Draft

CPD Webinar on
The Power Sector in the National Budget for FY2022: Perspectives on Allocative Priorities & Reform Agenda

Presentation by

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Discussion points

1. Introduction
2. State of the Power Sector during FY2021
3. The Power Sector in the National Budget for the FY2022
4. National Budget for FY2022 targeting the Clean Energy
5. Addressing Reform Issues in the Power Sector
6. Conclusion

1. Introduction

1. Introduction

- CPD has been organising a series of events on the National Budget for FY2021-22 concerning different macro and sectoral issues
  - The power and energy sector is one of the priority sectors in the national budget
  - This study put focus on power sector related issues from allocative priorities and reform points of view
- The ongoing year (FY2021) is an eventful year for the power sector of Bangladesh
  - Government has publicly announced abandoning coal-based power generation
  - In different international platforms, the Prime Minister announced Bangladesh's commitment in shifting from fossil-fuel based power generation towards clean power generation
- The 8th Five Year Plan (FY2021-25) has been officially made public in December, 2020 where the power and energy sector has got attention
  - Although the document does not properly reflect the stance on shifting from coal and promoting renewable energy led power generation
- The National Budget for FY2022 would be one of the first official documents which is supposed to reflect government's political stance and policy commitments
  - To be reflected in policy stances and fiscal & budgetary measures
- The present budget analysis has been carried out from two dimensions
  - Efficiency-based analysis
  - Power sector reform analysis

2. State of the Power Sector during FY2021

2. State of the Power Sector during FY2021

2.1 Overall state of the power sector in FY21

- The success of the power sector has been described with basic facts on installed capacity, per capita generation, access to electricity and system loss etc
  - Considerable progress has been made in ensuring access to electricity
  - Installed capacity increased to 25227mw, p/c generation 514kwh and access to electricity reached 99.5%
- Following that trend, 8th FYP put focus on further enhancement of generation capacity mainly based on fossil-fuel

Power sector in 2021& Its target for 2030

	2021	2030
Installed capacity (MW)	25227	40000
Consumers (mil.)	40	
Trans. Lines (ckt km)	12744	28320
Dist. Lines (km)	612000	660000
Grid sub-station	26000	59000 (2024)
Dis. loss	8.73%	
Per capita generation	514 kwh	
Access to electricity	99.5%	

Source: Power Cell, MoPEMR

Power sector in the 8th FYP

	Baseline (FY2020)	Target (2021)	Target (2022)	Target (2023)	Target (2024)	Target (2025)
Installed Generation Capacity (MW)	23,548	24,000	26,000	28,000	29,000	30,000
RE-based power generation						
Solar	127	542	895	400	50	2,014
Wind		60	230		10	300
Waste to Energy		6	42			48
Total	127	608	1,167	400	60	2,362

2. State of the Power Sector during FY2021

2.2 Power generation during FY2021: Efficiency analysis

- The power sector needs to describe its success based on efficiency-led performance analysis
- The power generation capacity has been continued to rise at a considerable rate during FY2021 despite having a huge surplus generation capacity (37%)
  - Per capita generation has increased by 20% in FY2021
  - Coal, gas and HFO based power generation has increased although number of plants has reduced in case of coal and gas-based power generation
  - RE based power generation though increased in FY21, but it has yet to get attention

Power generation in FY2020 and FY2021

Determinant	Actual (MW) 2019	2020	2021 (upto May, 21)	%▲ between FY19 and FY20	%▲ between FY20 and FY21 (upto May)
Generation Capacity	18610	20383	22023	9.5	8.04
Maximum Demand	12,100	13,300		9.9	
Maximum Generation	12,893	12,738	13,792	-1.2	8.2
Per capita generation (kWh) (grid)	426.05	426.23	512	0.04	20.1
Per capita Consumption (kWh) (grid)	375	378		0.8	

Energy mix in power generation: FY20 & FY21

Energy-mix	2020		2021	
	No of plants	MW generated	No of plants	MW generated
Coal	4	1146	3	1768
Gas	71	10979	67	11402
HFO	56	5540	61	6044
HSD	10	1290	10	1290
Hydro	1	230	1	230
Solar	4	38 (0.35%)	7	129 (0.5%)
Power Import	0	1160	0	1160
Total	146	20383	149	22023

Source: BPDB

2. State of the Power Sector during FY2021

2.2 Power generation during FY2021: Efficiency analysis

- Over generation capacity remains a concerning issue
  - With the rise in generation capacity and slow rise of T&D access, the over generation capacity is likely to increase further
- Different types of power plants are being used for power generation despite having excess capacity
  - Rental PP operate with a capacity of 1300 MW
  - A number of dated and inefficient power plants operate in public PP and private PP
  - These plants have been targeted to be phased out
- Without creating scope by phasing out plants, private investment in the RE based power generation would be unviable

Over generation capacity

Year	Total installed capacity (MW)	Over capacity (as per max. generation)	% of share of over capacity of installed capacity
2000-01	4005	972	24.27%
2010-11	7264	2374	32.68%
2015-16	12365	3329	26.92%
2018-19	18610	6068	32.60%
2019-20	20383	7645	37.51%
2020-21	22023	8231	37.37%

Source: Author's calculation based on BPDB data

Power plants under different ownership

Ownership	2020		2021	
	No of plants	Electricity generation	No of plants	Electricity generation
Public PP	76	9568	57	10146
Joint venture	1	771	1	1244
IPP	49	7583	71	8172
Rental PP	21	1301	20	1301
Imported		1160		1160
Total	147	20383	149	22023

Source: BPDB

2. State of the Power Sector during FY2021

2.3 Progress of transmission and distribution of electricity

- Transmission and distribution lines have increased during FY2021
  - The length of transmission and distribution lines has increased at a slower pace compared to that of generation (3.7% and 5.9% respectively vis-à-vis 8%) during FY2021
- Dearth of transmission and distribution lines are mentioned as a major reasons for load shedding
  - Surprisingly, official data indicates no load-shedding in the country (between July, 2019 and June,2021)

Transmission and distribution of electricity in FY2021

	FY2019	FY2020	FY2021	Changes between 2019 and 2020	Changes between FY2020 and FY2021
Transmission line (ckt km)	11,650	12,283	12,744	633 (5.4%)	461 (3.7%)
Distribution line (km)	5,24,000	5,77,479	612000	53,479 (10.2%)	34,521 (5.98%)

Source: Author's calculation from the data of BPDB annual reports

Load-shed of 01/07/2019

Area	Load Shedding
Dhaka	0
Chittagong	0
Khulna	0
Rajshahi	0
Comilla	0
Mymensingh	0
Sylhet	0
Barisal	0
Rangpur	0
Total	0

Load-shed of 16/06/2021

Area	Load Shedding
Dhaka	0
Chittagong	0
Khulna	0
Rajshahi	0
Comilla	0
Mymensingh	0
Sylhet	0
Barisal	0
Rangpur	0
Total	0

2. State of the Power Sector during FY2021

2.4 Cost of Electricity during FY2020

- BPDB's total cost of electricity was almost at the same level in FY2020 with that in 2019
  - However, per unit cost of electricity (Tk/kwh) has declined but at a slow pace (from Tk.6.01 in FY19 to Tk.5.91 per kwh in FY20)
  - A significant rise in cost of electricity from IPPs and quick rental in recent years constrain slowing down the per unit cost
- The per unit cost is the lowest in case of BPDB and purchase from public plants (Tk.3.8 and Tk.4.5 respectively) but it is higher in case of rental power plants (Tk..8.3)

