CHAPTER TEN

POWER AND ENERGY

The role of sustainable, reliable and cost effective power generation and supply is immense for sustaining the sustainable growth of GDP and growing economy of the country. After implementation of various power plans adopted by the government, the install capacity of the country has been increased to 23,482 MW in FY 2022-23 till January 2023, which stands at 26,700 MW including captive and renewable energy. Out of this capacity, the maximum generation yet so far was 14,782 MW on 16 April 2022. Total net electricity production was 85,607 million kilowatt-hours in FY 2021-22 and in the first six months of FY 2022-23 up to December 2022 total net electricity production stood at 44,633 million kilowatt-hours. Out of total net generation, 39.89 percent power was generated by public sector, 42.26 percent power from private sector, 7.83 percent from joint venture and 10.02 percent from power import. In addition, total system loss of transmission and distribution of electricity substantially declined to 9.30 percent in FY 2022-23 up to December 2022 from 14.73 percent in FY 2010-11. At present, the total distribution line is 6.29 lakh kilometer and total consumer is 4.45 crore. Government has brought all the citizens under 100 percent electricity facility in 2021. According to Power System Master Plan (PSMP) 2016, the government has set a target to increase installed electricity generation capacity to 40,000 MW by 2030 and 60,000 MW by 2041. On the other hand, natural gas met almost 59 percent of the country's total commercial use of energy. A total of 28 discovered gas fields cumulative gas production is about 19.94 trillion cubic feet up to December 2022 and net recoverable reserves in January 2023 is 8.68 trillion cubic feet. Besides, the country has about 13.60 lakh metric tons reserve fuel oil. Considering the country's energy security and fuel diversification plan, government is generating power from coal, LNG, dual-fuel, nuclear and renewable energy alongside establishing gas and liquid fuel-based power plants. Furthermore, electricity is being imported through regional and sub-regional cooperation.

Power Sector

Government has prioritised the power sector right from the beginning and undertaken immediate, short, medium and long-term plans to meet the increasing demand of electricity. At present, the installed generation capacity of the country has been increased to 26,700 MW including captive and renewable energy. Per capita power generation has increased to 609 kWh. The power distribution line has increased to 6.29 lakh km and the number of consumers has increased to 4.45 crore. The system loss has come down to 9.30 percent till December of FY 2022-23 which was 14.73 percent in FY 2010-11. Extensive development in the power sector is due to timely and realistic planning and implementation through intensive supervision, provision of incentives and incentives to attract domestic and foreign investment in the private sector and measures for import of power on the basis of regional cooperation. At present government has brought all its citizen under 100 percent electricity facility. As per vision 2041, government is working towards the implementation of power generation capacity of 40,000 MW by 2030 and 60,000 MW by 2041 as per Power System Master Plan (PSMP).

Power Generation

Power Generation Capacity

Total grid based installed capacity was 22,482 MW in FY 2021-22 including 10,130 MW in

public sector, 1,244 MW in JV, 9,948 MW in private sector and 1,160 MW from cross-border power import from India. Till January 2023, the total grid based installed capacity is 23,482 MW including 10,246 MW in Public Sector, 1,861 MW in JV, 10,215 MW in Private Sector and 1,160 MW power imported from India. As a whole, total installed power generation capacity has been reached to 26,700 MW including captive and renewable energy. Against the demand, maximum 14,782 MW power (16 April 2022) has been generated.

The installed capacity of power generation by fuel type and ownership in FY 2022-23 (up to January 2023) is shown in Figures 10.1 and 10.2 respectively.

Figure 10.1: Installed Capacity (by Fuel Type)

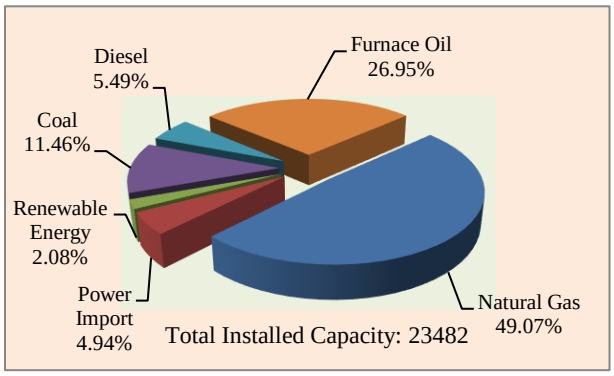
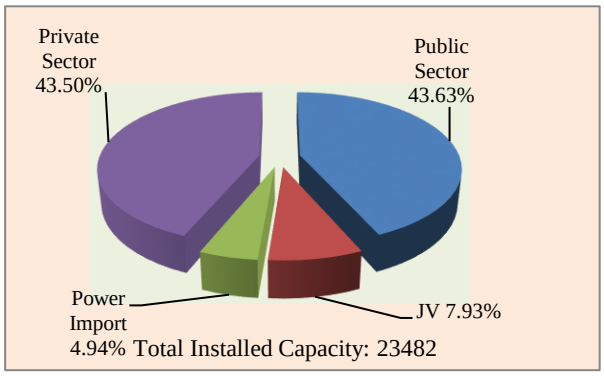


Figure 10.2: Installed Capacity (By Sector)



Source: Power Division (*Up to January 2023).

Power Generation (Million kWh)

The total 80,423 MkWh net electricity was generated during FY 2020-21 and during FY 2021-22 it was 85,607 MkWh which is 6.45 percent higher than the previous FY. In the FY 2022-23 till December 2022, the net generation is 44,633 MkWh amongst which 17,804 MkWh from public sector, 3,496 MkWh from JV and 23,333 MkWh from private sector power plants. Out of the total net generation, 39.89 percent power was generated by public sector power plants, 7.83 percent from JV power plants, 42.26 percent from private power plants, and 10.02 percent from power import. Of the total grid based generation, 50.32 percent gas-based, 9.87 percent coal-based, 28.11 percent liquid fuel based, 10.02 percent imported electricity and 1.69 percent renewable. Fuel wise and sector wise net energy generation in FY 2022-23 up to December 2022 are shown in figure 10.3 and 10.4 respectively.

Figure 10.3: Energy Generation (National) by Fuel

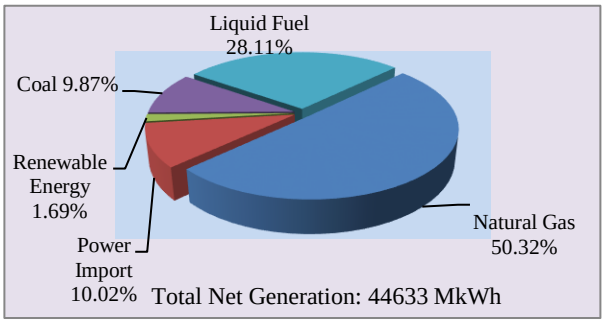
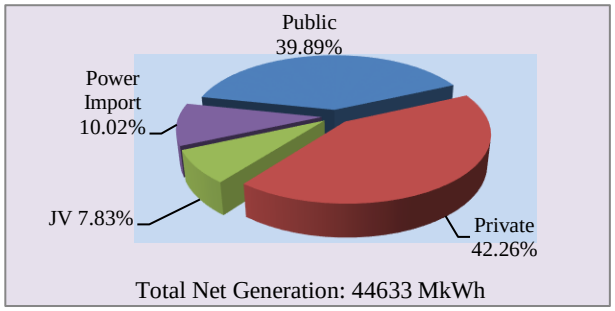


Figure 10.4: Energy Generation (National) by Sector



Source: Power Division (*Up to December 2022).

Maximum Power Generation

In FY 2010-11 maximum power generation was 4,890 MW, which is increased to 14,782 MW in FY 2021-22 (16 April 2022). The installed capacity and maximum generation since FY 2010-11 are presented in Table 10.1.

