

Draft

COVID-19 Pandemic in Bangladesh

The Power Sector in the National Budget for FY2020-21: An Analysis of Allocative Priorities & Alternate Proposals

Presentation by

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Discussion Points

1. Introduction
2. State of the Power Sector in FY2020: A Brief Overview
3. Challenges confronted by the Power Sector: Case of COVID-19
4. The Power Sector in the National Budget for FY2021
5. Analysis of Power Division's Annual Development Plan for FY2021
6. Alternate Budgetary Proposals and Beyond
7. Conclusion

1. Introduction

1. Introduction

- ❑ Bangladesh economy has been confronting major challenges in view of COVID-19 pandemic
 - The government has responded to the crisis since early stage by announcing and implementing various policy measures
 - Despite various initiatives, the FY2020 has been ended with a lot of despair in terms of economic growth, food security, unemployment and underemployment which caused rise in poverty and inequality
- ❑ The projected economic growth for FY2020 varied widely between official estimate (5.2%) and that of independent organisations (CPD: 2.5%; WB: 1.6%; IMF: 2.0%; ADB: 4.5%)
 - Forecast on economic growth for FY2021 is rather mixed: (MoF: 8.2%; ADB: 7.5%; WB: 1.2-2.9%; IMF: 9.5%)
 - CPD (2020) estimated a rise in poverty level to as high as 35%; BRAC (2020) estimated an income erosion of 95% households. Unofficial estimates indicate more than 1 crore people is in the risk of out of job
 - Disruptions in supply chains connected to domestic and international markets are far behind normal affecting production, export, investment, and employment
 - With the prolong period of COVID pandemic, the economy is likely to face challenges in managing short term risks which would led to make medium-term recovery
- ❑ The power sector of Bangladesh has been facing the consequent impact of COVID-19 in different ways
 - Lower demand for electricity during COVID period and the post-COVID period, growing financial burden and changing forecasted demand for electricity

1. Introduction

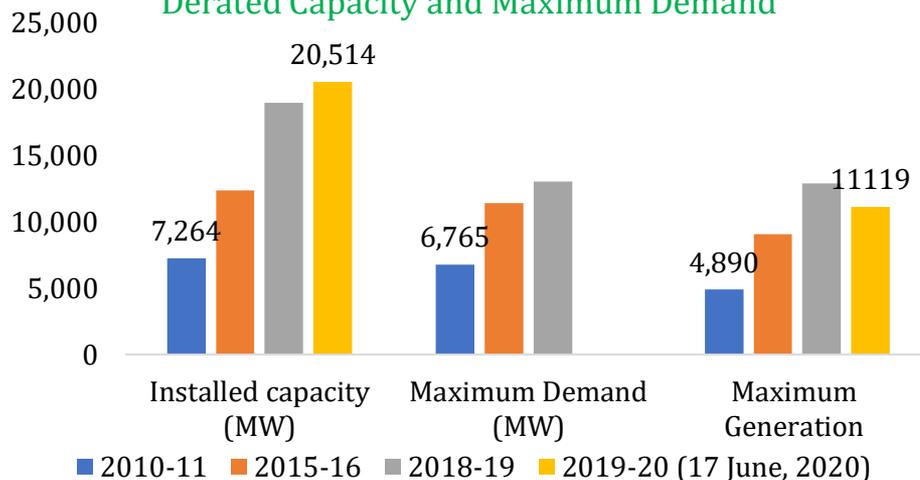
- ❑ In this backdrop, the national budget for FY2021 has been announced in the National Parliament on 11 June, 2020 and now is being discussed in the Parliament
 - Total budget for FY21 will be Tk.568,000 crore which is 7.0% higher than that of FY2020 (Tk.523,000 crore)
 - As per the budget document, four areas will get the priority in the next year: health, education, agriculture, and employment generation
 - Government is projecting a quick economic recovery during FY2021 (MTPS FY21-23)
 - Projected GDP growth will be 8.2% (jump from 5.2% in FY20) and projected private investment will be 25.4% (jump from 12.7% FY20)
- ❑ CPD (2020) explained that macroeconomic framework and fiscal framework of the budget for FY2021 are at their weakest links
 - Given the prevailing health crisis, both private investment and GDP would not rise as projected
 - Implementation of the budget will be highly difficult because of ambitious target-setting for revenue mobilization, limited attention in expenditure control, difficulty in deficit financing and lack of reprioritization of budget allocation
- ❑ The power sector has an important role to play in implementing the National Budget for FY2021
 - Scopes for creating fiscal space through rationally adjust revenue and development expenditures of the Power Division
 - Reprioritising ADP allocations of the Power Division in view of possible future adjustment of the power sector
 - Utilising the fiscal space for implementing alternate priorities
- ❑ This budget-analysis will help to identify the power sector's allocative priorities, areas for improvement in resource utilisation and possible scopes for future adjustment

2. State of the Power Sector in FY2020: A Brief Overview

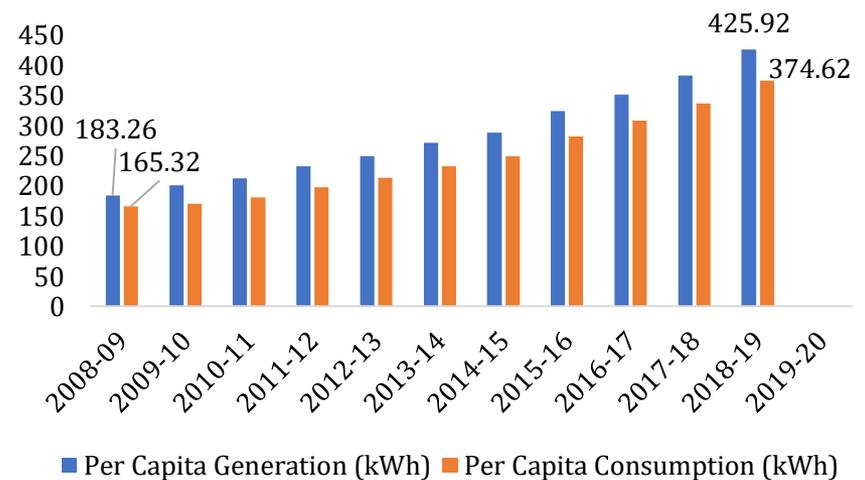
2. State of the Power Sector in FY2020: A Brief Overview

- ❑ The power sector is one of the major areas of success of the government over the last decade. Between FY09 and FY20 (mid-June)-
 - *Installed power generation capacity has increased: from 5,823MW to 20,514 MW (252.3%)*
 - *Maximum generation of electricity has increased: from 4,606 MW to 11,119 MW (141.4%)*
 - *Per capita consumption of electricity has increased: from 165.3kWh to 374.6kWh in FY2019 (126.6%)*
 - *The number of consumers of major economic activities has gradually increased: 8.7% in FY19 (y-o-y basis)*

Generation of Electricity: Installed Capacity, Derated Capacity and Maximum Demand