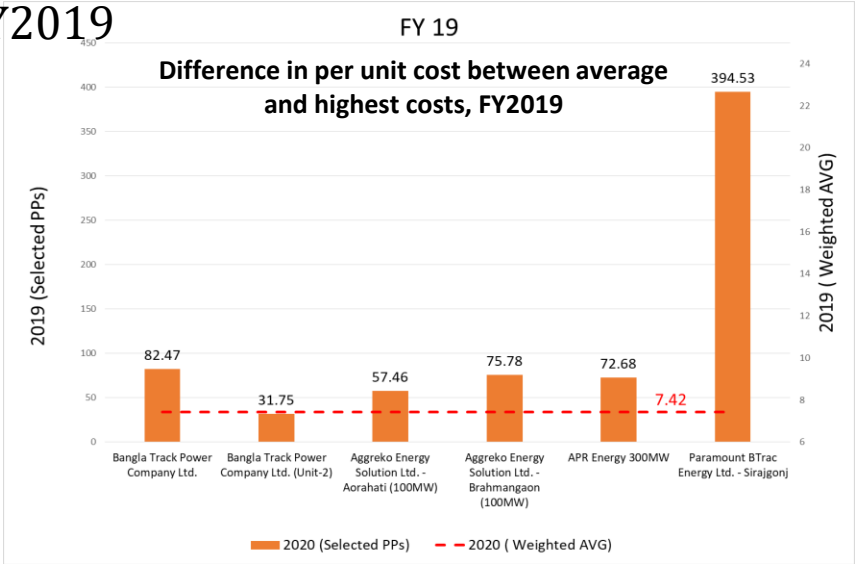
Total and Per Unit Cost of Electricity in FY2019 and FY2020

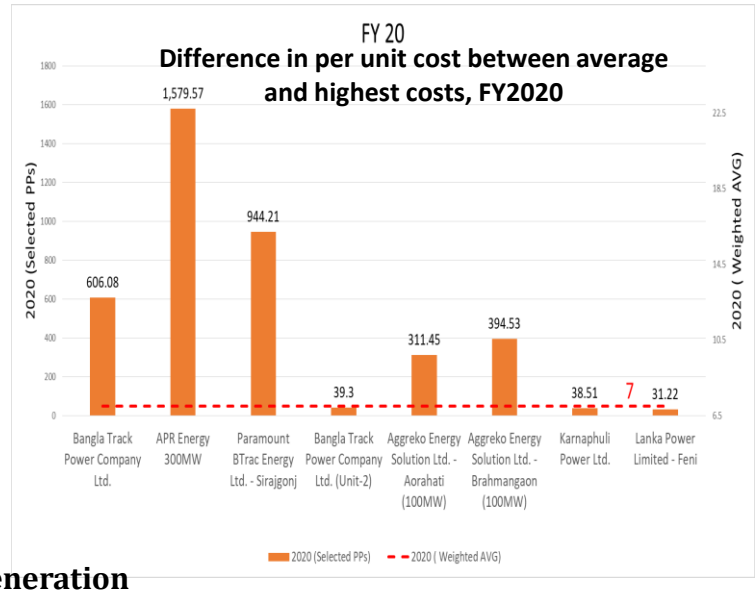
	FY 2017-18		FY 2018-19		FY 2019-20		Increase or decrease in FY 2019	Increase or decrease in FY 2020
	Amount (Crore Tk)	Cost (Tk/kWh)	Amount (Crore Tk.)	Cost (Tk/kWh)	Amount (Crore Tk.)	Cost (Tk/kWh)		
i. BPDB's Generation	9,431.39	6.44	7,648.06	4.58	7,464.76	4.47	(18.91)%	(2.40)%
ii. Purchase from IPP	10,410.59	5.72	15,748.50	7.42	17,518.98	7.00	51.27%	11.24%
iii. Purchase from Rental	6,281.73	8.77	5,013.62	8.40	3,216.43	8.34	(20.19)%	(35.85)%
iv. Purchase from Public Plant	7,289.54	4.52	6,839.30	3.82	6,671.67	3.86	(6.18)%	(2.45)%
v. Purchase from India	2,812.58	5.87	3,702.63	5.46	4,017.13	6.01	31.65%	8.49%
vi. Interest on budgetary support	1,188.31	0.20	1,294.80	0.19	1,294.80	0.19	8.96%	0.00%
vii. Provision for Maintenance and development fund	1,162.67	0.19	998.20	0.15	1,015.02	0.15	(14.15)%	1.68%
Total	38,576.81	6.33	41,245.12	6.01	41,198.80	5.91	6.92%	(0.11)%

Source: BPDB annual report

2. State of the Power Sector during FY2021

- There is huge variation in per unit cost of electricity purchased from different IPPs
  - While the average cost is found to be Tk.7.42 in FY19 and Tk.7.0 in FY20, the unit costs for some plants were as high as Tk.394 in FY2019 and Tk.1579, Tk.944, Tk.606, Tk.394 and Tk.311 respectively for different plants
- Unit cost variation (measured in st. deviation) is higher in FY2020 compared to FY2019





Standard deviation of unit cost of power generation

Particulars	FY 2019	FY 2020
Public Power Plants	6.0	131.7
IPP and SIPP	19.6	245.7
Rental and Quick Rental Power Plants	6.9	8.7
Purchase from India	1.4	1.6

Source: Author's calculation

2. State of the Power Sector during FY2021

2.5 BPDB's operating income and expenses during FY2020

- BPDB's financial position is still in red although operating losses has slightly declined
  - BPDB's operating loss is about Tk.4350 crore in FY2020
- A number of cost-heads have experienced significant rise in costs during FY2020
  - Distribution expenses (42.9%), generation expenses (excl. fuel cost) (23%), electricity purchase from IPP (11%)
  - A number of cost-heads have experience decline in expenses: fuel cost, electricity purchase from rental

BPDB's Operating Income/Expenses

Head of Accounts	Operating income/expenses			Changes (% per year)	
	FY 2018	FY 2019	FY 2020	Between FY2018 and FY2019	Between FY2019 and FY2020
Operating Revenue (1)	30,604	34,507	35,535	12.8	2.9
Sale of Electricity	29,741	33,064	34,012	11.2	2.9
Other Operating Revenue	863	1,443	1,524	67.1	5.6
Operating Expenses (2)	36,812	39,553	39,887	7.5	0.8
Fuel Cost	6,122	4,249	3,415	-30.6	-19.6
Generation Expenses (Excluding fuel cost)	2,406	2,442	3,008	1.5	23.2
Electricity purchase from IPP	10,411	15,749	17,519	51.3	11.2
Electricity purchase from RENTAL	6,282	5,014	3,216	-20.2	-35.9
Electricity purchase from Public Plant	7,290	6,839	6,672	-6.2	-2.5
Electricity purchase from India	2,813	3,703	4,017	31.7	8.5
Wheeling Charge to PGCB	183	215	232	17.6	7.9
Distribution Expenses	924	948	1,354	2.6	42.9
General & Administrative Expenses	383	395	453	3.2	14.8
Operating Profit/(Loss) = (1-2)	-6,207	-5,046	-4,352	-18.7	-13.8

2. State of the Power Sector during FY2021

2.5 RE based power generation in FY21

- Renewable energy is largely off-grid based and particularly solar energy based
  - Out of 730MW of installed capacity 496MW (67.9%) are solar
  - 69.8% of solar power is based on off-grid
  - Lack of smart grid system is a major bottleneck for expansion of grid based solar RE
- Net metering system has added 24.7 MW electricity till date
  - This is only 3.3% of the total installed capacity of renewable energy
  - Little contribution of DPDC, DESCO and others