Table 10.1: Installed Capacity and Maximum Generation

Fiscal Year	Installed capacity MW	Maximum generation MW
2010-11	7264	4890
2011-12	8716	6066
2012-13	9151	6434
2013-14	10416	7356
2014-15	11534	7817
2015-16	12365	9036
2016-17	13555	9479
2017-18	15953	10958
2018-19	18961	12893
2019-20	20383	12738
2020-21	22031	13792
2021-22	22482	14782
2022-23*	23482	13985

Source: Power Division, **(***up to January 2023)

Fuel Consumption for Power Generation

The natural gas consumption in public sector power plant was 150 billion cubic feet in the FY 2010-11 which reached to 219 billion cubic feet during the FY 2021-22. In the FY 2022-23 (till December 2022), the amount of gas consumption is 107 billion cubic feet. Coal has been used as fuel to produce electricity since the FY 2005-06. The total consumption of coal for electricity generation was 2.24 million ton up to December 2022 in the FY 2022-23. The consumption of natural gas and liquid fuel since FY 2010-11 to FY 2022-23 (till December 2022) are given in Table 10.2.

Table: 10.2: Fuel Consumption by Public Sector Power Plants

Fiscal Year	Natural gas (Billion cft)	Coal (Million Tonne)	Liquid Fuel (Million Liter)	
			Furnace Oil	HSD, SKO & LDO
2010-11	150	0.41	119	138
2011-12	151	0.45	182	60
2012-13	175	0.59	266	35
2013-14	183	0.54	424	175
2014-15	180	0.52	378	291
2015-16	207	0.49	439	238
2016-17	215	0.59	513	348
2017-18	211	0.82	615	795
2018-19	274	0.57	484	385
2019-20	268	1.24	301	12
2020-21	243	2.25	389	74
2021-22	219	2.52	523	154
2022-23*	107	2.24	344	187

Source: Power Division (* up to December 2022)

Power Generation Programme and Future Plan

Government has prepared Power System Master Plan (PSMP) including the reform activities to meet the growing demand. As per the plan, power generation capacity will be 40,000 MW by 2030 and 60,000 MW by 2041. In order to secure fuel supply, government has planned for fuel diversification. Electricity generation from gas/LNG, liquid fuel, coal, nuclear, hydro, renewable and import from neighboring countries have also been included in this plan. As per this plan, coal, nuclear, gas/LNG based combined cycle power plant will be used as base load power plants. Imported LNG will be used as complementary as there is a limitation of local gas. The integrated power and energy master plan is in final stage in line with the upgradation of PSMP.

Table 10.3 shows power sector development and future plan of the government up to 2041.

Table 10.3: Power Sector Generation Future plan

SL	Description	Year 2023 (Feb'23)	Year 2030	Year 2041
1.	Installed Capacity (MW)	26700*	40000	60000
2.	Electricity Demand (MW)	15500	33000	52000
3.	Transmission Line (Ckt. KM)	14546	27300	34850
4.	Grid Substation Capacity (MVA)	58076	120000	261000
5.	Per Capita Power Generation (KWh)	609	815	1475
6.	Access to Electricity (%)	100%	100%	100%

Source: Power Division (*Including Captive and RE)

Under Construction Power Generation Projects

At present, a number of power plants are under construction in both public and private sector. The expected power generation targets under ongoing projects are summarised in Table 10.4.

Table 10.4: Power Generation Projects (Under Construction)

Sector	No. of Projects	Capacity (MW)
Public Sector	11	3939
JV	2	3108
Private Sector	20	5047
Total (Under Construction)	**33**	**12094**

Source: Power Division

Among them mentionable projects are:

Public Sector

- *Khulna 336 MW CCPP*
- *Ghorasal 3rd & 4th Unit Repowering*
- *Rupsa 880 MW*
- *Mymensingh 360 MW CCPP*
- *Matarbari 1,200 MW coal-based power plant*

Joint Venture

- *Patuakhali (2nd Phase) 1,320 MW coal based (BCPCL)*
- *Patuakhali 1,320 MW coal-based power plant (RNPL)*
- *Rooppur 2x1,200 MW nuclear based power plant.*

Private Sector

- *Meghnaghat (Summit) 583 MW CCPP*
- *Meghnaghat (Reliance) 718 MW CCPP*
- *Meghnaghat (Unique) 584 MW CCPP*

B. Transmission System

Power Grid Company of Bangladesh Ltd. (PGCB)

Power Grid Company of Bangladesh Ltd. (PGCB) is responsible for operation, maintenance and development of transmission system all over Bangladesh. At present, power generated in different power plants is transmitted to the national grid through 400 kV, 230 kV and 132 kV transmission lines. In 1996, when PGCB was formed, the total lengths of 230 kV and 132 kV line were 838 ckt km and 4,755 ckt km respectively. As a result of the improvement of transmission infrastructure, 400 kV transmission lines of 1,897 ckt. km, 230 kV transmission lines of 4,186 ckt. km and 132 kV transmission lines of 8,464 ckt. km has been constructed in total till January 2023. Now there is one HVDC back-to-back station with total capacity of 1,000 MW, 6 nos. of 400/230 kV grid substations of 6,370 MVA, 4 nos. of 400/132 kV grid substation of 2,470 MVA, 29 nos. of 230/132 kV grid substations of 15,775 MVA, 5 nos. of 230/33 kV grid substations of 1,390 MVA, 167 nos. of 132/33 kV grid of 32,071 MVA capacity. Moreover, 450 MVAR capacitor bank at 132 kV level and 1,340 MVAR capacitor bank at 33 kV level has been added throughout the country. In the past year (February 2022-January 2023), a total of 1,334 ckt. km transmission lines and 7 nos. of grid substations of 2,769 MVA capacity have been newly added to the national grid at different voltage levels. Now the total number of transmission lines has been increased to 14,547 circuit kilometers till January, 2023. Table 10.5 shows year wise transmission system and sub-station infrastructure developed by PGCB.

Table-10.5: Transmission System and Substation Infrastructure by PGCB

Fiscal Year	Transmission System (ckt km)			400 kV HVDC Substation		400/230 kV & 400/132 KV Substation		230/132 kV & 230/33 KV Substation		132/33 kV Substation	
	400 kV	230 kV	132 kV	No	MW	No	MVA	No	MVA	No	MVA
2010-11	-	2647	6018	-	-	-	-	13	6675	81	8437
2011-12	-	2647	6080	-	-	-	-	13	6675	83	8737
2012-13	-	3021	6080	-	-	-	-	15	6975	84	9705
2013-14	165	3045	6120	01	500	-	-	18	8775	86	10714
2014-15	165	3171	6359	01	500	01	520	19	9075	89	11964
2015-16	221	3171	6397	01	500	01	520	19	9375	90	12420
2016-17	560	3313	6504	01	500	02	1690	19	9675	91	13365
2017-18	560	3325	6796	01	500	03	2210	19	9675	91	15046
2018-19	698	3372	7329	01	1000	05	3900	26	13135	132	22642
2019-20	861	3500	7758	01	1000	06	5070	27	13385	145	25885
2020-21	950	3658	8228	01	1000	06	5070	31	16145	153	29189
2021-22	1494	4018	8377	01	1000	09	7800	34	17165	165	31717
2022-23*	1897	4186	8464	01	1000	10	8840	34	17165	167	32071

Source: Power Division (*up to January 2023)

C. Power Distribution System

At present the following six organisations are responsible for electricity distribution:

1. Bangladesh Power Development Board (BPDB)
2. Bangladesh Rural Electrification Board (BREB)
3. Dhaka Power Distribution Company (DPDC)
4. Dhaka Electric Supply Company (DESCO)
5. West Zone Power Distribution Company (WZPDC)
6. Northern Electricity Supply Company Ltd (NESCO)

