CPD

Working Paper 150

The Power and Energy Sector in the National Budget FY2024

Addressing Operational and Non-operational Challenges

Helen Mashiyat Preoty
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Towards Carbon Neutral Economy

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The present paper titled ***The Power and Energy Sector in the National Budget FY2024: Addressing Operational and Non-operational Challenges*** has been prepared by *Ms Helen Mashiyat Preoty*, Research Associate, CPD (preoty@cpd.org.bd); *Mr Mashfiq Ahasan Hridoy*, Research Associate, CPD (mashfiq@cpd.org.bd); *Mr A S M Shamim Alam Shibly*, Senior Research Associate, CPD (shibly@cpd.org.bd); and *Mr Tamim Ahmed*, Senior Research Associate, CPD (tamim@cpd.org.bd).

Series Editor: *Dr Fahmida Khatun*, Executive Director, CPD.

Abstract

The power and energy sector of Bangladesh has been confronting several challenges that adversely affected various economic activities in households, agriculture, industries and businesses. These power and energy sector challenges require special attention from the National Budget FY23–24. However, the national budget for FY23–24 was a 'business as usual' budget for this sector instead of addressing significant challenges. So, the expectations are lower that the budget passed at the parliament would improve the sectoral health in particular. The study analysis shows that the power and energy sector has no good news in the early future, and load shedding is likely to continue in the coming months, hindering households, businesses, industry, and commercial activities. With huge excess reserves (about 50 per cent in FY25), the power sector will continue struggling to meet the capacity payment, subsidy requirements and fuel import payments. The mechanism of subsidy rationalisation under the IMF conditionality is found to be inefficient as it promotes passing the burden to the consumers' solely instead of ending subsidy through gradual phase-out of capacity payment. The study suggests further emphasis should be given to domestic gas exploration instead of the LNG-based power generation. Supportive fiscal measures must be promoted to encourage domestic and foreign investment in the development of renewable energy and strengthen the institutional capacity of the SREDA.

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Acronyms

ADP	Annual Development Plan
AIT	Advance Income Tax
APSCL	Ashuganj Power Station Company Ltd.
BAPEX	Bangladesh Petroleum Exploration and Production Company
BBL	Barell
BDT	Bangladeshi Taka
BERC	Bangladesh Energy Regulatory Corporation
BPC	Bangladesh Petroleum Corporation
BPDB	Bangladesh Power Development Board
CPGCBL	Coal Power Generation Company Bangladesh Limited
DESCO	Dhaka Electric Supply Company Limited
DPDC	Dhaka Power Distribution Company Limited
ECF	Extended Credit Facility
EGCB	Electricity Generation Company of Bangladesh
GHG	Greenhouse Gases
HFO	Heavy Fuel Oil
HSD	High Speed Diesel
IEPMP	Integrated Energy and Power Master Plan
IMED	Implementation Monitoring and Evaluation Division
IMF	International Monetary Fund
IPP	Independent Power Producers
ITFC	International Islamic Trade Finance Corporation
LNG	Liquified Natural Gas
MMBTU	Metric Million British Thermal Unit
MoF	Ministry of Finance
MoPEMR	Ministry of Power, Energy and Mineral Resources
MT	Metric Tonne
MW	Mega Watt
NBR	National Board of Revenue
OPEC	Organization of the Petroleum Exporting Countries
PGCB	Power Grid Company of Bangladesh
PV	Photovoltaic
RPC	Rural Power Company
RPGCL	Rupantarita Prakritik Gas Company Limited

RSF	Resilience and Sustainability Facility
SREDA	Sustainable And Renewable Energy Development Authority
T&D	Transmission and Distribution
USD	United States Dollar
VAT	Value Added Tax
WZPCL	West Zone Power Distribution Company

1. INTRODUCTION

The power and energy sector in Bangladesh has been passing a difficult time after experiencing considerable attainments for over a decade. Consequently, the sector has experienced with number of shortcomings in the last one year, including lack of capacity to pay bills for imported fossil fuels, disruption in power supply due to ongoing energy crisis, overburdened with dues of capacity payment to IPPs, and requirement of the substantial amount of subsidy. Addressing those shortcomings would not be possible only through fiscal-budgetary measures under the national budget. In fact, in a number of areas, major reform is needed in order to overcome the challenges. A part of those could be addressed through policy directives and another part could be through fiscal-budgetary measures. Hence, it was expected that the National Budget for FY23–24 will provide policy directives to address the structural and institutional weaknesses as well as ensure budgetary allocation to address operational barriers.

The National Parliament passed the National Budget for FY23–24 on 26 June 2023. Likewise, the earlier budgets, the power and energy sector has received attention for being one of the top-priority sectors. It is important to examine how the national budget has taken into consideration of the institutional, structural, and operational challenges.

Against this backdrop, the study examines the National Budget FY23–24 for the power and energy sector from the view of its allocative priorities as well as its policy perspectives. The specific objectives of the study are as follows:

a) To review the structural and institutional challenges of the power and energy sector and how those challenges have been addressed in the national budget for FY23–24;
b) To analyse the fiscal and budgetary measures to be implemented in the power and energy sector under the national budget for FY23–24; and
c) To examine the allocative priorities for the development of the clean/renewable energy and power sector during FY23–24.

2. STATE OF THE POWER AND ENERGY SECTOR DURING FY22–23: BRIEF REVIEW

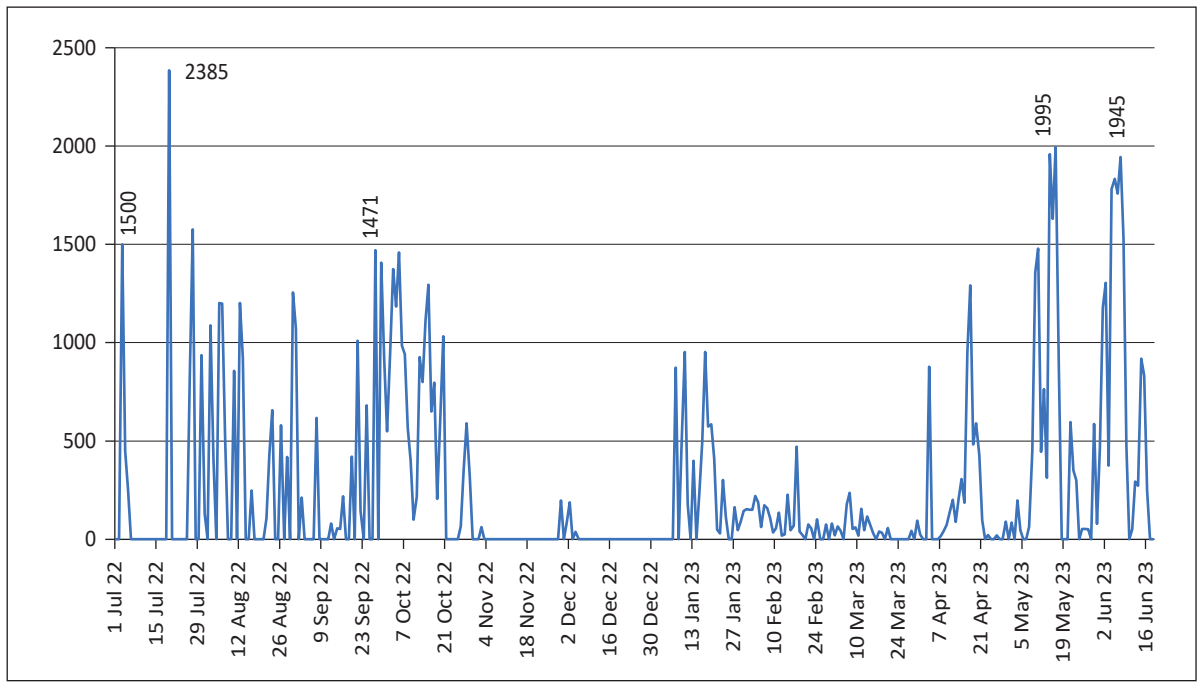
2.1 Frequent power outages

As mentioned above, the power and energy sector has experienced several shortcomings during FY22–23. Most importantly, there was nationwide regular power outage (load shedding). This is reflected in Figure 1 — interruption in power supply is reflected almost every day except in the months of winter (November and December 2022) when demand for electricity reduces in Bangladesh. The highest outage of electricity was observed on 19 July 2022 (2385 MW). On average, the per day power outage during FY22–23 was 291 MW. A spatial analysis of power outages shows that the highest level of outages happened in Dhaka and Khulna regions, followed by Mymensingh and Cumilla. In general, rural areas have also experienced overwhelming power outages as high as 10 hours a day (BPDB Load Shedding Data).

2.2 Frequent shutdown of power plants

During FY22–23, several big power plants were intermittently shut down. Maitree Super Thermal Power Project (Rampal coal-fired power plant) was shut down for 11 days (23/04/2023–03/05/2023). Payra was initially shut down on 25 May 2023. To operate the plant, about 40,000 tonnes of coal

Figure 1: Daily power outages (load shedding): July, 22 – June, 23



Source: Authors' illustration from BPDB load shedding data.

was imported on 26 June 2023. However, with the imported coal, electricity generation in full capacity was possible for only four days. The same also happened in case of the Patuakhali power station (RPCL/NORINCO).

2.3 Payment dues to a number of power plants

A number of independent power producers (IPPs) reported that a substantial part of payments for power generation from the government is not yet cleared by the authorities concerned. As reported in the media, the amount of due payment up to March 2023 was as high as Tk. 20,000 crore. Most of the IPPs have been contracted to pay the bill considering the exchange rate of the BDT against the USD. Since Bangladeshi taka has substantially devalued during FY23 (16.9 per cent/year), the financial burden on the public sector power recipient companies has substantially increased. Moreover, several contracts with the IPPs have been signed to pay in USD. Given the shortage of the USD, the payment could not be cleared as per contract and time.

2.4 Difficulty in opening LCs for importing fuels

Bangladesh Petroleum Corporation (BPC) – the public entity entitled to import fuels — usually opens 17 to 18 letter of credits (LCs) per month in different banks. Through these LCs, it imports about 500,000 tonnes of refined fuel and 100,000 tonnes of crude oil every month. However, the commercial banks expressed their disinterest in opening new LCs for the BPC, as a large amount of bills are still outstanding to the organization. As of April 2023, the total outstanding bill to BPC is as high as USD 350 million. No private bank has been opening LCs for the BPC. The publicly owned banks including Sonali, Janata and Rupali banks have opened a limited number of LCs every month – only 4–5 LCs per month. As a result, the local stock of fuels has been gradually declining — as per the reporting of some domestic newspapers, diesel stock is only for 30 to 35 days as of 2nd June 2023.

2.5 Borrowing short-term credit from international sources to import fuels

Given the shortages of foreign exchanges, the BPC found it difficult to import fuels. Hence, it took short-term credit from international sources — about USD 2.3 billion loan has been taken from the Jeddah-based Islamic Trade and Finance Corporation (ITFC). This helped the BPC to open new LCs to import fuels to reduce the deficit in fuel supply in the local market. According to the BPC, the ITFC loan would not be used to import refined oil or diesel; instead, it will be used to import crude oil only.

3. REVIEW OF THE CHALLENGES CONFRONTED BY THE POWER AND ENERGY SECTOR

The above-mentioned shortcomings of the power and energy sector are the reflection of a number of policy and law-related, institutional and operational challenges. At present, the sector is confronting the following three categories of challenges. The majority of these challenges are structural, institutional and operational in nature.