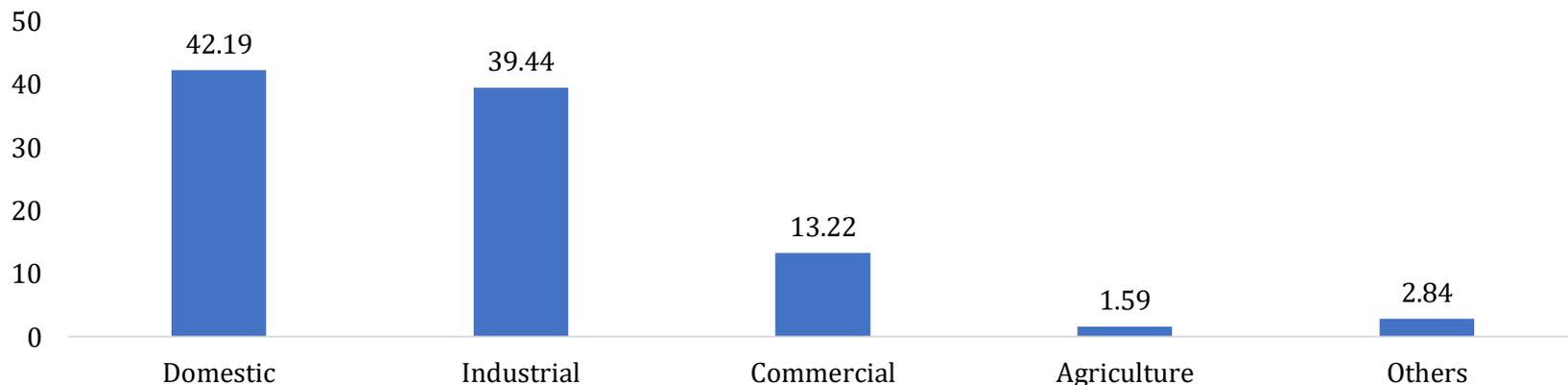
Per Capita Generation & Consumption (kWh)



2. State of the Power Sector in FY2020: A Brief Overview

- ❑ Despite the progress, demand for electricity did not rise as per projection of the PSMP2016
 - The lower growth in electricity demand is observed in agriculture (FY21: 2.6%) and small-scale industries (2.9%)
 - Moderate level of growth is observed in domestic (9%) and large-scale industry & commercial activities (9.5%)
 - Sluggish growth in production and investment in manufacturing, services, and commercial activities is the main reason behind this
 - COVID-19 has further aggravated the situation

Distribution of Consumers of Electricity, FY2018-19 (% of total consumers)



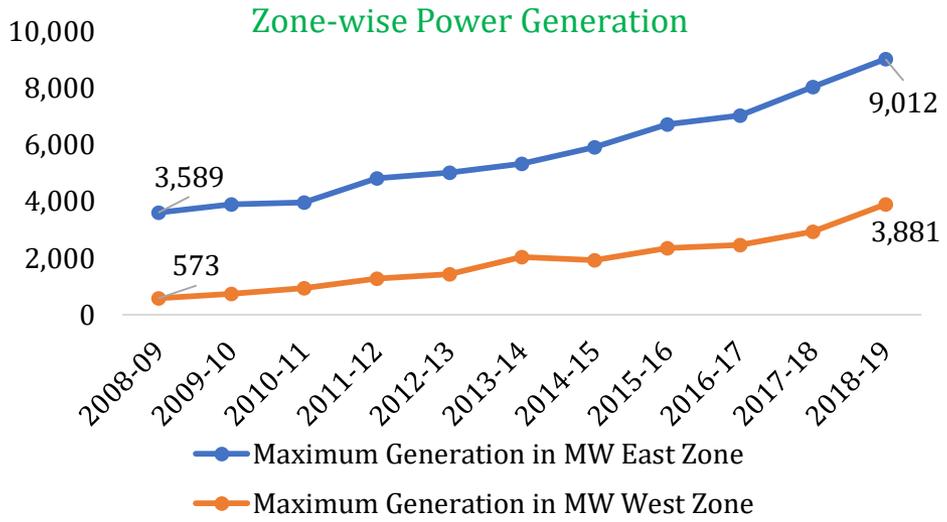
2. State of the Power Sector in FY2020: A Brief Overview

- ❑ The private sector is increasingly becoming the major source for power generation – public sector (9567 MW, 48.5%); IPP (6919 MW; 35%); QRPP (1958MW; 9.9%) and imported (160 MW; 5.9%)
 - Power generation is overwhelmingly dependent on fossil-fuel: gas (10,624MW; 53.5%), F. oil (5,152 MW; 25.9%) and HSD (1,875 MW; 9.4%). Coal is used to generate 524 MW worth of electricity
 - Renewable energy is a marginal source (1.5%; 300 MW) - solar (70MW) and hydro (230 MW)
 - Little effort has been made towards developing clean energy based power sector

Installed Capacity: Ownership and Energy-mix

Ownership	Installed capacity (no. of plants)	Raw Materials/ Fuel	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)
		Hydro	230 mw (1)
		Solar	70 mw (4)
Total	19595 mw (147)	Total	19595 mw (146)

2. State of the Power Sector in FY2020: A Brief Overview



No of Plants in Different Zone with Energy-mixes							
Zone	Coal	Gas	HFO	HSD	Hydro	Solar	Total
Barisal	1	3	1	0	0	0	5
Chit.gong	0	5	12	0	1	2	20
Comilla	0	15	7	1	0	0	23
Dhaka	0	20	16	3	0	0	39
Khulna	0	1	6	3	0	0	10
M.sigh	0	2	3	0	0	1	6
Rajshahi	0	9	10	1	0	0	20
Rangpur	3	0	1	2	0	1	7
Sylhet	0	16	0	0	0	0	16
Total	4	71	56	10	1	4	146

- ❑ Higher demand for electricity in the east zone (i.e. concentration of economic activities) pushed for generating more electricity compared to that of the west zone (69% and 31% of total respectively)
 - Majority of power plants are located in Dhaka (39), Comilla (23), Chittagong (20), Rajshahi (20) and Sylhet (16)
- ❑ Energy-mix of power plants is largely of two types
 - Public PPs are largely gas-based
 - Private PPs (IPPs) are mostly F. oil/HSD based while QRPP are mostly gas/F. oil based
- ❑ The transmission and distribution systems did not make considerable progress in commensurate with that of power generation

3. Challenges Confronted by the Power Sector: Case of COVID-19

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- ❑ The progress in the power sector is not out of weaknesses/challenges which need to be examined particularly in view of COVID 19 pandemic in the country

