

Cancel Amin Bazar 42.5 MW WTE Power Plant

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Environmentally
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Authors

S K Reason
Rahul Biswas
Sultana Jahan
Sonia Khatun
Israt Jahan Bushra

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Key Findings

The proposed 42.5-megawatt Waste-to-Energy (WTE) plant in Aminbazar will need 30 acres of land in the capital, Dhaka, and is expected to commence in 2026. The construction cost will be approximately BDT 5,661 crore (USD 481.3 million). In 2021, China Machinery Engineering Corporation won ownership of the project for 25 years without a tender. It has already applied for a loan of 100 million USD from the New Development Bank for the project. The project is on ADB's list of proposed projects. The key findings of this study are:

- About 8330.7 thousand tons of greenhouse gases will emit from the WTE plant in the next 25 years which can pose a severe threat to the environment and climate change.
- Dhaka's solid waste contains a high moisture content, making it challenging to generate significant heat. Methane gas emission will increase due to the use of low-calorie waste, which is a clear violation of Bangladesh's international commitments.
- The government faces significant economic challenges as it will have to pay BDT 25.56 (USD 0.2178) per unit (according to 30 June 2024) to purchase electricity, while currently, the average production cost of electricity is BDT 12.13 (USD 0.1033). The government has to pay extra money for each unit of electricity from this power plant, which will create additional pressure on the overall economy and the people of the country.
- No environmental, social or economic assessment was conducted prior to execution of the power purchase agreement for the project.
- The power plant will emit more greenhouse gas (GHGs) than coal-based power plants. Additionally, the emission of harmful substances such as sulfur dioxide, nitrogen oxide, carbon mono-oxide, particulate matter, dioxins, and heavy metals leads to chest ailments including respiratory issues. It enhances other health problems among the local residents.
- A waste-free urban system needs to be created that will drive behavioral, structural, and infrastructural improvements.
- The management system should be improved so that 100% of urban waste can be collected. The biodegradable portions of organic waste have to be converted into organic fertilizer, and plastic wastes need to be recycled.
- New Development Bank financing for the project should be canceled.
- Penalties for failing to provide sufficient quantity of waste; no such conditions shall be placed in any other projects, including this project.

The Aminbazar 42.5 MW Waste-to-Energy (WTE) Power Plant is also referred to as the Dhaka North WTE Power Plant. China Machinery Engineering Corporation (CMEC), a Chinese company, got the project without tender, and they will undertake the construction, implementation, and operation of the project (TBS, 2024). The estimated total cost of the project is USD 481.3 million (BDT 5,661 crore). A proposal has already been made to the New Development Bank for a loan of USD 100 million (BDT 1,176 crore) (NDB, 2024). This project has been undertaken without any environmental or economic feasibility assessment. The project requires 30 acres of land, and the Dhaka North City Corporation (DNCC) has already undertaken the land for the project. The proposed power plant in the Aminbazar area, located in Savar Upazila of Dhaka District in Bangladesh, was approved on December 26, 2023, with projected operation commencing in 2026 (BPDP, 2024).

This project was initiated in 2012; a memorandum of understanding was signed by Management Environment Finance Srl, an Italian company, in order to set up a WTE power plant in Dhaka (Bangla Tribune, 2024). However, the project was shelved after the company declared itself bankrupt (DT, 2024). After three years, in 2015, the Dhaka North City Corporation (DNCC) and Dhaka South City Corporation (DSCC), Dhaka Power Distribution Company Limited (DPDC) and Dhaka Electric Supply Company Limited (DESCO) jointly planned to form the Waste Power Generation Company (WPGC). This initiative also failed due to the lack of inter-agency coordination (Shitu, 2016). Later, the former Prime Minister instructed the construction of a WTE power plant, prompting the power division to take the initiative. In June 2019, the Local Government and Rural Development (LGRD) Ministry formed a committee to explore WTE solutions, which submitted a report in just one month, July 2019 (Hasan, 2019). The Cabinet Committee on Government Purchase (CCGP) approved the waste-to-energy project under the Quick Enhancement of Electricity and Energy Supply (Special Provision) Act 2010 on 12 November

2020 (Hasan, 2021). Subsequently, an agreement was signed among the Power Division, Dhaka North City Corporation, and China's CMEC company to install the power plant on 01 December 2021 (FE, 2021).