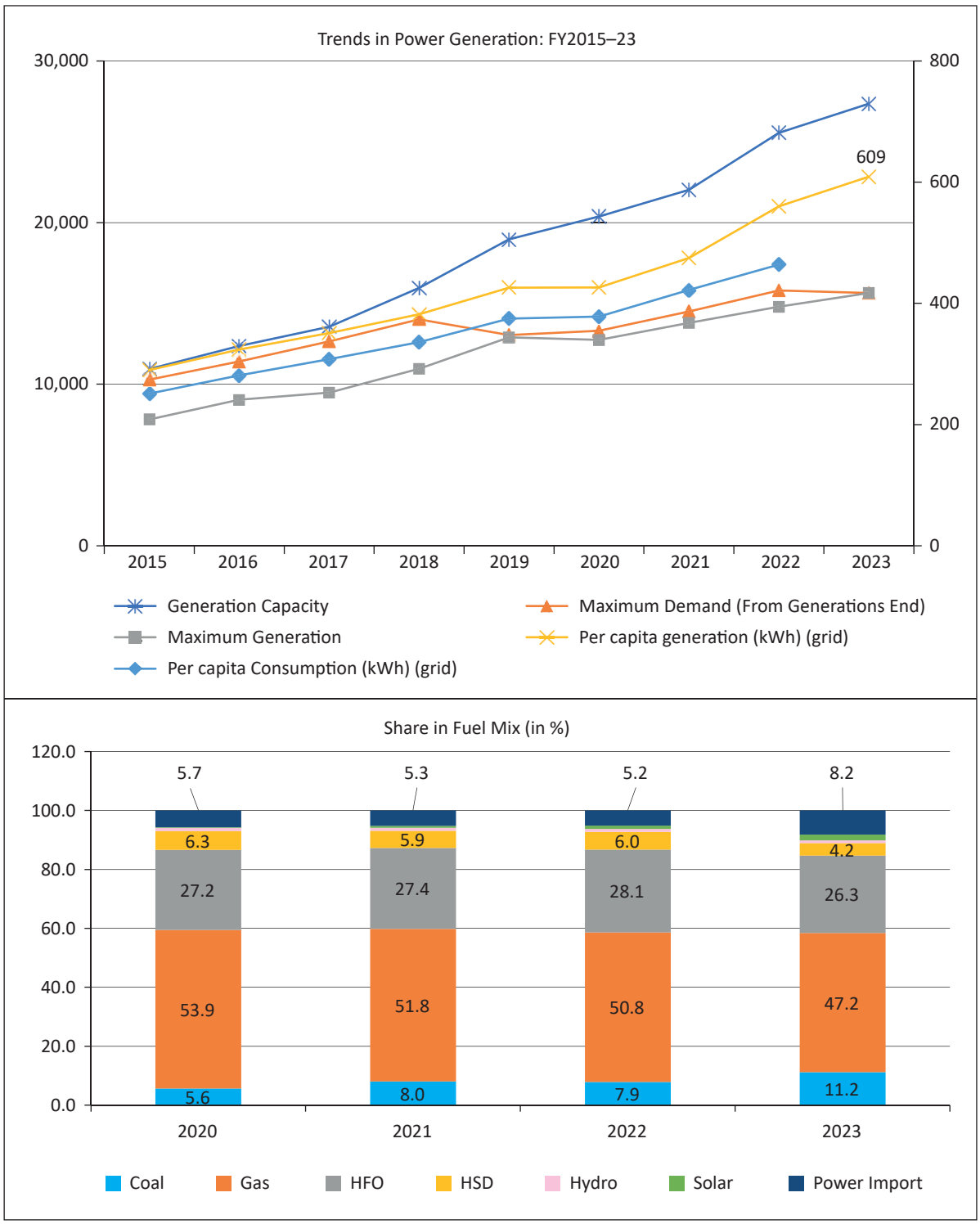
i. **Operational challenges:** The operational challenges of this sector include (a) Power generation related challenges; (b) High energy price continues to dominate the global market, and high import bills for energy would cause major part of the depletion of the country's forex reserve, and (c) Difficulty in continuing import of fossil fuels at a high cost to operate the power plants in maximum capacity.
ii. **Institutional challenges:** The institutional challenges of the power and energy sectors are mainly (a) Growing difficulty in the adjustment of BPDB's huge losses; (b) Lack of transparency in financial reporting of the energy importing and power producing companies; and (c) Tariff rate adjustment as part of the IMF conditionality faultily passing the burden to the consumer.
iii. **Policy/law-related challenges:** There are also some prevailing policy/law related challenges in this sector such as: (a) Policy amendments (BERC Ordinance 2022 & continuation of the quick enhancement of electricity and energy supply (special provision) act 2010) have weakened the governance structure; (b) Continuing burden of capacity payment making it difficult to pay in the future; (c) Flattening the progress in transmission and distribution continuously made it difficult to get the maximum benefit; (d) Continuous negligence towards renewable energy reduces the opportunity to diversify the fuel-mix; and (e) Neglecting the domestic gas sector development towards promoting import of LNG.

3.1 Operational challenges

3.1.1 Generation and fuel mix-related challenges

At present, the power sector is over-burdened with excess generation capacity. As of May 2023, the total power generation capacity reached 27,481 MW. Out of that, about 88.3 per cent (24,263MW) is on-grid and the remaining 12 per cent (3,218 MW) is off-grid. This huge power generation capacity has become a growing concern for the power sector as the maximum demand has not increased at the same pace over the years. During FY15–23, the installed power generation capacity increased by 150 per cent, whereas the maximum demand during the same period increased only by one-third of the capacity (52 per cent). The gap between per capita generation capacity and per capita consumption has widened over the years — from as low as 73 MW in 2015 to as high as 145 MW in 2023 (Figure 2).

Figure 2: Trends in power generation and fuel mix FY2015–23



Source: Authors' Illustration from BPDB Data.

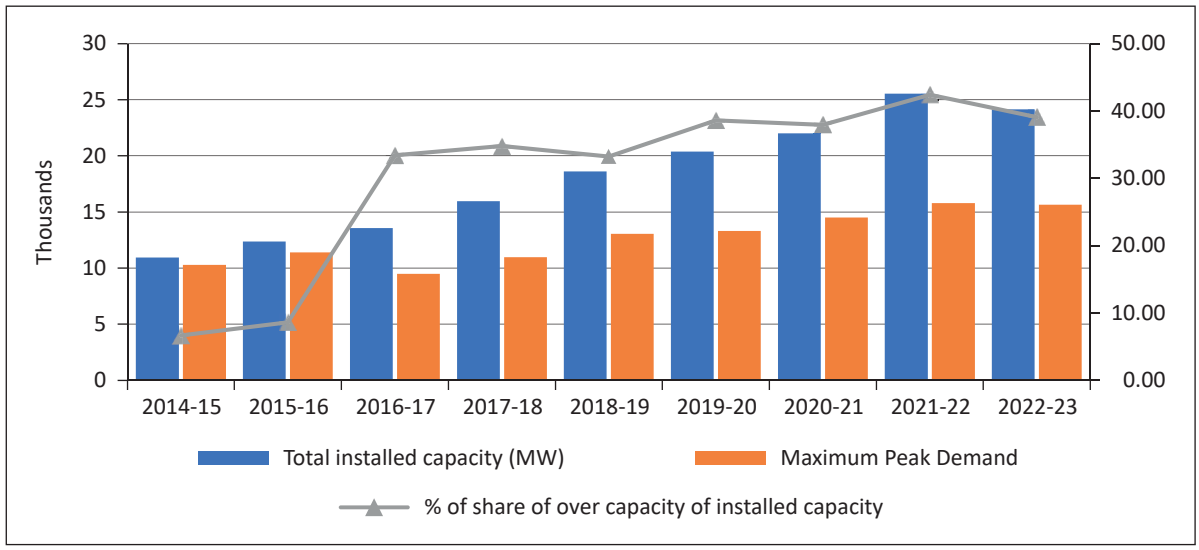
The energy mix of the power generation is fully dominated by fossil fuel — about 97 per cent of the generation capacity is dependent on different types of fossil fuels including natural gas, liquefied natural gas (LNG), high speed diesel (HSD), furnace oil (HFO) and coal (Figure 2). The share of renewable energy in power generation is as low as 3 per cent. The dominance of fossil

fuel has increased over the years particularly during the covid and the post-covid periods. Among the different energy mixes, gas including imported LNG is still dominating the fuel mix, although its share has slightly decreased from 53.9 per cent in 2020 to 47.2 per cent in 2023. The share of coal in the energy mix has spiked from 5.6 per cent in 2020 to 11.2 per cent in 2023. According to the BPDB progress report of June 2023, an additional 6,167 MW worth of coal-based generation capacity is to be added into the grid by 2026 which would further raise the share of coal in the overall energy-mix. The shares of HFO and HSD in the fuel mix during the mentioned period is more or less constant. Overall, there is little reflection of the government's official position to reduce the share of fossil fuel in the energy mix which is supposed to be started with the reduced share of coal. Instead, the share of coal and perhaps the share of LNG is likely to rise in the coming years.

The current energy-mix is heavily dependent on imported fossil fuels. Five (5) per cent of the total energy required for the power sector has been imported from different international markets (Power Division Annual Report 2021–22). As the single importing authority, different public agencies including Petrobangla, RPGCL, coal power and BPC are responsible for importing the required amount of energy. The overwhelming dependence on imported fossil fuels as well lack of energy diversification through renewable energy, it is difficult to manage the required funds for import during the times of uncertainty in the global energy market particularly during the time of Ukraine-Russia War. Moreover, limited financial capacities of these public agencies as well as shortages of forex reserve with the public exchequer, ensuring the required supply of energy for near to the maximum attained electricity (15,000MW on grid) is found to be difficult.

A major consequence of the widened gap between electricity generation capacity and electricity consumption is the rise in reserve margin (Figure 3). In true sense, this reserve margin has turned into excess generation capacity which caused huge financial burden on the Bangladesh Power Development Board (BPDB). As discussed in the following section, the burden for capacity payment has been skyrocketing which is being difficult to accommodate even with subsidised credit taken from the government.

Figure 3: Trend of rise of reserve margin



Source: Authors' Illustration from BPDB Data.

3.1.2 Escalating energy prices and their devastating impact on forex reserves

From early to mid-2023, the price of fossil fuels in the global energy market has shortly declined compared to that of the earlier year (Table 1). However, this deceleration did not continue further particularly after the announcement of Saudi Arabia to reduce the daily supply of crude oil from 1 July 2023. As part of the understanding OPEC countries, Saudi Arabia has decided to reduce the supply of crude oil by 1 million barrels per day from 1 July 2023. On the same day, Russia has also announced to cut down its daily oil export by 0.5 million barrels. Such a strategic decision to reduce global supply by major oil exporting countries has adverse impacts and implications on availability of crude oil as well as its price.

Table 1: Energy price forecast

Type	**Q3/2023** ***(July-September 2023)***	**Q4/2023** ***(October-December 2023)***	**Q1/2024** ***(January-March 2024)***
Crude oil, Brent (USD/bbl)	81.12	83.62	86.19
Natural gas (USD/mmbtu)	2.99	3.19	3.41
Coal (USD/mt)	138.93	144.49	150.27

Source: WB Pink Sheet.

The projected high price of crude oil, natural gas and coal reflects the same. All the prices of energy are likely to rise at the end of 2023 and early 2024. Hence, the financial burden of importing coal, LNG and furnace oil would not be eased within the next one year.

3.1.3 Difficulty in continuing import of fossil fuels at high cost to operate the power plants in maximum capacity

With the rise in demand for energy for power plants as well as high energy prices in the global market, total costs for imported fossil fuel have significantly increased within a few years. Between FY19–22, the costs for importing furnace oil and crude oil have increased by 36.6 per cent — an additional amount of Tk. 2,695 crore was spent within three years. However, even such additional expenses could not help generating electricity at the maximum attainable level (15,000 MW) let alone generating electricity at the full capacity (25,000 MW).

An estimate has been made about how much foreign exchange will be required to operate at the maximum attainable level (15,000 MW). Table 2 presents the estimated requirement of fuel and the requirement of foreign exchange for this purpose. Considering the current market price, a total of US$ 10 billion would be required per year to import different types of fuels. In other words, about USD 833 million needs to be spent every month for this import. On the contrary, almost a similar amount of foreign exchange (USD 884 million) was used to meet the yearly requirement of fuel in a normal year (e.g., FY18–19). Given the limited supply of forex reserves and banks' limited foreign currency available, importing the required amount of fuel even to reach the maximum attained level (15,000 MW) is difficult.

