



Assessment of existing and future emissions reduction from the coal sector toward the implementation of the Minamata and Stockholm Conventions

GEF project ID: 10748

MSP duration: September 2021 – September 2024

Project Objective:

To demonstrate mercury and persistent organic pollutant (POP) emissions reduction potential from CFPPs and CFIBs to support governments in implementing control and reduction strategies for new and existing sources.

Project Outcomes:

- Estimated mercury/POPs/greenhouse gas reductions and future scenarios for CFPPs and CFIBs management are endorsed by high-potential countries.
- High reduction potential countries committed to developing projects to address emissions from the CFPP and CFIB sectors.

In the midst of recent global events, the need for equitable and sustainable energy shifts are needed for both climate action and to reduce the unnecessary health burden associated with their atmospheric emissions. However, many emerging economies are experiencing delays in the development of renewable energy infrastructure to replace baseline electricity provision that fossil fuel energy sources are currently occupying. This creates challenges towards a rapid just energy transition and having continued reliance on coal as a primary energy resource, therefore resulting in continued emissions and release of pollutants coming from this sector.

Projections suggest that global coal-fired power plant (CFPP) capacity and their connecting CO₂ emissions will likely peak by 2030-2035 if planned retirements of existing CFPPs are followed. Conversely, mercury emissions from this sector are likely to already be decreasing, primarily because aging plants are being replaced with modern, more efficient ones equipped with multi-pollutant control technologies. However, a high level of uncertainty remains in estimating future mercury emissions reduction for all countries due to variables such as mercury input in coal sources, combustion efficiencies, and recorded reduction potentials of emission control technologies across countries to name a few. For this reason, to ensure a continued positive outlook on emissions reduction in the energy sector, it's crucial to invest in actions that will accelerate the transition to renewable energy resources in the power sector, along with facilitating more transparency in the operation of the coal-fired industrial boiler (CFIB) sectors, from which information for the latter is limited for most developing economies.

Accelerated action towards a just energy transition pathway is therefore vital to allow for an increase in the cancellation of planned CFPP projects, along with the potential for early retirement of existing CFPPs, all of which have positive implications towards eliminating emissions by its source. On the other hand, it is crucial to acknowledge that some countries must carefully balance this urgency with considerations related to energy security, employment stability, and economic growth. Therefore, this project places significant emphasis on evaluating the adoption of both the retirement of coal-fired infrastructure, and the application of the best available technologies and best environmental practices (BAT/BEP) that will assure sustainable energy generation. These considerations are made due to the observation that some emerging economies are still operating on a relatively young coal combustion fleet to meet their primary energy demands. All these considerations are essential for the successful execution of this project, which aims to provide an analysis of future emissions stemming from the coal-fired energy sector at the national level by accounting for their national economic interests and commitments to actions as per the various UN Conventions.

Identified high-potential countries:

- China, India, Indonesia, Malaysia, Thailand, Philippines, Vietnam, Pakistan, Bangladesh, South Africa