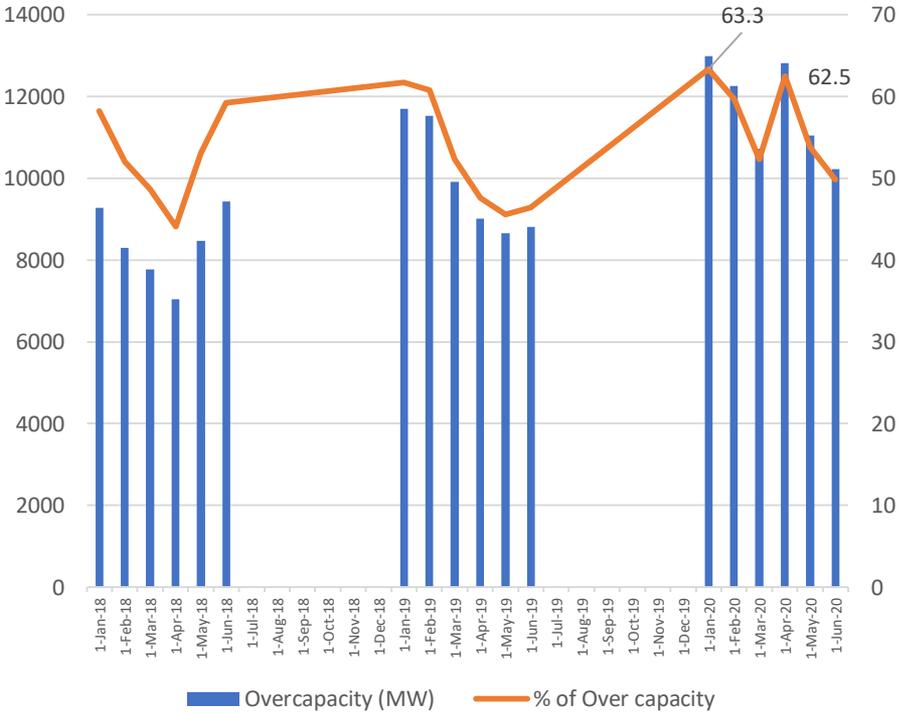
- ❑ **Overcapacity in Power Generation:** Overcapacity is a growing concern for the power sector which has further aggravated during the COVID-19 period
 - The amount of overcapacity on 16th June of FY18, FY19 and FY20 was 9,437 MW, 8,806 MW, and 10,216 MW respectively
 - During the same period, the rates of overcapacity were found to be as 59%, 46%, and 49.8% respectively
 - The over-capacity was reported at the highest level in January and March of 2020 (during the COVID-19 period) at 63.3% and 62.5% respectively
 - Such a high amount of 'reserve' capacity is against the target set at the PSMP (25%). This is significantly higher than the reserve capacity usually maintained by developing countries (10%) (IEEFA, 2020)
 - The Power Division (BPDB) has confronted rising fiscal and financial burden due to overcapacity related problems which has aggravated further during the COVID-19 period and would deepen in the post-COVID period

3. Challenges Confronted by the Power Sector: Case of COVID-19

Over Capacity in terms of Demand and Generation

Year	Over capacity (as per max. demand)	Over capacity (as per max. generation)	% of share of over capacity of installed capacity
1990-91		710	30.2
2000-01	611	972	24.3
2010-11	499	2374	32.7
2015-16	960	3329	26.9
2018-19	5917	6068	32.0
2019-20 (17 June, 20)		10216	49.8

Overcapacity in Power Generation: Pre-COVID and COVID Period



3. Challenges Confronted by the Power Sector: Case of COVID-19

- ❑ **Un- and under-utilisation of power plants:** Unbalanced growth in generation capacity and lack of commensurate rise in electricity demand particularly during COVID-19 period forced a large number of power plants to remain idle
 - During the C-19 period as many as 45 power plants (out of 147 PPs) were unutilized (0 utilization rate) in a single day (17 June, 2020); the number of such plants was only 19 a year earlier (17 June, 2019)
 - Lower level of utilization of power plants is higher during FY20 (e.g. COVID period)
 - Higher number of power plants were idle in Dhaka, Comilla and Chittagong zones due to lack of demand in major economic activities
 - Gas-based power plants were idle more
 - Majority of plants were idle due to ‘reserve’ and ‘maintenance purposes

Table: Zero Percent Utilisation of Plants with Reasons in 17 June 2020

Remarks	Chittagong	Comilla	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Total
Coal shortage	0	0	0	0	0	1	0	1
Contract Expired	0	0	0	0	0	0	1	1
FGMO	0	0	0	0	0	0	1	1
Fuel Shortage	0	0	1	0	0	0	0	1
Gas shortage.	1	2	1	0	3	0	0	7
Low demand	0	0	1	0	0	0	0	1
Reserve	2	4	3	5	4	0	0	18
Under S/D.	1	0	0	0	0	0	0	1
Under maint.	1	0	7	0	0	2	1	11
Total	5	6	13	5	7	3	3	42

3. Challenges Confronted by the Power Sector: Case of COVID-19

Table: Zone wise Utilisation rate with no. of plants in 17 June 2019

Zone	0%	<10%	10-20%	20-40%	40-60%	60-80%	80-90%	90-100%	Total
Barisal	0	0	0	0	1	1	1	1	4
Chittagong	2	0	1	3	4	4	2	2	18
Comilla	4	1	1	0	2	6	2	5	21
Dhaka	7	0	1	5	5	5	9	6	38
Khulna	1	1	0	2	2	3	1	1	11
Mymensigh	0	1	0	0	1	1	0	1	4
Rajshahi	2	1	0	2	5	4	2	2	18
Rangpur	1	1	0	0	3	1	0	0	6
Sylhet	2	0	0	0	3	2	3	3	13
Total	19	5	3	12	26	27	20	21	133

Table: Zone wise Utilisation rate with no. of plants in 17 June 2020

Zone	0%	<10%	10-20%	20-40%	40-60%	60-80%	80-90%	90-100%	Total
Barisal	0	0	0	1	1	1	1	1	5
Chittagong	7	2	0	1	4	1	0	4	19
Comilla	6	1	0	2	5	4	2	3	23
Dhaka	13	1	0	3	2	5	6	9	39
Khulna	5	0	0	1	2	1	1	1	11
Mymensigh	0	0	0	0	2	2	0	2	6
Rajshahi	8	0	0	2	3	1	3	3	20
Rangpur	3	0	1	1	1	1	0	0	7
Sylhet	3	0	0	1	0	3	3	5	15
Total	45	4	1	12	20	19	16	28	145

3. Challenges Confronted by the Power Sector: Case of COVID-19

Table 3: Plant wise generation capacity and Level of Efficiency

Efficiency level (%) Net	No. of plants	Percent
0-10%	0	
10-20%	5	3.65
20-30%	23	16.79
30-40%	49	35.77
40-50%	56	40.88
50-60%	4	2.92
60-70%	0	0
70-80%	0	0
80%+	0	0
Total	137	100

Table 4: Power generation through different raw materials

Efficiency level (%) Net	Power generation (in terms of energy mix)				
	COAL	F.oil	Gas based	HSD	Total
0-10%					
10-20%	1	0	2	2	5
20-30%	0	0	20	3	23
30-40%	1	14	26	8	49
40-50%	0	35	14	7	56
50-60%	0	0	4	0	4
>60%	0	0	0	0	0
Total	2	49	66	20	137

Table 5: Power generation through different public and private sector plants

Efficiency level (%) Net	Power generation through different public and private sector			
	Public PP	IPP	Rental	Total
0-10%				
10-20%	5	0	0	5
20-30%	19	1	3	23
30-40%	21	10	18	49
40-50%	14	33	9	56
50-60%	4	0	0	4
>60%	0	0	0	0
Total	63	44	30	137

❑ Lower Level of Efficiency:

Majority of power plants (over 55%) operate at lower efficiency level (less than 40%)

- 36% of plants operate at the level of 30-40% efficiency level and another 17% plants operate at the level of 20-30% efficiency level
- About 41% plants operate between 40-50% level
- IPPs and QRPPs operate with better efficiency level compared to that of Public PPs
- HFO and HSD based PPs operate at better efficiency level compared to that of gas-based PPs
- It is important to examine whether the priority list for power generation plants are properly followed particularly during the period of COVID-19¹⁷

3. Challenges Confronted by the Power Sector: Case of COVID-19

- ❑ **Wide variation in plant factors:** Huge variation of plant factors is another weakness