Table 2: Estimated fuel import requirement and dollar needed to import

Fuel type	Requirement to generate per MW of electricity (estimated)	Source wise distribution of maximum attained generation (15,000 MW)	Requirement of different energies to generate maximum attained level in a year	Requirement of foreign exchange to meet the required import of fuels in a year (billion USD)
Coal	9.2 Tonnes	2,668	8,959,144 Tonnes	1.39
HFO	2.2 Tonnes	5,255	4,282,106 Tonnes	3.20
HSD	1.2 Tonnes	787	333,216 Tonnes	0.27
Gas (including RLNG)	0.14	7,406	378,447	–
LNG	–	–	–	5.30
Total cost (billion USD)	–	–	–	10.16

Source: Authors' calculation.

3.2 Institutional challenges

3.2.1 Growing difficulty in adjustment of BPDB's huge losses due to heavy capacity payment

The Bangladesh Power Development Board (BPDB) — the state-owned agency to deal the power sector related utility services — manages its financial account by earning revenue by selling electricity against meeting the operation expenses particularly related to purchasing electricity from different power producers. Traditionally, the BPDB's financial account is in red as it needs to sell electricity at retail level at a subsidised price. A part of this loss has been adjusted by raising the retail price of electricity. In recent years the loss of BPDB has escalated, which is very difficult to explain only through subsidised retail prices offered to the consumers.

The financial condition of the BPDB has been worsening over the years. Operating loss reached from Tk. 6,200 crore in FY18 to Tk. 27,477 crore in FY22 — a rise of 343 per cent within a period of four years (Table 3). Of this skyrocketing change, the operating loss increased by 217.1 per cent in a single year (FY22).[1]

Table 3: Financial situation of the BPDB

Indicator	Operating income/expenses					Change % per year			
Head of Accounts	2018	2019	2020	2021	2022	2018-19	2019-20	2020-21	2021-22
Operating Revenue	30604	34507	35535	41770	42906	12.8	2.9	17.6	2.7
Operating Expenses	36812	39553	39887	50434	70383	7.5	0.8	26.4	39.6
Operating Profit/Loss	-6207	-5046	-4352	-8664	-27477	-18.7	-13.8	99.1	217.1

Source: BPDB annual reports.

[1]During FY22, the operating revenue has increased by only 2.7 per cent against the rise of operating expenses by 39.6 per cent.

A large part of BPDB's financial loss in recent years is attributed to the payment of large amounts as capacity charges to the IPPs, rental and quick rental power plants. Table 4 presents the capacity payment made by the government during FY17–FY23. The capacity charges have increased from Tk. 5,376 crore in FY17 to as high as Tk. 28,000 crore in FY23 (estimated). In other words, the payment has increased by 420 per cent within a period of six years (between FY17 and FY23) (Table 4).

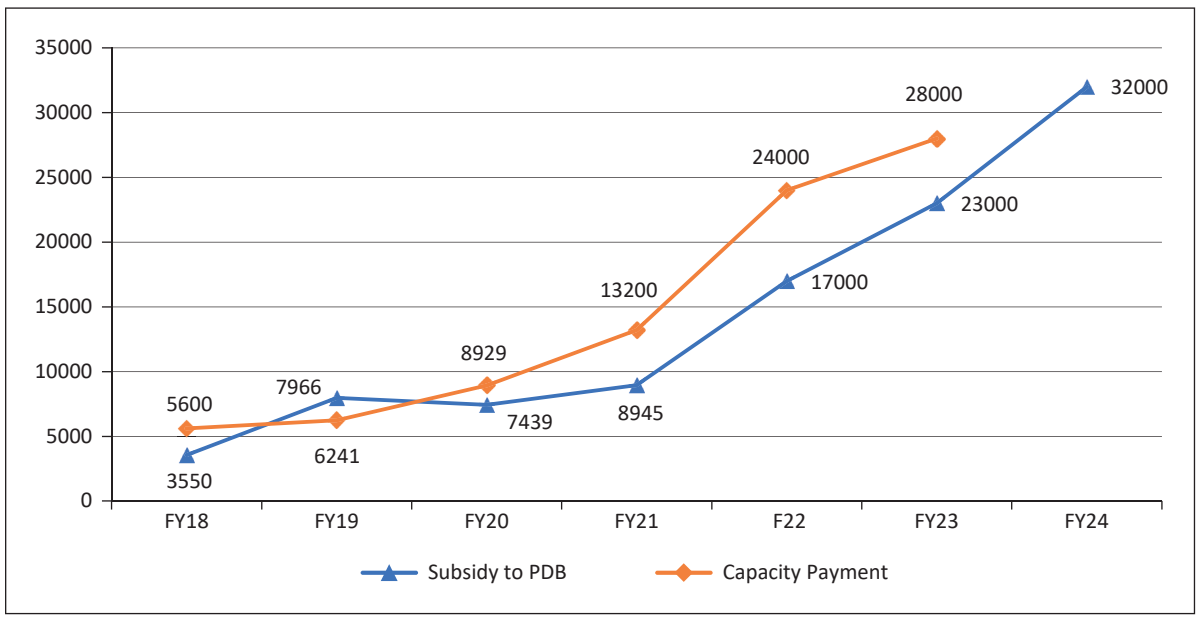
Table 4: Capacity payment over the years

Year	Capacity Payment (crore taka)	% Change in capacity payment
2016–17	5,376	6.6
2017–18	5,600	4.2
2018–19	6,241	11.4
2019–20	8,929	43.1
2020–21	13,200	47.8
2021–22	24,000	81.8
2022–23 (Estimated)	28,000	16.7

Source: Authors' calculation from MoF and BPDB Data.

The BPDB usually makes the payment by taking subsidised credit from the government. Figure 4 below shows that there is a positive correlation between the capacity payment and the subsidised credit by the BPDB. However, the subsidy taken by the BPDB is found to be inadequate to meet the payment obligation to the IPPs. Over the last few years, the BPDB has been passing through its capacity payment in the following years due to lack of funds available in hand. Hence, a part of the capacity payment in recent years is the unrealised payment of the previous years. It might happen that this unrealised payment is shown as credit which made it difficult to understand how weak the financial state of the BPDB is. In other words, the BPDB's financial state seems much bleak than what is observed in its published financial account.

Figure 4: Trend of subsidy and capacity payment



Source: Authors' Illustration from MoF and BPDB Data.

3.2.2 Subsidised credit for the power and energy sector deprived social sectors in getting required level of funding

Given the losses incurred over the last several years, the BPDB needed to borrow from the government. The amount of subsidised credit has been increasing from Tk. 4,000 crore in FY17 to Tk. 23,000 crore in FY23 which is apprehended to rise to Tk. 32,000 crore in FY24. Taking such a huge amount of subsidised credit made it one of the highest recipients of subsidised credit from the government – it alone accounted for 37.9 per cent of the total subsidy. This subsidised credit is mainly taken to meet the large amount of capacity payment to be paid to the IPPs, quick rental and other private entities. It is found that there is a strong positive correlation between the subsidised credit received and capacity payment made by the power sector (correlation coefficient: 0.96).

Subsidising power and energy to ensure access to energy and power at an affordable price to mass people is a widely applied instrument in developing countries. Most of the net energy-importing countries have undertaken various subsidisation measures at local market to address the global high price of energy in recent years. Table 5 presents the level of subsidisation by selected developing countries of Asia. Among the peer countries, Bangladesh has been providing the highest level of subsidy. Its subsidisation rate in 2021 was 34 per cent which is the highest among Asian energy importing countries (Indonesia: 32 per cent, Pakistan and Sri Lanka: 21 per cent, India: 16 per cent, Vietnam: 11 per cent, and China and Thailand: 5 per cent). Though the amount of subsidy per capita in Bangladesh is still at a modest level (USD 45), the subsidy — GDP ratio is the highest in country (5.6 per cent) followed by Pakistan (3.3 per cent). Given the fiscal constraints as well as fiscal pressure in most of the developing countries including Bangladesh, utilising such a large amount of subsidy in the power sector would further squeeze the resource availability for the social sectors. Hence, the social sectors are deprived of getting sufficient funds for making necessary investments.

Table 5: Subsidy for the power and energy sector in selected Asian energy importing countries

Country	Average subsidies rate (%)	Subsidy per capita ($/ person)	Total subsidy as a share of GDP (%)
China	5%	37	0.60%
India	16%	34	2.60%
Indonesia	32%	89	2.70%
Malaysia	9%	93	1.00%
Pakistan	21%	37	3.30%
Thailand	5%	34	0.60%
Sri Lanka	21%	49	1.60%
Viet Nam	11%	46	2.30%
Bangladesh	34%	45	5.60%

Source: IEA website, accessed on 20 June 2023.

3.2.3 Lack of transparency in financial reporting of the energy importing and power producing public entities

The financial reports of the energy and power-related public agencies including the BPDB, BPC and Petrobangla are not out of question. Table 6 presents financial information of selected indicators of these agencies including net profit/loss, dividends payable to government exchequer, long-term loan repayment and investment in fixed assets, etc. It is assumed that incurring losses by these agencies is likely to have negative impact on the agencies' dividends payable to government exchequer, long-term loan repayment and investment in fixed assets. Table 6 also shows that despite the losses incurred by the BPDB, BPC and Petrobangla during FY22 and FY23, and the losses projected in FY24, most of the above-mentioned indicators are with positive figures in case of BPC, BPDB and Petrobangla. It is not clear, despite incurring losses, how these companies have provided dividends and invested in fixed assets. Possibly it might happen that these companies without proper adjustment of their losses have made investment and paid dividends, on one hand and taking soft loans from the government showing their so-called 'financial losses'. Such losses could be used as a logical basis for upward adjustment of retail prices.

Table 6: Budget summary of BPC, BPDB and Petrobangla

(in crore/BDT)

Particulars	FY21–22	RFY22–23	BFY23–24
BPC			
Net Profit/Loss	-2706	-7985	-10019
Dividends payable to Government Exchequer	1000	200	100
Total Contribution Payable to Government Exchequer	25798	11867	14263
Long-term Loan Repayment	0	15274	14000
Investment in Fixed Asset	1013	2052	3924
BPDB			
Net Profit/Loss	-3233	-6958	-4959
Dividends payable to Government Exchequer	0	0	0
Total Contribution Payable to Government Exchequer	1933	2051	2102
Long-term Loan Repayment	2543	2170	1809
Investment in Fixed Asset	4064	4878	5570
Petrobangla			
	FY21–22 (Temporary)	**RFY22–23**	**BFY23–24**
Net Profit/Loss	696	472	449
Dividends payable to Government Exchequer	618	460	460
Total Contribution Payable to Government Exchequer	618	460	460
Long-term Loan Repayment	448	300	280
Investment in Fixed Asset	56113	5	19

Source: SOE Budget summary FY2023–24.

3.2.4 IMF conditionality would not be sufficient to address the challenges of the power and energy sector

Bangladesh has taken a loan of USD 4.7 billion from the IMF in order to create fiscal space to enable greater social and development spending, strengthen the financial sector, boost fiscal and governance reforms and build climate resilience'. Of the total amount, USD 3.3 billion (70.2 per cent of total) will be allocated under the Extended Credit Facility (ECF) and US$ 1.4 billion (29.8 per cent) under the new Resilience and Sustainability Fund (RSF) (Table 6).

