

## Highlights



The power sector is increasingly burdened by financial pressure mainly due to over-generation capacity, un- and underutilisation of power plants, inefficient operation, huge capacity payment, over-reliance on fossil fuels as energy-mix and import of raw materials.



The FY2021 national budget for the power sector put emphasis on transmission and distribution-related projects which would help to improve transmission and distribution of electricity system.



There is little justification for implementation of coal-based power plants, particularly when the country is burdened with over-generation capacity and those are environmentally polluting. The government should consider cancelling those projects.



The decision to defer and cancel of selected generation projects would create fiscal space for the government (about Tk. 914 crore from the revenue budget and Tk. 2507 crore from foreign aid in FY2021). The government should renegotiate with development partners for redirecting those project aid towards implementing clean-energy based power sector projects.



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## The Power Sector in the National Budget for FY2020-21 *An Analysis of Allocative Priorities and Alternate Proposals*

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### 1. Introduction

The national budget for the fiscal year 2020-2021 (FY2021) is regarded as one of the most challenging Financial Bills since the Independence of Bangladesh in 1971. The National Parliament passed the Bill on 30 June, 2020 which will be effective till the next one year – 1 July, 2020 to 30 June, 2021. The implementation of the new budget will be difficult due to the squeezed fiscal space in view of COVID-19. Taking that into account, CPD (2020) and a number of research organisations put forward suggestions for reprioritisation of public expenditure and refocusing on revenue mobilisation during the new fiscal year (FY2021). Since the power sector is one of the top-ten priority sectors under the medium-term budgetary framework, it has a vital role to play in attaining the changing budgetary priorities. Unlike the national budget for earlier years where allocative priorities are set for development of generation, transmission and distribution system of the power sector, this year's sectoral priority should be set for rationalisation of its budget allocation and contribution to overall revenue mobilisation.

The rationalisation of the power sector budget allocation has been further reinforced because of the growing financial burden on the Bangladesh Power Development Board (BPDB). This happened mainly because of creating excess electricity generation capacity which has increased further during COVID-19 period. This over generation capacity would rise further in the future unless budget allocation for new power generation projects is not controlled. More importantly, these generation projects will increase the burden of carbon foot print in the country as those are mostly derived from coal and other types of fossil-fuel. Such huge over-generation capacity requires additional payment of capacity charges, higher usages of fossil-fuel and thereby, unwanted import payment for huge amount of petroleum, Liquefied Natural Gas (LNG) and coal, and more subsidy from the government to meet the financial losses of BPDB. In the backdrop of low electricity demand during COVID-19 period which may not rise significantly during the post-COVID period, BPDB's financial burden would rise in a bigger way. The government would find it difficult to accommodate such burden in view of its limited fiscal capacity.

In this backdrop, an in-depth analysis of the budget allocation for the power sector during FY2021 is highly crucial due to a number of accounts. First, such an exercise will help to appreciate the key budgetary impact and implications caused by different challenges confronted by the power sector. Second, it will help to rethink about allocative priorities of the power sector during COVID-19 and the post-COVID period and thereby requirement of reprioritisation and reallocation of the power sector budget both in FY2021 as well as in the medium term (FY2021-FY2023). Finally, the analysis will put forward alternate proposals for addressing major challenges in the current power sector development plan and thereby developing clean energy-based power sector in the longer run.

The objectives of the study are two folds – (a) to inform the policymakers, bureaucrats, private sector and civil society organisations about the inefficiency in allocative priorities in the power sector; and (b) to inform the government, particularly senior officials of the Ministry of Power,

Energy and Mineral Resources, Ministry of Planning and Ministry of Finance, about the scope for reprioritisation of budgetary allocation in the power sector to identify scopes for releasing funds for the implementation of other important activities both within and outside the sector.

## 2. State of the Power Sector in FY2020 and COVID-19 Pandemic: Implications for the National Budget for FY2021

**Access to Electricity:** The development of the power sector can be explained in two accounts – first, in terms of its progress over the last one decade and second, in terms of its challenges. The ruling party claimed the progress of the power sector as one of its main successes. This is mainly reflected in terms of ensuring broad-based access to electricity with a 252 per cent rise in installed capacity (from 5,823MW to 20,514 MW between FY09 and FY20), a 141 per cent rise of maximum generation (from 4,606 MW to 11,119 MW) and a 127 per cent growth of per capita consumption of electricity (374.6 kWh in FY2019 to 510 kWh in FY20). Despite the progress in access to electricity, its demand did not rise in commensurate with the projection made in the Power Sector Master Plans (PSMPs) in 2010 and 2016. Slow growth in electricity demand is evident in a number of accounts - limited rise in number of connections in agriculture (2.6 per cent per year) and small-scale industries (2.9 per cent) between FY2009 and FY2020. Sluggish growth in production and investment in manufacturing, services and commercial activities, particularly in SMEs during the pre-COVID period is the main reason behind this. The trend in domestic production and investment has aggravated further during the COVID-19 period due to disruptions in domestic and export-oriented supply chains.