Annual Plant Factor

	Annual Plant factor
Dhaka	2.7-78.4
Chittagong	2.6-52.5
Comilla	7.7-84.8
Sylhet	16.1-83.3
Khulna	4.4-58.2
Barisal	3.7-79.7
Rajshahi	9.7-66.4
Rangpur	8.5-52.3
Private IPP	0.41-76.2
Rental PP	2.49-84.1

3. Challenges Confronted by the Power Sector: Case of COVID-19

❑ **Fiscal and Financial Burden:** The expenditure for power generation has been increasing over the years though per unit generation cost has declined

- BPDB's yearly expenditure in FY2018 and FY2019 was Tk.38,576 crore and Tk.41,245 crore respectively
- Per unit cost of electricity was Tk.6.33 and Tk.6.01 respectively
- BPDB needs to take loans/subsidy from the government; despite that, BPDB incurred considerable amount of losses (Tk.6,207 crore in FY18 & Tk.5,046 crore in FY19)
- Expenditure in selected items (e.g. power purchase from IPP; coal purchase) were exceptionally high
- The COVID-19 will further rise the financial burden particularly due to overcapacity, inefficiency, and underutilization of power plants

Generation cost of BPDB's own plant and Electricity purchase from other sources					
Particulars	FY2017-18		FY 2018-19		Increase/ (Decrease)
	Amount (Crore Tk.)	Cost (Tk/kWh)	Amount (Crore Tk.)	Cost (Tk/kWh)	
BPDB's Generation	9431.4	6.4	7648.1	4.6	-0.2
Purchase from IPP	10410.6	5.7	15748.5	7.4	0.5
Purchase from Rental	6281.7	8.8	5013.6	8.4	-0.2
Purchase from Public Plant	7289.5	4.5	6839.3	3.8	-0.1
Purchase from India	2812.6	5.9	3702.6	5.5	0.3
Interest on budgetary support	1188.3	0.2	1294.8	0.2	0.1
Provision for Maintenance and Development fund	1162.7	0.2	998.2	0.2	-0.1
Total	38576.8	6.3	41245.1	6.0	-0.1

3. Challenges Confronted by the Power Sector: Case of COVID-19

Budget for FY19: Achievement

Operating income and operating expenses for FY2018 and FY2019 (Tk. cr)

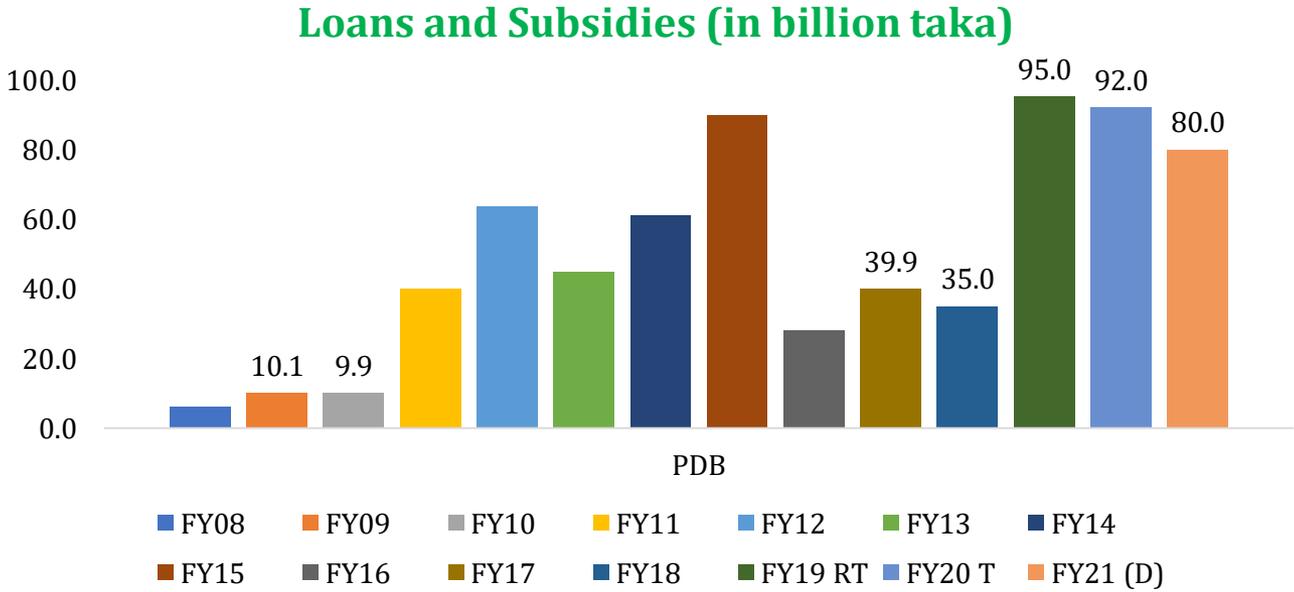
Head of Accounts	FY 2017-2018	FY 2018-2019	Amount increase/ (Decrease)	Percentage of increase/Decrease
Operating Revenue	0,604.41	34,506.87	3,902.46	12.75%
Operating Expenses	36,811.89	39,553.30	2,741.41	7.45%
Profit/(Loss)	-6,207.47	-5,046.43	1,161.05	-18.70%

Operating Expenses

Operating Expenses	Budget (Lac Tk.)	Achievement (Lac Tk.)	Performance over budget
Fuel Cost - Gas	123,092	122,684	408
Diesel/Furnace Oil Used for Electricity Generation	241,087	237,993	3,094
Coal Used for Electricity Generation	45,531	64,258	-18,727
Electricity Purchase from IPP	1,506,886	1,574,850	-67,964
Electricity Purchase from Rental	521,211	501,362	19,849
Electricity Purchase from India	417,424	370,263	47,161
Electricity Purchase from Public Plant	731,423	683,930	47,493
Depreciation	171,870	182,683	-10,813
Repair & Maintenance Expenses	87,550	61,130	46,420
Personnel Expenses	134,608	121,953	12,655
Office & Administrative Expenses	40,316	12,720	27,596
Transmission Expenses for Wheeling Charge	28,522	21,502	7,020

3. Challenges Confronted by the Power Sector: Case of COVID-19

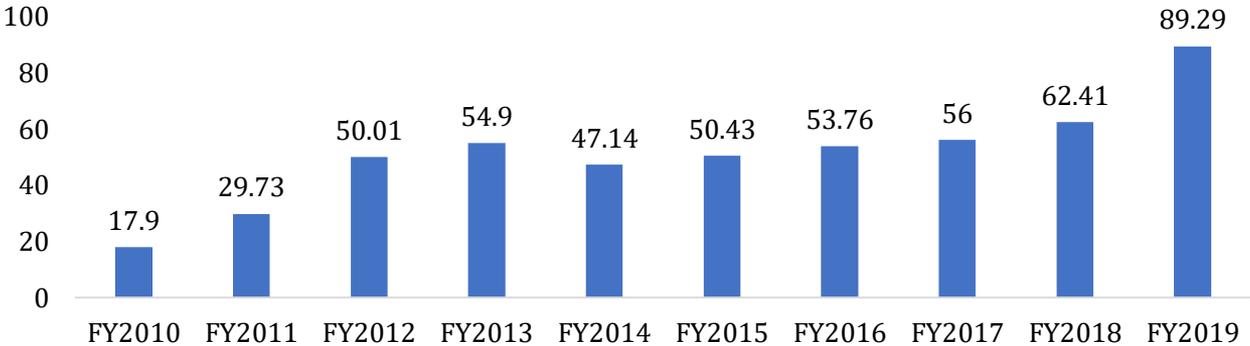
- ❑ **Loans & Subsidies from Government:** A large amount of loans/ subsidy from the government is required to meet additional expenses of the BPDB
 - The requirement of loan has significantly increased in recent years (Tk.9,200 crore in RBF20)
 - The COVID-19 would further rise the requirement of loan in FY21 (Tk.8,000 crore has been demanded by the Power Division)



3. Challenges Confronted by the Power Sector: Case of COVID-19

- ❑ **Payment of Capacity Charges:** Payment of capacity charges to power plants is a growing expenditure for the BPDB particularly for rising un- and under-utilization of capacity
 - The payment has significantly increased over the years – from only Tk.1,790 crore in FY10 to 8,929 crore in FY19 (rise by 398%)
 - In FY2019, the amount of capacity payment is almost equivalent to the amount of subsidy
 - Due to COVID 19, the requirement of capacity payment would rise further in FY21

Capacity Payment to Power Plants (billion Tk.)



