambangraya Megah Tbk.

Operate the coal mining since year
1993 and first coal production in
year **1998**

Concession under the CCoW
(Coal Contract of Work) will be
valid until year **2028**

Total area - **24.1 kHa** and
100% within Forestry area

+ 11.1 kHa disturbed and
+ 8.9 kHa already revegetated



Stockpile and Port Operation

- Constructed in year **1994** and operated since year **1998**
- Stockpile capacity **650 Kton**
- Conveyor line **6.0 km** length
- Shiploader capacity **3,700 TPH**
- Bontang Coal Terminal **90,000 DWT**
- Electricity supported by
 - Diesel Generator (**1994**)
 - Steam power plant (**2010**)
 - Solar PV (**2019**)



Steam Coal Power Plant

- Constructed year **2007** and operated since year **2010**
- Own operation and internal use
- Capacity **2 x 7 MW**
- Coal consumption **2.0 kton/month - 2.5 kton/month** or **(65-80 ton/day)**
- Coal Quality **CV 6111 kcal/kg**, TS 1.21%, Ash 5.21%, TM 16,33%



Solar Photovoltaics (PV)

An aerial photograph of a large-scale solar photovoltaic (PV) farm. The image shows numerous long, parallel rows of solar panels stretching across a flat, open area. The panels are dark blue with a grid pattern. To the left of the solar farm, there is a body of water, possibly a reservoir or a pond, surrounded by some greenery. In the center of the farm, there are some small structures and what appears to be a maintenance area. The overall scene is bright and clear, suggesting a sunny day.

- Constructed year **2019** and operated since year **2020**
- Capacity **3 Megawatt**
- Battery Energy Storage (BESS) **2 Megawatt**

Energy Transition

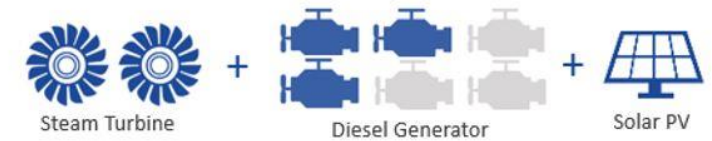
- Solar PV generate energy 2,162 MWH/Year
- Emission reduction 2,140 Ton CO₂ eq
- Equal with planting 114,797 trees/years

	2020	2021	2022
Power Ratio	Actual (%)	Actual (%)	Target (%)
Steam Turbine	72	74	80
Diesel Generator	23	20	12
Solar PV	5	6	8

2018 Operation Scheme



2020 Operation Scheme



Result and Goals 2020

PV production Total 2,162 GW in 2020



Standard coal savings

858.60Tons



CO₂ reduction

2140.03Tons



Equivalent tree planting

116208Tree(s)

Result and Goals 2021

PV production Total 2,107 GW in 2021



Standard coal savings

842.84Tons



CO₂ reduction

2100.78Tons



Equivalent tree planting

114797Tree(s)

Coal Business and GHG Emission

Regulatory Requirement	Coverage	Highlight
Nationally Determined Contribution (NDC) PR No.98 of 2021 Law No.7 of 2021 MR No. 168 of 2022 PR No.112 of 2022	National National National LHK National	<ul style="list-style-type: none"> • National commitment towards a low carbon and climate change-resilient • Carbon economic value implementation • Carbon taxes • Indonesia's Forestry and Other Land Use (FOLU) NET SINK 2030 • Acceleration of Renewable Energy Development for Electricity Supply

PR : President Regulation GR : Government Regulation MR : Ministry Regulation LHK : Environmental and Forestry

Risk

- Decarbonization acceleration from **stronger climate change regulation/standard** will require certain follow up actions
- Increasing cost from potential **carbon cost** on mining activities based on carbon content and/or emissions
- More **environmental disclosure and obligation** to be reported
- **Stricter license** to operate for mining business (Limited forestry quota available, EIA, Forestry Area Usage Permit, Mine Closure Document etc.)

Opportunity

- Change the **steam turbine from coal basis to become biomass basis** ; wood chip or wood pellet
- Utilization of post-mining areas for carbon capture to reduce the burden of **potential carbon cost**, e.g. taxes
- Business development opportunities: **natural capital solution**
- Business development opportunities in the electricity sector that will be based **on renewable energy**

ITM's Climate Strategy

Aligned with our aspiration to provide **greener** and **smarter** energy product, we have been continuously seeking ways to support SDGs and not shy to play active role in endorsing national development as a major energy player in Indonesia.