**Power Generation:** Power generation in the last one decade has been carried out almost equally by both the public and the private sector (Table 1). As of June 2020, the public sector power plants hold a share of 48.5 per cent of total generation capacity (9567 MW), while the independent power producers' (IPPs) hold a share of 35 per cent (6919 MW) and quick rental power plant producers (QRPP) maintained a share of 9.9 per cent (1958 MW). Import of electricity from India accounts for 5.9 per cent of total capacity (160 MW). Over the years, the structure of ownership of power generation has been slowly diversified. In terms of the energy-mix, the country is still overwhelmingly dependent on fossil-fuel (Table 1). Gas (53.5 per

**Table 1: Installed Capacity: Ownership and Energy-mix**

Ownership	Ownership wise Installed capacity (no. of plants)	Energy-mix	Energy-mix wise Installed capacity (no. of plants)
Public PP	9567 mw (76)	Coal	524 mw (4)
IPP	6919 mw (49)	Gas	10624 mw (71)
Rental PP	1958 mw (20)	HFO	5152 mw (56)
Imported	1160 mw (2)	HSD	1875 mw (10)
Total	19595 mw (147)	Hydro	230 mw (1)
		Solar	70 mw (4)
		Total	19595 mw (146)

Source: BPDB website.

cent; 10624MW), furnace oil (25.9 per cent; 5152 MW) and high-speed diesel (HSD) (9.4 per cent; 1875 MW) are the major sources of primary energy. Coal is still used at a limited scale which generates 524 MW worth of electricity at present. Usages of energy mix are found to be different for different power plants - while public sector power plants are mostly gas-based, IPPs are mostly furnace oil/HSD based and QRPPs are mostly gas and furnace

oil-based. Renewable energy is yet to be regarded as a major source of energy-mix in either public and IPPs. At present, it could generate only 1.5 per cent of the total capacity of which 70 MW is from solar and 230 MW is from hydro. Overall, little progress has been observed during the last one decade towards making the power sector clean. The initiatives for rationalisation of the budget for the Power Division should pay due attention towards reduction of power generation based on coal and petroleum and enhancing the generation based on renewable energy.

**Transmission and Distribution:** The transmission and distribution system unlike the generation did not make considerable progress during the last one decade. At present, transmission and distribution are highly concentrated to the east zone, which accounts for 69 per cent of total transmission capacity. Higher economic activities and high population density in the east zone made the transmission and distribution concentrated. This is reflected in the location of power plants - majority of power plants are located in Dhaka (39), Comilla (23), Chittagong (20) and Sylhet (16). Except for Rajshahi (20 plants), none of the districts in the west zone has a considerable number of power plants. Henceforth the transmission and distribution system in the west zone has not yet developed. The spreading of economic activities outside the eastern zone led to a gradual rise in per capita income and, in turn a rise in demand for better transmission and distribution system in the west zone. The allocation for the national budget, therefore, should put more emphasis on improvement of the country's transmission and distribution system.

**Challenges of Over-Generation Capacity:** Over-generation capacity (technically it is called 'reserve capacity') has become a major burden for the power sector, and it has significantly increased during COVID period (Table 2). According to the data of a specific day (16 June 2020), the amount of overcapacity was 59 per cent

**Table 2: Over Capacity in terms of Demand and Generation**

Year	Overcapacity (as per max. generation)	% of share of overcapacity of installed capacity
1990-91	710	30.2
2000-01	972	24.3
2010-11	2374	32.7
2015-16	3329	26.9
2018-19	6068	32.0
2019-20 (17 June, 2020)	10216	49.8

Source: Authors' analysis based on BPDB daily data (2020).

(9,437 MW). Analysis of daily data indicates that the highest amount of overcapacity was during January 2020 (63.3 per cent) and March 2020 (62.5 per cent). The level of overcapacity was slightly lower during the pre-COVID period – on 16 June 2019, it was 49.8 per cent and on 16 June 2018, it was 46 per cent. Such a high share of reserve capacity is against the benchmark set forth at the PSMP 2016 (25 per cent). Even Bangladesh's reserve capacity is much higher compared to that of other developing countries (10 per cent) (IEEFA, 2020). It is well acknowledged that Bangladesh may require higher reserve capacity due to the existing huge gap in electricity demand between the summer and winter seasons. It is argued by the government officials that electricity demand would increase within a short period after completion of ongoing large scale infrastructure development projects (e.g. metro rail, special economic zones). However, those demands could hardly justify keeping about 50 per cent or more of reserve capacity. Such over capacity is partly responsible for BPDB's financial burden which needs to be adjusted through budgetary and non-budgetary measures.

**Under-utilisation of Power Plants:** An unbalanced growth in generation capacity and lack of corresponding rise in demand forced a large number of power plants to remain idle. During the COVID-19 period, as many as 45 power plants were found to be unutilised in a single day (17 June 2020). The corresponding number of plants unutilised a year earlier was much lower (only 19 on 17 June, 2019). Such underutilisation of power plants has forced the BPDB to pay a minimum capacity payment to individual power producers. This capacity payment has been increasing over the years which forced the government to allocate resources to finance the deficit.