- ❑ **Revision of Electricity Tariff:** Revision of electricity tariff is happened at lower than the market level. However, adjustment of electricity tariff is partly responsible for the higher fiscal burden
 - The electricity tariff was last revised in February, 2020
 - Low petroleum price may partly reduce the cost pressure for purchasing fuel

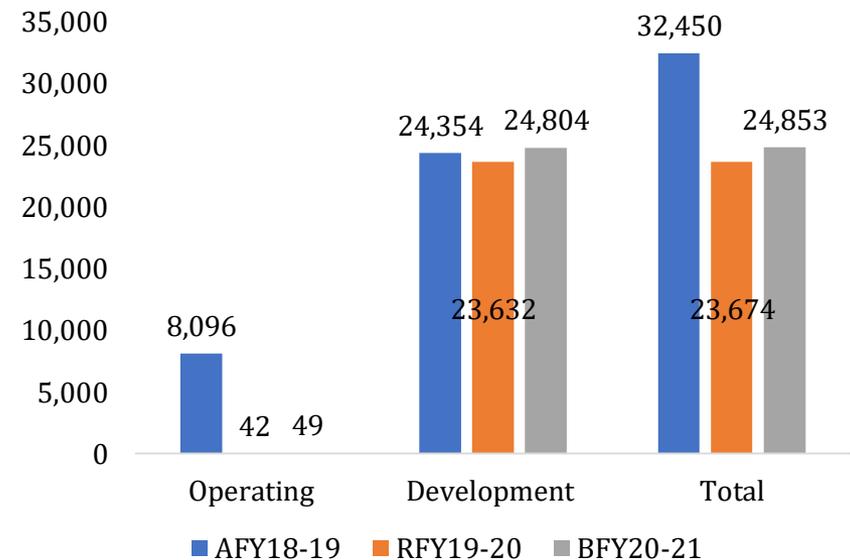
4. The Power Sector in the National Budget for FY2021

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□ The National budget for FY2021 has allocated Tk.26,758 crore for the Energy and Power Divisions

- Tk.24,804 crore for the Power Division and Tk.1,836 crore for the Energy and Minerals Resource Division
- The amount of budget for Power Division has increased by 4.98%; of which, operating budget increased by 16.7% and development budget increased by 4.9%
- Development budget comprises 99.8% of Power Division's budget
- Despite the rise in budget allocation, the budget share of Power Division has declined from 5.21% in RFY20 to 4.71% in BFY21

Non-development, development and total allocation for Power Division



Source: CPD (2020)

□ During budget revision for FY20, the government has downsized the allocation for several ministries/divisions including that of the Power Division

- RFY20 reduced allocation for the Power Division by Tk.2,390 crore

□ Analysis of the power sector in the national budget for FY21 requires to examine the following four issues: a) Allocative priorities in the development budget; b) Demand for subsidy under the operating budget; c) Fiscal measures related to the power sector and d) Changing the direction of the budget towards clean energy

4. The Power Sector in the National Budget for FY2021

- ❑ A total of 88 projects will be implemented in the Power Division in FY2021 with a total investment of Tk.26,541
 - Majority of projects are ‘continuing’ projects (40.6% of total budget); followed by ‘carryover’ projects (28.4%) and ‘concluding’ projects (31%)
 - No ‘new’ investment project has been considered for FY21; a new technical project has been considered
 - An estimated Tk.100 crore would be required for initiating unapproved projects in FY21
- ❑ Comparing the budget allocation between BFY20 and BFY21, no major difference is observed in overall allocative priorities of the Power Division
 - In FY2020, the proportionate distribution of budget allocation for ‘continuing’, ‘concluding’ and ‘carryover’ projects were 47.6%, 39.2 and 12.9% respectively
- ❑ The share of ‘carryover’ projects has increased in FY21
 - This indicates inefficiency in implementation of projects

Status of ADP Projects undertaken by the Power Division in FY20 and FY21

Projects	FY2020 (lakh Tk.)					No of Projects
	New	Continuing	Concluding	Carryover	Total	
Investment	95	11958.78	9922.76	3269.93	25246.47	74
Technical	0	109.56	0	0	109.56	8
Approved Projects	95	12068.34	9922.76	3269.93	25356.03	82
Unapproved Projects					2009.5	
Total					27365.53	

Projects	FY2021 (Lakh Tk.)					Number of Projects
	New	Continuing	Concluding	Carryover	Total	
Investment	0	1075956	818467	750277	2644700	79
Technical	200	2189	4099	3000	9488	9
Approved Projects	200	1078145	822566	753277	2654188	88
Unapproved projects					10001	
Total					2664189	

5. Analysis of Power Division's ADP for FY2021

5. 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 for FY21
 - 18 projects are likely to be completed in FY21. Another 17 projects will be completed between 80-90% where additional allocation could help complete those in next fiscal
 - Allocation has been made for 7 projects which will be completed between 10-20% when most of the projects are supposed to be completed in FY21
 - Allocation has been made for 7 projects which will be completed less than 10% where the projects are supposed to be completed between FY22-FY24
- It is expected that Power Division will not encourage additional investment in generation related projects except that of renewable energy projects given the existing overcapacity as well as creating fiscal space for other activities
 - The allocation should give priority to projects related to transmission and distribution

Implementation Rate of ADP Projects at the end of June, 2021 (All projects)

Project Completion Year	No. of projects	No. of projects as per rate of implementation						
		<10%	10-20%	20-40%	40-60%	60-80%	80-90%	90% and above
Up to June, 2019	1	0	0	0	1	0	0	0
By June, 2020	26	0	0	1	3	4	11	7
By June, 2021	35	1	5	3	4	7	5	10
By June, 2022	16	3	2	4	5	1	1	0
By June, 2023	5	1	0	1	3	0	0	0
By June, 2024	3	3	0	0	0	0	0	0
Beyond June, 2024	2	0	0	1	0	0	0	1
Total	88	8	7	10	16	12	17	18

5. Analysis of Power Division's ADP for FY2021

- ❑ In case of generation, 2 projects will be completed in FY21 while another 5 projects will be completed at 80-90% level
- ❑ A total of 5 transmission and 10 distribution related projects will be completed by the end of FY21 which is positive news
- ❑ There are scopes for more allocation for additional 3 transmission and 9 distribution related projects to be completed in FY21

