Policy Brief on

Power Crisis in Bangladesh: Challenges and Opportunities

Background of the power sector of Bangladesh

Bangladesh has experienced phenomenal economic development in the last decade, qualifying for its transition from a Least Developed Country (LDC) to developing country status. In pursuit of achieving a high income developed country status by 2041, it has maintained a prudent vision of universal access to quality electrical power supply in a cost-effective and affordable manner which is quite in line with the Sustainable Development Goal -7, "Ensure access to affordable, reliable, sustainable and modern energy for all".

The energy industry is widely regarded as one of the most capital-intensive industries, requiring significant capital investment. Private sector engagement (PSE) was viewed as a suitable option for the capacity enhancement of electrical power supply during the power crisis in Bangladesh due to resource and capital shortages as well as public sector inefficiencies brought about by the public sector's long-held monopoly in the industry. In 2009, the total number of power plants in Bangladesh was only 27, with a power generation capacity of about 5 thousand Megawatts (MW). In more than a decade, the number of power plants in the country has increased to 153, and currently several power plants are under construction. As a result, the current power generation capacity stands at 25,730 MW. Moreover, access to electricity has reached 100 % in 2022, which was only 47% during the year 2009. The most significant role in the growth of the country's power generation capacity has been the opportunity to mobilize private capital in power generation. Currently, the country's electricity demand is 14,000 to 15,000 MW on an average. At present, Bangladesh has approximately more than 40-50 percent power generation capacity (installed compared to the total demand). But due to less demand or underutilization of the capacity, the government pays thousands of crores of money to private power plants as capacity payments every year despite not utilizing many of those power generation capacities (Khan, 2012).

Present power sector status: A crisis is looming

Interestingly, almost half of the power capacities of the country belongs to privately owned Independent Power Producers (IPPs), and most of these IPPs are liquid fuel-based peaking power plants. These are extensively dependent on import of diesel or furnace oil. Even large baseload coal-based and gas-based power plants are highly dependent on imported coal and liquefied natural gas (LNG), respectively. Thus, the power sector in Bangladesh has

become incredibly dependent on imported coal and LNG, as well as liquid fuel-based private power plants, leaving it very vulnerable to disruptions in the global supply chain and price volatility.

The average bulk electricity selling rate has consistently been lower than the supply cost of electricity purchased from IPPs, Rental Power Plants (RPPs) and power import over the years. As a result, the gap between the electricity supply cost and the selling tariff has widened year after year implying a massive budget deficit risking the energy security and financial sustainability of the power sector.

[1] Source: BPDB Annual Report, 2020-21

Even when the price of primary fuel in the international market was much lower a year ago, approximately 40-50 percent of installed generation capacity remained unused (maximum demand served in 2021 was 13,792 MW against installed capacity of 25,284 MW). Despite the fact that the demand for power generation has increased from the previous year underutilization still ranges between 40 and 50 percent (Hossan, 2022). But this time the reason is the shortage of primary fuel (e.g., gas, liquid fuel, etc.) as the price of fuel in the international market has sharply increased due to the conflict between Russia and Ukraine. Due to gas and fuel scarcity, up to 58 power plants are now not operating at full capacity, resulting in a production shortage which eventually caused frequent load-shedding. Moreover, the unavailability of electricity creates public discontent and impedes industrial production and economic growth as well.

[1] Bangladesh Power Development Board (BPDB), a statutory body of government, acts as the government's single buyer, purchasing bulk electricity from all public and private power plants and selling it to distribution utilities.

Major reasons behind the current crisis situation

- The lack of primary fuel such as gas, diesel and furnace oil can be considered to be one of the key reasons behind the current power generation disruption in Bangladesh. Although Bangladesh has a daily demand for 2252 million cubic feet of gas for power generation, only 1035 million cubic feet of gas have been delivered to power plants at the same time. The main reason for the decrease in gas supply in relation to demand is an increase in Liquefied Natural Gas (LNG) prices in the international spot market (Hossan, 2022). Moreover, there have not been many activities for offshore gas exploration since maritime border disputes with India and Myanmar were settled. Due to these lackluster attempts to capture indigenous gas from onshore and offshore, there was not enough gas supply capacity to meet the demand from the power sector, which severely increased import dependency of fuel. Energy imports are frequently impacted by supply disruption and price volatility. The development of the infrastructure for the import of energy is likewise unsatisfactory.

- Underutilization of supply capacity was caused by the imbalance between electricity demand and supply capacity. Underutilization of installed capacity resulted from a weakness of demand projection, slower-than-expected industrial growth, and irrecoverable high electricity production costs, delayed retirement of contractually expired Rental Power Plants (RPPs) and Quick Rental Power Plants (QRPPs).