**Low Level of Efficiency:** BPDB’s financial burden has been increasing due to low level of efficiency of the power plants. Over 55 per cent of total plants operate at an efficiency level of less than 40 per cent (Table 3). About 36 per cent power plants operate at an efficiency

**Table 3: Power generation through different public and private sector (no. of plants)**

Efficiency level (%) net	Percentage of total number of plants	Power generation through different public and private sector (no. of plants)				No. of plants
		Public PP	IPP	Rental	Total	
0-10%	0.0					0
10-20%	3.7	5	0	0	5	5
20-30%	16.8	19	1	3	23	23
30-40%	35.8	21	10	18	49	49
40-50%	40.9	14	33	9	56	56
50-60%	2.9	4	0	0	4	4
>60%	0.0	0	0	0	0	0
<b>Total</b>	<b>100.0</b>	<b>63</b>	<b>44</b>	<b>30</b>	<b>137</b>	<b>137</b>

Source: BPDB Annual Report 2019.

level of 30-40 per cent, and another 17 per cent of plants operate at an efficiency level of 20-30 per cent. None of the available plants operate over the level of 60 per cent and above. Relatively better efficiency level is observed in case of IPPs and QRR-led power plants compared to that of public PPs. In terms of energy-mixes, HFO and HSD based PPs operate at a better efficiency level compared to that of gas-based PPs. The huge variation in plant factor among the power plants is another reason for unstable efficiency level. Due to COVID-19, the plant factor of individual plants has drastically reduced. Such operational inefficiencies, directly and indirectly have increased the financial burden of the BPDB which ultimately pass on either to consumers (in the form of higher tariffs) or to the government (in the form of higher amount of subsidy).

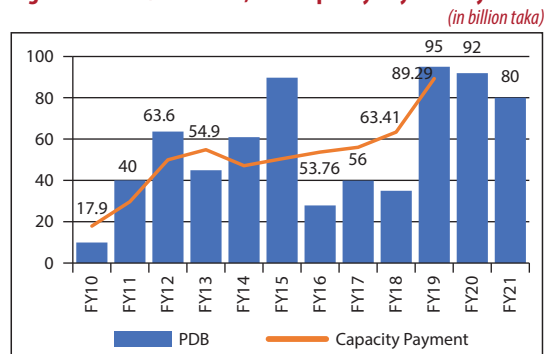
**BPDB’s Rising Yearly Expenditure:** The power generation cost per unit has been declining over the years - from Tk. 6.33 in FY18 to Tk. 6.02 in FY19. This is not reflected in the overall expenditure for power generation which has been increasing - from Tk. 38,576 crore in FY2018 to Tk. 41,245 crore in FY2019. Expenditures in selected heads such as purchasing electricity from IPPs and purchasing of coal were found to be exceptionally high. In other words, the financial burden of BPDB has been increasing because of huge amount of import of fossil-fuel every year. The import cost of petroleum was as high as US\$4.1 billion in FY2019 which was even higher in FY2018 (US\$ 4.8 billion). BPDB is in partial relief as import payment would be lower in FY2020 because of low price of crude oil and petroleum products in the world market.

BPDB’s expenditure is increasingly being burdened by high amount of capacity payment to IPPs and QRRs. The yearly financial statement of BPDB does not clearly specify related payment. Media reports indicate that payment of capacity charges to power plants has been increasing over the years. It was Tk. 6341 crore in FY 2018

which jumped to Tk. 8929 crore in FY19. Within nine years, capacity payment has skyrocketed as high as 398 per cent (from only Tk. 1,790 crore in FY10 to Tk. 8929 crore in FY2019). According to Figure 1, the capacity payment is almost equivalent to the amount of subsidy taken from the government in FY2029. In other words, most of the cash loan taken from the government has been utilised only to meet the capacity payment – an outcome of unplanned expansion of power generation capacity in the country. As discussed, the COVID-19 would raise the requirement of capacity payment further during FY21 and thereby may require additional amount subsidy from the government. Otherwise, the BPDB needs to go for raising power tariff for generating additional revenue.

BPDB is currently incurring a considerable amount of losses. Its yearly financial balance has deteriorated from (-Tk. 6207 crore) in

**Figure 1: Loans/Subsidies, and Capacity Payment by BPDB**



Source: BPDB.

FY2018 to (-Tk. 5046 crore) in FY2019 (Table 4). The financial balance of BPDB for FY2020 has not yet been published which is likely to be deteriorating due to COVID-19 related adversities. Usually this loss has been adjusted through borrowing from the government. The amount of borrowing has significantly increased in recent years (Tk. 9200 crore in RBF20). Adjustment of power tariff is another mean to increase revenue income. The power tariff was last revised in March, 2020 when about 5.3 per cent upward revision was made by the Bangladesh Energy Regulatory Commission (BERC).

