

Cancel the Integrated Energy and Power Master Plan (IEPMP)

Protect Bangladesh from fossil fuel dominance and embrace sustainable energy solutions

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Unproven technologies, Burdensome capacity charges, and Dependence on imported energy threaten the national economy and energy security

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KEY FINDINGS

In 2023, the Integrated Energy and Power Master Plan (IEPMP) for Bangladesh was developed with funding from the Institute of Energy Economics Japan (IEEJ) and in cooperation with the Japan International Cooperation Agency (JICA). This plan emphasizes coal, LNG, and unproven fake technologies that rely heavily on imports, potentially posing serious risks to Bangladesh's economy. The key findings of this study are:

- The IEPMP proposes the use of ammonia, hydrogen and carbon capture technologies, whose effectiveness has not yet been fully tested. Even developed countries like the United States and the United Kingdom have refused to adopt these technologies.
- If the IEPMP is implemented, the additional capacity charge will further strain the country's economy. With the funds BDT 1,47,556 crore spent on capacity charges in the power sector in the last 17 years, 18,304 MW of solar power could have been generated, or four Padma bridges or four Metro rail projects could have been built.
- Under the IEPMP, the reliance on highly polluting coal and LNG could lead to increased air pollution, causing long-term harm to biodiversity and public health.
- The IEPMP proposes only 13% renewable energy by 2050, whereas in Bangladesh's Climate Prosperity Plans and the Climate Vulnerable Forum goal of 100% renewable energy by 2050.
- The IEPMP threatens Bangladesh's economic growth and energy security; thus, ought to be canceled. Instead, a new master plan should be adopted to ensure 'zero carbon' considering national resources, sovereignty, regional security, and environmental balance.
- In alignment with the commitments made at the United Nations Climate Conference, all coal and oil-based power plants should be canceled. Instead, a comprehensive renewable energy policy should be adopted to ensure 100% renewable energy by 2050.

The Integrated Energy and Power Master Plan (IEPMP) 2023 was drafted for Bangladesh, funded by the Institute of Energy Economics Japan (IEEJ), and supported by the Japan International Cooperation Agency (JICA) in 2023. Similar master plans were previously developed in 2010 and 2016 with JICA's cooperation. Analyzing these plans shows a special emphasis on imported coal and liquefied natural gas (LNG) by JICA.

JICA developed this plan using 47 experts from Japan without including any Bangladeshi expert. JICA and IEEJ formulated this master plan even without consulting various community groups, such as energy and electricity consumers, small businesses, residential customers, indigenous communities, transgender groups, renewable energy producers, or the youth. Although IEEJ conducted two consultation meetings with a few representatives, the main report does not reflect public opinion. The most surprising aspect is that during the formulation of this plan, no discussions were held with members of parliament, nor with the parliamentary standing committees related to the Ministry of Planning, the Ministry of Power, Energy and Mineral Resources, and the Ministry of Environment, Forest and Climate Change.

The previous Power Sector Master Plan (PSMP) predicted that the country's power demand would reach 24,000 MW by 2021, as a result, the government hastily approved a large number of power plants. However, the highest peak demand in FY 2021-22 was only 14,782 MW, creating excess capacity (BPDB, 2022). Currently, Bangladesh has an installed power generation capacity of 28,098 MW (BPDB, 2024). However, on April 30 of this year, the record for the highest electricity production in a single day was 16,477 megawatts (BPDB, 2024). This means that about 11,621 megawatts of installed capacity or 70.5% is idle for the rest of the time, leading to a waste of resources. Using the Quick Enhancement of Electricity and Energy Supply (Special Provisions) Act 2010, many unnecessary furnace oil and diesel powered plants have been approved, which is responsible for exceeding the peak demand. For these idle

power plants, capacity charges amounted to BDT 17,788 crore in FY 2022-23 and BDT 28,489 crore in FY 2023-24. This amount is expected to exceed BDT 35,000 crore in FY 2024-25 (Dhaka Post, 2024).

The IEPMP estimates that by 2050, Bangladesh's total electricity demand will reach 97,000 MW (with an installed capacity of 111,114 MW). But, according to data from the Power Development Board (PDB), the peak electricity demand in 2027 is projected to be 28,487 MW. Even if this demand were to double or triple by 2050, it still does not align with the estimates made in the IEPMP. Implementing projects based on these exaggerated projections could once again lead Bangladesh into the trap of excessive capacity charges.

The government of Bangladesh has pledged in the Climate Prosperity Plans (CPP) and Climate Vulnerable Forum (CVF) that by 2050, 100% renewable energy will be implemented. However, the Integrated Energy and Power Master Plans (IEPMP) proposes only 13% renewable energy implementation by 2050. This proposal clearly conflicts with the commitment made to the Climate Prosperity Plans (CPP) and Climate Vulnerable Forum (CVF), raising questions about Bangladesh's energy transition and its renewable energy targets.

Bangladesh spends around BDT 470 billion annually on LNG imports and approximately BDT 250 billion on coal imports (DT, 2023). If Bangladesh adopts Japan's proposed plan, it will increasingly become dependent on capacity charges and imported fuel and technology. On the other hand, adopting a renewable energy-based plan would ensure Bangladesh's energy security while saving valuable foreign currency.