Table 7: Phase-wise implementation of the reform conditions

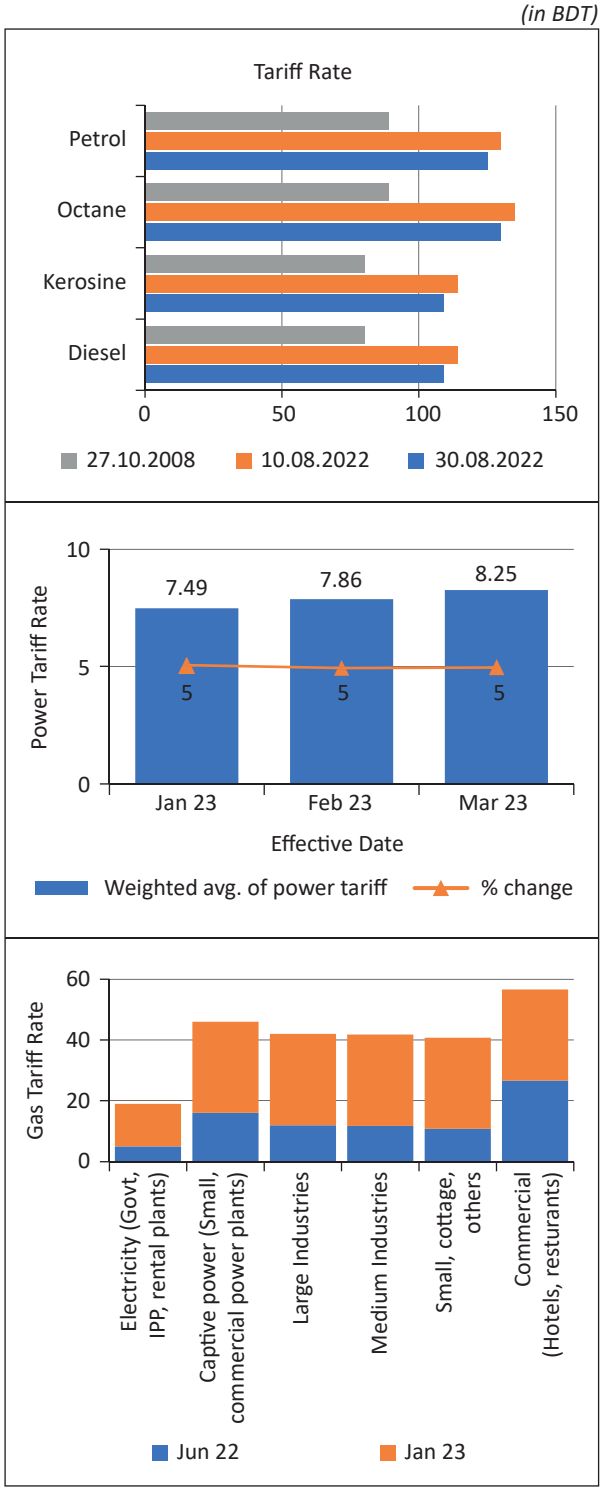
Reforms for Bangladesh	Periodic reviews					
	1st	2nd	3rd	4th	5th	6th
Adoption of periodic - formula-based price						
Implementation of periodic formula-based price						
Adjustment mechanism for petroleum products						
Setting price adjustment mechanisms for petroleum products						
Adoption of a sustainable PPP paper and an associated action plan						
Adoption and implementation of a methodology for embedding climate change in the MTMF						
Issuing a circular on an update to the Green Book						
Adoption of an updated PPP policy and framework						
Updating green bond financing policy, particularly the green taxonomy						
Adoption of an updated PPP policy and framework						
Conducting and publishing climate stress testing by BB						
Updating the policy on Green Bond Financing by BB						

Source: Authors' Illustration from IMF press release.

As part of taking the financial support, Bangladesh has agreed to undertake several reform measures. One of the important reform areas will be to address the challenges concerning clean energy development and vulnerabilities of climate change. Of the loan, under the RSF (USD 1.4 billion) will be disbursed under the RSF, which is the main component targeting clean energy and climate change-related concerns (i.e., adaptation and mitigation measures). The IMF conditionalities related to the power and energy sector have touched upon two broad areas: a) reducing fiscal burden by withdrawing subsidies, and b) addressing the climate vulnerabilities by promoting clean and green transition. Although the measures have implications for the sector but those are not sufficient and in some instances those measures are counter-productive to address the key challenges of the power and energy sector. For example, rationalisation of subsidies for the power sector has been implemented by passing through the burden to the consumers by raising electricity tariff at the retail level. Instead, it is important to shift a part of the burden to the independent power producers by withdrawing the payment of capacity charges. Since the problems are not necessarily fiscal in nature, rather more structural in nature, a set of additional initiatives are required to address those challenges.

Figure 5: Change in tariff rates

(in BDT)



Source: Authors' Illustration.

3.2.5 Tariff rate adjustment as part of IMF conditionality gaultily passed through the burden to the consumer

As discussed above the government has taken initiatives to rationalise the energy tariff in connection to reduce the fiscal burden of the BPDB. Tariffs of petrol, octane, kerosene, and diesel have been increased on 30 August 2022. Although there is an understanding that the tariffs will be adjusted in accordance with global market price of petroleum products, this has yet to be implemented. Hence, despite the reduction of fuel price in the international market, tariffs in the local market were not reduced afterwards. Similarly, power tariff has been hiked from Tk. 7.49 to Tk. 8.25/kwh between January to March 2023. The tariff has been increased by five (5) per cent every month from January to March 2023, totaling 15 per cent hike in the electricity price (Figure 5).

The government has increased retail price of gas by 179 per cent in January 2023 considering the hike of market price of imported LNG (Figure 5). However, even though the LNG price in the global market shows a downward trend, there is no sign of downward adjustment of gas price at the local market. Instead, LNG has been imported at a higher amount to meet the gas shortages which caused a higher fiscal burden to the government.

This adjustment of energy and power tariffs indicated that the consumers need to take the full burden. However, higher financial burden of the concerned public agencies is not attributed to higher price of energy in the international market, rather this burden is caused because of excess generation capacity created in the energy sector for which the government has committed to allocate capacity payment. Hence, the financial burden of the energy and power supplying agencies has been faultily passed on to the consumers. Appropriate measures need to be taken to phase out capacity payment for IPPs for power generation.

3.3 Policy/Law-related challenges

3.3.1 Burden of over generation capacity will continue to rise and made it difficult to pay capacity charges in the future

Despite having unutilised capacity, setting up existing power plants will further rise the over generation capacity in the coming years. As per the ongoing plan of setting up new power plants by 2025, a total of 6,218 MW of additional capacity will be added. Such excess capacity will further raise the pressure on capacity payment. According to the BPDB, the total installed capacity will reach 31,091 MW in 2025 (Table 8). The over generation capacity can hike from 36 per cent in FY23 to as high as 50 per cent in 2025.[2] Hence the capacity payment is expected to rise even further. How and from which sources, the BPDB will be able to clean the capacity charges will persistently remain a key question in the coming future.

Table 8: Estimates of power generation capacity and reserve margin (Excess Capacity)

Indicators	Capacity in MW
Present Generation Capacity	27361.0
Generation to be added by 2025	6218.0
Capacity to be phased out	2487.9
Generation Capacity by 2025	31091.0
Possible Maximum Demand as per BPDB	19900.0
Over generation capacity as per PDB's demand	11191.0
Share of overcapacity (%)	36%
Possible Maximum Demand considering 4% growth rate in demand	16925.0
Over generation capacity as per CPD's estimation	14166.0
Share of overcapacity (%)	46%
The demand will remain same as the current year	15648.0
Over generation capacity	15443.0
Rate of over generation capacity (%)	50%

Source: Authors' Calculation.

3.3.2 Flattening the progress in setting up transmission and distribution lines continuously made it difficult to get the maximum benefit

While the length of transmission and distribution lines have increased over the years, the growth has been flattened particularly in cases of distribution lines (Figure 6). Setting up distribution lines has increased by merely 0.3 per cent in FY23 from the previous year — over the years there is a

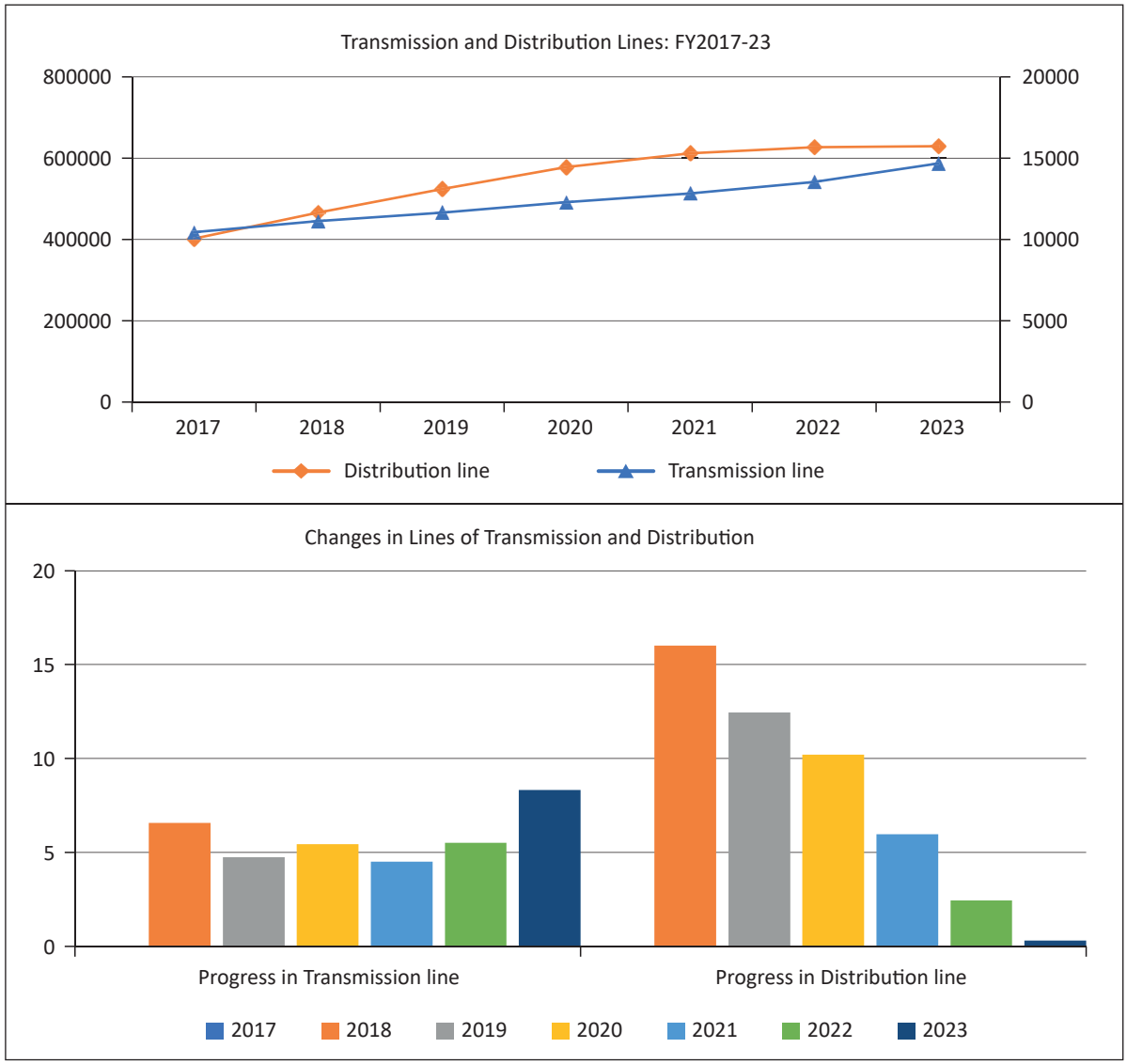
[2]Based on three different assumptions, the over generation capacity by 2025 has been estimated.

I. ***Possible Maximum Demand as per BPDB:*** By 2025, the maximum power demand will ne 19,900 MW according to BPDB estimates with the installed generation capacity to be reached at 31,091 MW. This will lead the share of overcapacity at 36 per cent.

II. ***Possible Maximum Demand considering 4 per cent growth rate in demand:*** Considering 4 per cent growth rate in electricity demad, maximum demand will reach 16,925 MW in 2025. It will increase the over generation capacity even further by 46 per cent (14,166 MW).