Inter-Utility Energy Import

The distribution utilities have purchased 80,285 MKWh and 41,952 MKWh electricity at 33 KV and 132 KV level during FY 2021-22 and FY 2022-23 (up to December 2022) respectively. The purchased electricity of different utilities is shown in the figure10.5 and 10.6:

Figure 10.5: Inter Utility Energy Import FY (2021-22)

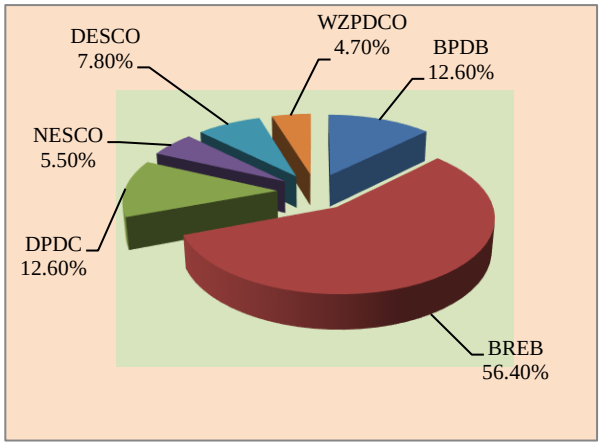
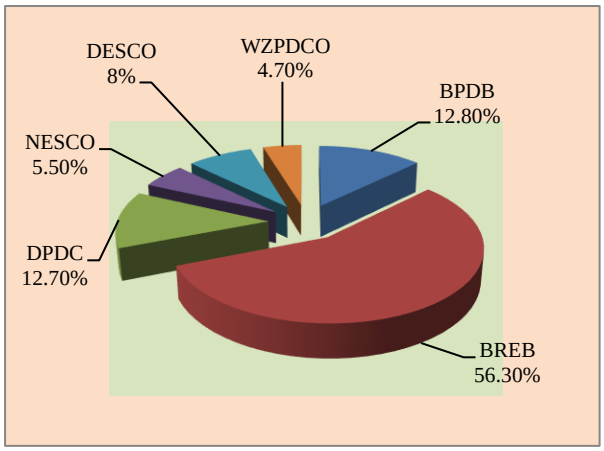


Figure 10.6: Inter Utility Energy Import FY (2022-23*)



Source: Power Division (* up to December 2022)

System Loss

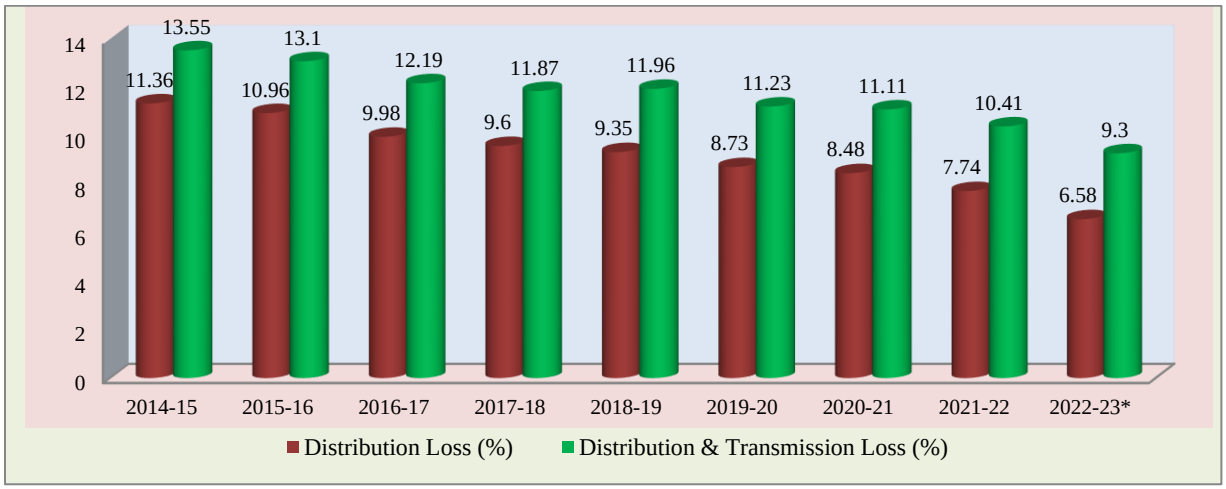
System loss is one of the key performance indicators of the distribution entities. To achieve desired performance of the sector, system loss needs to be further reduced. Various measures, such as continuous performance monitoring of the power sector reforms and target-oriented measures are being implemented to reduce the system loss. The system loss from FY 2010-11 to FY 2022-23 (up to December 2022) is shown in Table 10.6 and in figure10.7

Table 10.6: Year- wise System Loss Statistics

Fiscal Year	Transmission Loss (%)	Distribution Loss (%)	Total Loss (T&D)%
2010-11	1.98	12.75	14.73
2011-12	2.35	12.26	14.61
2012-13	2.33	12.03	14.36
2013-14	2.17	11.96	14.13
2014-15	2.19	11.36	13.55
2015-16	2.14	10.96	13.10
2016-17	2.21	9.98	12.19
2017-18	2.27	9.60	11.87
2018-19	2.61	9.35	11.96
2019-20	2.5	8.73	11.23
2020-21	2.41	8.48	11.11
2021-22	-	7.74	10.41
2022-23*	-	6.58	9.30

Source: Power Division (* up to December 2022)

Figure 10.7: Year Wise System Loss Statistics



Source: Power Division. (*Up to December 2022)

Accounts Receivable

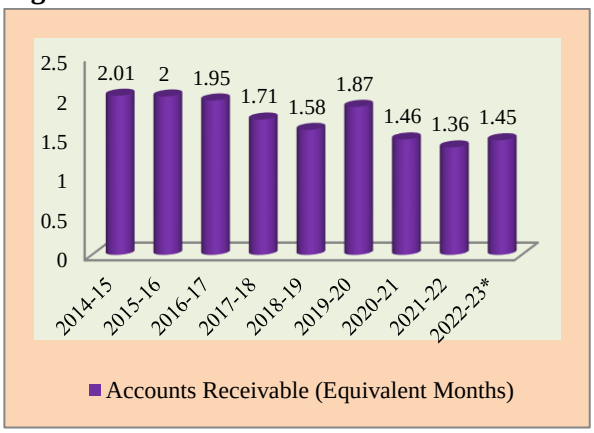
To improve financial viability and efficiency of the sector, the government adopts a financial action plan to maintain power sector receivables at no more than 2 months' billed amount equivalent and reduce receivables from autonomous, public entities and private customers to an acceptable limit. From FY 2010-11 to FY 2022-23 (up to November 2022) year wise accounts receivables are shown in Table 10.7 and in Figure 10.8.

Table 10.7: Year wise Accounts Receivable

Fiscal year	Accounts Receivable (Equivalent Months)
2010-11	2.22
2011-12	2.21
2012-13	2.06
2013-14	2.04
2014-15	2.01
2015-16	2.00
2016-17	1.95
2017-18	1.71
2018-19	1.58
2019-20	1.87
2020-21	1.46
2021-22	1.36
2022-23*	1.45

Source: Power Division *Up to November 2022.

Figure 10.8: Year Wise Accounts Receivable



Source: Power Division (*Up to November 2022)

Pre-Paid Meter

To improve power distribution system, 52,41,721 prepaid meters have been installed by different entities. Till January 2023, BPDB, BREB, DPDC, DESCO, WZPDCL and NESCO have installed 16,51,197, 13,10,564, 6,61,396, 6,28,727, 4,89,837 and 5,00,000 numbers of prepaid meters respectively. Moreover, due to introduction of prepaid meters, system loss has been reduced significantly and consumption pattern has also been changed. Power Division has set a target to bring all large and medium consumers under prepaid meter. The list of installed prepaid meters up to January 2023 has been shown in table 10.8.