Different sources of RE

Technology	Off grid (MW)	On grid (MW)	Total (MW)
Solar	346.69	149.93	496.62
Wind	2	0.9	2.9
Hydro	0	230	230
Biogas to electricity	0.69	0	0.69
Biomass to electricity	0.4	0	0.4
Total	349.78	380.83	730.61

Source: SREDA

State of net metering system

Utility Name	Installed Capacity	Quantity
BPDB	6.9 MW	307
BREB	11.5 MW	261
DPDC	2.2 MW	243
DESCO	2.3 MW	325
WZPDCL	0.9 MW	199
NESCO	0.9 MW	50
TOTAL	24.7 MW	1385

Source: SREDA

Share of RE

Year	Installed capacity	% share or RE in total installed capacity
2019	615	2.73
2020	649.5	3.12
2021	730.61	3.32

Source: BPDB annual report

2. State of the Power Sector during FY2021

2.6 Selected Initiatives and Activities undertaken by the BPDB

- Mega projects having 3,840MW power generation capacity are being implementing at Payra, Maheshkhali and Matarbari areas aimed at ensuring power and energy security
- MoPEMR is seeking the prime minister's approval to convert 13 large coal power projects into clean liquefied natural gas (LNG) based plants
    - These 13 coal-based projects either made little progress or could not secure financing
- Bangladesh Power Development Board (BPDB) has been paying the Payra power company Tk115 crore every month as "capacity payment" – a kind of penalty for keeping a functional plant idle
    - Payra is operating at half capacity, as one of its two units has remained idle since its completion in December last year owing to delays in the construction of a transmission line
- Government of Bangladesh has set a target to generate 2000 megawatts of electricity from renewable energy sources in three years, which will be 10 per cent of the country's total power production
- BPDB has started evaluating a number of bids submitted by aspiring bidders for two more wind power plants — one in Chandpur and another at Inani Beach, Cox's Bazar.
    - Each of the two projects will have 50-MW generation capacity
    - A levelised tariff of Tk 10.56 kwh (each unit) over the period of 20 years

2. State of the Power Sector during FY2021

2.6 Selected Initiatives and Activities undertaken by the BPDB

- Bangladesh accounts for 1.2% of the global share of LNG imports in 2020, an increase of 0.1% from 2019.
  - The country imported LNG from Algeria, Equatorial Guinea, and Nigeria. The highest volume of LNG import came from Nigeria—0.55 million tonne
- Bangladesh will buy two LNG cargoes from spot market in June, one less from May, 2021 as it will be importing more gas from term suppliers in the hot summer month.
  - Buy another 33.60 lakh MMBtus of liquefied natural gas (LNG) from the spot market to meet the growing demand for the super-chilled fuel.
  - Vitol Asia Pte of Singapore will supply the fuel. Each MMBtu (Metric Million British thermal units) will cost $8.012.
  - Bangladesh initiated to import LNG from spot market after two years of the country's first LNG cargo import in August 2018.
  - It has a 15-year contract with Qatargas to import 2.5-million tonnes per year at a 12.65% slope of the three-month average Brent price plus a 50-cent constant
- The government for the first time has taken the pricing authority of LPG marketed by private companies in its hand by re-fixing its price at the retail level.
  - According to the order, per 12kg LPG cylinder will cost Tk975, which is now being sold at Tk1000 to Tk1100, depending on companies.
  - The retail price of the state-owned LP Gas Limited's 12.5kg cylinder will cost Tk591, instead of the existing price of Tk.600

2. State of the Power Sector during FY2021

2.6 Selected Initiatives and Activities undertaken by the BPDB

- The 'Power Factor Improvement and Smart Grid under Dhaka Power Development Company (DPDC) Dhaka, Bangladesh' is the first ever smart grid project in Bangladesh and will be implemented over the next five years
  - The French Development Agency (AFD) and the government have signed a grant financing agreement of 12 million euro or around Tk 1.24 billion to support advanced digital solutions
  - It will also prevent an accumulated 1,04,000 tonnes of CO2 emissions per year
- Electricity billing will be online in future as part of upgrading the system, which will help stop 'inflated' electricity bills
- Office management system will be online
  - Some 61,265 electricity clients across the country raised allegation until July 05 against inflated electricity bills out of around 40 million consumers across the country

2. State of the Power Sector during FY2021

2.6 Selected Initiatives and Activities undertaken by the BPDB

- A project involving Tk 4,000 crore has been taken under the BREB to develop the distribution network
    - DPDC received Tk 3,051 crore from the Annual Development Programme to expand and strengthen the power system network. Under the project, the overhead electric cables will go underground
- The government has made allocations to develop the transmission system to evacuate electricity from the Rooppur Nuclear Power Plant and Matarbari and Payra power plants
- A move is underway to install 1.4 million (1400,000) smart prepayment meters under jurisdiction areas of Dhaka Power Distribution Company Limited (DPDC).
    - As a part of the government's plan to bring all consumers of power under smart prepayment metering system
- DPDC will spend Tk 145 million as fees for a consultant to supervise nine electricity substation installation and rehab work. The AFD will provide the support
- MOU has signed between Petrobangla and H-Energy, India on import of LNG through pipeline from India

3. The Power Sector in the National Budget for FY2022

3. The Power Sector in the National Budget for FY2022

3.1 Power Sector in the Policy Speech of National Budget for FY2021

Aim: Ensuring power and energy security through public investment

Projects underway: 38 power plants with a capacity of 14,115 MW are under construction, and

- Contracts have been signed for the construction of another 20 power plants with a capacity of 2,961 MW
- Six power plants with a capacity of 650 MW are in the process of tendering
- Construction of 33 power plants with a capacity of 15,019 MW has been approved

Ensuring energy security: To increase the supply of LNG, there is an initiative to set up a land-based LNG terminal with a capacity of 1,000 million cubic feet per day in the Matarbari area of Cox's Bazar district

- To enhance and consolidate energy security, the government has taken steps to increase fuel oil reserves
- In 2009, the country's fuel storage capacity was 8.94 lakh m. tons, which has been increased to about 13.20 million m. tons

Renewable energy: At present, 722 MW of electricity is being generated from renewable energy

- Solar power plants and wind power plants are being installed to generate 10 percent of the total electricity from RE

3. The Power Sector in the National Budget for FY2022

3.1 Power sector in the Policy Speech of National Budget for FY2021

My Village My Town: Encouragement and support will be provided for setting up of biogas plants and solar panels on group basis to increase the supply of electricity and energy in the villages and make them more reliable.

T&D Line: There is a plan to increase the number of transmission lines to 28,000 km and the number of distribution lines to 6.60 lakh km by 2030

System Loss: Reduced from 14.33 percent in 2009 to 8.73 percent in May, 2021

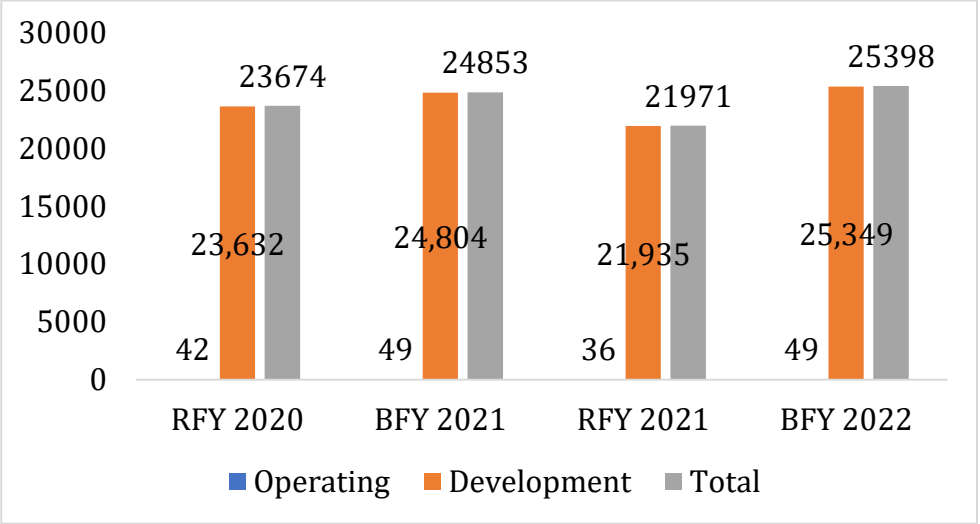
- *Little reflection in the budget speech about government's political commitment and Prime Minister's commitment in various international platforms moving the power sector towards clean-power*