**Implementation Rate of ADP Projects at the end of June, 2021
(Generation related projects)**

Project Completion Year	No. of projects	No. of projects as per rate of implementation						
		<.10%	10-20%	20-40%	40-60%	60-80%	80-90%	90% and above
Up to June, 2019	1		0	0	1	0	0	0
By June, 2020	5		0	1	1	0	2	1
By June, 2021	7		1	1	1	1	2	1
By June, 2022	4		1	0	2	0	1	0
By June, 2023	1		0	0	1	0	0	0
By June, 2024								
Beyond June, 2024	1		0	1	0	0	0	0
Total	19		2	3	6	1	5	2

**Implementation Rate of ADP Projects at the end of June, 2021
(Distribution related projects)**

Project Completion Year	No. of projects	No. of projects as per rate of implementation						
		<.10%	10-20%	20-40%	40-60%	60-80%	80-90%	90% and above
Up to June, 2019								
By June, 2020	2	0	0	0	0	0	2	0
By June, 2021	12	0	0	0	2	2	4	4
By June, 2022	16	0	1	1	2	4	3	5
By June, 2023	6	1	0	3	2	0	0	0
By June, 2024	2	2	0	0	0	0	0	0
Beyond June, 2024	1	0	0	0	0	0	0	1
Total	39	3	1	4	6	6	9	10

**Implementation Rate of ADP Projects at the end of June, 2021
(Transmission related projects)**

Project Completion Year	No. of projects	No. of projects as per rate of implementation						
		<.10%	10-20%	20-40%	40-60%	60-80%	80-90%	90% and above
Up to June, 2019	3	0	0	0	0	1	2	0
By June, 2020	5	0	0	0	0	2	1	2
By June, 2021	9	1	3	0	1	1	0	3
By June, 2022	4	2	1	0	0	1	0	0
By June, 2023	4	1	0	1	2	0	0	0
By June, 2024	1	1	0	0	0	0	0	0
Beyond June, 2024								
Total	26	5	4	1	3	5	3	5

5. Analysis of Power Division's ADP for FY2021

Implementation Rate of ADP Projects at the end of June, 2021 (Coal-based/Thermal power plants/ related projects)

Project Completion Year	No. of projects	No. of projects as per rate of implementation						
		<10%	10-20%	20-40%	40-60%	60-80%	80-90%	90% and above
Up to June, 2019	1				1			
By June, 2020	2				1		1	0
By June, 2021	3				1		1	1
By June, 2022							1	
By June, 2023	1				1		0	0
By June, 2024								
Beyond June, 2024								
Total	7				3		3	1

Implementation Rate of ADP Projects at the end of June, 2021 (Combined cycle/dual fuel/related projects)

Project Completion Year	No. of projects	No. of projects as per rate of implementation						
		<10%	10-20%	20-40%	40-60%	60-80%	80-90%	90% and above
Up to June, 2019								
By June, 2020	3			1			1	1
By June, 2021	2		1	1				
By June, 2022	2		1		1			
By June, 2023								
By June, 2024								
Beyond June, 2024	1			1				
Total	5		2	2	1		1	1

- ❑ A detailed analysis has been carried out on generation-related projects which use different energies
 - Allocation has been made in a way to complete one coal-based power plant – this could be deferred
 - Another 3 coal-fired power plants have received an allocation to complete about 80-90% of their work
 - Allocation has been made for completion of 1 fuel-based power plant and another one to near completion level
- ❑ There are scopes for deferring implementation of both coal-based and fuel-based power plants
 - Limitations of resources and already large-scale overcapacity in power generation
 - A part of these resources could be used for alternate purposes

5. Analysis of Power Division's ADP for FY2021

- ❑ Allocation of resources for implementing solar energy projects is scant – out of three projects none got adequate allocation to complete the project by FY21
- ❑ It is important to put emphasis on reprioritisation of the budget allocation of the Power Division particularly towards promoting clean energy
 - ❑ By discouraging new investment in coal/fuel-based power plants and retiring private sector quick rental power plants on a priority basis
 - ❑ By giving priorities to renewable energy based power plants

Implementation Rate of ADP Projects at the end of June, 2021
(Solar energy/wind/renewable energy/ roof top solar energy projects)

Project Completion Year	No. of projects	No. of projects as per rate of implementation						
		<10%	10-20%	20-40%	40-60%	60-80%	80-90%	90% and above
Up to June, 2019								
By June, 2020	2				1	1		
By June, 2021	1				1	0		
By June, 2022								
By June, 2023								
By June, 2024								
Beyond June, 2024								
Total	3				2	1		

5. Analysis of Power Division's ADP for FY2021

Fiscal Measures on Power Sector in the Budget for FY21

- ❑ Government has announced VAT exemption on up to 60-amp solar battery production for partner organisations of Infrastructure Development Company Ltd (IDCOL)
 - Such a measure would support environment-friendly clean energy growth
- ❑ Withdrawal of exemption benefit on import of furnace oil will discourage installation of furnace oil-based power plants and helping to promote less carbon foot-print
 - At the same time, such a measure will contribute to raising revenue by about Tk.2000 crore which was earlier foregone
- ❑ VAT exemption facility provided to Rooppur Nuclear Power plant Project along with other infrastructure projects will have an adverse impact on revenue mobilization

5. Analysis of Power Division's ADP for FY2021

- ❑ Various initiatives undertaken by the private sector particularly in terms of setting up power plants have important budgetary implications
 - Those initiatives if not properly aligned with the requirement would further rise overcapacity and would increase fiscal and financial burden
- ❑ A large number of power sector IPPs are currently at different stages of implementation

Private sector projects that are at different stage of implementation						
Level of implementation	Total no. of projects	Amount of electricity to be generated (MW)				
		HFO/HS D/Gas based	LNG/Others	Coal-based	Renewable energy	Total
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
Total	32	1452	1849	4532	2024	6159
Source: BPDB						

- A total of 6,159 MW worth of power generation capacity (from initiation to over 95% of implementation)
- Installed capacity would rise to 26,673MW – a large part of this electricity would add overcapacity
- A significant part of these plants will be coal-fired power plants (4,532 MW) to be operated using imported coal
- These projects should be deferred/canceled (if possible)

Private Sector Projects which Received LOI/NOA/Tender Process						
	Total no. of projects	Amount of electricity to be generated (MW)				
		Oil-based	LNG/Others	Coal-based	Renewable energy	Total
LOI/NOA Issued	13	0	1040	1240	577	2857
Assessment of tenders	7	0	0	0	350	350
Total	20	0	1040	1240	927	3207

5. Analysis of Power Division's ADP for FY2021

- Over 2,000 MW worth of electricity has been planned to be generated by renewable energy (solar and wind)
- ❑ A total of 20 IPP projects are currently at an early stage of implementation such as those received LOI/NOA from government or assessment of tenders is undertaken
 - A total of 3,207 MW worth of electricity to generated largely by coal (1,240) and LNG (1,040)
 - About 927 MW to be generated by solar/wind
- ❑ Establishment of such a large number of fossil-fuel based power plants would require import of huge amounts of petroleum, LNG, and Coal
- ❑ Import cost for petroleum has significantly increased in recent year which was as high as US\$4.5 billion in FY2018 and US\$4.1 billion in FY2019
- ❑ Such import cost would significantly increase in the future as most will be operated by imported fuel
 - Low price of crude oil and petroleum products is a partial relief for the government during the period of COVID-19
 - This should not be used as a reason for promoting fuel-based power plants

Bangladesh's Import of Energy				
Year	LNG (HS:27111)	HFO, HSD, others (HS:271019)	Coal (excluding bituminous) (HS:270119)	Bituminous Coal (HS:270112)
2015	22			7240
2016	6	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.

