

Supporting the early phase-out of CFPP in South Africa

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A Coal Asset Transition Accelerator (CATA) related project



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Objective

- This project's goal is to support the development of an independent and socially engaged Coal-Fired Power Plant (CFPP) decommissioning plan/s, that includes testing potential for early decommissioning and assessing the potential avoided costs for refurbishment and retrofits, while ensuring energy security is maintained during the transition and beyond.
- The plan/s will bring together the processes and outcomes of a multi-criteria assessment (MCA) decision-making framework and an open and transparent techno-economic modelling exercise to quantitatively assess the drivers and implications of various decommissioning schedules for the CFPP fleet.
- Central to this process would be broad, structured stakeholder engagement through the PCC.

Multi-Criteria Assessment (MCA) Framework

- To identify coal plants that are appropriate for retirement or repurposing, analysis is required to assess both (i) the country context of the plant in terms of their degree of readiness to transition to clean energy, and (ii) the plant's own operating conditions.
- The key questions framing the development of the MCA framework are:

Country-level

1. To what extent is the country going to be heavily reliant on coal to meet its future energy demand?
2. Will the country be able to ensure a secure supply of energy in the future while phasing out coal?
3. Is the market regulation and decarbonisation policy conducive to phasing out coal?
4. How important is coal to the country's economy in terms of job creation and trade?

Plant-level

1. **Security:** Will the early retirement of the plant affect the country's security of supply?
2. **Cost:** Are the plant's operations economically viable in terms of continued operation and maintenance?
3. **Carbon:** How can early retirement of the plant contribute towards decreasing carbon emissions?

Techno-Economic Model

To focus on some of the unanswered questions, this project will focus on 3 scenarios to illustrate how CFPP could be phased down earlier in line with 2040-related carbon constraint. The phase down could be met with:

- Full early shut-down, based on compliance with the NEMA Air Quality Act (Minimum Emissions Standards stipulation)
- Retrofitting to meet the MES (including research on costs of FGD retrofits, or other possible measures for plant retrofit (and costs thereof), to meet compliance)
- Model the cost-optimal scenarios – what to retire and what to retrofit to meet the budget