Table:10.8: Installation of prepaid meters

Utility	Single phase	Three phase	Total
BPDB	1610014	41183	1**651197**
REB	1296464	14100	1**310564**
DPDC	603243	58153	**661396**
DESCO	552962	75765	**628727**
WZPDCO	475608	14229	**489837**
NESCO	467200	32800	**500000**
Total	**5005491**	**236230**	**5241721**

Source: Power Division.

D. Bangladesh Rural Electrification Board (BREB)

Up to January 2023, Bangladesh Rural Electrification Board has connected total 3.45 crore of consumers by constructing 5.31 lakh km distribution lines through 80 *Palli Bidyut Samities*. Among them 3.09 crore are residential, 4.11 lakh irrigations, 23.40 lakh commercial, 2.75 lakh industrial, 5.26 lakh others. The total number of electricity consumers all over Bangladesh is about 4.75 crore, out of which the total consumers of BREB are 4.45 crore which is about 72 percent of the total consumers of the country and the consumers of BREB consume 59 percent of National Electricity Generation. Target and achievement of line construction and consumer connection of BREB from FY 2010-11 to FY 2022-23 (up to January 2023) is shown in Table 10.9.

Table 10.9: Physical Target and Achievement of BREB

FY	Distribution Line (Km)		Consumer Connection	
	Target	Achive-ment	Target	Achieve-ment
2010-11	2095	3028	-	259548
2011-12	7700	10049	-	723713
2012-13	10222	10279	-	304417
2013-14	16971	17544	-	758932
2014-15	18750	18698	-	1839064
2015-16	20000	31612	1500000	3597883
2016-17	25000	36554	2000000	3511573
2017-18	30000	54886	3200000	3851143
2018-19	25000	71326	2000000	3045593
2019-20	50000	50166	2000000	2405312
2020-21	30000	32736	1300000	2461134
2021-22	10000	12091	800000	1880214
2022-23*	8000	5642	800000	843905

Source: Rural Electrification Board (REB) (*Up to January 2023)

Projects under Implementation of BREB

Bangladesh Rural Electrification Board is running 2 projects in the FY 2022-23 with the aim of making the government's 100 percent electrification programme a success. Moreover, 4 projects of BREB have been approved recently. If these projects are implemented, BREB will ensure quality, affordable, uninterrupted power supply to the customers under BREB by developing a cost-effective, reliable, sustainable and modern electricity distribution system. Mentioned that 5,642 km of new lines have been constructed/renewed against the target of 8,000 km. new line construction/renewal, against the target of 27 (390 MVA) electrical substations construction/capacity building a total of 20 (250 MVA) substation construction/capacity building work has been carried out and a total of 1,298 substations have been constructed with a capacity of 17,460 MVA. Already, a total of 1.55 lakh consumers have been provided electricity connection by installing submarine cables in 646 off-grid areas and 5,717 solar home systems in 29 areas. Due to BREB's nationwide comprehensive programme and sincere efforts, 3.45 crore consumers of various categories have been provided electricity in a total of 462 *upazilas* including off-grid areas.

E. Sustainable Energy Development

Renewable Energy

Government has taken steps to promote renewable and clean energy alongside fossil fuel. In the PSMP, due importance has been given to utilize renewable energy resources. Government has established 'Sustainable and Renewable Energy Development Authority' (SREDA) in 2014 under Sustainable and Renewable Energy Development Authority Act, 2012 to facilitate sustainable energy/renewable energy as well as energy efficiency. To fulfill the government target of generating electricity from renewable energy sources, SREDA is mandated to provide

any sorts of assistance within its purview to implement renewable energy projects. At present, 1,158.59 MW renewable energy system has been installed. Bangladesh has formulated 'Net Metering Guideline, 2018' to promote rooftop solar system in the country. This guideline encourages consumers to become prosumer by the utilization of free space in their buildings for solar power generation. So far, 1,821 systems have been installed under Net Metering Scheme with total capacity of 60.034 MW. Moreover, 2,777 solar irrigation system which has total capacity of 51.076 MW has been implemented. Table 10.10 shows the progress of renewable energy:

Table 10.10: Progress of Renewable Energy

Technology	Off-grid (MW)	On-grid (MW)	Total (MW)
Solar	356.69	567.81	924.5
Wind	2.00	0.9	2.9
Hydro	-	230	230
Biogas	0.69	0	0.69
Biomass	0.4	0	0.4
Total	**359.78**	**798.71**	**1158.49**

Source: Power Division

Energy Efficiency (EE) and Energy Conservation (EC)

In order to consolidate the sustainable energy system, SREDA has been working to achieve the energy saving targets set out in the 8th Five-Year Plan of Bangladesh, along with the formulation of various rules, regulations, guidelines and policies on energy efficiency and conservation. SREDA has formulated 'Energy Efficiency and Conservation Master Plan up to 2030' and working according to the plan to achieve the goal. The Master Plan has set a target of improving 20 percent energy intensity by 2030 (compared to FY 2013-14).

Achievement in Energy Efficiency Improvement:

- Preparation of Energy Efficiency and Conservation Master Plan up to 2030.
- 'Energy Efficiency and Conservation Rules 2016' has been formulated.
- Formulation of Energy Efficiency and Conservation Rules 2018.
- Conducting Training and Examination to prepare Energy Auditors and certifying them.
- Starting energy audit in state-owned industries and in public buildings
- Conducting Energy Efficiency & Conservation Promotion Financing Project, to facilitate low interest (4-6%) loan for industry, building and residential sector for purchasing energy efficient machineries;
- Introduction of awareness raising campaign for Energy Efficiency and Conservation.

Renewable Energy Programme of BREB

The first Solar Home System (SHS) was installed by BREB in 1993 with the financial assistance from France. Till now Bangladesh Rural Electrification Board has installed 5,717 solar home systems in off-grid areas, with a maximum peak capacity of .251 MWp, the number of rooftop solar home systems installed at customer end in grid areas is 96,389; with a peak capacity of about 18.57 MWp, 40 solar irrigation pumps (0.237 MWp) and 14 solar charging stations (0.303 MWp) have been installed. 21 rooftop solar home systems have been installed in various *Palli Bidyut Samities* with own funding of the respective PBS; Its maximum peak capacity is 0.044 MWp. An ADB-funded project is also underway to provide agricultural irrigation through solar-powered pumps. Through this project 2,000 solar irrigation pumps will be installed within the project period (2024). The total capacity of these pumps will be

approximately 19.30 MWp. Among them, 190 solar irrigation pumps have been installed till January 2023, with a maximum peak capacity of 1.67 MWp.

F. Rooppur Nuclear Power Plant (RNPP)

The *Rooppur* Nuclear Power Plant with a capacity of 2,400 MW in two units is being constructed to meet the growing demand of electricity in the country. The *Rooppur* Nuclear Power Plant construction project is underway in the midst of the global corona virus epidemic. Land development, soil stabilization, concrete bedding under all infrastructures and construction of residential buildings have already been completed in the project area. Construction of jetties and embankments along the banks of the *Padma* river and construction of an artificial water channel in the project area have been completed to facilitate the transportation of heavy machinery and fuel by waterways. The reactor is equipped with molten core catcher, reactor pressure vessel, steam generator and a full scale analytical simulator at the training center. Other plant-equipment manufacturing activities are underway in various factories of the Russian Federation. It is expected that power connection from this power plant to the national grid will be possible by 2024.

Construction progress of the first unit:

About 90 percent of the physical construction work and more than 60 percent of the installation work of the reactor building of Unit-1 of *Rooppur* Nuclear Power Plant with a capacity of 1,200 MW has been completed. Overall implementation progress including physical construction and installation of machinery is approximately 80 percent. Turbine building completion is approximately 88 percent and physical construction of first cooling tower up to +175m height is completed. Commissioning work will be started after completion of physical construction and equipment installation work of Unit-1 in June 2023.