III. ***The demand will remain same as the current year:*** Lastly considering that the power demand will remain the same in 2025 as it is now in 2023, the over generation capacity will be 15,443 MW in 2025. In that case, 50 per cent of the total generation capacity will remain unutilised in 2025.

Figure 6: Trend of transmission and distribution lines



Source: BPDB Annual Reports.

gradual deceleration in setting up distribution lines (from 16 per cent in FY18 to 0.3 per cent in FY23). On the contrary, the growth of transmission lines has made noticeable progress — as transmission lines have increased at 8.3 per cent in FY23 over the previous year. It has maintained a growth between 4 to 6 per cent level over the years. Such a diverse nature of growth in transmission and distribution lines is a major reason behind poor load management. This happens at a time when a huge excess power generation capacity remains- a paradoxical situation indeed!

3.3.3 Continuous negligence towards renewable energy reduces the opportunity to diversify the fuel-mix and to address fossil fuel related challenges

Although the renewable energy target is set at 40 per cent by 2041 (24,000 MW), total installed renewable energy-based generation capacity at present is only 1,184 MW, which is only 4.3 per cent of total installed capacity of electricity (Table 9). In order to reach the target of 40 per cent of renewable energy by 2041, no major initiative has so far been taken.

Table 9: Present renewable energy situation

Technology	Off-grid (MW)	On-grid (MW)	Total (MW)
Solar	365.51	584.13	949.64
Wind	2.00	0.90	2.90
Hydro	0.00	230.00	230.00
Biogas to Electricity	0.69	0.00	0.69
Biomass to Electricity	0.40	0.00	0.40
Total	368.60	815.03	1183.63

Source: SREDA website.

The new draft IEPMP has been set to undermine the potential of renewable energy target set by the prime minister. In the draft IEPMP, the target is faultily revised to 'Up to 40 per cent of power from cleaner energy by 2041'. Such a shift in the narrative weakens the government's stance and creates confusion among the masses regarding renewable energy. The cleaner energy includes non-tested technologies such as ammonia, hydrogen, critical and super critical carbon capture unit IEPMP shows that only 8.8 per cent of total electricity (mere 5,280MW) is generated from renewable energy sources.

3.3.4 Neglecting the domestic gas sector development towards facilitating import of LNG

With depleting domestic reserves of natural gas, there is a considerable rise of unmet demand for natural gas mainly in the gas-based power plants (Table 10).[3] As much as 19.94 trillion cubic feet of gas has already been extracted and the remaining reserve is 8.82 trillion cubic feet which would be depleted within 10 years. Hence, the unmet demand for gas over the years has been increasing — from only 1.35 per cent in FY18 to as high as 16 per cent in FY22, which has been partly met by increasing import of LNG. LNG import has been increasing — from 0.12tcf in FY19 to 0.26tcf in FY23. However, this amount of supply met only 26 per cent of total gas demand. The cost incurred for imported LNG was much higher compared to that in domestic supply of gas knowing the fact that domestic gas price is set at below the international market price of gas. The financial burden was further increased when the government decided to import from spot market at high cost in FY21 which continued in FY23.

Table 10: Domestic production, demand for gas and imported LNG

FY	Domestic production (TCF)	Total consumption (TCF)	% of Demand unmet with only natural gas reserve	R-LNG supply (TCF)
2017–18	0.97	0.98	-1.35	
2018–19	0.96	1.04	-7.69	0.12
2019–20	0.89	0.99	-10.60	0.20
2020–21	0.88	1.02	-13.26	0.22
2021–22	0.84	1.00	-16.00	0.26

Source: Authors' estimation from Bangladesh Economic Review.

[3]The state minister said that the country's primary gas reserve, including the stock of the newly invented Ilisha gas field, stands at 40.43 trillion cubic feet while the extractable gas reserve stands at 28.76 trillion cubic feet.

Instead of exploring more gas from domestic gas blocks, there is a tendency to import LNG at a high cost to meet the demand. Since 2009, only 19 wells have been drilled which is very low to meet the requirement — despite having funds under the 'Gas Development Fund' no major effort has been made to generate gas wells. According to the MTMPS, the government has a plan to dig another 46 wells by 2024 with the objective of increasing gas generation capacity to 618 million cubic ft. As per the Gas Development Fund report, at present only 7 drilling wells (exploratory and appraisal cum development) are ongoing. The allocated budget for these drilling projects is Tk. 1,074.7 crore. The rate of implementation of these projects is also poor — some of the projects made progress as low as 6.4 per cent while some others reached as high as 63.3 per cent. The projects for 2D and 3D seismic surveys were long overdue.

In contrast, the fund for gas development has been used for purchasing LNG (Tk. 2,000 crore) which is a major counter-measure towards gas sector development in the country. As per CPD's calculation, the majority of the required funds for importing energy in the coming years, as estimated (USD 5.3 billion) will go for importing LNG (Table 2). This large amount of money can be saved if the focus is given to developing the domestic gas base. Extractions from the unutilised and unexplored gas mines should be started to meet the immediate demand.

3.3.5 Policy amendments have weakened the governance structure

The government has amended the BERC Act 2003 in 2022. Such an amendment has created scope to make decisions arbitrarily by the MoPEMR or BPDB or BPC or Petrobangla on setting/revising the energy prices. Prior to the amendment, the Bangladesh Energy Regulatory Commission (BERC) held public hearing on proposals for revision of retail tariff which was part of an accountability as well as a participatory mechanism. Under the amended Act, such accountability/participatory mechanism scrapped which is replaced by executive decision-making system without having any accountability. The BPDB/Petrobangla may take decisions without any directives from the BERC. Such a decision-making system has further weakened the BERC. In fact, BERC's strong monitoring role would be much needed when the government adopts a market-based pricing model as part of IMF's conditionality. Under the existing stature, the BERC could hardly play any role in ensuring market-based pricing.

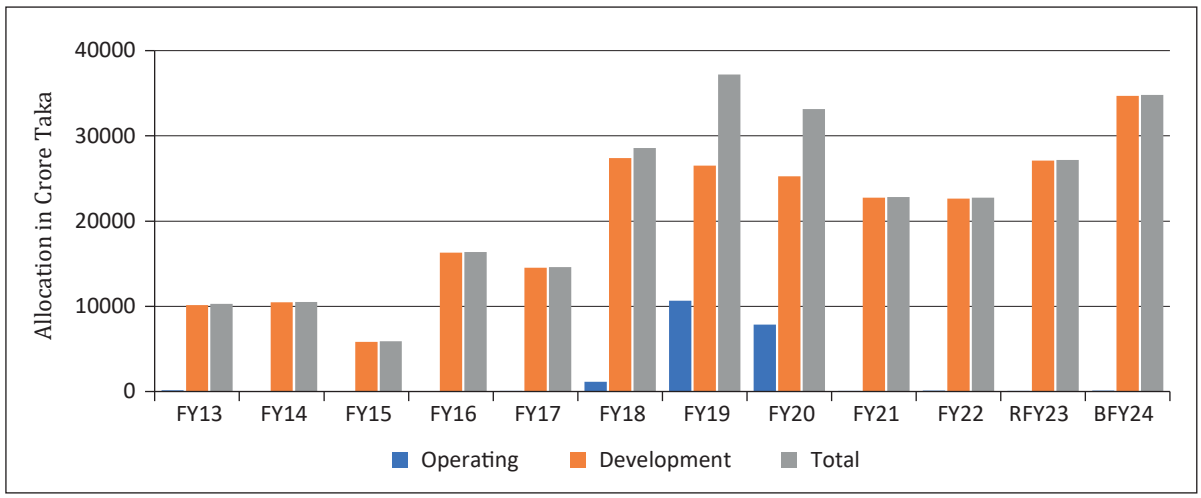
The government's move to further extending the timeline of the Quick Enhancement of Electricity and Energy Supply (Special Provision) Act 2010 is another faulty measure. The Act has been extended in 2021 for another five years - until 2026. Since the Act has given the authority to the government to make public procurement decisions without the competitive bidding process, its continuation has further extended the anti-competitive practices in the power and energy sector. Overall, continuation of the Act is perhaps the reason for inefficient and non- competitive power and energy sector in Bangladesh. As part of reform, this law should be repealed and to create a competitive market environment.

4. ANALYSIS OF THE NATIONAL BUDGET FOR THE POWER AND ENERGY SECTOR FOR FY2023–24

4.1 Overall budget for the Ministry of the Power Energy and Mineral Resources (MoPEMR)

The power and energy sector is one of the leading sectors in terms of allocation in the National Budget (Figure 7). Over the past 10 years, this sector's budgetary allocation has shown a constant

Figure 7: Power and Energy sector budget



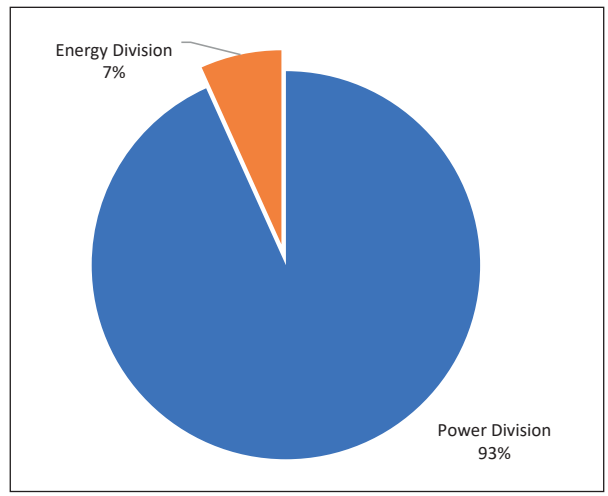
Source: Budget in brief, Ministry of Finance.

upward trend, reflecting its growing importance. During FY23–24, the sector received an allocation of Tk. 34,819 crore which is 4.6 per cent of the total budget — exceeding the share of the previous year (4.1 per cent). Among the leading sectors, the sector has experienced the highest rise in overall allocation (28 per cent over the revised budget for FY23). Both operational and development budget have increased by 32 per cent and 28 per cent respectively. In other words, the sector bears significance in ensuring overall development agenda of the incumbent government.

The power division secured the lion's share of the MoPEMR's total budget allocation — in the budget for FY2023–24 its share rose to as high as 93 per cent of the ministry's budget (Figure 8). The division's budget has experienced a rise of 34 per cent mainly because of sizeable rise in its development budget (Figure 9). It is to be noted that the operating budget of the power division is only 0.15 per cent of the total budget.

