



Environmental and Ecological Impact of the Matarbari Ultra Super Critical Coal-Fired Power Project in Bangladesh

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Introduction

As part of its plan to produce 10,000-12,000MW electricity from coal by 2030, the Bangladesh Government is implementing 1,200MW Matarbari Ultra Super Critical Coal-Fired Power Project. Even though in early 2022 the country scrapped 10 projects among the 18 it had initiated, the continuation of this mega plant at Matarbari raises technical questions. Moreover, irregularities were identified in the project's first phase with regard to the tender process and the environmental impact assessment (EIA) – thus raising concerns about increased climate impacts, air & water pollution, displacement of communities, and loss of livelihoods. Against this backdrop, this evaluation research identifies the technical loopholes in the EIA and implementation processes that go against the sustenance of the ecology and are harmful to the environment.

Materials and Methods

This research involves analyzing the documents of the project proposal, outcomes of the stakeholders' meetings, and other secondary data including credible newspaper reports, and face-to-face consultations. This study has focused on conducting the required literature review and desk review for finding and analyzing data from secondary reports, i.e., Environmental Impact Assessment of Phase I and Phase II of Matarbari, Matarbari 2 Draft EIA, Land Acquisition and Resettlement Action Plan, and other national roadmaps. For gathering satellite imaging of the construction site, we have used Google Earth Pro.

Results and Discussion

Matarbari is a densely populated island in Cox's Bazar in Bangladesh home to 100,000 individuals. In terms of legal implication of the EIA, our study shows 1) direct violation of procedures to give clearance about EIA, 2) conflict of interest of the organizations in charge of conducting the EIA, 3) disregarding public participation in the EIA, 4) not maintaining safe distance from environmental critical areas (ECA), 5) financing of the phase II which is inconsistent with Japan's long-term strategy under the Paris Agreement and Japan's strategic energy plan, and 5) incompatibility of building another coal-terminated force plant with the Nationally Determined Commitment (NDC) of Bangladesh.

Our study shows that, the plant's advancement has caused deterioration of floods in view of annihilation of water channels for farming and water entryways, harming of local area streets, expansion in auto collisions, and inflow and aggregation of silt in encompassing streams, which antagonistically affects livelihoods of nearby networks. Close-by marine fishing zones are being tainted because of discharge from these force plants. Accordingly, fish products will not be imaginable as no nation will import mercury-containing fish. Shrimp cultivating will be incomprehensible. In addition, mangrove woods will be annihilated completely which will likewise obliterate the biodiversity and environment of the Moheshkhali-Sonadia district. Around 75% salt of the nation is created in Cox's Bazar. Because of the improvement of the force plants, Bangladesh needs to rely upon imports to fulfill the need for salt. Additionally, crab products will be stopped. These plants are to influence Cox's Bazar Oceanside, public parks, and natural life asylums by keeping mercury and flying debris. No less than 182 tons of fly debris and 32kg of mercury will be kept yearly in four natural life-safe havens, including Sangu Wildlife Sanctuary, five public parks including Kaptai National Park, alongside Bangabandhu Safari Park, and the world's longest Cox's Bazar oceanside. These undertakings would emanate an expected 600-800kg of mercury each year into the air, of which 33% (170-290kg) would be kept into land



and freshwater environments in the locale, influencing cropland and fisheries. This stored mercury will pollute fish in a space of 1,500sqkm toward the north and upper east of the plants with a populace of roughly 1.5 million individuals. By and large, the plant would transmit 10,000-ton fly debris each year containing a not insignificant rundown of poisonous weighty metals like arsenic, cadmium, chromium, lead, mercury, nickel, zinc, cobalt, manganese, and calcium. In the event that the contamination controls are not worked as expected, particulate matter (PM) discharge could be as high as multiple times, SO₂ outflow up to multiple times as high, and nitrogen oxide (NO_x) and mercury emanation up to twice as high, our research found.

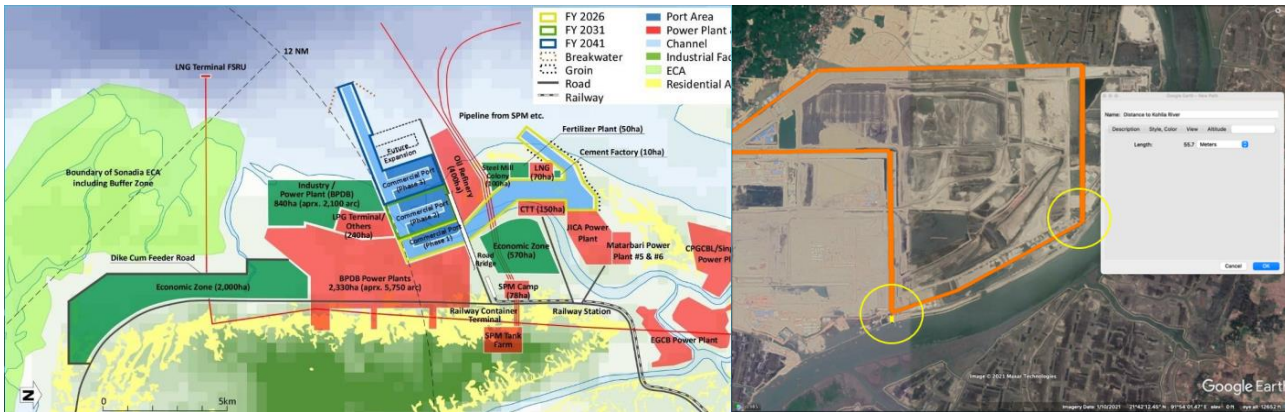


Figure 1. A close-up view of the Matarbari plant threatening other critical establishments in the area;
Figure 2. Satellite image showing the distances between the proposed coal ash pond and the Kohelia River at the southernmost and southeastern corners are less than 60 meters.

According to satellite views in our studies, the ash pond is almost near the Kohelia river – an important livelihood option and ecological landmark in the area. As per the EIA report of the plant, 20% of debris will be produced in the wake of consuming coal. To save this debris, a lake across 183 sections of the land region should be burrowed. As indicated by nearby individuals, if not suitably controlled as flying debris will make a debacle in the encompassing region. Other than the debris lake in the typhoon and flood inclined region will make the soil and groundwater dirty by stirring up with downpour water and spreading past the plant region.

Conclusions

Our impact evaluation study shows clear evidence of destruction of environment and ecology of the nearby coastal areas of the Matarbari plant. There is no alternative to stop the construction of this coal power plant. This study shows that further EIA and environmental research are needed to get a total picture of damage done by this power plant including its impact on surrounding ecosystems, environment, and climate change.

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