All preparations are being made to take delivery the first batch of nuclear fuel of Unit-1 from the Russian Federation to the project area by October 2023. In the first half of next year 2024, the target of performing cold and hot phase test of Unit-1 and conducting reactor physical startup activities has been set. After the construction of transmission line, establishment of physical protection system, construction of offsite telecommunication infrastructure for *Rooppur* Nuclear Power Plant is properly completed by 2023, it will be possible to add Unit-1 of *Rooppur* Nuclear Power Plant to the national power grid as per the schedule.

Construction progress of second unit:

About 70 percent of the physical construction work of Reactor Building of Unit-II of *Rooppur* Nuclear Power Plant has been completed. Preparations are being made to place reactor pressure vessel, steam generator, coolant pump of 2nd unit in design position. The reactor auxiliary building is approximately 55 percent completed. The construction of the turbine building is approximately 65 percent completed. The construction of the first and second cooling tower of the second unit has been completed up to the height of +145 meters and +126 meters respectively. The overall progress of physical construction work of Unit-II is approximately 55 percent. The power generation target of Unit-2 is set after one year of Unit-1.

Regional Power Cooperation

To enhance the development of power sector, Bangladesh Government is working with neighboring countries as well as SAARC, BIMSTEC, SASEC and D-8 for regional cooperation. Collaboration effort with the SAARC countries is continuing. Also Bangladesh has taken initiative in cross border trade of

electricity through bilateral cooperation with Nepal, Bhutan and India. Bangladesh has been working for the overall development of the power sector as an active member of the Regional, Sub-Regional Cooperation and various Cooperation Forums.

Electricity import from India

A joint steering committee has been working for regional cooperation between Bangladesh and India power exchange. An inter-regional grid has been established to import electricity from *Baharampur*, India to *Bheramara, Kustia*. At present, 1,000 MW electricity has been imported through 400 KV transmission line and 160 MW electricity also imported from *Tripura*, India to *Cumilla*, Bangladesh. Initiatives have been taken as per N-1 contingency rule to import 1,000 MW electricity through *Bheramara- Baharampur* 400 KV transmission line. A contract has been signed with Adani group, India to import 1,600 MW (net 1,496 MW) from *Jharkhand* coal based power and it is expected to receive power from India very soon.

Electricity import from Bhutan

An initiative has been taken to import hydro power from Bhutan. A Tripartite MoU is at the final stage between Bangladesh, India and Bhutan in order to construct a power plant through joint investment.

Electricity import from Nepal

An initiative has been taken to import power from Nepal. A Memorandum of Understanding (MoU) has been signed with GMR group, India and NTPC Vidyut Vyapar Nigam Ltd (NVVN) in order to import 500 MW electricity from Nepal.

BIMSTEC's cooperation

An initiative has been taken for regional cooperation through BIMSTEC. In this regard, a Memorandum of Understanding (MoU) has been signed. In order to foster cooperation, drafting of two policies- 'BIMSTEC policy for Transmission of Electricity' and 'BIMSTEC policy for Trade, Exchange of Electricity and Tariff Mechanism' are going on.

China cooperation in Bangladesh power sector and investment opportunity

A Memorandum of Understanding (MoU) has been signed between Bangladesh and China on 21 October 2012 to enhance cooperation in power sector. As a result, cooperation and investment opportunity in Bangladesh power sector will be enhanced. For this, both the countries will contribute to uplift the trade and economic cooperation. Electricity generation, transmission, distribution, energy efficiency, renewable energy has been identified as the scope of cooperation.

Oil, Gas and Mineral Resources

The main purpose of oil, gas and mineral resource sector is to meet energy demand of the country by undertaking exploration, production, development and appraisal of oil and gas fields and subsequent energy reserve enhancement. The main aim of the sector is to reduce extreme dependence on natural gas through diversification of energy-mix and alternative/renewable energy resource usage, balanced and synchronised development of gas production, transmission and distribution activities, encourage participation of private entrepreneurs in oil and gas exploration, production and distribution.

Natural Gas Reserves

Natural gas accounts for 59 percent of the commercial energy of the country. Till now, 28 gas fields have been discovered in the country. According to the latest estimation of *Petrobangla* total initial gas in place (GIIP) is 40.23 trillion cubic feet (TCF), out of which 28.62 TCF is recoverable in proven and probable categories. From 1960 to December 2022, total 19.94 TCF gas was produced leaving 8.68 TCF recoverable. Status of field-wise gas production and reserves is presented in Table 10.11.

Table 10.11: Status of Gas Production and Reserve

(Billion Cubic Feet)

L. No.	Fields	Producing Well (PW)	GIIP (Gas initially in place)	Recoverable Reserve			Product. FY 2021-22	Cumulative Production (Dec, 2022)	Remaining Reserves w.r.t 2P (Jan, 2023)
				1P	2P	3P			
A. PRODUCING									
1	*Titash*	22	8148.9	5384.0	6367.0	6517.0	143.51	5217.90	1149.10
2	*Habiganj*	7	3981.0	2787.0	2787.0	3096.0	56.85	2689.15	97.85
3	*Bakhrabad*	6	1701.0	1052.9	1231.5	1339.0	12.66	880.82	350.71
4	*Koilashtila*	3	3610.0	2390.0	2760.0	2760.0	11.31	757.97	2002.03
5	*Rashidpur*	5	3650.0	1060.0	2433.0	3113.0	16.12	691.55	1741.45
6	*Sylhet/Haripur*	3	370.0	256.5	318.9	332.0	2.23	221.86	97.04
7	*Meghna*	1	122.1	101.0	101.0	101.0	2.62	81.39	19.61
8	*Narshingdi*	2	369.0	218.0	276.8	299.0	9.90	239.62	37.18
9	*Biyanibajar*	2	230.7	150.0	203.0	203.0	2.70	113.92	89.25
10	*Fenchuganj*	2	553.0	229.0	381.0	498.0	5.09	171.84	209.16
11	*Salda*	3	379.9	79.0	279.0	327.0	1.13	96.39	182.61
12	*Shahbajpur*	5	918.1	-	642.7	488.0	22.89	132.83	509.85
13	*Semutang*	1	653.8	151.0	317.7	375.1	0.28	14.18	303.52
14	*Sundalpur*	1	62.2	25.0	35.1	43.5	2.78	22.94	12.16
15	*Srikail*	4	240.0	96.0	161.0	161.0	15.23	132.40	28.60
16	*Begumganj*	1	100.0	14.0	70.0	0.0	3.07	11.25	58.75
17	*Jalalabad*	6	1534.1	1567.0	1567.0	-	69.14	1566.95	-
18	*Moulavibazar*	2	1053.0	405.0	428.0	812.0	5.56	344.44	83.56
19	*Bibiyana*	26	8350.0	4415.0	5755.4	7084.0	440.33	5421.99	333.44
20	*Bangura*	5	1198.0	379.0	714.0	941.0	20.69	532.49	181.51
	Sub-total A:	**107**	**37224.8**	**20759.4**	**26829.1**	**28489.6**	**844.11**	**19341.70**	**7487.39**
B. NON-PRODUCING									
21	*Kutubdia*		65.0	45.5	45.50	45.5	0.0	0.0	45.50
22	*Bhola North*		621.9	0.0	435.32	-	0.0	0.0	435.32
23	*Zakiganj*		75.9	-	53.13	-	0.0	0.0	53.13
	Sub-total B:		**762.8**	**45.5**	**534.0**	**45.5**	**0.0**	**0.0**	**533.95**
C. PRODUCTION SUSPENDED									
24	*Rupganj*		48.0	-	33.6	-	-	0.68	32.92
25	*Sangu*		1039.0	265.0	474.0	727.0	0.0	26.46	447.54
26	*Chattak*		71.8	50.3	50.3	50.3	0.0	21.1	29.20
27	*Kamta*		185.2	125.0	125.0	175.0	0.0	62.4	62.60
28	*Feni*		899.6	544.4	577.8	638.7	0.0	487.91	89.85
	Sub-total C:		**2243.6**	**984.7**	**1260.7**	**1591.0**	**0.0**	**598.5**	**662.11**
	Grand Total, BCF	**A+B +C**	**40231.2**	**21789.6**	**28623.70**	**30126.1**	**844.11**	**19940.25**	**8683.45**
	Grand Total, TCF		**40.23**	**21.79**	**28.62**	**30.13**	**0.84**	**19.94**	**8.68**

Source: Energy and Mineral Resources Division.

