

Contributions to Decarbonization **The Implementation** of the Joint Crediting **Mechanism (JCM)** in Indonesia



Coordinating Ministry for Economic Affairs Republic of Indonesia



Decarbonization policy

Long-term Strategy on Low Carbon and Climate Resilience (LTS-LCCR) 2050

- Indicates an ambitious target to be implemented in the AFOLU, energy, IPPU, and waste sectors.
- On the more ambitious target, the primary energy mix consists of coal (34%), gas (25%), oil (8%) and renewables (33%) in 2050.
- Additional mitigation through building, street lighting, biofuels, EV, CCUS/CCS.

President Regulation on Carbon Pricing No 98/2022

- Internalizing the emission externalities with the "polluters-pay-principle".
- Regulate trading and non-trading
- instruments, including carbon offset.
- Ministerial Decree for carbon pricing is still under preparation.



Green Taxonomy

- Green Taxonomy encourage green investment in Indonesia.
- Green Taxonomy will increase sustainability, transparency, and accountability of green investment.

Indonesia NZE Strategy

Zero Carbon 2020 2060 Scenario (TWh)



The collaboration driven by decarbonization

- Facilitate diffusion of leading low carbon technologies, products, systems, services, and infrastructure
- Implementation of mitigation actions
- Contributing to the sustainable development in developing countries
- The showcasing of the JCM project gives the private sector confidence to independently replicate low-carbon technologies



Structure of JCM





Applied technologies and sectors coverage

	Biomass	Air- saving loom	Tribrid	Thermal oil heater	Freezer show- case	Centri- fugal chiller		Power plant	Health- care
Mini hydro	Regene- rative burner	Cold storage	Waste paper process	LED street lighting	CNG converter		Glass film	Conve- nience store	Wood- working
Electric heat pump	Waste heat recovery	Auto- clave	Co- generati on	Advanced process control		Trans- portation	Auto- motive	Industri al park	Rubber
	Solar PV	Injection molding	Waste water treat- ment		Shoppi ng mall	Aromatic	Golf ball	Cement	Sports complex
	LED spotlight	Once- through boiler		Tele- commun -cation	ni Apart- ment	Textile	Oil refinery	Frozen food	Plastic

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12MW Biomass Power Plant Project

Project participants

- PT Primanusa Energi Lestari
- AURA-Green Energy Co., Ltd.

Locations

Tanjung Seumantoh, Aceh Tamiang, Aceh

Expected GHG Emission Reductions 31,322 tCO2-eq./year

- This project aims to reduce CO2 emissions by implementing a biomass power generation utilizing residues such as Empty Fruit Bunch (EFB) discharged from palm oil factories, and to substitute renewable energy for grid electric power in Indonesia.
- EFB etc. are collected by belt conveyors from a palm oil mill adjacent to the biomass power generation facility. The boiler incorporates a movable step grate stoker with an automatic ash removal function and an optimization control system of furnace temperature, which can suppress the occurrence of clinker peculiar to EFB



10 Mini Hydro Power Plant Projects

Project participants

- 11 Indonesian companies
- 8 Japanese companies

Locations

North Sumatera, West Sumatera, Bengkulu, Lampung, East Nusa Tenggara, Maluku

Expected GHG Emission Reductions

173,349 tCO2-eq./year

- Small hydroelectric generation with capacities between 2MW to 10 MW contributing to the spread of renewable energy, development of industry and job creation
- 9 new construction projects and a rehabilitation project



Examples of JCM projects

Introduction of CNG-Diesel Hybrid Equipment to Public Bus

Project participants

- BLU UPTD Semarang
- Hokusan Co., Ltd.

Locations

Semarang city, Central Java

Expected GHG Emission Reductions 2,667 tCO2-eq./year

- Toyama City has concluded a cooperation agreement between Semarang City to realize low carbon society under city to city cooperation.
- Based on the cooperation agreement, this project aims to reduce GHG emissions through fuel switch from diesel to CNG.
- In the project, 72 diesel buses owned by Trans Semarang, including 25 large-sized buses and 47 mid-sized buses, are retrofitted from diesel engine to hybrid engine with CNG system available. These buses are considered more cost-effective through fuel switching.



5 Solar Power Generation Projects

Project participants

- 9 Indonesian companies
- 6 Japanese companies

Locations

South Sumatera, Jakarta, West Java, Central Java, East Java, Banten, Bali, Riau Islands

Expected GHG Emission Reductions

7,714 tCO2-eq./year

- The generated electricity replaces a portion of grid electricity to reduce greenhouse gas (GHG) emissions in the sport complex, a shopping mall and several factories.
- A ground-mounted solar panel project and 4 rooftop-mounted solar panel projects; a project installed with the storage battery.



Examples of JCM projects



Potential collaboration

Solar energy industries

• Solar panel and its components

Low carbon technologies

- Co-generation
- Combined heat and power
- Waste heat recovery

CO₂

- Waste to energy
- CCUS
- Energy storage system



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Energy efficient equipment

 Industry equipment (motors, compressors, pumps, transformers)

Electric vehicle

- E-car, e-bike, escooter
- Battery and its components

The Challenges



Coal experienced a dramatic 1. spike in demand this year due to the Russo-Ukrainian War, prices rising exponentially from China to Europe. Not only affected by the war, 2. but the price of this dirtiest fossil fuel has also soared as the hot weather in North Asia increases the need for air conditioning, and the industry recovers post-pandemic.

The Challenges

- 1. Oversupply on grid electricity due to Covid and recession.
- 2. Increasing gas price, while Indonesia in highly dependant on imported LPG.
- 3. More than 70% of electricity produced by PLN are coming from coal power generation.

- 1. Currently, PLN encourage the use of electrical stove in households use and discourage the newly installed solar rooftop projects in Indonesia.
- 2. Limitation from PLN for solar power projects (100% into 15% capacity).
- 3. Therefore, some JCM solar power projects are on hold and still under discussion.

Thank you

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