The proposed power plant has the potential to generate approximately 7,725 million units (GWh) of electricity throughout its lifespan with an 83% load factor. But, according to the power purchase agreement signed with CMEC, the government will have to pay BDT 25.56 (USD 0.2178) per unit (kilowatt-hour) for this electricity (based on the exchange rate as of June 30, 2024) while currently the average production cost of electricity is BDT 12.13 (USD 0.1033) per unit. Because of this, the high cost of purchasing electricity from the new plant will place significant financial pressure on both the government and the public. As a result, the government's expenditure will increase. Bangladesh will have to spend nearly USD 2 billion (BDT 23,480) over 25 years to purchase the electricity it produces (Benar News, 2020). This amount must be paid in dollars, which will severely strain the foreign reserve.

Moreover, the high water content in Dhaka's waste results in lower heat generation. Waste typically requires a calorific value of 1000–1500 kilocalories to generate electricity efficiently. In contrast, Dhaka's solid waste exhibits a lower value of only 600 kilocalories (Rahman, 2022). Currently, DNCC produces 3500 tons of waste (Mamun, 2021), including 400 tons of construction waste (Mamun, 2024). However, the power companies do not accept construction waste due to its unsuitability for electricity generation. According to DNCC, managing a vast amount of solid waste—3500 tons of waste daily is a significant challenge (DNCC, 2020). Only 80% of the waste is collected by the City Corporation. This backlog not only contributes to environmental and health hazards but also affects the overall cleanliness and aesthetics of the city. To address this, improvements in waste management systems are essential (Waste Report 2019–20). A recent study mentioned that half of the waste in Dhaka city remains

untreated. This waste is often dumped into canals and drains, which are difficult to remove. This WTE power plant will face a fuel crisis. According to the treaty, DNCC will have to pay BDT 3,000 (USD 25.16) for each ton of waste if the necessary amount of waste cannot be supplied (Saadat, 2021).

While WTE technology is considered renewable, it is not actually clean energy. WTE projects produce higher greenhouse gas (GHGs) emissions compared to coal-based power plants. About 1.01 tons of CO₂ are released during the waste incineration of 1 ton of municipal solid waste (MSW). On average, 1.015kg CO₂ emits to generate each unit of electricity. According to the estimation, the greenhouse gas (GHGs) emission from the power plant could range from 333.2 thousand tons annually to 83% Plant Load Factor (PLF). Over a 25-year operation period, the GHG emissions from the facility could reach 8330.7 thousand tons.

WTE power plant releases various pollutants, including sulfur dioxide, nitrogen oxide, and particulate matter. Incomplete combustion may emit concentrated toxins with serious potential health risks, such as dioxins/furans and heavy metals (Cole-Hunter et al., 2020). The emissions from such plants can cause chest ailments including respiratory issues and other health problems among the local residents (Pavlas et al., 2010).

Generating electricity from waste is

economically and environmentally detrimental due to high levels of pollution and low calorific value. The Dhaka North City Corporation should focus on developing an advanced waste management system instead of relying on WTE production. Moreover, residents of the city have to be encouraged for behavioral change. It is essential to raise public awareness for disposing of different types of waste in separate bins and to emphasize waste segregation by hiring relevant personnel. At the same time, structural and infrastructural management development is required. For urban waste management under the **Clean Development Mechanism (CDM)**, biodegradable portions of organic waste have to be converted into organic fertilizer, and plastic waste has to be recycled. Besides, liquid waste can be a good source of fuel gas. Methane gas emissions will further increase due to using low calorific value wastes, which is a clear violation of Bangladesh's 2021 Global Methane Pledged. The revenue generated from using CDM technology should be invested in solar technology.

This project should be canceled to ensure a sustainable future for upcoming generations, as it harms the environment and poses obstacles to economic development. Thus, the 42.5 MW WTE Power plant project in Dhaka city must be canceled to ensure sustainable economic development, energy security, and a safe environment under Vision 2041.



Source: Paul's Rubbish Removal, 2023

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Contact



Email: info@cleanbd.org

Website: <https://www.cleanbd.org/>