**Table 4: Operating income and operating expenses for FY2018 and FY2019**

Head of Accounts	FY2018	FY2019	Amount increase/ (Decrease)	Percentage of increase/ Decrease
Operating Revenue	30,604.41	34,506.87	3,902.46	12.75%
Operating Expenses	36,811.89	39,553.30	2,741.41	7.45%
Profit/(Loss)	-6,207.47	-5,046.43	1,161.05	-18.70%

Source: BPDB, 2019.

Overall, the power sector is increasingly burdened by financial pressure. Over-generation capacity, un- and underutilisation of power plants, inefficient operation, and over-reliance on fossil fuels as energy-mix – may make BPDB’s operation financially unbearable in the near future. The COVID-19 has given an indication that shortfall in the demand for electricity would not revert back quickly in the post-COVID period. Hence the financial stress of the BPDB would further rise in the medium to longer term. In this backdrop, the national budget for FY2021 would be a good start to revisit the power sector in view of addressing its energy-mix and financial challenges and possible future way-out.

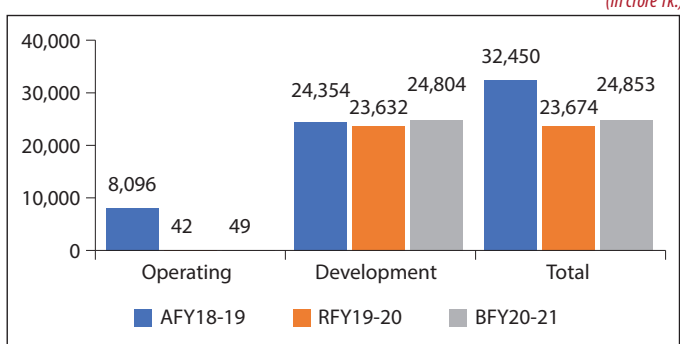
### 3. The Power Sector in the National Budget for FY2021

The power sector has two important roles to play in implementing the National Budget for FY2021 during the period of COVID-19 and afterwards. First, it has scopes to create fiscal space through rationally adjusting its revenue and development expenditures; second, it can reprioritise its Annual Development Plan (ADP) allocations with a view to provide directions for possible future adjustment for the sector. The following analysis will help to identify the sector’s allocative priorities, areas for improvement in resource utilisation and possible ways of adjustment.

#### 3.1 Allocation for the Power Division in FY2021

The National budget for FY2021 has allocated Tk. 24,853 crore to the Power Division (Figure 2). Of which, Tk. 24,804 crore (99.8 per cent of

**Figure 2: Operating, development and total allocation for Power Division**



Source: Author’s Compilation from Budget in Brief from MoF, 2021.

total budget) is for development budget, and the remaining amount (Tk. 48 crore) is for operating/non- development budget. Overall budget allocation for the Division has increased by 4.98 per cent mainly because of the rise in the development budget. Despite the rise in allocation, the share of the Power Division in the total budget has declined - from 5.21 per cent of the revised budget for FY2020 (RFY2020) to 4.71 per cent of the total budget for FY2021 (BFY2021). It was initially thought that allocation for the Power Division in FY2021 would not exceed the level of the immediate past year (RFY2020) as the government may like to maintain the trend of RBFY2020 where the budget for several ministries/divisions was slashed including that of the Power Division (Tk. 2,390 crore).

A total of 88 projects will be implemented in the Power Division during FY2021 with an investment of Tk. 24,804 crore. Major share of this allocation will be used for 79 ‘investment projects’ (Tk. 24609 crore; 99.2 per cent) while only a minuscule amount (Tk. 94.9 crore; 0.38 per cent) will be used for implementing nine ‘technical projects’. The allocated budget for the Power Division will be sourced almost equally from revenue budget (53.3 per cent of total sectoral ADP) and foreign aid (46.7 per cent). Unlike other ministries, foreign aid plays a major role in implementing power sector projects – about 16.4 per cent of total foreign aid for the ADP implementation (Tk. 70,502 crore in BFY2021) will be used by the Power Division during FY2021.

All implementable projects could be categorised into three groups in terms of their level of progress against the stipulated timeline for

completion. These three groups include (a) ‘carry-over’ projects which have exceeded their stipulated completion timeline; (b) ‘concluding’ projects which are supposed to be completed within the fiscal year as per timeline; and (c) ‘continuing’ projects which will continue in the fiscal year as the stipulated timeline will not be over. An analysis reveals that majority of projects to be implemented during FY2021 will be ‘continuing’ projects (40.6 per cent of the total allocated budget) followed by ‘carry-over’ projects (28.4 per cent) and ‘concluding’ projects (31 per cent) (Table 5). Comparing the budget allocation for

**Table 5: Level of Implementation of Power Sector ADP Projects: ‘Carry-over’, ‘Continuing’ and ‘Concluding’ Projects**

Fiscal year	No. of projects	Budget allocation (Tk. crore)				Total
		New	Continuing	Concluding	Carry-over	
FY20	82	0.95 (44.3%)	12081.84 (36.4%)	9922.76 (19.3%)	5265.93 (100.0%)	27271.53
FY21	88	2.0 (40.6%)	10781.5 (31.0%)	8225.7 (28.4%)	7532.8 (100.0%)	26541.9

Source: Ministry of Planning, Annual Development Plan (ADP) 2021.

the Power Division between BFY2020 and BFY2021, no major difference is observed in allocative priorities. During FY2020, the proportionate share of budget allocation for ‘continuing’, ‘concluding’, and ‘carry-over’ projects was 44.3 per cent, 36.4 per cent, and 19.3 per cent, respectively. Contrarily, the share of ‘carry-over’ projects has increased in FY2021, which rather indicates rising operational inefficiency of the Power Division in implementing projects.