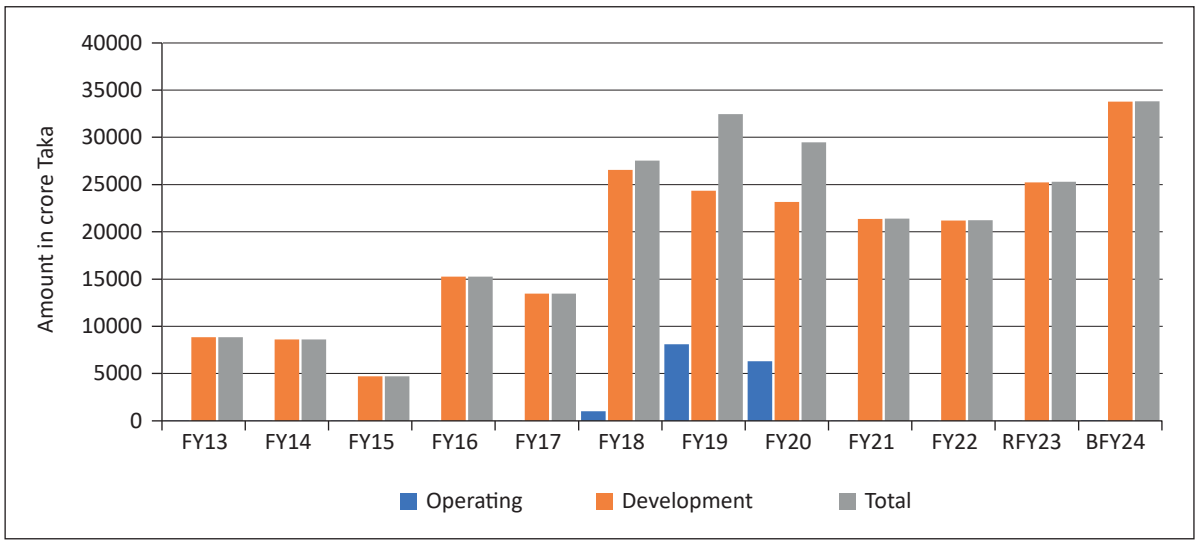
The budget allocation for the energy and mineral resource division is egregiously small, making up just 7 per cent of the overall budget (Figure 10). Furthermore, there hasn't been any discernible trend in this allocation during the past 10 years. Notably, there was a significant reduction in allocation from FY14 to FY18. The allocation for the division of energy and mineral resources has been drastically reduced in the budget for FY24— by as much as 48 per cent. This decline is mostly the result of a drastic 51 per cent fall in funding for the development budget. Given the shortages of supply of gas, such reduced budget allocation for the energy division portrays a potential disregard for the development of the domestic gas sector and a propensity to be dependent on imported

Figure 8: Division-wise allocation for FY24



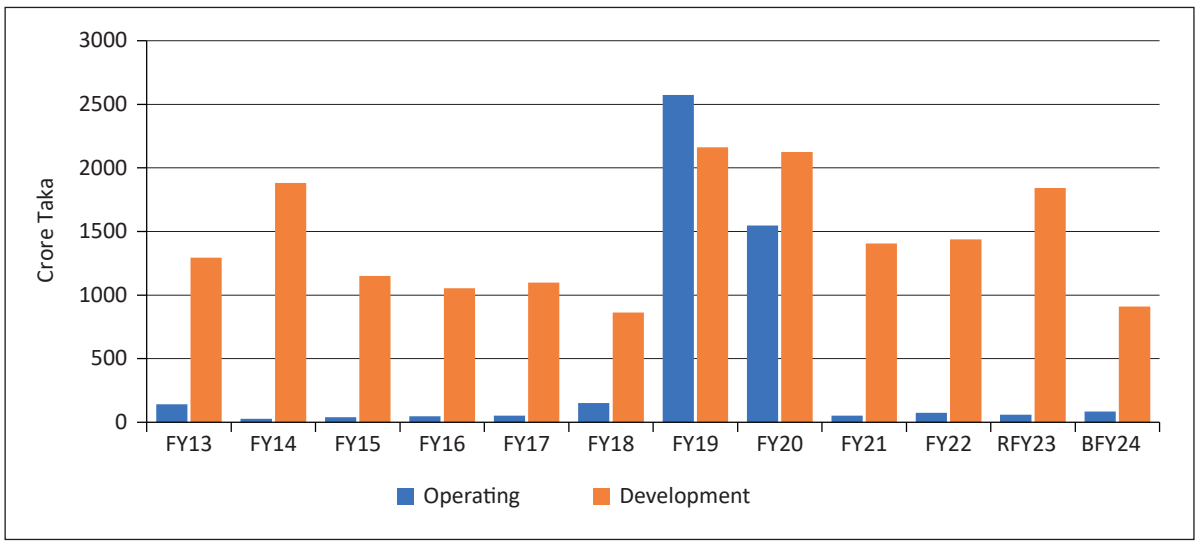
Source: Budget in brief, Ministry of Finance.

Figure 9: Budget of the Power Division over the years



Source: Budget in brief, Ministry of Finance.

Figure 10: Budget of Energy and Mineral Resources Division over the years



Source: Budget in Brief, Ministry of Finance.

LNG. In other words, expansion and development of domestic energy resources are no longer the priority of the government.

4.2 Fiscal expenditure for the Power and Energy Sector in the National Budget for FY2023–24

A number of fiscal measures related to the products associated with power and energy have been undertaken under the national budget for FY23. The government has imposed the elimination of the current 15 per cent VAT and 5 per cent advance tax at the import stage for 13 petroleum products. At the same time, specific taxes at fixed rates have been imposed on all petroleum products with a view to avoid revenue deficit brought on by worldwide fluctuations in petroleum prices. Such a

measure would help avoid a shortfall in revenue in energy import even after implementation of a periodic formula-based price adjustment mechanism expected to be implemented in September 2023. The National Board of Revenue (NBR) seeks to protect this revenue stream because the importation of diesel, furnace oil, and other fuels makes a considerable contribution to revenue collection (56 per cent of the total NBR revenue in FY22). Consumers will probably bear the cost if the price adjustment hurts the Bangladesh Petroleum Corporation's (BPC) financial situation. Therefore, even if the NBR will benefit from the implementation of specific levies on petroleum items by sustaining revenue generation, it may not always guarantee consumer welfare.

The BPC has taken a noticeable step by announcing that it will implement a periodic formula-based price adjustment system for petroleum pricing from September 2023.[4] During his speech, the finance minister emphasised the significance of this formula-based pricing strategy. The implementation of such a mechanism is essential in ending providing subsidies to the public entities, according to the International Monetary Fund (IMF). However, an appropriate pricing formula needs a proper base of fixed and variable costs for investment and operation of these enterprises. Hence, it is necessary to appropriately estimate 'losses', 'profits', 'cash transfers' to the public exchequer, and 'investment' of the public entities. Estimating 'base level cost' and 'base level tariff' is essential for implementing market-based pricing without creating an additional burden on the consumer.

The finance minister has announced the phasing-out of the minimum capacity charge for rental power plants in the budget for FY24, which is a positive move. Whether these corrective measures will actually lessen the financial burden of the Bangladesh Power Development Board (BPDB) or not is a crucial question. Along with that, the phasing-out of expensive energy-based power plants as well as out modelled, ineffective, and old power plants is also necessary. However, the national budget did not pay respect to the demands of stakeholders to reduce the tariff on equipment used in solar-based power plants. Withholding discriminatory tax support for fossil fuels and power would be an important fiscal policy to promote renewable energy and would foster competition within the power and energy sectors. This would open the door for Bangladesh to have a sustainable and environmentally friendly energy future.

5. DEVELOPMENT PROJECTS IN THE POWER SECTOR UNDER THE NATIONAL BUDGET FY2023–24

5.1 State of implementation of projects

The power sector related development projects comprise three broad categories of projects — (a) generation related; (b) transmission related and (c) distribution related projects. During FY23–24, the number of generation-related projects in the power and energy industry decreased compared to the previous year from 22 to 17. Given the over generation capacity of the power sector, reduction in the number of generation projects is a positive sign. In fact, further reduction in the generation related projects is expected in the coming years.

The status of implementation of development projects has been evaluated by the CPD based on the level of additional time required to complete a project (Table 11). Three level of implementation has been taken into account: (a) carry over projects: the projects which could not be completed as per official scheduled timeline and need additional time; (b) continuing projects: the projects which

[4]The government postponed the plan to implement an automated dynamic fuel-pricing mechanism for this time being ahead of the next general election.

Table 11: Project completion status by types of projects

(in number)

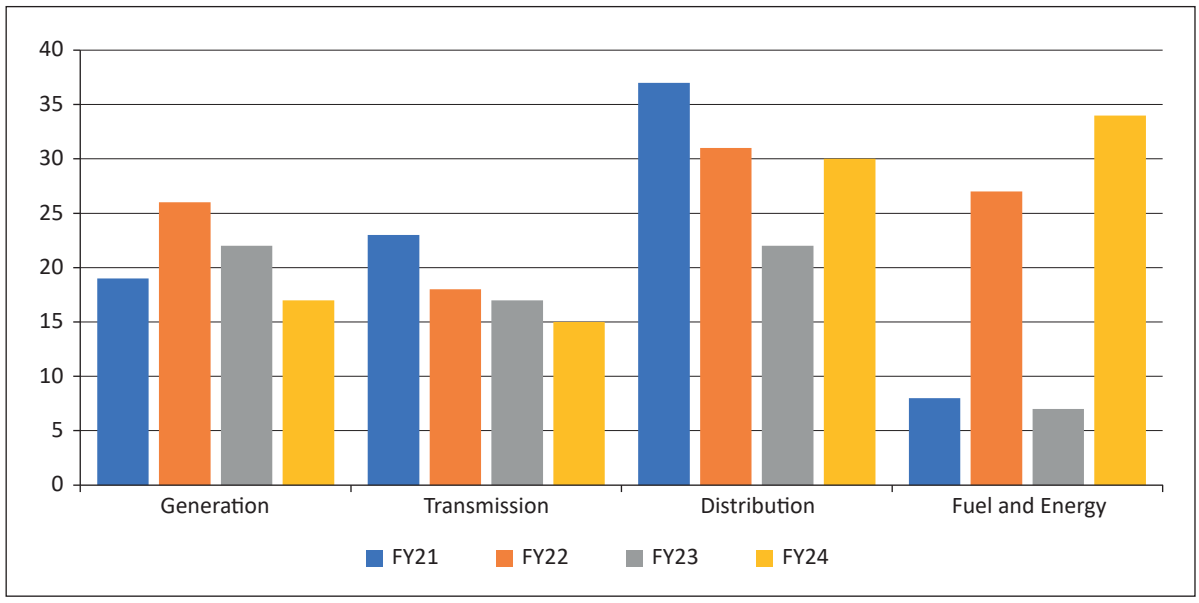
Project	Carry-over	Concluding	Continuing	New	Total
Generation	8	6	3	0	17
Transmission	8	3	4	0	15
Distribution	0	9	11	2	30
Fuel and Energy	13	16	5	0	34
Total	**29**	**34**	**23**	**2**	**96**

Source: Authors' calculation from the ADP FY24.

have time available as per official scheduled timeline; and (c) concluding projects: the projects which are going to be implemented in the current fiscal year as per the scheduled timeline. Table 10 presents the status of project implementation expected to take place in FY24. The CPD analysis shows the share of carry-over projects has decreased during FY24. It is important to note that the FY24 budget did not give priority to renewable energy-based power projects - only five renewable energy-based projects received allocation this year. In fact, the budgetary allocation for FY24 on renewable power generation appears to have fallen short in addressing the pressing need for clean and sustainable energy solutions, notwithstanding the global push towards sustainable and renewable energy sources.

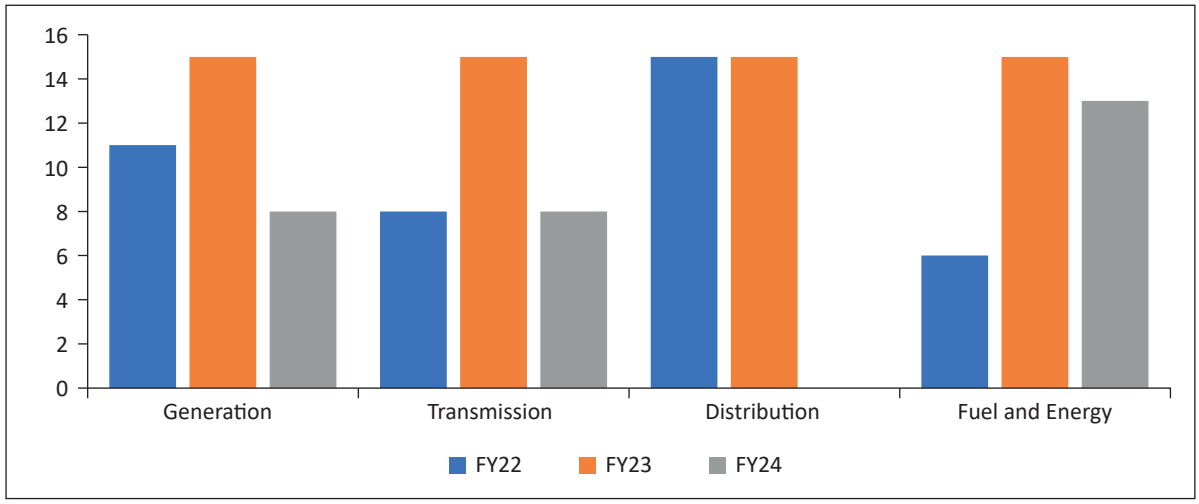
The majority of projects in recent years (FY21–24) are targeted at distribution of power (Figure 11 and Figure 12). The number of projects has increased — from 22 to 30. Eight of these projects are carryover projects, nine (9) of them are concluding projects, and 11 are ongoing projects. Such a rise is appreciated with a view to developing the distribution system in the country. The transmission related projects, on the other hand, have been decreasing gradually. In view of developing an integrated transmission and distribution system across the country, equal importance needs to be given to extending country-wide grid system. Considering the prospect of substantive rise in renewable energy development, future investment should focus on developing a smart-grid system

Figure 11: Total number of projects over the years



Source: Authors' calculation from ADP FY2023–24.