3. The Power Sector in the National Budget for FY2022

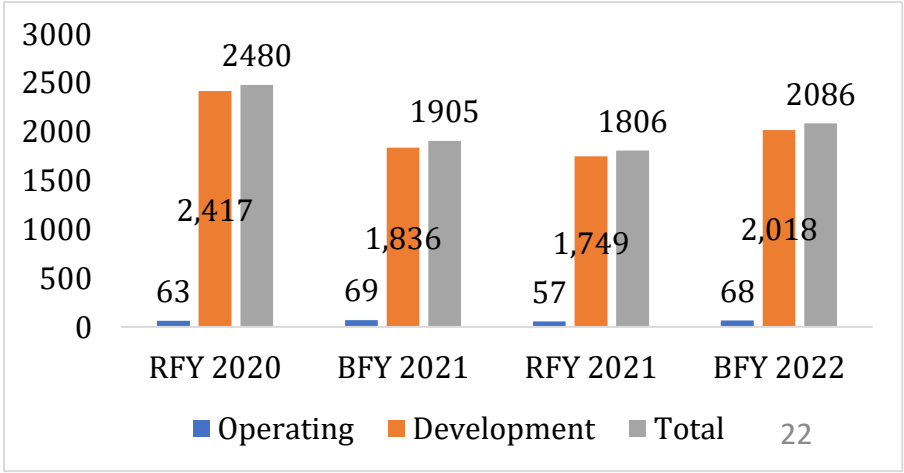
3.2 Overall allocation for the power sector

- In the FY 2022 Budget, the Energy and Power sector has an allocation of Tk. 27,484 crore which is mostly earmarked for ADP (Tk 27,367 crore)
  - Allocation for Power Division: Tk 25398 Crore (Op: Tk.49 Cr., Dev: Tk.25349 Cr.)
  - Allocation for Energy and Mineral Division: Tk 2086 Crore (Op: Tk.68 Cr. , Dev: Tk.2018 Cr)
- Allocation has increased by 15.6% in BFY2022 compared to that in RFY2021 (Tk 23,777 crore) – almost at the same rate in Power Division and Energy and Mineral Division
  - The share of Energy and Power divisions in total budget has reduced to some extent in FY 2022 (from 4.71% in FY 2021 to 4.55% in FY2022)

Budget allocation for power division (in crore taka)



Budget allocation for energy and mineral resources division

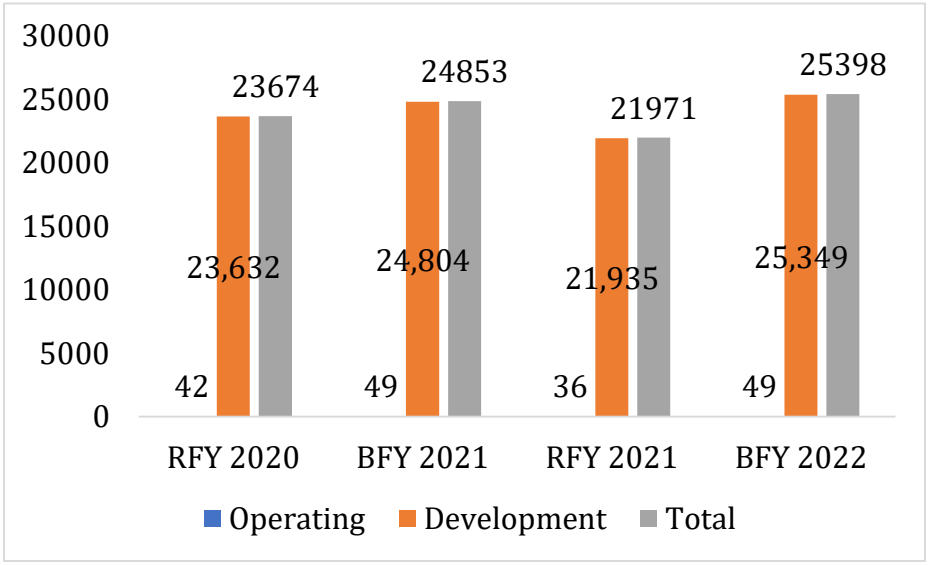


3. The Power Sector in the National Budget for FY2022

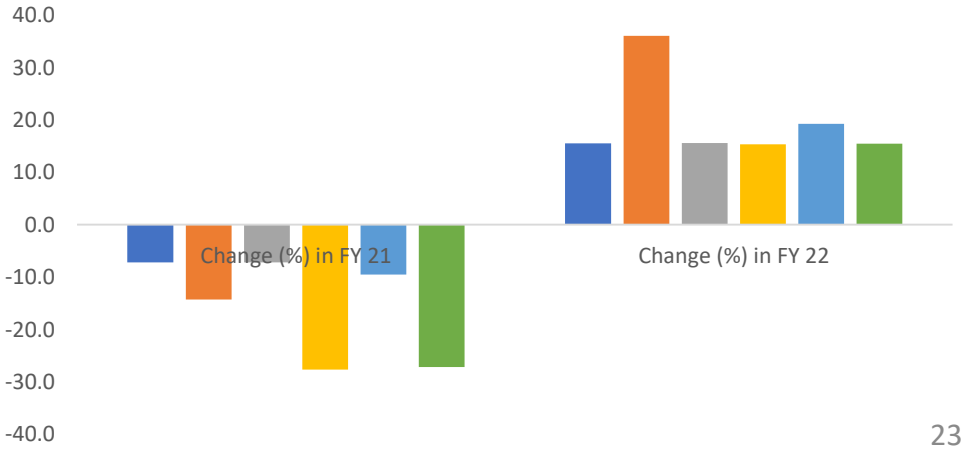
3.2 Overall allocation for the power sector

- The sector has a good track record in ADP implementation – average rate of implementation in FY2021 is 59.4% (July-April 2021) - higher than the overall average
- Both operating and development budget have increased in FY2022
  - Although both the budgets were reduced in FY2021
  - Both in case of power and energy divisions
- Government has returned back to pre-covid level in case of budget allocation for FY22 after halting a year (in FY21) apprehending resource constraints owing to Covid pandemic (figure below)

Budget allocation for power division (in crore taka)



% Changes in non-development and development budget of the Power and Energy Divisions



3. The Power Sector in the National Budget for FY2022

3.2 Overall allocation for the power sector

- Despite being burdened with overcapacity, power sector is continuing to give priority to generation related projects under ADP
  - 62% of the total ADP allocation of power sector is provided for generation (including Ruppur Power Plant)
  - Power sector should shift its allocation from generation towards more on transmission and distribution
- FY 2022 budget did not give due importance towards generation of renewable energy based power generation
  - At present only 730 MW of electricity generation capacity from renewable energy which is only 2.86% of total generation capacity
    - PSMP 2016 had aimed to generate 10% of the total capacity from RE within 2025
    - No new investment under SREDA for RE-based projects
- Despite the political commitment for phasing out from fossil-fuel based power generation towards clean-energy based power generation, FY 22 budget has failed to address that commitment