#### 3.2 Analysis of Power Division’s ADP for FY2021

A project-level analysis has been carried out to estimate the possible rate of implementation of individual projects with the allocated budget during FY2021 (Table 6). Out of 88 projects to be financed in FY2021, 18 projects will be completed/will be near to completion (20.5 per cent of total projects), another 17 projects

**Table 6: Implementation Rate of ADP Projects at the end of June 2021 (All projects)**

Types of projects	No. of projects	No. of projects as per the rate of implementation						
		<10 %	10-20 %	20-40 %	40-60 %	60-80 %	80-90 %	90% and above
Carry-over projects	27	0	0	1	4	4	11	7
Concluding projects	35	1	5	3	4	7	5	10
Continuing projects	26	7	2	6	8	1	1	1
<b>Total</b>	<b>88</b>	<b>8</b>	<b>7</b>	<b>10</b>	<b>16</b>	<b>12</b>	<b>17</b>	<b>18</b>

Source: Author’s Analysis Compiling ADP FY2021.

will be implemented at the level of 80-90 per cent (19.3 per cent), 28 projects to be implemented within the range of 40-80 per cent and the rest 25 projects (28.4 per cent) will be implemented below 40 per cent level. The ‘carry-over’ projects (27) would make better progress during FY2021, although number of those projects would be completed below 60 per cent level. The highest number of projects to be completed (10) in FY2021 will be from the categories of ‘concluding’ projects. This indicates that as many as 25 projects, which are supposed to be completed in FY2021 (71.4 per cent of the total number of projects), will not be completed on time. Among the ‘continuing’ projects (26), only one project will be completed in FY2021.



During FY2021, a lesser number of generation projects and a higher number of transmission and distribution-related projects will be completed. Out of 18 projects to be completed, two projects are generation-related, five projects are transmission related, and ten projects are distribution related. Among the 17 projects to be completed at the level of 80-90 per cent, five projects are related to generation, three are transmission related, and nine are distribution-related projects. Overall, transmission and distribution-related projects are getting more priorities and more allocation in FY2021 which would help to improve transmission and distribution of electricity system. On the other hand, allocation for generation-related projects is still getting attention in the budget which need to be lessened. Given almost half of the total generation capacity as 'reserve capacity', the allocation for generation related projects needs strong justification particularly at the time of fiscal stress to the government.

A detailed analysis has been carried out on generation-related projects to be undertaken during FY2021. As many as four coal-fired power plant projects will get allocation for completion or near completion during this year. Similarly, two fuel-based power plants will be either completed or will be near completed in FY2021. The coal-based power plant, which would be completed this fiscal year, could be deferred and that allocation could be used for alternate purposes. Another three coal-fired power plants have received an allocation to complete about 80-90 per cent of their work. These coal-based power plants include Payra, Rampal and Matarbari supercritical coal-fired power plants. The allocation for this coal-fired power plants could be reduced and progress of their implementation could be slowed down. Similarly, less allocation for two fuel-based power plants could defer their level of implementation during FY2021. There is little justification for

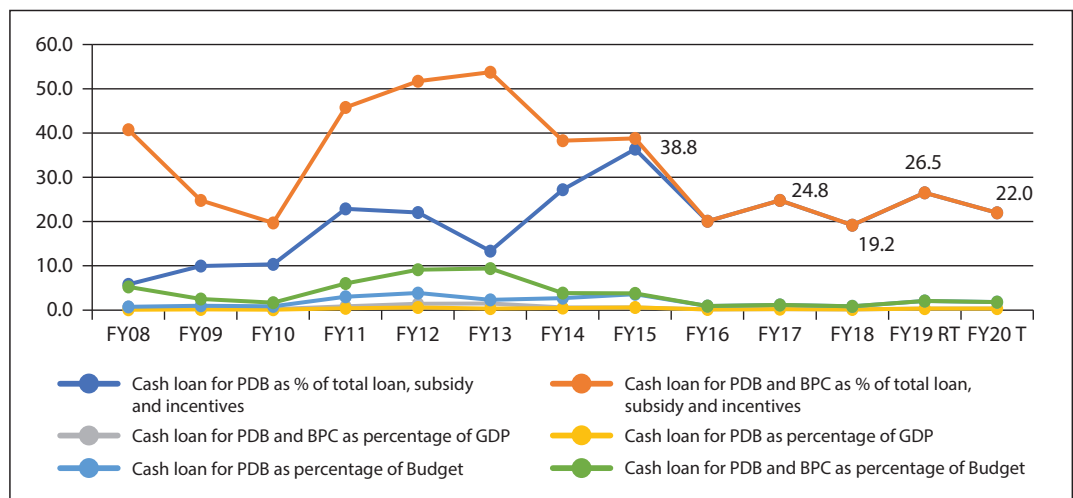
implementation of these fossil-fuel based power plants, particularly when the country is overburdened with generation capacity. Such allocative priorities in the national budget indicate that the country is moving towards the opposite direction from making the sector clean and green. In other words, the decision to defer the implementation of these projects would create fiscal space for the government in implementing other essential projects.