Figure 12: Number of carry-over projects over the years

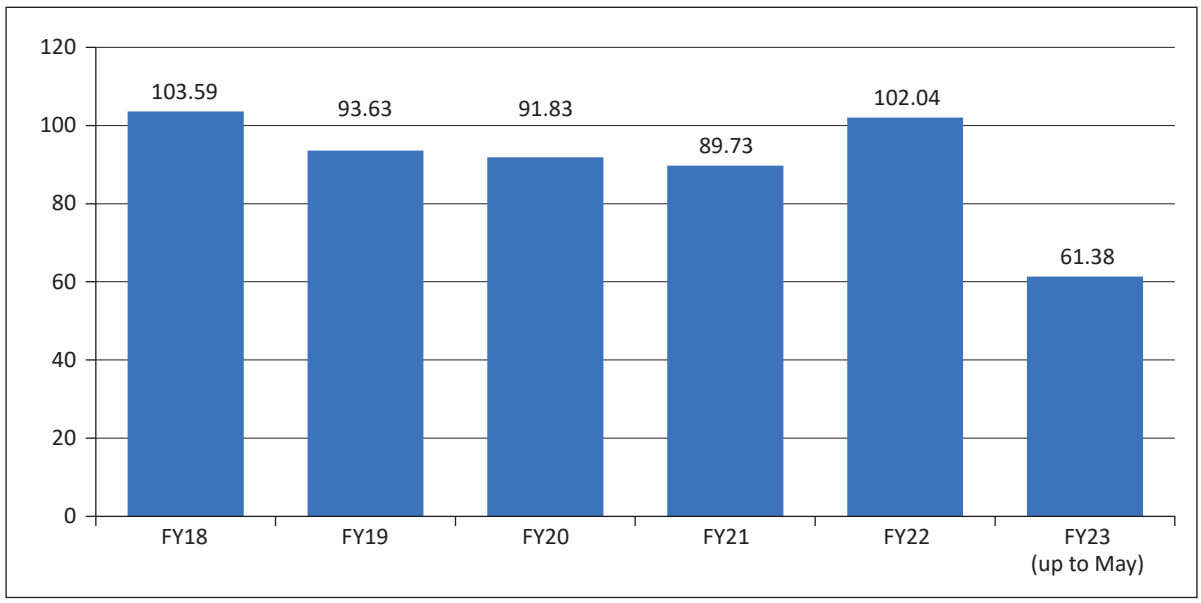


Source: Authors' calculation from ADP FY2023–24.

in the country. Despite the substantive reduction of allocation for the energy division, most of the projects implemented under the MoPEMR in FY24 are related to fuel and energy. In fact, these are mainly carry-over projects.

The information related to the rate of implementation of power and energy related projects which are reported by the Implementation Monitoring and Evaluation Division's (IMED) of the Ministry of Planning has created confusion regarding its authenticity. For instance, the IMED estimates show a 102 per cent implementation of the power division activities in FY22. On the contrary, the allocation reported by the Ministry of Finance for the same period show a much lower percentage of implementation during the FY22 — about 83.6 per cent as per the FY22 budget and about 92.8 per cent as per the amended budget for FY22 (Figure 13). According to the Ministry of Finance, the

Figure 13: Implementation rate of Power Division over the years based on the IMED data



Source: Authors' calculation from IMED.

power division's implementation rate has gradually declined over the years, dropping drastically to only 60 per cent in FY23. The same discrepancy in the implementation rate is observed in cases of energy related projects.

5.2 Major development projects in power generation

A total of 17 generation-related projects will be implemented in FY24 (Table 12). Eight of these projects are carryover projects, 6 are concluding projects, and 3 are ongoing projects. No new generation-related project is included in FY24 which is a good sign, instead, attention is given to the completion of carryover and ongoing projects. Some of these projects, though, need to be seriously rethought. For instance, the land purchased for the 1320 MW Patuakhali superthermal power plant should not be extended further for establishing a coal-fired power plants given the financial burden to be caused by importing coal as well as the adverse environmental impact of GHG emission from the plant. Instead, the government may allocate the purchased land for setting up a wind or solar energy-based power plant which would be free of operation cost and environment friendly. Similar to this, the Matarbari 1320 ultra-supercritical power project offers plenty of open area and wind resources that might allow the construction of a wind-powered power plant.

Table 12: Rate of implementation of generation-related projects

Name of the Project	Maximum Completion Rate (in per cent)	Organisation	Project Status	Ministry
Ghorashal 3rd unit repairing programme	100	BPDB	Carry-over	MoPEMR
Ghorashal 4th unit repowering programme (2nd revised)	93	BPDB	Carry-over	MoPEMR
Land acquisition, development, and conservation for Patuakhali 1320MW super thermal power plant	95	APSCL	Carry-over	MoPEMR
Technical assistance for power sector development and capacity building	99	Power Division	Carry-over	MoPEMR
Matarbari 2*600 MW ultra super critical coal fired power project	85	CPGCBL	Continuing	MoPEMR
Rooppur nuclear power plant	68	BNEC	Continuing	MoPEMR

Source: ADP of FY24.

5.3 Major development projects in transmission

There are 15 transmission-related projects in FY24. Eight of these projects are carryover projects, 6 are concluding projects, and 3 are ongoing projects. The number of projects decreased this year compared to the previous year. More funding is required to speed up completion of transmission-related projects (Table 13). Delay in implementing transmission projects has cumulative effect in further delay in getting electricity generated by new power plants causing an obligation to pay the capacity charges to the power plants.

Table 13: Rate of implementation of transmission-related projects

Project title	Maximum completion rate (in per cent)	Organisation	Project status	Ministry
Power grid network strengthening project under PGCB (Revised)	40	PGCB	Concluding	MoPEMR
Development of transmission infrastructure for generated power evacuation of Rooppur Nuclear Power Plant	51	PGCB	Concluding	MoPEMR
Capacity expansion of existing grid sub-centre and transmission line	25	PGCB	Continuing	MoPEMR
Dhaka and western grid transmission network enhancement project	30	PGCB	Carry-over	MoPEMR
Feasibility test and technical assistance project for Madunaghat- Bhulta 765KV transmission line	11	PGCB	Continuing	MoPEMR

Source: ADP of FY24.

5.4 Major development projects in power distribution

The number of distribution-related projects has increased in FY24, as discussed earlier. A new project is also being worked on in Monpura Island for expansion and upgradation of the distribution system. Some of the so-called 'concluding' projects would end up as 'carry-over' projects because of insufficient funding (Table 14). Spatial disparity of projects is also observed, with fewer projects being carried out outside Dhaka. In order to establish a countrywide integrated transmission and distribution system, more allocation would be required for T&D located outside of Dhaka region.

Table 14: Rate of implementation of distribution-related projects

Project title	Maximum completion rate (in per cent)	Organisation	Project status	Ministry
Expansion and upgradation of electricity distribution system in Monpura island	4	WZPCL	New	MoPEMR
Pre-payment metering for distribution of Cumilla and Mymensingh	98	BPDB	Concluding	MoPEMR
100% sustainable and reliable electrification in Hatia, Nijhum and Kutubdia Island	99	BPDB	Concluding	MoPEMR
Smart pre-payment meter supply and establishment programme in DESCO region	98	BPDB	Concluding	MoPEMR
Construction of 132/33/11 KV underground grid sub-station at Gulshan in Dhaka	16	DESCO	Concluding	MoPEMR

(Table 14 contd.)

(Table 14 contd.)

Project title	Maximum completion rate (in per cent)	Organisation	Project status	Ministry
Development of electricity distribution system in the area under DPDC	70	DPDC	Concluding	MoPEMR

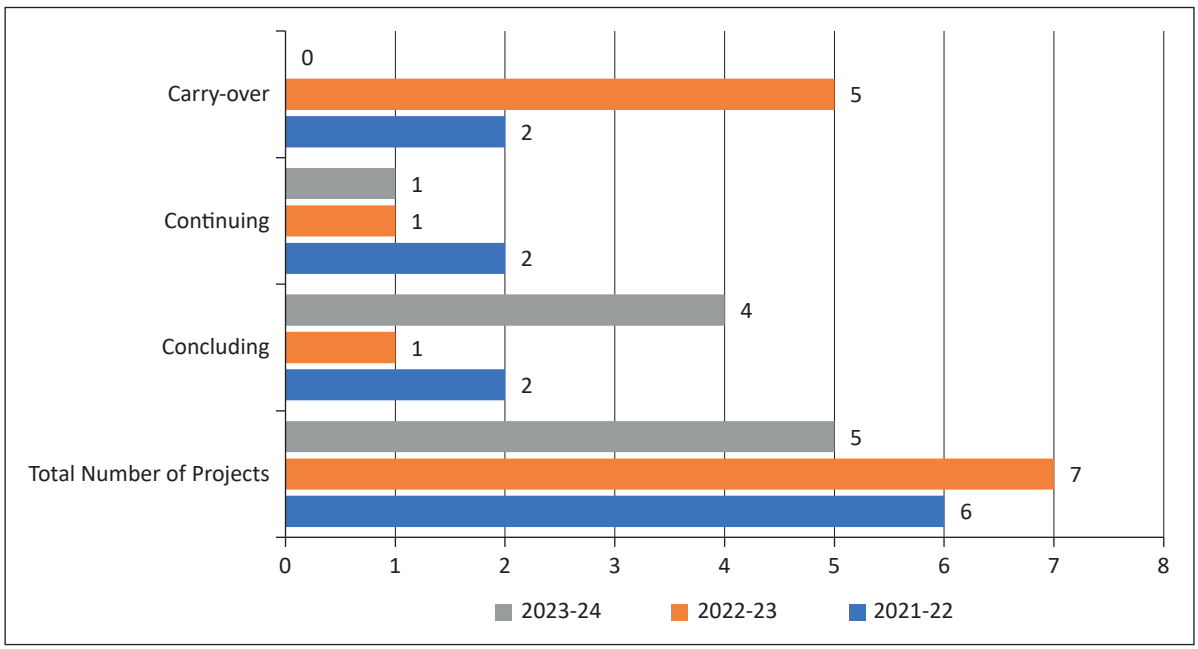
Source: ADP of FY24.

6. DEVELOPMENT OF RENEWABLE ENERGY IN FY23–24

6.1 State of implementation of renewable energy-related projects

There has been a drop-in number of renewable energy related projects allocated in the Annual Development Programme (ADP) for FY23–24. The number of projects has dropped from 7 in FY22–23 to 6 projects in FY23–24 (Table 14). Four out of the 6 projects are concluding projects. The number of concluding projects has increased during the last 3 years. There is no carry-over project in FY24. Initiating more renewable energy-based projects under the public sector requires substantial rise in budget allocation in the Ministry of Power, Energy, and Mineral Resources (MoPEMR). In this context, the Sustainable and Renewable Energy Development Authority (SREDA) needs to be proactive in initiating and implementing renewable energy-based projects (Figure 14).

Figure 14: Trend of ADP allocation in renewable energy-related projects



Source: Authors' Estimation from ADPs.