Bangladesh has made significant commitments, both nationally and internationally, to achieve 40% renewable energy by 2041 through energy transition. However, the IEPMP proposes the introduction of 40% so-called 'clean energy' by 2041, which includes the introduction of import-dependent liquid hydrogen, ammonia, and Carbon Capture and Storage (CCS) technology that could severely damage the

country's economy. The IEPMP proposes an installed capacity of 49.2% fossil fuels (coal, gas, and LNG), 12.3% so-called 'advanced technology,' ('false solutions') and only 33.9% renewable energy by 2050. Whereas generation capacity is 64% for fossil fuels, 15.4% for 'false solutions' and only 13% for renewables. The renewable portion under the guise of 'clean energy' does not even represent half. However, according to the Advanced Technology Scenario (ATS-In between) for renewable energy installation, a total of 16,470 MW of electricity could be generated from renewable sources by 2041, which would account for only 20.8% of total energy demand. So, such changes in IEPMP cast doubt on other energy plans and may confuse the public regarding renewable energy.

The energy targets of the IEPMP project are completely inconsistent with Bangladesh's other plans. 'Zero carbon', 'energy security', or 'economic viability' cannot be achieved through the use of fossil fuels and fake technologies. The pollution from highly emitting coal will seriously affect the lives and livelihoods of the local inhabitants. Additionally, Bangladesh is forced to spend its hard-earned foreign exchange to purchase expensive coal and LNG from unstable international markets to meet electricity demand.

For fossil fuel-based power plants, the government is obligated to pay capacity charges in foreign currency. These excessive capacity charges have a severe negative impact on Bangladesh's economy. In contrast, renewable energy-based power plants operate on a "no electricity, no pay" basis, meaning no capacity charges need to be paid.

The IEPMP also proposed so-called 'Advanced Technologies' to initiate with 20% ammonia cofiring from 2035, 20% liquid hydrogen from 2037, hydrogen-fired thermal power plants from 2040 and Carbon Capture & Storage (CCS) technology from 2040. Research shows that ammonia emits nitrous oxide, which is 273 times more harmful as a greenhouse gas than carbon dioxide. The cost of blue hydrogen is about USD 5.00 per kilogram, nearly five times higher than domestic gas. **Firstly**, the effectiveness of

these technologies remains unproven, even developed countries like Canada, the United Kingdom and the United States have refused to accept it. **Secondly**, these technologies will extend the lifespan of fossil fuel-based power plants, contributing to climate change and exposing Bangladesh to severe economic losses. **Thirdly**, these technologies are 300% more expensive than current power plant components in Bangladesh. **Fourthly**, Bangladesh will have to import these technologies from energy-exporting countries, harming the national economy.

The IEPMP estimates that an investment of USD 118.6 billion will be required to meet the production capacity by 2050. Of this, USD 61.2 billion will be needed for fossil fuel (51.60%), with USD 29.7 billion allocated for wind (25.04%), USD 13.2 billion for nuclear (11.13%), USD 7.2 billion for solar (6.07%), and USD 6.9 billion for hydrogen and ammonia (5.82%). According to the IEPMP, by 2050, it will be possible to generate 18% of electricity from wind power. On the other hand, it states that only 5% of electricity could be generated from solar power by 2050. Although the IEPMP suggests more electricity from wind power, experts believe solar power is more effective than wind in Bangladesh.

Once invested in the renewable sector, there is no additional cost other than maintenance for the next 25 years. There will be no need for capacity charges, which could be a hopeful prospect for Bangladesh's economy. The production cost of fossil fuel-based electricity is increasing by an average of 12% per year. In contrast, the production cost of renewable energy is decreasing at an average rate of 10%. In 2024, the cost per unit of electricity production was BDT 26 from diesel, BDT 17 from furnace oil, BDT 13 from LNG, BDT 8.1 from imported coal, BDT 14 from Nuclear and BDT 12 from solar power ([SANEM, 2024](#)). Five years ago, the cost of solar electricity production was BDT 19.40 per unit. In recent agreements, the cost of solar power production per unit has been set at BDT 8.12.

The installation costs for renewable energy-based power plants have also decreased rapidly. It costs BDT 174 million (USD 1.48 million) to install 1 MW of coal-based power plant and BDT 91.7 million (USD 0.78 million) for 1 MW of gas-based power plant. In contrast, the installation of 1 MW capacity solar power plants costs only BDT 74.1 million (USD 0.63 million), with costs decreasing by 10% annually. Notably, in FY 2023-24, the capacity charges of BDT 26,000 crore could enable Bangladesh to create nearly 3,500 megawatts of solar power for 20 years without additional costs (BWGED, 2023; Kaler Kantho, 2023), which is about one-quarter of the current electricity demand (Kaler Kantho, 2023). In the past 17 years, Bangladesh has paid BDT 1,47,556 crore in capacity charges to both public and private power plants (Sharebiz, 2024), with which about 18,304 MW of electricity could be generated, exceeding the present demand. Otherwise, four Padma Bridges or four Metro-rail could be built using this money. Notably, 25% of the total annual subsidy allocation of the national budget is spent in the power sector. The Center for Policy Dialogue (CPD) estimates that 81% of this allocation is spent on capacity charges (TDS, 2024).

Hasan Mehedi, CEO of the Coastal Livelihood and Environmental Action Network (CLEAN) and an energy expert, believes that the IEPMP 2023, prepared by the Japanese institution IEEJ with funding from JICA, should be immediately canceled as it is contrary to Bangladesh's interests. He emphasizes the need for a new energy and power plan prioritizing Bangladesh's interests is crucial. This plan should include the implementation of a 'no electricity, no pay' policy and consider technological capabilities, reduction of import dependency, environmental balance, and the potential of renewable energy to ensure a sustainable economy.

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