The budget allocation for renewable energy projects is scant. Out of three projects to be implemented in FY2021, none of the project gets sufficient allocation for completion within FY2021. The government should create scope for more investment in clean-energy projects; this could be done by discouraging new investment in coal/fuel-based power plants as well as by retiring private sector QRR power plants at the earliest. The Power Division may consider revisiting its priorities in generation-related projects based on fresh estimate of demand for electricity till 2041 and thereby putting effort towards making the power sector clean.

### 3.3 Fiscal and Financial Measures related to the Power Sector

**Subsidy (cash loan) to the Power Sector:** The fiscal support of the government in the form of cash loan (subsidy) is still a major contributor for meeting financial deficit of the BPDB. The amount of subsidised loan received by the Power Division during FY2021 is not properly specified in the budget documents; however, the Ministry has demanded a loan of Tk. 8000 crore for the current fiscal. This amount of subsidy would be 1.48 per cent of the total budget. The Power Division is the single largest borrower of subsidised loan from the government in the recent years – this was as high as 38.8 per cent during FY2013. During FY2020, its subsidy was accounted for more than one-fifth of total subsidy allocated for different sectors. It is to be noted that between FY2009 and FY2020, BPDB took a total of Tk. 61,510 crore taka as cash loan and the amount has increased over the years. According to Figure 4, the share of BPDB's loan both in terms of percentage of total budget and percentage of total GDP, has been declining. This decline in the share of BPDB's subsidy in recent years is not because of lower budget allocation for subsidy purposes, rather it happened because of considerable rise in the overall size of the budget and the GDP. Given the fiscal pressure, a high amount of subsidy for the Power Division in FY2021 would be difficult to manage for the government.

Figure 3: Cash Loan (Subsidy) for PDB and BPC: FY2009-FY2020



Source: Ministry of Finance.

**Other Fiscal Measures:** A number of power sector related fiscal measures have been announced in the national budget for FY2021. For example, the budget has made exemption of value added tax (VAT) on up to 60-amp solar battery production for partner organisations of Infrastructure Development Company Ltd. (IDCOL). Such a measure is expected to facilitate the production of environment-friendly solar battery in the country. However, 60-amp solar batteries have limited power storage capacity and it is largely used in auto-rickshaws; hence the benefit would be confined to specific purposes. The budget has announced VAT exemption facility for Ruppur Nuclear Power Plant project along with other infrastructure projects. Such a measure would stop getting revenue from a large-scale infrastructure project. The measures seems to be inconsistent with the current fiscal stress situation of the government.

Government has decided to impose 12 per cent import duty on furnace oil which was exempted earlier. Withdrawal of exemption benefit on import of furnace oil would create an opportunity to raise

revenue earning from the private sector which use imported furnace oil. An estimated Tk. 2000 crore would be deposited to the public exchequer because of these measures. However, the BPDB has taken a decision after the budget to reduce the price of furnace oil for the IPPs which would cross-subsidise IPP's additional payment for the new import duty. Lowering the price of furnace oil would pass on the financial burden to the BPDB, which is an inconsistent measure in the current context.

**Financial Measures:** Apart from fiscal measure, BPDB has undertaken additional steps in view of its growing financial burden. In June 2020, the Ministry of Power, Energy and Mineral Resources placed a new bill to the National Parliament seeking permission for adjustment of power tariff more than once in a year.

Approval of the Bill in the Parliament will allow the BPDB to raise the retail tariff more than once in this year as the last revision of the tariff was held in March, 2020. An upward adjustment of tariff would help the BPDB to accommodate its financial burden by passing through a part of the burden to the users of electricity. The question is whether such an adjustment is rational and justified without addressing overcapacity and inefficiency related excess expenditure. Such an adjustment would be justified in view of reducing the gap between market rate and administered rate only when the operational inefficiencies are addressed.