Natural Gas Production and Sector-wise Consumption

Natural gas is used for electricity generation, fertilizer production, transportation, industries, domestic sector and commercial purpose. In FY 2020-21 total gas supply including RLNG was 1,104.1 billion cubic feet and total gas consumption was 1,017.5 billion cubic feet. Then, in FY 2021-22 total gas supply including RLNG was 1,080.4 billion cubic feet and total gas consumption was 1,001.3 billion cubic feet. Year-wise/sector-wise natural gas production and consumption are shown in Table 10.12 and sector wise gas consumption pattern are given in Figure 10.9 and Figure 10.10.

Table 10.12: Production of Natural Gas and its Consumption by Sector

(In billion cubic feet)

FY	Production (including R-LNG)	Consumption								
		Power	Captive Power	Fertiliser	Industry	Tea Estate	Com.	Dom.	CNG	Total
2010-11	708.9	275.8	121.6	58.9	122.1	0.8	8.5	87.4	38.5	713.6
2011-12	743.7	302.5	124.2	58.5	128.3	0.8	8.6	89.2	38.3	750.4
2012-13	800.6	328.8	134.1	60.0	135.7	0.8	8.8	89.7	40.2	798.1
2013-14	820.4	337.4	143.8	53.8	141.9	0.8	8.9	101.5	40.1	828.1
2014-15	892.2	354.8	150.0	53.8	147.7	0.8	9.1	118.2	42.9	877.3
2015-16	973.2	399.6	160.8	52.6	156.0	0.9	9.0	141.5	46.5	966.9
2016-17	969.2	403.6	160.5	49.1	163.1	1.0	8.7	154.4	47.0	987.3
2017-18	968.7	398.6	160.5	43.0	166.6	0.9	8.2	158.0	46.2	982.0
2018-19	1077.7	450.9	157.5	57.7	164.5	1.0	7.9	158.9	43.4	1041.8
2019-20	1085.61	455.9	151.6	54.6	155.7	1.1	6.7	132.7	36.1	994.4
2020-21	1104.1	425.8	169.1	64.7	181.7	0.9	6.0	134.2	35.1	1017.5
2021-22	1080.4	402.0	175.7	60.4	191.0	1.1	6.0	127.8	37.3	1001.3

Source: Energy and Mineral Resources Division.

Figure: 10.9: Category-wise Gas Consumption FY2020-21

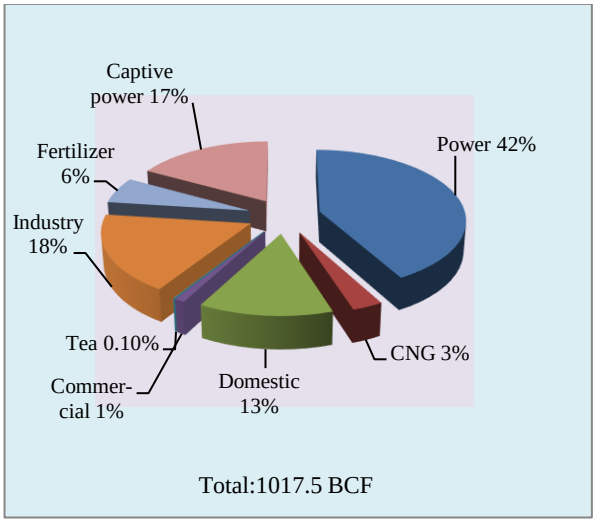
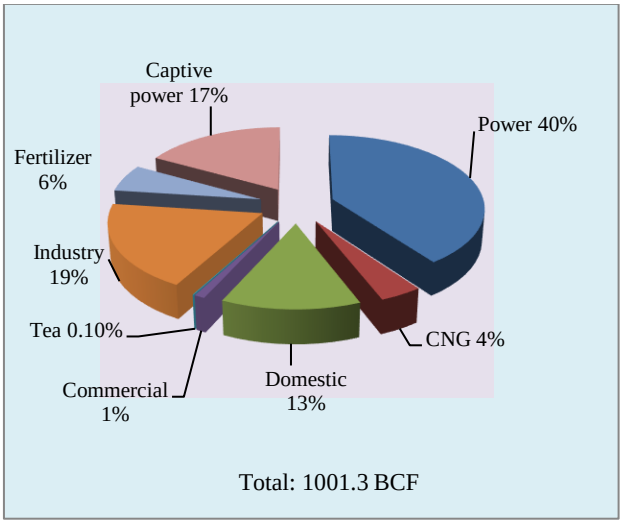


Figure: 10.10: Category-wise Gas Consumption FY 2021-22



Source: Petrobangla.

Sector wise Gas Demand Forcast

The gas demand in the Power sector is increasing with the steady industrialisation in the country. According to Gas Sector Master Plan Bangladesh 2017 (Scenario C), total Gas demand is expected to rise up to 4,787 mmcfd in FY 2022-23, 4,931 mmcfd in FY 2023-24, 5,079 mmcfd in FY 2024-25 and 5,257 mmcfd in FY 2025-26. Gas demand in the industrial sector is considered to become 1,169 mmcfd in FY 2022-23 and 1,575 mmcfd in FY 2025-26. Moreover, demand for gas in Commercial and Tea sectors is considered to become 38 mmcfd in FY 2022-23, and is expected to remain the same up to FY 2025-26. Sector-wise gas demand forcast is given in table 10.13.

Table 10.13: Sector-wise Average Gas Demand Forecast

(mmcfd)

Sector	2022-23	2023-24	2024-25	2025-26
Power	2266	2279	2285	2315
Captive	389	350	315	283
Fertiliser	316	316	316	316
Industry	1169	1299	1435	1575
Domestic	457	490	524	557
Comercial & tea	38	38	38	38
CNG	152	159	166	173
Total	**4787**	**4931**	**5079**	**5257**

Source: Energy and Mineral Resources Division.

Liquefied Natural Gas (LNG)

To minimize the demand-supply gap, government decided to import LNG. As per the decision, two Floating Storage and Re-gasification Units (FSRU) is installed at deep sea near *Moheshkhali, Cox'sbazar* having storage capacity of 1,38,000 m3 LNG and regasification capacity of 500 MMSCFD each. The first FSRU installed by Excelerate Energy Bangladesh Limited (EEBL) was commissioned on August 2018. The second FSRU installed by Summit LNG Terminal Co. (Pvt.) Ltd. was commissioned on April 2019. Imported LNG is being re-gasified by these two Floating terminals and supplying Regasified LNG (RLNG) to the national gas grid. To import LNG on long-term basis, *Petrobangla* signed two separate LNG Sale and Purchase Agreement (SPA) with Ras Laffan Liquefied Natural Gas Company Limited of Qatar and Oman Trading International of Oman respectively on 2017 and 2018. Additionally, *Petrobangla* signed Master Sale and Purchase Agreement (MSPA) with 21 companies for importing LNG from spot market. Considering the increasing future gas demand, government has decided to set up a land-based LNG terminal with regasification capacity of 1,000 MMSCFD at *Matarbari, Cox'sbazar* on BOOT (Build Own Operate & Transfer) basis. Necessary works are in progress in this regard. Considering the increasing energy demand of the country, government is planning to execute more long-term LNG import contracts and install more FSRUs in *Moheshkhali, Coxsbazar* and in *Payra, Patuakhali.*