- A two-part tariff structure (capacity and energy payment) given to private power plants aggravates the situation of generation capacity underutilization. As fuel cost (embedded in energy payment) is pass-through in tariff, private power plants receive capacity payments, but even that remain unused, but the government has incurred significant losses of paying capacity payment (irrecoverable) as well as unavailability of electricity and stalled economic growth.

- Private Power Generation Policy - 1996 (Revised 2004) ensures the provision of competitive selection of private sector enterprises, but the Quick Enhancement of Energy and Electricity Special Provision Act - 2010 permits non-competitive engagement of private power generation (known as “unsolicited proposal”) through case-by-case negotiation. Although

this 2010 Act is supposed to be a tool for crisis management, it is now used as a regular policy instrument for the treatment of unsolicited proposals (avoiding the conventional competing bidding procurement process). Such provision of non-competitive private sector engagement in electricity generation limits the possibility of delivering better value for money for the people of Bangladesh. This creates a window for the private sector which benefits by exploiting the negotiation environment with high price during times of crisis. Moreover, by the Special Provision Act 2010 which limits the court's jurisdiction power and energy sector development process, continued application of this special legal provision that goes against the spirit of public procurement in terms of transparency, accountability, competition, and efficiency.

- In Bangladesh, the energy sector development including gas, petroleum, coal exploration capacity, etc. is inconsistent with the power sector development. Domestic primary fuel exploration and capacity development receive significantly less budgetary allocation than the power sector. The development of new domestic gas and coal harnessing capacities do not take place in accordance with the increasing fuel demand for electricity. The budget allocation scenario is depicted below in the following table.

Eighth Five Year Plan ADP Allocations for Power & Energy Sector (Taka billion FY2021 current prices)

Division of Ministry of Energy Power and Mineral Resources.	Fiscal Year				
	FY21	FY22	FY23	FY24	FY25
Energy and Mineral Resources Division	20	24.7	28.4	33.2	39.8
Power Division	245.1	264.5	362.4	419	502.8

Seventh Five Year Plan ADP Allocations for Power & Energy Sector (Taka billion FY 2016 current prices)

Division of Ministry of Energy Power and Mineral Resources.	Fiscal Year				
	FY16	FY17	FY18	FY19	FY20
Energy and Mineral Resources Division	19.9	34.5	41.1	48.2	56.6
Power Division	164.9	168.5	171.5	201	235.9
Total	184.8	203	212.6	249.2	292.5

Sixth Five Year ADP Allocations for Power & Energy Sector
(Taka billion FY 2011 current prices)

Division of Ministry of Energy Power and Mineral Resources.	Fiscal Year				
	FY11	FY12	FY13	FY14	FY15
Energy and Mineral Resources Division	10.80	15.13	17.17	20.12	22.89
Power Division	49.95	70.69	85.57	108.98	134.58
Total	60.75	85.82	102.74	129.10	157.47

Source: 8th Five-year Plan, Bangladesh Planning Commission
(http://plancomm.gov.bd/site/files/8ec347dc-4926-4802-a839-7569897e1a7a/8th-Five-Year-Plan)

Way forward

- Competitive private sector investment in electricity generation should be mobilized through proper legislation and a sound transparent procurement process. Case-by-case exemptions from competitive bidding and negotiated tariffs shall no longer be permitted.

- The public and private sectors need to share risks proportionately because the private sector is expanding and becoming a significant component of the electricity system. The private sector should now take additional market-related risks, like demand risk, as the market has adequately matured in recent years. Moreover, time has come to reexamine the possibility of a single-part tariff instead of the existing two-part tariff (capacity payment + energy payment) for private power plants.

- Providing subsidies in the energy or power sector are not uncommon in developing countries. However, subsidies cannot be justified when these are the result of inefficiency, underutilization of built capacity, excessive investment, or poor governance.

- Tariffs or subsidies should not be used to offset excessive investment and sectoral inefficiency that is not in the public interest. Therefore, the government should continually seek out the best investments, the most affordable primary fuel alternatives, and the least expensive electricity.

- Delayed implementation of large public baseload power plants has led to an excessive need for expensive liquid fuel private power plants. Therefore, many IPPs were set up to run for five years. But the government repeatedly extended their tenure of operations and incurred huge deficits due to subsidies given to these IPPs. These rental and quick rental projects should be phased out slowly.

- The Quick Enhancement of Energy and Electricity (Special Provision) Act - 2010 should be discontinued as this act prevents competitive bidding procedure of PSE and adopt the best procurement procedures. This Act puts the energy and power sector governance under question when this law indemnifies public officials, and allows them to exercise arbitrary practice where individual sanctity has been taken for granted.

- In order for the energy sector (Energy Division, Ministry of Power, Energy and Mineral Resources, Bangladesh) to become technically and financially capable of supplying local fuel for electricity generation, more funds need to be allocated to it. In addition, to utilize domestic coal of the highest quality, a sustainable coal policy has to be developed on an emergency basis.

Reference

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