### 3.4 Fiscal-Budgetary Implications related to IPP Projects: Ongoing and Proposed

The operational costs of IPP projects have significant budgetary implications for the Power Division. Different levels of energy-mix, operational inefficiencies, un- and under-utilisation of capacity and operation of expensive quick rental power plants imply significant budgetary implications. The import payment for different primary energy which is largely used by IPPs has been increasing over the years (Table 7). Since BPDB possesses the sole authority to import

**Table 7: Bangladesh's Import of Energy ('000 US\$)**

Year	LNG (HS:271111)	HFO, HSD, others (HS:271019)	Coal (excluding bituminous) (HS:270119)	Bituminous Coal (HS: 270112)
2016		1762144	58188	53459
2017		2607237	131299	78064
2018	367177	3979543	183948	63973
2019	114676	3645473	327385	53976
2020 (Jan-Apr)		651137	24576	

Sources: ITC calculations based on UN COMTRADE and ITC statistics.

petroleum and coal, it has to make the import payment of the required energy for the private sector power plants. The foreign currency used for such import put pressure to the overall forex reserve of the country.

Different IPP projects which are currently being implemented will rise the fiscal-budgetary pressure further in the coming years. A

total of 6159 MW worth of generation capacity will be installed through those IPP plants. These power plants are at different levels of implementation from the level of initiation to over 95 per cent level of implementation (Table 8). A significant part of these plants will be coal-fired power plants (4532 MW) based on imported coal. Besides, 20 IPP projects have received LOI/NOA from government or

**Table 8: Private Sector Projects that are at Different Stages of Implementation**

Level of implementation	Total no. of projects	Amount of electricity to be generated (MW)				Total
		HFO/HSD/Gas based	LNG/Others	Coal-based	Renewable energy	
Initiated	10	0	1849	1849	1849	1849
Upto 10%	6	100	0	1459	85	1644
10-25%	7	389	0	1224	90	1703
25-50%	1	100	0	0	0	100
50-80%	6	637	0	0	0	637
80%+	2	226	0	0	0	226
<b>Total</b>	<b>32</b>	<b>1452</b>	<b>1849</b>	<b>4532</b>	<b>2024</b>	<b>6159</b>

Source: BPDB.

their tender assessments have completed. These projects will generate another 3207 MW worth of electricity. Of these, 1240 MW will be generated by coal, and 1040 MW will be generated by LNG. The establishment of such a large number of fossil-fuel based power plants would require more import of petroleum, LNG, and coal which will raise the import cost further. Low price of crude oil and petroleum products is a partial relief for the government during the period of COVID-19. However, the lower petroleum price cannot justify more fossil fuel-based power plants in the country.

IPPs for renewable energy projects are still limited. However, the number of projects is likely to increase in the future. As per the projects currently being implemented, over 2000 MW worth of electricity would be generated by renewable energy (solar and wind). Another 20 IPP projects have either received LOI/NOA from the government or have their tender assessment completed. These projects would generate about 927 MW of electricity by solar/wind.

## 4. Alternate Proposals for the Power Sector

### 4.1 Reprioritising ADP Projects: Need to Focus on Transmission and Distribution Projects

Out of 88 projects which are being implemented in FY2021, a total of 26 are transmission related, and 39 are distribution-related projects (Table 9). These projects should get priority in the budget allocation in order to be completed as per timeline. Early completion of these projects will contribute to improving transmission and distribution system. Among 26 transmission projects, only five projects get allocation for completion in FY2021; however, another six are 'carry-over projects', and six are 'concluding projects' which would be completed less than 90 per cent in FY2021. These projects include western grid network development, construction of Patuakhali-Gopalganj KV transmission line and Gopalganj 400 KV grid substation and construction of Bheramara-Bahrapur second 400 KV double circuit transmission line etc. These projects should get additional allocation for completion during FY2021.

Similarly, out of 39 distribution-related projects, only nine projects received allocation to complete in FY2021. Another nine are 'carry-over projects' and 12 are 'concluding projects' – these projects did not get sufficient allocation for completion within

**Table 9: Budget Allocation for Generation, Transmission and Distribution related Projects**

Type of Project	Carry-over projects			Concluding projects				Continuing projects				Total projects
	<90%	>90%	Total	<40%	40-90%	>90%	Total	<20%	20-40%	40%	Total	
Generation	5	1	6	2	4	1	7	1	1	4	6	19
Transmission	6	2	8	4	2	3	9	5	1	3	9	26
Distribution	9	4	13	2	10	5	17	3	3	3	9	39
Miscellaneous	-	-	-	1	0	1	2	0	1	1	2	4
<b>Total</b>	<b>20</b>	<b>7</b>	<b>27</b>	<b>9</b>	<b>16</b>	<b>10</b>	<b>35</b>	<b>9</b>	<b>6</b>	<b>11</b>	<b>26</b>	<b>88</b>

Sources: Author’s Analysis Compiling ADP FY2021.

FY2021. These projects include, among others, smart prepaid metering project for west zone power distribution company area. Additional allocation for these distribution-related projects would help to complete at the earliest and could contribute to improving the distribution system.