Distribution of ADP allocation of FY 22 in Power Sector

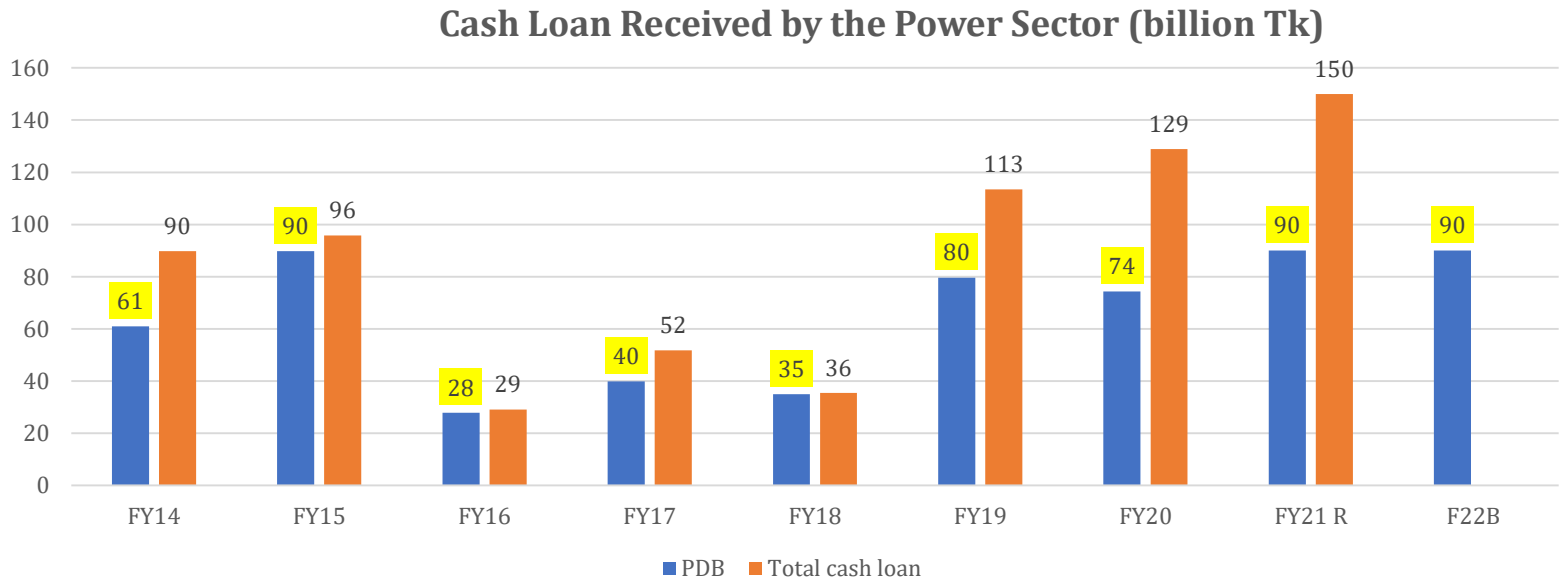
Sub-sector	Allocated ADP (Lakh)	% of total ADP
Generation	Tk 28325.4	62.03%
Transmission	Tk 8779.3	19.23%
Distribution	Tk 8,558.6	18.74%
Total	Tk 45663.3	100%

Source: Author's calculation

3. The Power Sector in the National Budget for FY2022

3.2 Overall allocation for the power sector

- The power division needs to take cash loan from the government in order to meet the costs. In FY22 the subsidy provided for energy and power sector will remain same at Tk 9,ooo crore like FY21
  - BPDB is the single largest borrower of cash loan from the government.
  - A large part of the borrowed fund will be used to meet the capacity payment
- The subsidy will likely mean that BPDB will not need to seek permission from BERC to raise the power tariff which is not desirable during the crisis period



Source: Budget statement 2A_E and Mid term Macroeconomic Policy Statement

3. The Power Sector in the National Budget for FY2022

3.3 ADP allocation for BPDB

- A total of 102 projects will be implemented under the Power Division during FY2022
  - Highest number of projects are related to distribution (31) followed by energy (27) and generation (26)
  - Number of transmission related projects are less
  - Majority of projects are 'carryover' projects (40) followed by 'concluding' (35) and 'continuing' projects (26)
- Despite the highest number of projects under distribution related activities, majority are carryover projects
  - Same is also evident in case of transmission and generation which means inefficiency in project implementation
  - Higher allocation for transmission and distribution does not necessarily mean better implementation of projects

Types of implementing project under ADP in FY2022

Types of project	Freq.	Percent
Distribution	31	30.39
Fuel & Energy	27	26.47
Generation	26	25.49
Transmission	18	17.65
Total	102	100

Project completion status by Types of project (in number)

Project	Carry over	Concluding	Continuing	New	Total
Distribution	15	11	4	1	31
Fuel & Energy	6	9	12	0	27
Generation	11	9	6	0	26
Transmission	8	6	4	0	18
Total	40	35	26	1	102

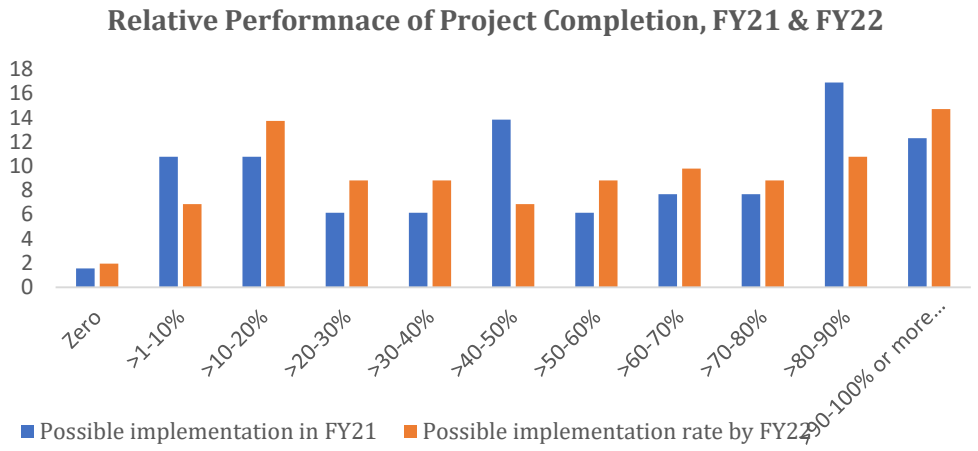
Project completion status by types of implementing project