1

Natural capital readiness

Following the environmental commitment, the revegetation and reforestation area is sufficient to support the biomass program

2

National renewable energy acceleration

The government of Indonesia has promoted the renewable energy adoption through various regulations and initiatives

3

Developing biomass as renewable energy

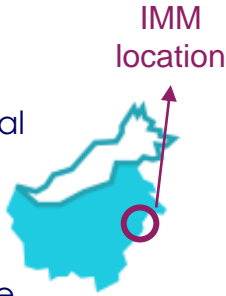
There is more urgency to have higher renewable energy mix, such that more biomass study/pilot project will help everyone to achieve our goals

ITM with its reputation and capacity is geared up to be the government's partner in finding more synergy in the biomass energy-based product so we could create a **sustainable world** together.

Executive summary of our biomass project

General Information

- Currently is in pilot project phase conducted by Indominco Mandiri – IMM (one of ITM subsidiaries).
- Located at East Kalimantan (close to the new capital city of Nusantara).
- IMM own its coal fired powerplant (CFP) that could utilize wood biomass with co-firing.
- The biomass project has been acknowledged by the government.



About the wood biomass

- Until June 2022, IMM has **planted 8.9k Ha** from the total land clearing of 11.2k Ha (80% of total area).
- The chosen plant species is **Kaliandra** (one of its variant is called **Sengon** in Indonesia) or **Gamal** depending on the altitude. On the lower altitude, Gamal would be more suitable, and vice versa.
- We have planted more than **1.5 mn Sengon tree** in reclamation area of Indominco with the diameter of **30-50cm for 10 years old Sengon** whereas **Gamal has been planted in the area of 100 Ha** with diameter of **10-15 cm for 10 years old Gamal**.
- Based on the calculation, at 5% co-firing level (5% biomass and 95% coal) would require approximately **120 ton/month of biomass product**.
- We estimated that in several arboretum with total area of **61ha**, we **have accumulated total 14.7 kT biomass** that we could use to support this project.

Wood biomass advantages



Naturally absorb greenhouse gas (GHG) emissions.



Lower sulphur, lower ash and lower SOx emissions.



Strengthen biodiversity by providing natural habitat



The energy output could be comparable to middle CV coal.

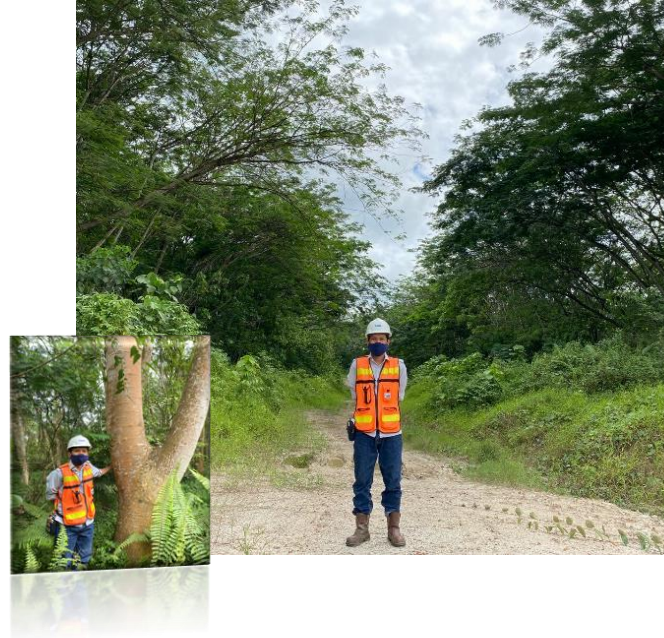
Prospect in the future

- The business model potentially in form of B2B scheme or Joint Venture with other powerplant companies.
- Based on the fair economical value approximation, the cost per ton for 10% co-firing is ranging on 500-650k rupiah US\$ 45/Ton, which implies there should be more upside in export market.