**4.2 ADP Allocation should put less priority on Fossil-Fuel based Power Generation Projects**

As high as 19 power generation projects will be implemented during FY2021 where the significant allocation has been earmarked. Such allocation will help to complete a number of fossil-fuel projects during FY2021 which need to be deferred. These projects include the construction of Bibiana-3 400MW combined cycle power plants (CCPP) and emergency assistance projects for BREB. This 400 MW CCPP will be completed with an allocation of Tk. 535 crore of which Tk. 40 crore will be managed from domestic sources. There is one coal-fired and one furnace oil-based power plant projects which will be completed between 80-90 per cent levels within FY2021. Both of these projects could be deferred, and resources could be saved for using alternate purposes. Besides, a total of Tk. 147 crore has been allocated from the revenue budget to conduct a feasibility study for the establishment of a coal-fired power plant. This project should be cancelled, and resources could be used for alternate purposes. Another Tk. 124 crore has been allocated from revenue budget for setting up a power generation plant which could be deferred.

A substantial amount of budget has been earmarked for a coal-fired power plant for which Tk. 578 crore will be made from the revenue budget, and the rest (Tk. 3092 crore) will be allocated from the foreign fund. Government should rethink about financing coal-fired power plants with the support of the development partners. Among the projects to be completed between ‘80-90 per cent’ and ‘60-80 per cent’ levels, an allocation of Tk. 250 crore has been earmarked for land acquisition and land development for the coal-fired power plant which could be cancelled. Among the projects to be completed by FY2022, there is a significant allocation made for land acquisition (Tk. 160 crore) for a coal-fired power plant. Also, allocation from the revenue budget has been made for conducting a feasibility study for another coal-fired power plant (Tk. 5 crore). Government should consider cancelling these projects. Such a decision would create fiscal space for undertaking other important projects.

**4.3 Easing Financial Burden by Reducing Overcapacity**

The Power Division needs to reduce its financial burden owing to overcapacity related costs. BPDB needs to gradually reduce its burden for capacity payment. Newly introduced payment method with the IPPs, which is called “No electricity, no pay” may help to reduce capacity payment and would help to reduce financial burden.

A mechanism needs to be developed to reduce the excess installed capacity beyond the officially declared level of reserve capacity (25 per cent). The estimated excess capacity is amounted to be 6893 MW. In this connection, gradual retirement of quick rental power plants (capacity of 1920 MW) would be the first step to reduce the over-generation capacity. Power plants which operate with a very low level of efficiency could be retired. A considerable amount of coal-fired power generation (capacity of 6159 MW) to be created both by public and private sectors need to be deferred or cancelled.

Deferment and cancellation of a number of power generation projects particularly those based on coal-fired and furnace oil could ease the pressure of high cost for imported fuels including furnace oil, HSD and coal. A major redirection will be required by promoting renewable energy projects, which will immediately reduce the fiscal pressure on the BPDB in terms of import payment and other additional costs. This will also reduce the pressure on paying higher charges for expensive furnace oil based power plants under the private sector.

**4.4 Fresh Outlook is needed for Renewable Energy**

Renewable energy-based power plants are limited in number in the pipeline. Under the public sector, only three projects are currently in the pipeline with a combined capacity of 162.5MW. In contrast, the private sector has made a considerable amount of investment which could generate about 2024 MW of electricity. Another 927 MW of renewable energy projects have received the LOI/NOA/completed tender process. The government should take initiative to popularise the net metering system and thereby increased the use of rooftop solar power system. More investment is needed for technological improvements in longer duration storage capacity of the solar battery. Incentivising renewable energy-based projects at the private sector could help popularise its use at a small scale (e.g. rooftop, school, and so on). Introduction of net metering system for small scale renewable energy projects connecting with the grid system should be popularised.

**5. Concluding Remarks**

The success of the power sector under this government should not be outweighed by growing challenges and missed opportunities. The COVID-19 has provided an opportunity to revisit existing approaches, operations, management, and cost and return of the ongoing projects. It is high time to rethink about future development strategies of the power sector in view of redirecting it towards clean-energy by 2030 and 2041.

The Power Division needs to reassess the demand for electricity for the coming years targeting 2041. Given the sluggish rise in electricity demand since the pre-COVID period, which would continue in the post-COVID period, the projected future demand for

electricity would be more conservative. In other words, the growing overcapacity and inefficiency in the power sector would further increase fiscal-budgetary pressure in the post-COVID period. The rationalisation of the Power Division's budget will be highly important to create fiscal space for undertaking other important activities within and outside the sector.

Considering overcapacity in power generation, the decision to defer and cancel of selected generation projects would release about Tk. 914 crore from the revenue budget and Tk. 2507 crore from foreign aid in FY2021. The government should renegotiate with development partners/private sector regarding redirecting project aid from ongoing generation-related projects towards

implementing clean-energy based, efficiency-enhancing transmission and distribution related projects. Round of negotiations will be conducted with the development partners and foreign MNCs for redirecting funds from coal-fired power plants to clean-energy based power plants.

Given the ongoing financial burden and limited subsidy commitment from the government for FY2021, the Power Division intends to raise its revenue by upward adjustment of retail tariffs. Without taking measures to reduce growing inefficiencies and other operational weaknesses, passing the financial burden to the consumers in the name of market-led adjustment of power tariff is difficult to justify.

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