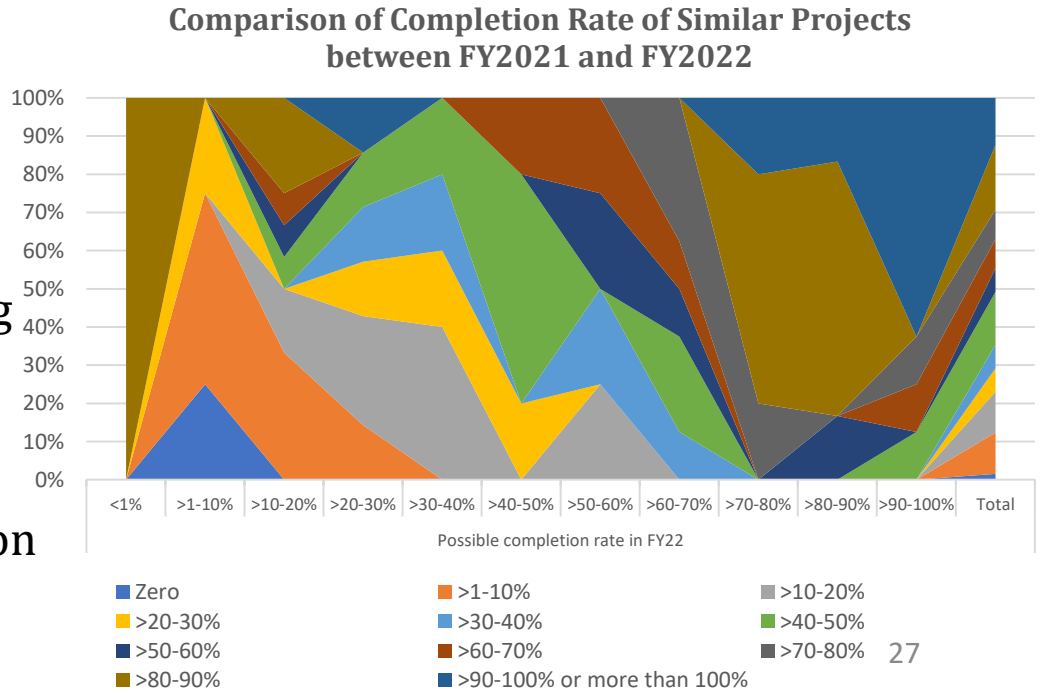
Project	Carry over	Concluding	Continuing	New	Total
Distribution	48.4	35.5	12.9	3.2	100
Fuel & Energy	22.2	33.3	44.4	0.0	100
Generation	42.3	34.6	23.1	0.0	100
Transmission	44.4	33.3	22.2	0.0	100
Total	39.2	34.3	25.5	1.0	100

3. The Power Sector in the National Budget for FY2022

3.3 ADP Allocation for BPDB

- Majority of projects are at the early stage of implementation
  - About 38.2% of projects will be implemented less than 50% level
  - The situation did not improve from the last year (Fig above)
- The status of carryover projects is very shocking
  - 15% projects would be completed by at best 20%
  - 13% projects would be completed by at best 40%
- Majority of projects have lost their track of project completion cycle (Fig below)
  - A part of the projects which are allocated for completion by FY2022 may not be completed on time





3. The Power Sector in the National Budget for FY2022

3.3 ADP Allocation for BPDB

- Analysis of allocation by organizations reveal that allocations are not evenly distributed
  - In case of distribution related projects, allocation has increased at DPDC while it has declined in case of BPDB, BREB, DESCO and WZPDCL
  - The allocation for transmission has been made only in case of PGCB
  - The generation related allocation has been made in few companies such as BPDB, CPGCBL, NWPGCL
  - A number of companies received less allocation such as B-R PCL, EGCB and RPC

Agency wise Changes in ADP Allocation

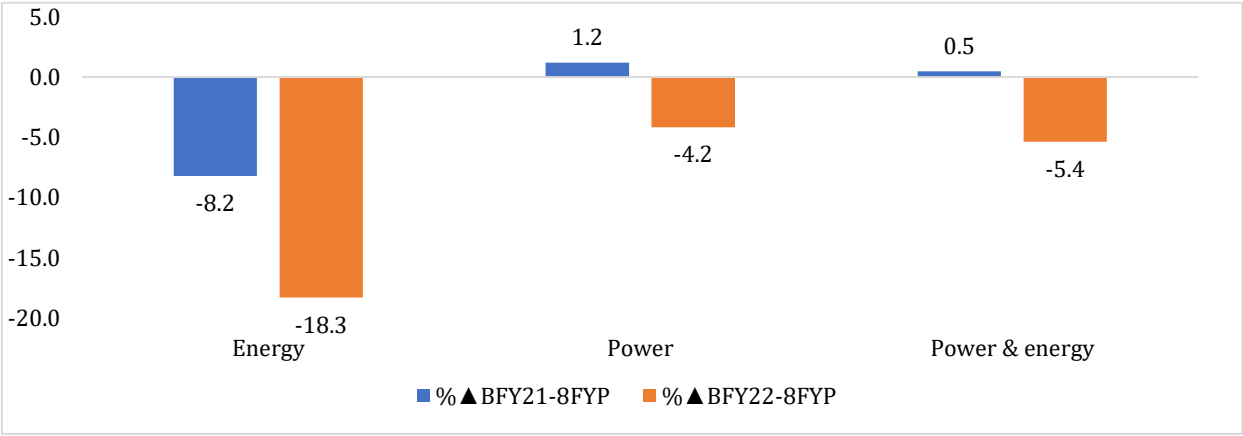
	%▲ in FY22's Allocation	Generation	Transmission	Distribution
Ashuganj Power Station Company Ltd. (APSCL)	-22.3	-22.3		
Bangladesh Power Development Board (BPDB)	1.5	38.2		-45.7
BR Powergen Company Ltd. (B-R PCL)	-58.9	-58.9		
Bangladesh Rural Electrification Board	-49.5			-49.5
Coal Power Generation Company Ltd. (CPGCL)	54.8	54.8		
Dhaka Electric Supply Company (DESCO)	-58.5			-58.5
Dhaka Power Distribution Company (DPDC)	85.4			85.4
Electricity Generation Company of Bangladesh Ltd. (EGCB Ltd.)	-37.1	-37.1		
North West Power Generation Company (NWPGC)	54.4	54.4		
Power Grid Company of Bangladesh (PGCB)	16.3		16.3	
Rural Power Company Ltd. (RPCL)	-75.3	-75.3		
West Zone Power Distribution Company Ltd. (OZoPaDiKo Ltd.)	-62.4			-62.4

3. The Power Sector in the National Budget for FY2022

3.4 Comparison with ADP Allocation Mentioned in 8th FYP

- The Power sector does not get allocation in accordance with the allocation proposed in the 8th FYP
- During FY2022, allocation for energy and power are less than that mentioned in the policy document
  - A less allocation for fossil-fuel based energy is a blessing in disguised

% changes in development allocation of budget over 8FYP



4. National Budget for FY2022 targeting the Clean Energy

4. National Budget for FY2022 targeting the Clean Energy

- A number of RE-based projects are implemented by different ministries and departments
  - These include three projects under MoPEMR, three projects under MoA, one project under MoT
  - Projects include solar panel establishment, solar power plant, irrigation through solar pump, micro-irrigation through solar energy and establishment of solar base station
  - Projects implementation status are mixed: two carryover, three concluding and two continuing projects
- None of the project under SREDA is included in the ADP for FY2022

Renewable energy based Projects implemented by the MoPEMR, FY2022

Name of project	Maximum Possible Completion by FY22	Organisation	Type of Project	Project status	Ministry
Electricity distribution through solar panel establishment in the remote areas of Chattogram hill tracts	39%	CHTDB	Generation	Continuing	MoPEMR
Sonagaji 50MW solar power plant building	36%	EGCB	Generation	Carry over	MoPEMR
Agriculture irrigation through solar driven pump	93%	BREB	Distribution	Carry over	MoPEMR

4. National Budget for FY2022 targeting the Clean Energy

Renewable energy based Projects implemented by the MoA, FY2022

Name of project	Maximum Possible Completion by FY22	Organisation	Type of Project	Project status	Ministry
Increase crop production through expansion of solar energy and water saving modern technology (pilot)	82%	DAE	Generation	Concluding	MoA
Experimental research on extension of two-tier agricultural technology through solar energy-based irrigation system and its versatility	100%	RDA	Generation	Concluding	MoA
Development of micro-irrigation using solar energy	48%	BADC	Generation	Continuing	MoA