6. Alternate Proposals for the Power Sector

6. Alternate Proposals for the Power Sector

- There are as many as 26 projects which were supposed to be completed by June, 2020 (carry-over projects)
 - As per allocation for FY21, 7 of those projects are likely to be completed/near completed
 - 6 out of these 7 projects are related to transmission which needs to be completed quickly
 - A 400 MW CCPP will be completed with an allocation of Tk.535 crore of which Tk.40 crore is from government's revenue –could it be possible to defer?

Budget Allocation for Carry-over Projects which have completion date 'up to June 2020'								
Completion rate till June, 2020	Expected Completion rate till June, 2021							Total
	<10 %	10-20%	20-40%	40-60%	60-80%	80-90%	90% and above	
<10%			0	2	0	0	0	2
10-20%			0	1	1	0	0	2
20-40%			1	0	0	0	0	1
40-60%					1	1		2
60-80%			0	0	2	4	4	10
80-90%			0	0	0	6	0	6
90% and above			0	0	0	0	3	3
Total			1	3	4	11	7	26

Carry-over Projects with 90+% Implementation Level		
Project Name	Maximum Possible Completion by FY21	Completion rate by FY20
Construction of Bibiana-3, 400MW Combined Bicycle Power Plants	106.0	90.0
Aminbazar-Mawa-Mongla 400 KV transmission line	117.2	76.6
Construction of Patuakhali-Payra 230 KV transmission line	95.2	94.6
15 lakh customer connections through rural electrification expansion (1st revised with 19.50 lakh customer connection facilities)	92.2	78.7
Emergency Assistance Project BREB Part (Electrification for Displaced Myanmar Citizens in Cox's Bazar	94.9	74.1
Convert, enhance and install existing 33 kV overhead lines to underground cable in DESCO area.	101.4	92.7
Technical Assistance Project for Institutional Strengthening of Rural Electrification Program	109.4	70.2

6. Alternate Proposals for the Power Sector

- ❑ Among the ‘carry over’ projects to be completed between 80-90% level at the end of FY21, 9 out of 11 are transmission and distribution related projects where additional allocation could help complete those during FY21
 - Two power generation projects including one coal-based power plants will get allocation
 - A total of Tk.147 crore has been allocated from revenue to conduct a feasibility study to establish a coal-fired power plant – this project could be cancelled
 - Another Tk.124 crore has been allocated from revenue for setting up a power generation plant which could be deferred
- ❑ Among the ‘carry over’ projects with 60-80% implementation level, all are transmission and distribution related projects which could be allocated more for near completion in FY21

Carry-over Projects with 60-80% Implementation Level		
Project Name	Maximum Possible Completion by FY21	Completion rate by FY20
Western Grid Network Development Project	66.5	60.2
Construction of Patuakhali (Pigeon) -Gopalganj 400 KV transmission line and Gopalganj 400 KV grid substation	70.7	59.1
Construction of Bheramara (Bangladesh) -Bahrampur (India) Second 400 KV Double Circuit Transmission Line (Building Bangladesh Part)	72.9	70.0
Smart Prepayment Metering Project for West Zone Power Distribution Company Ltd. (Ozopadiko) Area	64.2	18.4

6. Alternate Proposals for the Power Sector

Carry-over Projects with 80-90% Implementation Level		
Project Name	Maximum Possible Completion by FY21	Completion rate by FY20
Land Acquisition and Protection and Feasibility Study of Bangladesh-Singapore 700 MW Ultra Super Critical Coal Based Power Plant (Revised)	87.5	69.2
Construction of Mirsarai 150 MW dual fuel power plant	87.4	75.8
Enhancement of capacity of grid substations and transmission line for rural electrification	81.5	76.8
Construction of Bakerganj-Barguna 132 KV transmission line and Barguna 132/33 KV substation	80.0	71.2
Development of transmission infrastructure to provide reliable power supply to Mirsarai Economic Zone	82.0	67.2
Strengthening Power Distribution System Project (1st Amendment)	86.8	72.1
Upgradation of Rural Electricity Distribution System (Dhaka, Chittagong and Sylhet Division) (Revised)	89.0	83.7
Expansion of Distribution Network for 100% Rural Electrification (Dhaka, Mymensingh, Chittagong and Sylhet Division)	83.2	62.6
Expansion of Distribution Network for 100% Rural Electrification (Rajshahi, Rangpur, Khulna and Barisal Division)	82.1	58.0
Construction of New 132/33 KV and 33/11 KV Sub-Station under DPDC (1st Amendment)	84.5	83.1
Construction of 132/33/11 KV Grid Sub-Station in DESCO Area	87.7	85.6

6. Alternate Proposals for the Power Sector

- ❑ Among the ‘completing projects’ with implementation level between ‘80-90%’ and ‘60-80%’, the majority of those are related to distribution and related activities
 - Additional allocation could be made for the completion of agricultural irrigation through solar power pump projects
 - An allocation of Tk.250 crore has been made for land acquisition, land development for the coal-fired power plants – this project could be cancelled
 - More allocation could be made for the pre-payment metering project for Comilla and Mymensingh to be completed in FY21

Concluding Projects with 80-90% Implementation Level		
Project Name	Maximum Possible Completion by FY21	Completion rate by FY20
Ghorashal-3 Repairing Project (Unapproved)	83.6	66.0
Land Acquisition, Land Development and Resettlement for Implementation of Patuakhali 1320 (2*660) MW Coal Fired Thermal Power Plant	82.4	65.2
Pre-Payment Metering for Distribution: Comilla and Mymensingh	89.6	28.8
Development of power distribution system in three hill districts	85.9	71.4
Electricity in improving rural living standards	82.4	47.3

Concluding Projects with 60-80% Implementation Level		
Project Name	Maximum Possible Completion by FY21	Completion rate by FY20
Ghorashal - 4th Unit Re-Powering Project	73.2	67.7
400/230/132 KV Grid Network Development	60.4	42.3
Power System Development Project Rangpur Zone (Unapproved)	73.9	58.4
Development of power distribution system Project, Sylhet Division	61.5	44.5
Agricultural irrigation through solar powered pumps	69.7	2.2
Augmentation and Rehabilitation of Distribution System in DESCO Area	74.2	71.2
Establishment of Supervisory Control and Data Acquisition (SCADA) system in DESCO area	75.4	26.1

6. Alternate Proposals for the Power Sector

- ❑ Among the projects to be completed by FY22 (continuing projects), proposed allocation will help to implement 1 project at the level of '80-90%', 1 project at the level of '60-80%' and 5 projects at the level of '40-60%'
 - Significant investment has been made for land acquisition (Tk.160 crore) for a coal-fired power plant and feasibility study for another coal-fired power plant (Tk.5 crore) from the revenue budget. Government should cancel those investment projects

Continuing Projects with 40-60% Implementation Level

Project Name	Max. Possible Completion by FY21	Completion rate by FY20
Construction of Khulna 330 MW Dual-Fuel Combined Cycle Power Station	54.2	27.4
Feasibility study for setting up of CPGCBL-Sumitomo 1200 MW ultra Super power plant	47.7	20.7
Development of power distribution system Project, Mymensingh Zone	43.4	27.8
Development of power distribution system, Comilla Zone	48.1	31.6
Technical Assistance Project of Renewable Energy about Resource Assessment and Piloting	44.4	9.7