Petroleum Products

Bangladesh Petroleum Corporation (BPC) imports, acquires, stores and markets petroleum products. It develops and maintains storage facilities to preserve sufficient stock of petroleum products. The current storage capacity of petroleum products is around 13.69 lakh metric tonnes. BPC has taken initiative to set up a new unit of existing refinery named ERL Unit-2 and total crude oil processing capacity will be 45 lakh metric tonnes of both units. Construction of the project Installation of Single Point Mooring (SPM) with double pipelines is going on. It will be possible to discharge annually 90 lakh metric tonnes crude and refined petroleum through pipeline directly for mother tanker. A project is going on to construct pipeline for transporting diesel from *Chattogram* to Dhaka. Another pipeline construction is in progress to transport aviation fuel from *Pitolganj* to *Kurmitola* Aviation Depot, Dhaka. A pipeline about 131.50 km will be constructed from *Shiliguri*, India to *Parbotipur* depot, Bangladesh to import diesel from India to ensure fast, smooth and uninterrupted supply of petroleum to northern region of Bangladesh. Information regarding imported crude oil and refined petroleum products during FY 2010-11 to FY 2022-23 is shown in Tables 10.14 and 10.15

Table 10.14: Import of Crude Oil

FY	Quantity (Metric tonnes)	C and F Value/ Million US$	Crore Taka
2010-11	1409302	978.81	7037.00
2011-12	1085937	919.26	7053.51
2012-13	1292102	1060.30	8536.70
2013-14	1176693	968.55	7957.29
2014-15	1303194	734.00	5739.35
2015-16	1093120	336.15	3225.92
2016-17	1391629	514.10	4132.35
2017-18	1173647	565.99	4603.81
2018-19	1361877	721.28	6080.39
2019-20	1151963	455.91	3854.64
2020-21	1434613	584.64	4966.52
2021-22	1366085	896.84	7855.92
2022-23*	984023	1246.94	7308.85

Source: Energy and Mineral Resources Division (* Up to February 2023)

Table: 10.15: Import of Refined Petroleum Products

FY	Diesel, Octane and Jet A-1		Lubricating Base Oil		Furnace Oil		Merin Fuel	
	Quantity (Metric tonne)	Value (Crore Taka)	Quantity (Metric tonne)	Value (Crore Taka)	Quantity (Metric tonne)	Value (Crore Taka)	Quantity (Metric tonne)	CFR Value (Crore Taka)
2010-11	2488456	21403.69	4749	43.75	230524	1123.17		
2011-12	3409934	27111.24	4980	53.11	680982	3819.07		
2012-13	2827160	21949.10	4853	38.56	803603	4367.26		
2013-14	3158343	23485.56	-	-	1016101	5144.68		
2014-15	3403890	18569.62	-	-	691705	2714.30		
2015-16	3337426	11110.31	-	-	335150	660.52		
2016-17	3871432	14433.91	-	-	521199	1240.66		
2017-18	4892089	23300.67	-	-	650540	2091.52		
2018-19	4281958	23376.50	-	-	318634	1282.49		
2019-20	3873131	17045.18	-	-	175694	687.04		
2020-21	4144762	16694.40	-	-	47924	151.41	29964	111.24
2021-22	4809132	38277.75	-	-	316086	1710.86	16506	101.06
2022-23*	3044857	32667.72	-	-	159354	729.82	14996	121.17

Source: Energy and Mineral Resources Division (*Up to February 2023)

Subsidy for Petroleum Products

Bangladesh Petroleum Corporation (BPC) imports crude and refined oil every year according to country's demand. There are ups and downs of refined and crude oil prices in international market. So BPC has continuously incurred losses due to non-adjustment of oil price as well as custom duty in the domestic market in conformity with increases of oil price in the international market. As a result, government had to give remarkable amount of subsidy for importing petroleum products. Since November 2014, due to the price of oil has fallen in the international market, Government did not give

any subsidy in the FY 2015-16, 2016-17, 2017-18, 2018-19, 2019-20 and 2020-21. However, in the FY 2021-22 due to the global situation created by the Ukraine-Russia war and the price of fuel oil increased in the international market, BPC made a loss of Tk 2,705.64 crore. Table 10.16 shows the amount of subsidy given to BPC.

Table 10.16: Amount of Subsidy given to BPC by the government

(In Crore Taka)

FY	Amount of Subsidy
2010-11	4000.00
2011-12	8550.00
2012-13	13558.00
2013-14	2478.00
2014-15	600.00
2015-16	0.00
2016-17	0.00
2017-18	0.00
2018-19	0.00
2019-20	0.00
2020-21	0.00
2021-22	0.00
2022-23*	0.00

Source: Bangladesh Petroleum Corporation (*Up to February 2023)

Mineral Resources

The Bureau of Mineral Development (BMD) issues exploration license and grants mining lease and quarry lease for different minerals like coal, hard rock, peat, mineral sand, metallic minerals, white clay, silica sand, ordinary sand, mixed stone, limestone, clay etc.

Coal

Five coal fields discovered in Bangladesh till now. The total estimated reserves of these discovered coal fields are about 7,823 million tons, which is equivalent to 185 TCF of Natural gas.

Out of these 5 coal fields, coal is being commercially extracted only from the *Barapukuria* coal field from September 2005. The total amount of coal has been extracted till December 2022 is 13.47 million tons. Coal is mainly used in thermal power plant for electricity generation and also as fuel in brick field, steel industry and various other industries. At present coal is being produced from the central basin area of *Barapukuria* coal field by Underground Mining method with an average production of 0.8 million metric tons per year. A coal-based thermal power plant with a capacity of 525 MW has been set up near the mine from which electricity is being regularly supplied to the national grid.

As the coal layer appears at a comparatively shallow depth in the north and southern part of *Barapukuria* coal basin, there is a plan to conduct a study project to verify the feasibility of open pit mining from that part. If it is possible to develop an open pit coal mine in the north and southern part of *Barapukuria* basin, about 170 million tons of coal can be extracted in 28-30 years at a rate of 6-10 million tons per year.

Besides, a feasibility study for the development of *Dighipara* coal field in *Nawabganj upazila* of *Dinajpur* district has been completed in 2020. According to the study report, out of the 706 million tons of coal in the *Dighipara* coal field, a total of 90 million tons could be extracted in 30 years at an annual rate of 3 million tons by underground mining method. Table 10.17 shows the location, depth and estimated reserve of the coal fields.

Table 10.17: Location, depth and estimated reserve of the coal fields

Sl. No	Coal field	Year of Discovery	Depth	Estimated Reserve
1.	*Barapukuria*	1985	118-509	410
2.	*Dighipara*	1995	328-455	706
3.	*Phulbari*	1997	141-270	572
4.	*Khalaspir*	1989	222-516	685
5.	*Jamalgonj*	1962	640-158	5450
Total				7823

Source: Energy and Mineral Resources Division

Hard Rock

The total reserve of hard rock is 174 million metric tons of which 73 million metric tons of rock is extractable. The Bureau of Mineral Development issued a license of lease to develop the hard rock mine in the area of 54 square km in *Parbatipur* and *Nawabganj upazillas* of *Dinajpur* district. Total 8.48 million metric tons of rock has been produced and total 8.01 million metric tons of rock has been sold during the year May 2007 to February 2023. According to the result of already completed feasibility study almost total 113.70 million metric tons of granite rock can be possible to produce during 40 years in the proposed new mining area of 2.25 square kilometers.