Renewable energy based Projects implemented by the MoPTCI, FY22

Name of project	Maximum Possible Completion by FY22	Organisation	Type of Project	Project status	Ministry
Strengthening Tele talk network coverage in remote and inaccessible areas by setting up solar base stations	78%	Tele Talk	Generation	Concluding	PTD

5. Addressing Reform in the Power Sector

5. Addressing Reform in the Power Sector

5.1 Coal-based power plants are still being financed despite official announcement of abandoning coal-based power plants

- ADP allocation for FY2022 includes nine coal-fired power project with allocation which raises question about the Ministry's position regarding government's stance on abandoning coal-fired power plants. These include-
  - **a)** Land acquisition, development and resettlement for implementation of Patuakhali thermal power plant (revised) (Tk.37 crore);
  - **b)** Land acquisition, protection and feasibility study for Bangladesh-Singapore 700MW ultra super critical coal based power plant (2nd revised) (Tk.40 crore);
  - **c)** Land acquisition, development and conservation for Patuakhali 1320MW super thermal power plant (Tk.42 crore);
- Few projects did not get any allocation- a) Land acquisition for Moheshkhali power hub; b) Matarbari ultra super critical coal fired power project-2 (PGCB part from Matarbari to Madunaghat 400KV transmission line)
  - Funding for some projects are related to coal-fired power plants which are currently in progress
- MoPEMR should immediately stop all kinds of activities related to coal-based power generation particularly those which are in the pipeline

5. Addressing Reform in the Power Sector

Status of ADP Allocation for Different Projects relayed to Coal-Based Power Generation and Transmission

Name of project	Organization	Type of Project	Type of plant	Cumulative Expenditure up to June 2020	Revised allocation FY21	Allocation FY22	Maximum Possible Completion by FY22	Project status	Possible completion by FY21
Land acquisition for Moheshkhali power hub	BPDB	Generation	Coal & gas	131,661	58,210	1	143%	Carry over	99.4
Land acquisition, development and resettlement for implementation of Patuakhali thermal power plant (Revised)	RPCL	Generation	Thermal/Ultra super thermal	0	11250	3700	17%	Concluding	82.4
Land acquisition, protectiona nad feasibility study for Bangladesh-Singapore 700MW ultra super critical coal based power plant (2nd revised)	CPGCBL	Generation	Ultra super/Ultra super critical coal	55,638	2200	4000	72%	Concluding	87.5
Feasibility study for setting up CPGCBL-Sumitomo 1200 MW ultra super power plant	CPGCBL	Generation	Ultra super/Ultra super critical coal	0	175	150	18%	Concluding	47.7
Land acquisition and anchillary activities for setting up CPGCBL-Sumitomo 1200 MW ultra super critical coal based power plant	CPGCBL	Generation	Ultra super/Ultra super critical coal	0	1	10	0%	Concluding	85
Matarbari 2*600 MW ultra super critical coal fired power project	CPGCBL	Generation	Ultra super/Ultra super critical coal	1,274,693	420000	616200	64%	Continuing	46.1
Land acquisition, development and conservation for Patuakhali 1320MW super thermal power plant	APSCL	Generation	Thermal/Ultra super thermal	0	12395	4200	20%	Carry over	40.4
Link road and anchillary infrastructure building projects for Payra 1320MW thermal power plant	NWPGCL	Generation	Thermal/Ultra super thermal	0	7500	10000	70%	Carry over	50.3
Matarbari ultra super critical coal fired power project-2 (PGCB part from Matarbari to Madunaghat 400KV transmission line)	PGCB	Transmission	Ultra super/Ultra super critical coal	52,593	56450	1	100%	Carry over	104.1

5. Addressing Reform in the Power Sector

5.2 Allocation for Ruppur should be reduced

- Ruppur Nuclear Power Plant received the highest allocation in the ADP (Tk.18426 cr.) which will help the project to complete 53% of the project
  - Given the huge amount of access electricity in hand, such huge allocation for quick implementation of the project (target 2025) would create a pressure for surplus electricity
  - Allocation for the project should be reduced – both from the government and from the Russian government
- The extracted allocation should be used for RE based power generation

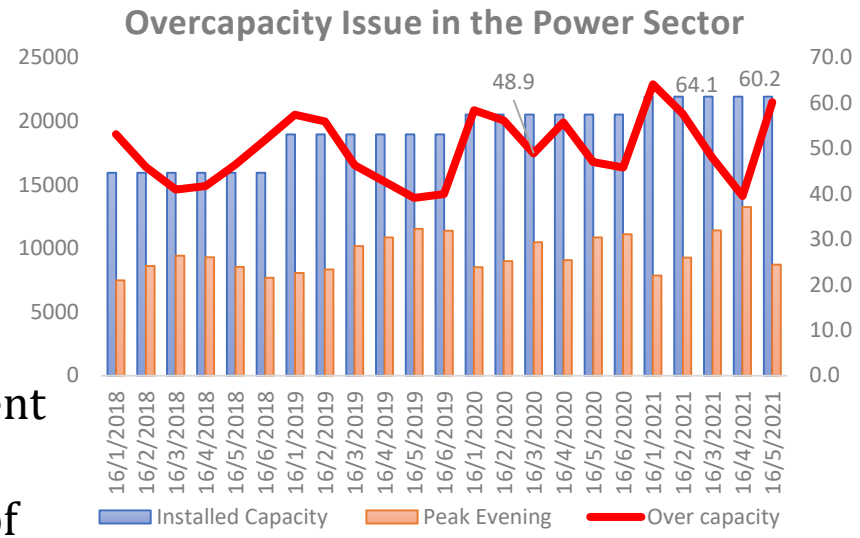
Allocation for Ruppur nuclear power plant and its transmission activities in FY22

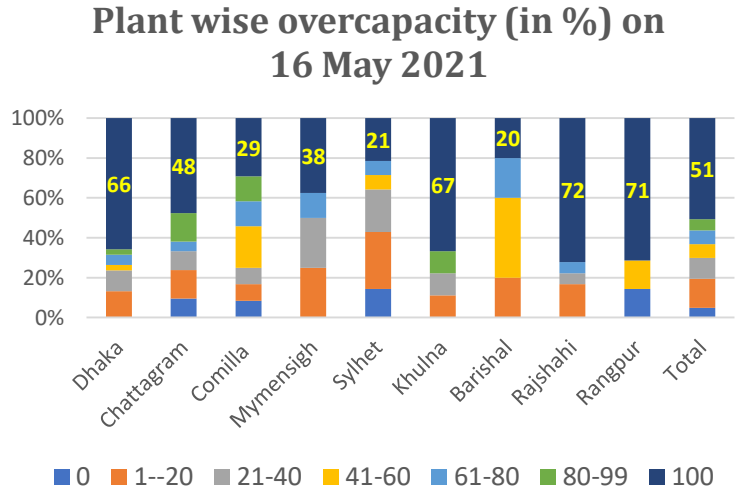
Name of project	Implementing organisation	Type of Project	Allocation FY22	Project Aid	GoB	Maximum Possible Completion by FY22	Project completion status
Ruppur nuclear power plant	Bangladesh Nuclear Energy Commission	Generation	1842616	1600000	242616	53%	Continuing
Development of transmission infrastructure for generated power evacuation of Ruppur Nuclear Power Plant	PGCB	Transmission	207939	164995	42944	24%	Continuing
Total			2050555	1764995	285560		

5. Addressing the Reform in the Power Sector

5.3 Overcapacity should be significantly reduced

- Over capacity has increasingly become a concerning issue
  - As much as 60% capacity is currently unutilized (16 May 2021)
- A plant wise analysis shows that majority of plants remain idle as high as 100% in a particular day (16 May 2021)
- Such inefficiency caused high capacity payment to a large number of enterprises
  - This caused a rise in average unit price of electricity as high as Tk.1500 per kwh
- Such huge cost burden is increasingly getting difficult for the BPDB to accommodate its loss and force it to take loan from the government
  - BPDB is at present the highest recipient of cash loan from the government.
- BPDB should revise its generation plans for 2030 considering the revised slow rise in demand





5. Addressing Reform in the Power Sector

5.4 Exiting Quick Rental Power Plants

- Despite the official stance on gradual phase out quick rental power plants, the period has been extended in most of the plants
  - These would further creating pressure to the BPDB
  - Given the over capacity, the peak demand would be easily met by rest of the power plants
  - During FY2020 only 440 MW worth of electricity was used which was only 1/3 of total capacity of quick rental power plants
- Without exiting these power plants it is difficult to create space for demand for grid-RE based power demand in the country.