Budget Allocation for Projects which have completion date 'up to June 2022' (Continuing Projects)

Completion rate till June, 2020	Expected Completion rate till June, 2021							Total
	<10%	10-20%	20-40%	40-60%	60-80%	80-90%	90% and above	
<10%	3	2	3	1	0	0	0	9
10-20%	0	0	0	0	1	0	0	1
20-40%	0	0	1	4	0	0	0	5
40-60%	0	0	0	0	0	0	0	
60-80%	0	0		0	0	1	0	1
80-90%	0	0	0	0	0	0	0	0
90% +	0	0	0	0	0	0	0	0
Total	3	2	4	5	1	1	0	16

Continuing Projects with 80-90% Implementation Level

Project Name	Max. Possible Completion by FY21	Completion rate by FY20
Land Acquisition and Ancillary Activities for Establishment of CPGCBL-Sumitomo 1200 MW Ultra Super Critical Coal PP	85.0	72.4

Continuing Projects with 60-80% Implementation Level

Project Name	Max. Possible Completion by FY21	Completion rate by FY20
Construction of 400 KV transmission line from Rahonpur to Manaksha in Chapainawabganj district to import electricity from Jharkhand, India to Bangladesh	75.4	13.4

6. Alternate Proposals for the Power Sector

- ❑ The Power Division needs to reduce its financial burden owing to overcapacity related costs as those have been creating fiscal pressure to the government
 - For example, the excess installed capacity beyond the reserve capacity (25%) at present would be 6,893 MW for which the BPDB needs to pay capacity payment which is a huge burden
 - The additional IPPs which are currently in the process of completion (6,159 MW) would increase the excess capacity further and would require more capacity payment in the next fiscal year and following years
 - More subsidy/loans from the government would be required which could be avoided if this additional capacity payment could be gradually lessened
 - Since majority of these power plants and a large number of those newly set-up power plants will be operated using F. Oil/HSD/LNG/Coal, there is a growing pressure to the BPDB to make large amount of import payment. This pressure will rise further in the coming years unless appropriate measures are taken regarding the energy mix

6. Alternate Proposals for the Power Sector

- ❑ Renewable energy-based power plants are limited in number under public sector power plants
 - Only three projects are currently in the pipeline with a combined capacity of 162.5MW worth of electricity to be generated
 - Private sector has made investment which could generate about 2,024 MW worth of electricity when those will be in operation. Besides, another 927 MW worth of renewable energy projects have received LOI/NOA/tender process
 - 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 of raw materials
 - This will also reduce the pressure on paying higher charges for QRR and IPPs which operate with F. oil

Renewable Energy based Power Plants (SREDA)													
	Number of projects	Solar Park	Rooftop Solar except net metering	Net metering rooftop solar	Solar Irrigation	Solar Minigrid	Solar Nanogrid	Solar charging station	Wind Projects	Hydro projects	Biogas to electricity	Biomass to Electricity	Total MW
Completed & Running	132	38.4	5.28	0.21	1.25	4.54	0.001	0.104	2	230	0.63	0.4	282.82
Under Planning	16	1022	-	-	-	-	-	-	-	-	1	-	1023
Implementation ongoing	18	974.8	-	-	-	1.118	-	-	-	-	0.06	-	975.98 ²

7. Conclusion

7. Conclusion

- ❑ 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, cost and return of the ongoing power generation, distribution, transmission and related activities
 - It is a good time to rethink about the power sector development strategies in view of redirecting the power sector towards clean energy led sector by 2030 and 2041
- ❑ The growing overcapacity and inefficiency in the power sector have been creating fiscal-financial pressure on the Power Division particularly to the BPDB
 - Such pressure has increased during COVID-19 period and will increase further in the post-COVID period
 - Government's fiscal capacity to support those additional financial burden has been increasingly becoming difficult and would be further difficult in COVID-19 and post-COVID period
 - Rationalisation of the Power Division's budget including expenditure of the BPDB during FY21 would be an immediate doable for contributing to create fiscal space for undertaking other important activities within and outside the power sector
 - Reprioritisation of investment projects of the Power Division and projects in operation and being implemented by the public and private sectors needs to be undertaken from FY21 and should continue in the upcoming budgets in view of redirecting the power sector towards clean energy
- ❑ A detailed analysis has been made on the budget of the Power Division and the state of the power sector in FY20 taking into account of the COVID-19

7. Conclusion

- ❑ The National budget FY21 for the Power Division has rightly reflected in budget allocation its ongoing drive to improve transmission and distribution system
 - The Power Division needs to follow 'go-slow' policy in power generation related projects both under public and private sector given the huge amount of overcapacity currently exists
 - The power division needs to shift its focus from generating electricity based on fossil-fuel to more by renewable energy- both under public and private sector
- ❑ The analysis reveals usage of revenue budget (along with project support) for implementing power generation projects which are at different levels of implementation
 - Considering overcapacity in power generation, the decision to defer and cancel of selected generation projects would release about Tk.914 crore from the Power Division budget which could be used for implementing other projects
 - Project support for these generation related projects is amounted to be Tk.2,507 crore which is supported by ECA, IDA, JICA & ADB/IDB. If development partners agree, this amount of fund and the remaining committed amount for those power generation projects could be used for clean energy, efficiency improvement and transmission and distribution related projects

7. Conclusion

- ❑ Government should renegotiate with development partners/private sector regarding redirecting resources for implementing clean energy based projects
 - This negotiation is particularly important for budget allocated for coal-fired power plants which are at different stages of development
 - In case of fossil-fuel based power plants which are at different stages of implementation, government should negotiate with development partners and private sector about possible deferment/cancellation of the projects
- ❑ Government should make a clear exit plan for the quick rental power plants and should gradually phased-out those projects which would release about 1958 MW worth generation capacity equivalent to about 1/3 of total over capacity
 - A well-planned renewable energy led electricity generation through solar, wind, roof-top and other means could be a better option for the future
- ❑ Government should renegotiate with IPPs about the terms and conditions for different types of payment including capacity payment given the changing power demand particularly at the time of COVID-19 and the post-COVID period
 - The 'force majeure' clause' of the contract between BPDB and IPPs can be revisited and renegotiated

7. Conclusion

- ❑ The power tariff is subsidized; it is revised in February, 2020 and the ministry has recently submitted a bill to the Parliament for getting authority to amend revision of power tariff for more than once in a year
 - 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 tariffs by shifting a part of the burden to consumers (more than once in a year)
 - The Division should take measures reducing its rising expenditures on a priority basis
- ❑ The Power Division should work more to reduce overcapacity in power generation in the coming years
 - The strategy should be on gradual reduction of overcapacity in terms of share of total installed capacity
 - Reprioritizing power generation towards making clean energy based power sector by 2030 and 2041
 - Development partners need to approach for redirecting their support not for coal/other fossil fuel but for clean energy based power generation projects
 - A number of developing countries have taken initiatives to cancel/defer aid-support projects which will use fossil-fuel particularly coal in power generation
- ❑ The Power Division needs to re-estimate demand for electricity in the coming years in view of sluggish investment since pre-COVID period which would continue in the post-COVID period
 - Re-estimation of power demand would help the power sector to plan for the future in a well-organized way particularly targeting the clean energy led power sector development

Thank you.



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