Analysis in this presentation was made possible through the Clean Energy Transitions in Emerging Economies programme, which has received funding from the European Union's Horizon 2020 research and innovation programme (grant agreement No 952363.)

Enhancing Indonesia's Power System

Dr Pablo Hevia-Koch, Energy Analyst, Renewables Integration and Secure Electricity, IEA

H2020 CETEE Closing Workshop
Brussels, 14 September 2022

International Energy Agency

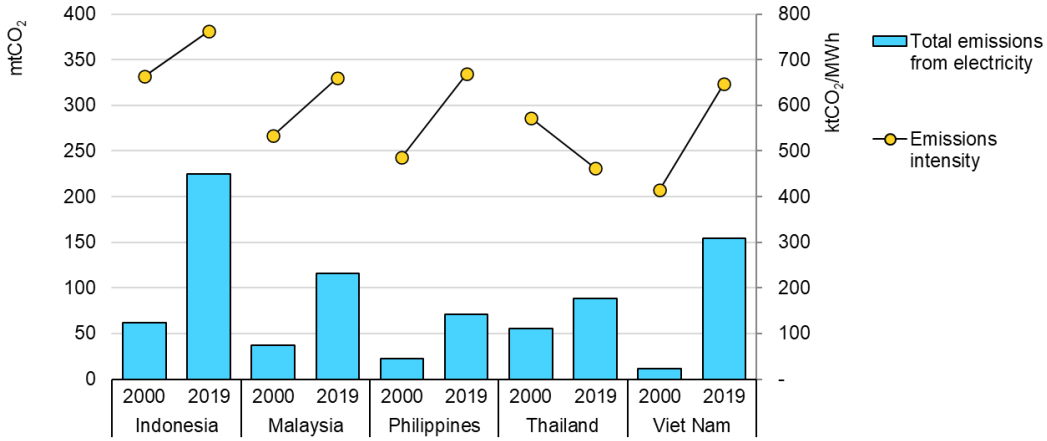
WP3: Power sector analysis and recommendations for increasing shares of renewable electricity

- Objective: work with priority countries to assess the **impact of higher shares of renewable energy** in the power system**,** and to identify **technical, regulatory and policy** actions that ensure **cost-effectiveness** and **reliability** of the **clean energy transition.**
- Net zero starts by power sector, and **renewables are the key**. Integration is necessary from the perspective of **security**, **sustainability** and **affordability**.
- Emerging market and developing economies account for 75% of the projected global increase in **electricity demand** to 2050
- Tailor-made **analysis**, actionable **policy recommendations**, and **capacity development** through workshops and high-level dialogue

Co-operation with emerging economies is key for ensuring a secure and sustainable energy future for all

Indonesia is a main player for the clean energy transition

- Indonesia is today the seventh largest economy in the world and growing fast
  - GDP per capita of around USD 13 000 in 2021 to USD 40 000 by 2060.
- In 2021, Indonesia announced a commitment to achieve net zero emissions by 2060, or earlier with support from advanced economies
- Emitting 224 million tonnes of CO2 in 2019, the power sector in Indonesia is the country's largest emitter, accounting for 38% of emissions from fuel combustion.
- Indonesia is the largest archipelago in the world and there are significant differences among the islands.

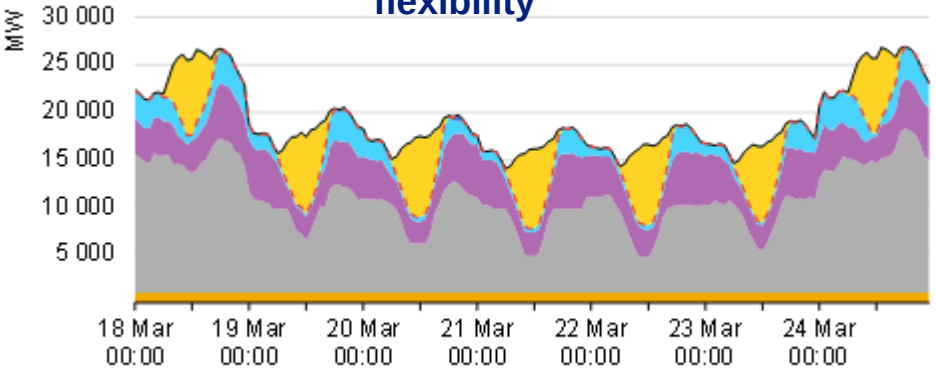


Project: Enhancing Indonesia's Power System

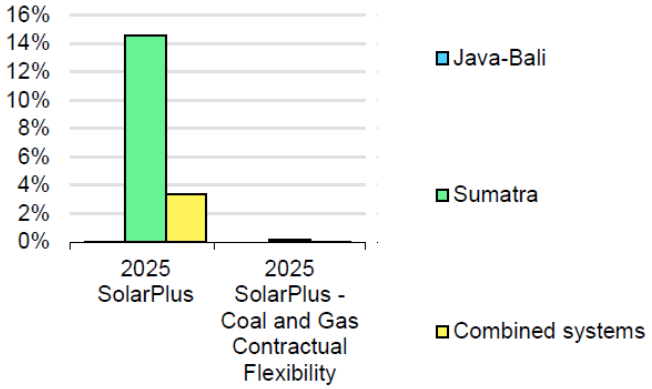
- Pathways to meet the renewables targets in 2025 and beyond
- Largest systems: Java-Bali and Sumatra
  - 23% share of renewables in the electricity mix by 2025 – Plans mostly include hydro, geothermal, biofuel and biomass cofiring.

Could a higher solar PV share help meet the 2025 renewables target?

Thermal and hydro fleets cover the required flexibility



Contractual flexibility reduces curtailment



Triharyo Soesilo
Special Advisor to Minister for Acceleration of Infrastructure Development & Investment, MEMR

A view on the decarbonisation of Indonesia