Reclaimed and revegetated area



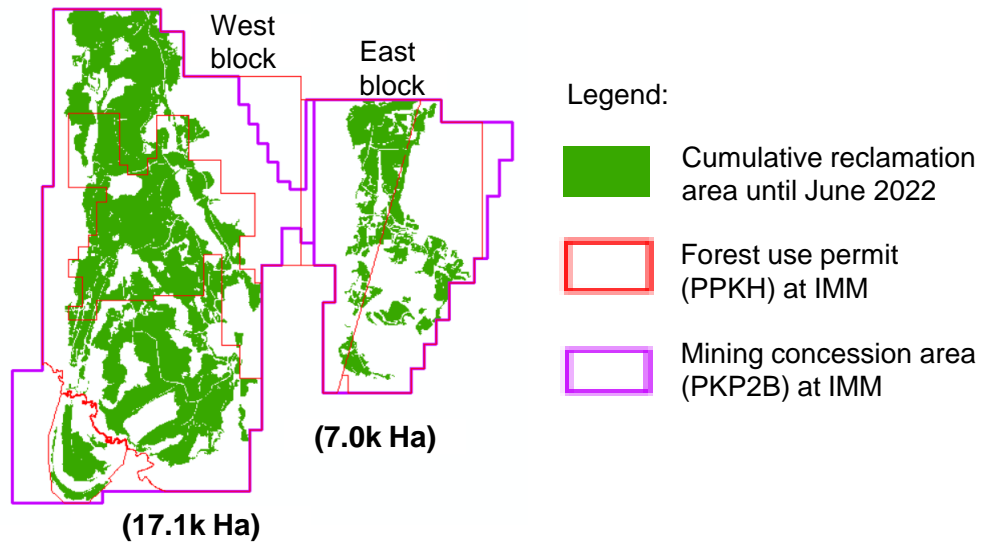
Sengon plantation area

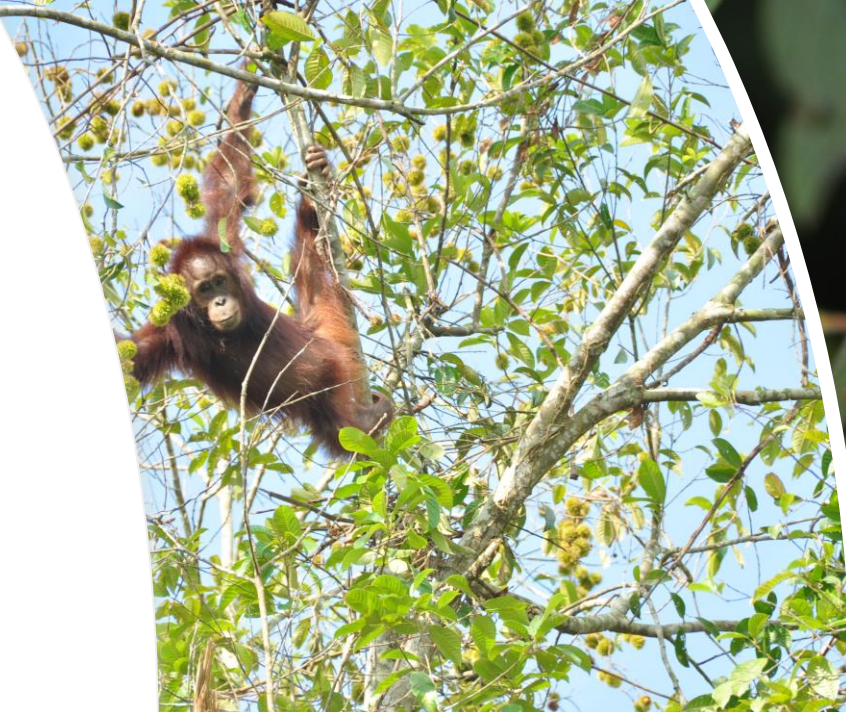


Gamal plantation area



IMM reclamation and revegetated area





Good and Responsible Mining

Energy transition towards greener and smarter



Our next actions

Continuing on the biomass pilot project and increase the co-firing rate into desirable level.

Preparing necessary natural asset and infrastructure to strengthen the biomass implementation in the future

Cooperating further with the government to increase the biomass product feasibility and supporting policy



Thank You

OUR WAY IN ENERGY

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