6.2 Major renewable energy-based projects in FY2024

Five of the 6 projects within the renewable sector (as shown in Table 15) are linked to generation, and one is dedicated to distribution. Only 2 of the 6 'concluding' projects are anticipated to be finished in the upcoming fiscal year. This suggests the remaining 4 projects will probably be carried

over to the next year. Additionally, one ongoing project, which has a 40 per cent implementation rate right now, could end up being a carryover project unless sufficient allocation is made in the following year. The timely completion of these projects and the avoidance of additional delays and inefficiencies within the renewable energy sector depend on proper funding and allocation.

Table 15: Renewable energy-based major development projects for FY2023–24

Project title	Maximum completion rate (in per cent)	Organisation	Project type	Project status	Ministry
Sonagaji 50MW solar power plant building	89	EGCB	Generation	Concluding	MoPEMR
Technical support project for renewable energy resource assessment and piloting	98	SREDA	Generation	Concluding	MoPEMR
TA for strengthening and development of sustainable power sector in Bangladesh	40	Power Cell	Generation	Continuing	MoPEMR
Agriculture irrigation through solar driven pump	93	BREB	Distribution	Concluding	MoPEMR
100 MW solar power plant building in Madariganj	54	RPC	Generation	Concluding	MoPEMR

Source: Authors' estimation from ADP FY2023–24.

6.3 Fiscal measures related to renewable energy-based power generation in FY24

No fiscal measures concerning renewable energy have been outlined in the budget speech for FY2024. Although there were proposals from the stakeholders requesting reduction of VAT, Tax, custom duty and AIT for importing machinery concerning renewable energy, those were not considered.

7. PUBLIC INVESTMENT IN THE ENERGY SECTOR IN FY23–24

7.1 Major development projects for the development of gas production and supply

The energy sector is implementing a total of 23 gas-related projects during FY24. Out of these projects, 2 are carryover projects, 14 are concluding projects, and 7 are ongoing projects (Table 16). Due to a lack of funding, many concluding projects would turn out to be carry-over projects. Given the shortages of gas, it is expected that necessary budgetary allocation will be made to drill gas wells and thereby enhance the gas supply. Surprisingly, neither the budgeted projects nor the gas development fund has given priority to drilling new wells. Under the current ADP, there is only 1 drilling project in Sylhet which is scheduled to be completed this year. Despite the finance minister mentioned in the budget speech about drilling 46 new wells by December 2024, only 6 wells are now in the drilling stage. It is difficult to meet the goal of drilling 46 wells by 2024 because there is not enough funding allocated for this purpose. Consequently, an excessive focus on imported liquefied natural gas (LNG) could inadvertently overshadow more pressing concerns in the upcoming years.

Table 16: Rate of implementation of gas-related projects

Project title	Maximum completion rate (in per cent)	Organisation	Project status	Ministry
Project of Gas pipeline for Mymensingh combined cycle power station from Dhanua to Mymensingh	62	RPC	Concluding	MoPEMR
Bakhrabad-Meghnaghat-Haripur gas transmission pipeline construction	71	Petrobangla	Concluding	MoPEMR
Gas distribution network upgradation in Fauzdarhat-Sitakunda-Mirsarai	66	Petrobangla	Continuing	MoPEMR
Establishing pre-paid gas meter for the residential consumers of KGDSL	12	Petrobangla	Carry-over	MoPEMR
Digging Sylhet well no. 10 (evaluation/ developing well)	96	Petrobangla	Concluding	MoPEMR
Installation of 50,000 prepaid gas meters in JGTDSL affiliated areas	93	Petrobangla	Concluding	MoPEMR
Gas transmission pipeline construction programme in Bangabandhu Sheikh Mujib Railway bridge	28	Petrobangla	Continuing	MoPEMR
3D seismic survey at the exempted areas of acreage block 13 and 14	50	Petrobangla	Continuing	MoPEMR

Source: ADP of FY24.

7.2 Major projects related to the LNG supply

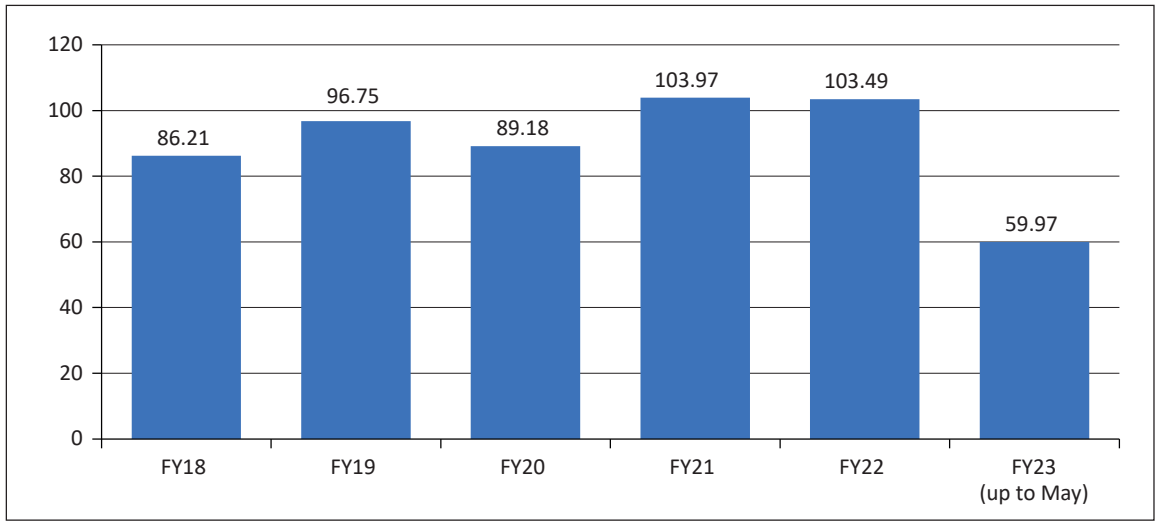
As shown in Table 17, there is only one LNG-related project in the fiscal year 2024 — conducting a technical and economic feasibility study for the construction of a land-based LNG terminal. This project should not move forward as it will further promote imported LNG use in the country. Under the Quick Enhancement of Electricity and Energy Supply (Special Provision) Act 2010, the government controversially authorised the construction of the third floating storage regasification unit (FSRU). Allocating resources solely to this project will further delay the energy transition process in the country. It is noteworthy that Petrobangla has taken loan of Tk. 20 billion from the Gas Development Fund in order to import LNG. This allocation raises questions about utilising funds for LNG which is supposed to be used for development of domestic gas sector.

Table 17: Rate of implementation of LNG-related projects

Project title	Maximum completion rate (in per cent)	Organisation	Project status	Ministry
Perform technical and economic feasibility study, engineering, and tender management services for the construction of the land-based LNG terminal at Matarbari, Cox's Bazar.	90	Petrobangla	Continuing	MoPEMR

Source: ADP of FY24.

Figure 15: Implementation rate of the Energy and Mineral Resources Division over the years



Source: Authors' calculation from IMED.

As mentioned earlier, there is confusion regarding IMED's reported data on implementation rate of energy sector projects. The IMED statistics showed an implementation rate of 103.5 per cent for the fiscal year 2022 (Figure 15). On the other hand, the MoF reported data showed that rate of implementation was 72.5 per cent as per the budget for FY22 and 92 per cent as per the revised budget for FY22. Hence, consistency in reporting data is required among different organisations reporting the same data.

8. CONCLUDING REMARKS AND RECOMMENDATIONS

The power and energy sector of Bangladesh appears to take little lessons from the ongoing crisis, rather the sector is moving towards a wrong direction in case of energy transition and sustainability point of view. Instead of putting effort into domestic gas sector development, it has tried to rely on imported LNG which would further weaken the forex reserve. Instead of going for energy diversification, it has further increased its reliance on coal which is against the official position of not promoting coal. Negligence to the renewable energy sector continues and no major reversal in policy and initiatives is observed.

The passed national budget for FY24 is hardly addressing major challenges, rather it is a 'business as usual' budget. Hence, there is little expectation that the budget would make substantial contribution addressing the challenges of the power and energy sector.

Analysis shows that the power and energy sector have no good news in sooner future and load shedding will be most likely to continue in the coming months which will hinder the households, businesses and industry and commercial activities. With huge excess reserve (about 50 per cent in FY25), the power sector will continue struggling to meet the capacity payment, subsidy requirements and fuel import payments. As a result, this sector's financial position would keep getting worse – as if the BPDB slowly moved towards becoming a 'white elephant' with the threat of being financially unviable.

a. **Emphasis should be given to domestic gas exploration instead of LNG-based power generation:** The government should reduce the dependency on long-term LNG contracts and emphasise gas exploration in the new and old domestic gas fields. LNG purchases from the spot market should be halted as this is a high-price situation. The government should take the initiative to further expedite foreign aid flow for on- shore and off- shore gas exploration by the BAPEX.
b. **The discriminatory fiscal support provided to the fossil fuel-based power and energy needs to be gradually phased out:** The fiscal support of this sector is still discriminating between the fossil fuel and non-fossil fuel-based power generation. The first step of renewable energy promotion is withdrawing fossil fuel favouring fiscal measures in terms of tax breaks, subsidies and incentives, etc.
c. **Supportive fiscal measures need to be promoted to encourage domestic and foreign investment in the renewable energy sector development:** Parallel with the withdrawal of fossil fuel incentives, renewable energy producers and power generations should be given supportive fiscal, budgetary and policy measures. It will give an upper hand in the race.
d. **The financial accounts of public entities such as BPC, BPDB and Petrobangla should be transparent:** These state-owned enterprises are continuously showing negative balance in operative income but provide dividend to the exchequer, investment to assets and taking subsidy from the government. Under such a situation it is difficult to set the base level price for opening of a market-based pricing model starting for petroleum. A proper financial accounting of these public accounting is required in order to find out base level price.
e. **Subsidy management needs to be done through gradual phasing out of capacity payment:** The IMF conditionality for subsidy management only through price adjustment faultily passes the burden to the consumers of energy. This subsidy management needs to be done through gradual phase out of capacity payment in case of the fossil fuel-based power plants. This will save resources in terms of capacity payment as well as the requirement of subsidised credit. Additionally, it will save the US$ required for importing fuels. The BPDB should revisit and review the capacity payment paid and the tariff at which the PDB is buying power from IPPs, rentals and quick rental power plants.
f. **Institutional capacity of SREDA needs to be thoroughly reviewed:** The institutional capacity of SREDA should be reviewed thoroughly with the intention to strengthen its capacity to handle and improve the renewable energy-based power generation in Bangladesh. It is expected that the fiscal and budgetary measures in the coming years will be thoroughly revised targeting a renewable energy-based power and energy sector in the country under the leadership of the SREDA.
g. **The Quick Enhancement of Electricity and Energy Supply (Special Provision) Act 2010 needs to be repealed immediately:** The special provision act itself is non-competitive in nature as it was adopted during an extraordinary time. As part of creating a completive market in the sector with better efficiency and low cost, the Quick Enhancement of Electricity and Energy Supply (Special Provision) Act 2010 needs to be repealed with immediate action.
h. **All contracts should be made public to ensure transparency in the selection process:** The MoPEMR should disclose the information related to the contracts made with different domestic and foreign entities. Oftentimes, the general people are unaware of the power generation contracts with IPPs, long-term LNG import contracts from different countries and fuel purchase deals, among others. Disclosing the contracts and agreements publicly will ensure transparency of the decisions taken by the ministry and other public authorities.
i. **Investment should be further expedited to ensure energy sustainability and energy efficiency:** Investment in renewable energy-based initiatives related to generation, transmission and distribution should be promoted. These include power generation, smart grid development, development of national load dispatch system, energy saving battery, windmill, floating solar

plant, micro grid, mini grid, net metering, roof-top PV, electric vehicle, solar based irrigation, bio- waste based energy, district-wise/thana-wise renewable energy and energy efficiency.

j. **IEPMP should be revised thoroughly:** Finally, the IEPMP in its current draft would not help to contribute to energy transition properly rather would push further to increase the debt burden. The usage of coal and other hydrocarbon-based energy mixed with advanced technologies as 'clean' should not be encouraged through the master plan. It is expected that an alternate scenario called '40 per cent renewable energy by 2040' needs to be set.

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