QRRs and Their Periods of Contract

Name of plant	Fuel	Installed capacity (MW)	Derated capacity (MW)	Contract period (in years)	Contract expired
RPP					
Venture 34.5 MW, Bhola	Gas	56	50	3	11.07.2021
Enegyprima, Sylhet	Gas	50	50	3	04.01.2020(ext.)
Engergyprima. Bogra	Gas	20	10	3	12.11.2020(ext.)
Precision, Ashuganj	Gas	60	55	3	06.04.2023(ext.)
Energyprima, Fenchuganj	Gas	44	44	3	14.02.2021(ext.)
GBB, Bogra	Gas	23.3	21.7	15	16.06.2023
Barakatullah, Fenchuganj	Gas	55.1	51	15	23.10.2024
Shajibazar (Hobiganj)	Gas	92.8	86	15	09.02.2024
Desh, Kumargaon, Sylhet	Gas	11.7	10	15	17.03.2024
Sub-Total (RPP)		412.9	377.7		
QRPP					
Ghorasal 78.5MW (Max), Narsingdi	Gas	78	78	3	08-01-21(Extended)
Ashuganj (United), B-Baria	Gas	53	53	3	21-06-19(Extended)
Bhola (Aggreko)	Gas	95	95	4	17-03-22(Extended)
Madanganj (Summit), Naryanganj	HFO	102	101.2	5	31-03-21(Extended)
Meghnaghat (IEL), Naryanganj	HFO	100	100	5	07-05-21(Extended)
Siddirganj (Dutch Bangla), Naryanganj	HFO	100	100	5	20-07-21(Extended)
Power Pac Mutiara, Keranigonj, Dhaka	HFO	100	100	5	26-03-22(Extended)
Noapara (Khanjahan Ali), Jessore	HFO	40	40	5	28-05-21(Extended)
Khulna (KPCL-II) , Khulna	HFO	115	115	5	31-05-21(Extended)
Amnura Sinha Power, Chapai Nababganj	HFO	50	50	5	12-01-22(Extended)
Katakhali (Northern), Rajshahi	HFO	50	50	5	21-05-22(Extended)
Julda (Acorn), Chattogram	HFO	100	100	5	25-03-22(Extended)
Sub-Total (QRPP)		983	982.2		
Total RPP and QRPP			1359.9		

5. Addressing Reform in the Power Sector

5.5 No further Extension of 'Speedy Supply of Power and Energy Act'

- Bangladesh's energy and power sector needs to shift its activities from the 'emergency management' (initiated in early 2010s) to 'market-led' management
  - It needs to improve its transparency, accountability and efficiency
- 'Speedy Supply of Power and Energy Act' 2010 was enacted targeting special need in 2010
  - It was enacted on October 12, 2010, for two years. In September 2012, the government first extended the law for two years which expired on October 11, 2014
  - The Act further extended for another four years till October 11, 2018
  - The Act has once again extended for three more years – till 10 October, 2021
- Given the development of the power and energy sector, the 'Speedy Supply of Power and Energy Act' needs to be discontinued immediately
  - As per Act, the it can be discontinued any time before its period of expiry through repealing it

6. Conclusion

6. Conclusion

- The success of the power sector needs new narrative
  - The sector continued relying on fossil-fuel based power generation and related transmission and distribution as its case of achievement
- The success needs to be examined from efficiency and reform points of view
  - Moving gradually from 'horizontal' towards 'vertical' expansion of the sector towards 'quality' along with 'quantity'
- The national budget for FY2022 has special importance from the power sector in the context of changing national and global perspectives with regard to moving towards carbon-neutral economy
  - Particularly through phasing out coal and other fossil-fuel based power generation and promoting renewable energy
- Unfortunately, the proposed budget for the power sector does not reflect that perspective
  - The budget has put focus on traditional areas – mostly in generation and partly in transmission and distribution and no special focus on RE led power generation
  - The budget speech did not reflect key policy reform issues such as shifting from coal and LNG, phasing out of quick rental, promoting RE based power generation

6. Conclusion

- The overall performance of the power sector during FY2021 is mixed
  - Positive changes observed in case of generation, transmission and distribution
  - Modest rise in RE based power generation though it's share is still negligible
  - Overcapacity and frequent power outage and 'zero' load-shedding in official data – three contradictory issues have been continuing
  - BPDB borne a huge financial burden because of its over generation capacity – per unit cost for some power plants was as high as Tk.1500 although average cost is Tk.7. Variation in per unit cost was higher in FY2020 compared to that in FY2019
  - Modest level of activities observed in the SREDA
- The budget allocation for the Power sector has increased – allocation for distribution get the priority
  - However, higher allocation does not explain adding new projects rather majority of the distribution related projects are 'carryover' projects which portrays inefficiency in project implementation
  - Transmission related projects observed rise in 'carryover' projects
  - The allocation for distribution and transmission for different agencies shows both reduction and increase in budget which portrays skewed nature of allocation and subsequent adverse effect on electricity users of different areas

6. Conclusion

- The BPDB is the highest recipient of cash loan from the government over the last nine years
  - A major reason for not being no-loss/profitable state by BPDB is because of its over-emphasis on power generation by the private sector which caused almost half of the electricity unused (beyond reserve margin)
  - Shifting this financial burden to the consumers by raising power tariff will be unjustified
  - BPDB should exclusively focus on reduction of over-generation capacity, stop giving approval of new power plants, phasing out of coal and LNG, exiting from QRR and rental PPs
  - Enhanced budget allocation for SREDA
- The MoPEMR particularly BPDB should announce the following:
  a) No new power plant to be in operation before 2025
  b) No further extension of any QRR and rental power plants
  c) The timeline for exiting of quick rental power plants
  d) No allocation for coal-fired power plants (except those three which are ongoing and their related transmission and distribution)
  e) Reduction of maximum per unit cost of electricity from each plant with a minimum level of variation
  f) Gradual rise in proportionate share of budget allocation in transmission and distribution related projects over generation related projects
  g) Share of 'carryover projects' in transmission and distribution should be declined

6. Conclusion

- The budget allocation for RE related projects should be further enhanced
  - Activities of SREDA should be further promoted
  - Government should invest more in RE based projects (both small and large scale projects)
  - Fiscal incentive structure for investment in RE-based power sector projects should be further widened
  - FDI in the RE should be facilitated by making the domestic business environment favorable including making the businesses viable and derisking
- The power sector should be made competitive- thus all types of bidding should be held under 'open bidding' system maintaining transparency
  - In this context 'Speedy Supply of Power and Energy Act' should be discontinued immediately.
  - This Act should not get further extension after the end of the current tenure (10 October, 2021).

Thank you.