



Draft Carbon Methodology for Early Retirement of Grid-Connected Coal-Fired Power Plants

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ADB

The rationale – Why develop the methodology

- Coal-Fired Power Plant (CFPP) accounted 30% of global CO₂ emission
- 74% of CFPPs are in Asia: young (~13 years, lifetime ≥ 35 years)
- Despite decline of RE costs, still challenging to promote RE growth without CFPP early retirement.
- Challenges of CFPP early retirement: relative young age of CFPP, state loss implications (SOE), financial loss implications (IPP)
- Carbon credits can close financial gaps & facilitate Just Transition to cleaner energy
- No available methodology to estimate emission reduction of early retirement of grid-connected CFPP
- Compliance methodology (under the Paris Agreement) can potentially be used for either compliance or voluntary carbon markets.
- Early retirement CFPP is not a typical Carbon mitigation activity, classified as a new asset class of carbon credits, i.e., transition carbon credits. Requiring a robust, high-integrity and conservative approach in developing the methodology and activity/project in order to access carbon market;
- ADB ETM projects across Southeast Asian countries including in Indonesia inform the methodology development.

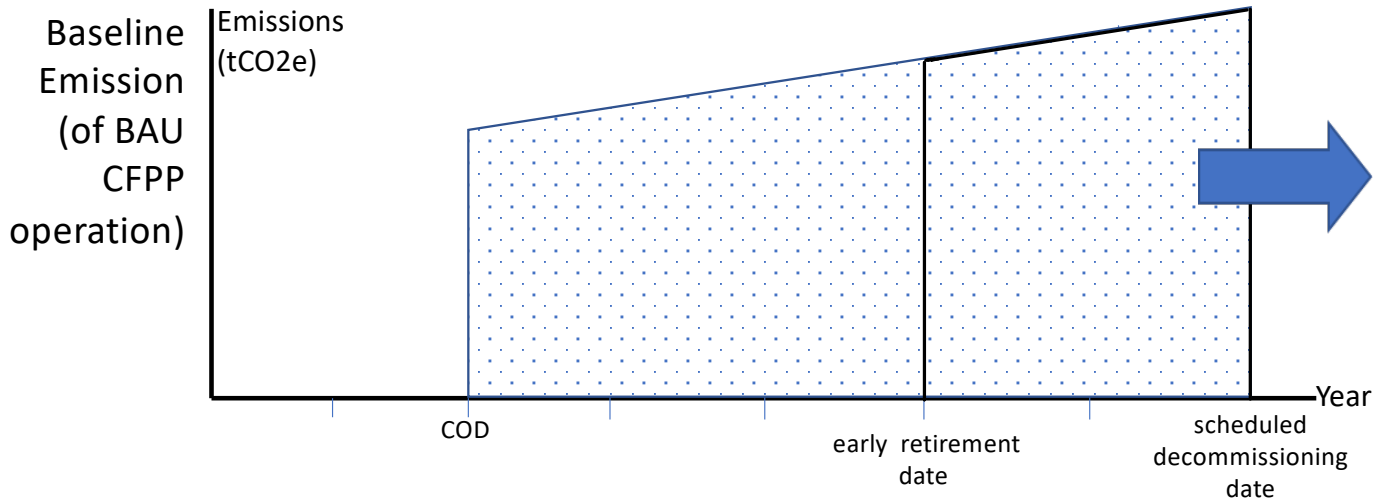
Methodological approach

Conservative - in compliance with Article 6.4 mechanism of the Paris Agreement- but **rewarding enough** for the CFPP owners to adopt.

- **Baseline emissions:** Estimated based on average power generation and/or the emission factor of coal used in the CFPP (historical emissions)
- **Activity emissions:** Estimated from the generation of power in the grid that fills the gap created by the decommissioned CFPP
- **Leakage emissions:** Estimated in case power is imported from connected electric grid or if any critical equipment from decommissioned CFPP are sold
- The replacement is calculated separately should the RE replacement wish to claim for carbon credit
- The baseline power plant will not be accounted in the activity emissions

Emission Reduction = Baseline Emission – Activity Emission – Leakage Emission

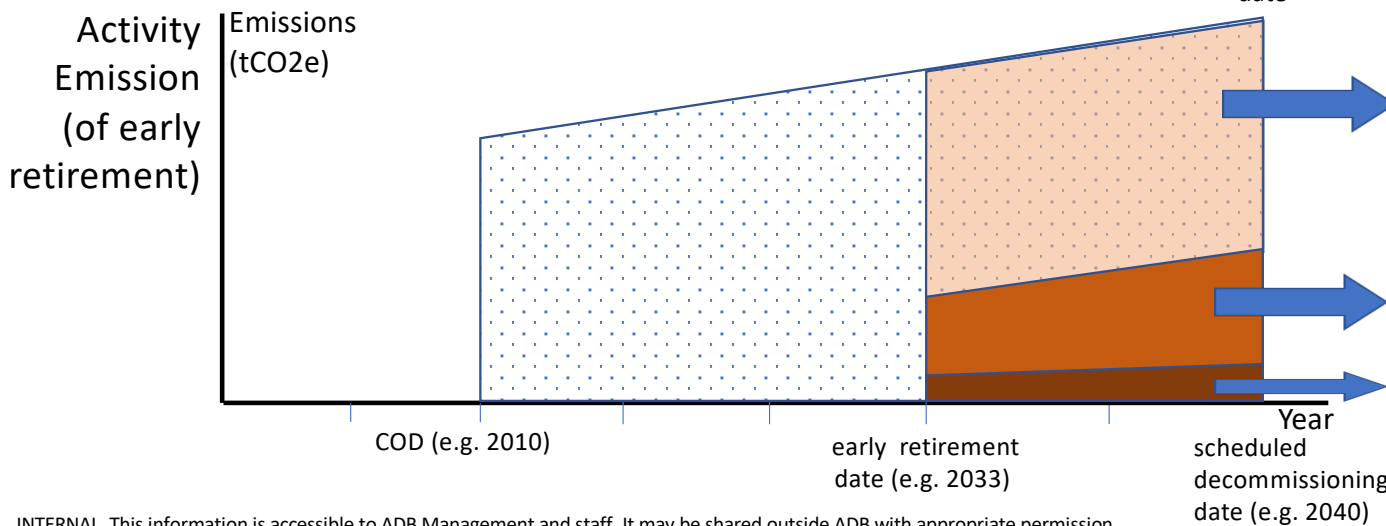
Methodological approach- how is it estimated



The Baseline Emission, from the coal combustion in the power plant, calculated from either:

- Coal Consumption, or
- Power Generation

$$\text{Emission Reduction (ER)} = \text{BE} - \text{PE} - \text{LE}$$



Emission Reductions from CFPP Early Retirement

Activity Emissions, from generation of power in the grid that fills the gap created by decommissioned CFPP

Leakage Emissions, if applicable, from imported power or usage of critical equipment

Just Transition (JT)

- This proposed methodology will follow the Sustainable Development Tool – a mandatory tool as part of the Article 6.4 mechanism (approved at the 1th Supervisory Body meeting (SBM 014) 14th meeting.
- The Just Transition measures will be included as a part to apply and comply with the SD tool of the article 6.4 Mechanism.
- ADB has published the JT framework for Cirebon, the proposed pilot project for this new methodology for article 6.4 Mechanism:

<https://www.adb.org/projects/documents/ino-56294-001-dpta>