Ordinary stone/sand mixed stone

In *Sylhet, Sunamganj, Panchagarh, Lalmonirhat* and *Bandarban* hill district there are 60 gazetted ordinary stone/sand mixed stone quarries/areas with a total area of about 1,965 hectres.

White Clay

White Clay is available in *Netrakona, Mymensingh, Sherpur, Habiganj, Moulvibazar* and *Chittagong* districts. It is widely used in insulator, refractories, medicine, glass and paper industries in addition to various household items, ceramic products, tiles etc.

Silica Sand

There are a total of 78 silica sand quarries in *Sylhet, Moulvibazar* and *Habiganj* districts of Bangladesh with a total area of 332.28 hectres. At present silica sand is being extracted from silica sand quarries in *Habiganj* district. Silica sand is used as a raw material in glass and ceramic industries as well as in construction.

Heavy Mineral

Heavy Minerals are found in *Cox's Bazar, Teknaf, Maheshkhali, Patuakhali, Bhola* i.e. coastal areas and riverside areas of the country. Among the mineral sands zircon, garnet, leucoccine, monazite, rutile, ilmenite and magnetite are predominant. Such Heavy Minerals is very valuable and has multiple uses.

Iron ore

Iron ore has been discovered in *Alihat* area under *Hakimpur upazila* of *Dinajpur* district in an area of about 10 square kilometers (1,000 hectares). At present, exploration is ongoing in that area.

Mineral Resources (Except Oil and Gas) Investigation, Exploration and Evaluation

GSB is the only government organisation under ministry of Power, Energy and Mineral resources to expedite the exploration of Mineral Resources except oil and gas, and also evaluate of that resources and carrying out geoscientific research works. GSB has implemented various development projects to strengthen the exploration and evaluation of mineral resources in the country. As a result, skilled manpower has been developed with foreign training under various projects of this department and research facilities has made by procuring modern equipment to work in the petrology-mineralogy, engineering geology, sedimentology and clay mineralogy, remote sensing and GIS, micropaleontology, geophysics and analytical chemistry laboratories. Besides these, GSB has discovered Peat, Glass Sand, White Clay, Construction Sand, Gravel, Limestone, Heavy minerals in different parts of the country. Coal and Peat discovered by GSB is now used in power generation and household activities.

Recent Achievements of GSB

- In FY 2021-22 Geological and geomorphological mapping have been completed of 6,407 sq. km.
- 852 sq. Km. areas of geo-physical survey, approximately 60 line Km. areas of seismic survey and 85 sq. Km. areas of presence and

quantity of chemical substance has been completed.

- GSB has discovered 30 meters thick limestone in 675 meters depth in *Tajpur* area of *Bilasbari* union of *Badalgachi upazila* under *Naogaon* district.
- Recently, GSB has also discovered a magnetic rock (magnetic, hematite) of 30 meters thick at a depth of 430 meters at *Hakimpur Upazila* under *Dinajpur* district.
- By the project titled *'Identification and Economic Assessment of the Valuable Minerals in the River Sands of Bangladesh'* collection of different sand samples from *Brahmapurta, Meghna, Someshawri* river basin and analyses of these samples, valuable minerals like Zircon, Monazite, Ilmenite, Rutile, Leocoxin, Kayanite, Garnet, Magnetite etc. has been identified. The average percentage of heavy mineral is 8.92 percent which is internationally acceptable.

Hydrocarbon Unit

Hydrocarbon Unit provides technical support to Energy and Mineral Resources Division to provide views/comments on different policies including Coal policy, MoU, preparation of SDG's Action plan, Gas demand, Gas sector development, Future plan of Gas Sector, Attend PSC's JRC/JMC's meeting, Supervision and Monitoring of Production Sharing Contract (PSC) and other Contracts; Petroleum Refining and Marketing Management, Mines and Minerals Development related Rules and Regulations.

Control of Explosives and Safety Management

Department of Explosives is assigned to discharge its responsibility in controlling manufacture, importation, storage, transportation, transmission and use of Dangerous Goods Substances (DGs) such as Explosives, Gas, Petroleum, Flammable Liquids, Combustible Solids and Oxidizing Substances to ensure safety of lives and assets. Issuance of expert-opinion by examining the evidence related to the case filed by Law Enforcing-agencies in the Speedy-Trial Tribunal as per the provisions of the Explosive Substances Act, 1908. This organisation also furnishes expert-services to Armed Forces.

Regulatory Functions in Energy Sector

To expedite long term development of the energy sector, the Bangladesh Energy Regulatory Commission (BERC) is carrying out activities for creating favorable environment in electricity generation, energy transmission, transportation and marketing as well as for management and operation of this sector. In addition, the BERC has been working to ensure transparency in tariff fixation, protect consumers' interests and create competitive market. Major activities of Bangladesh Energy Regulatory Commission are given below:

Tariff Determination

The Commission determines the wholesale (bulk) tariff for electricity generation entities, electricity transmission tariff for electricity transmission company, retail tariff for electricity distribution entities, gas transmission tariff for gas transmission company, gas distribution charge and gas tariff at consumer level for gas distribution companies as per BERC Act 2003 and tariff regulations. The Commission has fixed life-line (1-50 units) tariff for low-cost supply of electricity to the people of small means for their households. The minimum electricity and gas bills have been rescinded considering the interest of the common consumer. The affordable super off-peak rates have been introduced in the country to facilitate battery mounted electric vehicles for its charging stations and to provide low-cost power supply to medium pumps for irrigation. The price of Liquefied Petroleum Gas (LPG) is being adjusted monthly at the consumer level according to the order of the Hon'ble High Court Division.

Gas Development Fund: A Sustainable Financing of Gas Sector Development

To augment the financial capacity for exploration and production of gas by the nationalised companies, the Commission formed 'Gas Development Fund' on July 30, 2009. An amount of Tk. 17,530.22 crore has been provisioned to the Gas Development Fund up to June 2022.

Power Sector Development Fund: Alternative Financing for Power Sector Development

In order to increase the efficiency and capability of Bangladesh Power Development Board (BPDB), the Commission formed 'Power Sector Development Fund' on February 01, 2011 with 5.17 percent of existing average rate of bulk tariff. The Commission has re-fixed the rate of deposit 0.15 taka on selling price of per kWh by the November 23, 2017 w.e.f. December 1, 2017. The cumulative provision in this fund up to October 2022 is Tk 13,661.92 crore.

Energy Security Fund: Creative Financing for Augmenters Energy Security

With a view to ensuring the energy security in Bangladesh, the Commission formed 'Energy Security Fund' on September 01, 2015 through raising of gas tariff Tk 1.01 per cubic meter. Up to June 2022 Tk. 13,543.93 crores have been accumulated in this fund. Meanwhile, 'Energy Security Fund Guidelines 2018' has been formulated on April 02, 2018. A revolving fund worth Tk. 13,227.44 has been ratified to meet LNG import cost.

Providing License (Power License)

A total of 2,765 power licenses have been issued by the Commission in various categories of power sector from FY 2010-11 to FY 2022-23 (up to February 2023).

Issuance of License (Gas & Petroleum License)

A total of 533 gas licenses have been issued by the Commission in various categories of gas sector from FY 2010-11 to 2022-23 (up to February 2023). Commission issued a total of 981 petroleum licenses in various categories of petroleum sector from FY 2010-11 to FY 2022-23 (up to February 2023).

Arbitration Activities

The Bangladesh Energy Regulatory Commission is authorized to settle disputes among licensees and between licensees and consumers of the energy sector. Till now Commission has resolved 269 cases out of 413 cases.

Establishing Transparency and Accountability

The Commission has taken initiative to introduce Uniform System of Accounts to prepare financial account statements in the same standard for the transparency and accountability of utilities. The Commission has issued an order for the implementation of uniform accounting procedure for all licensees of the gas sector. The order includes guidelines to accounting, permanent asset and inventory management for each financial transaction. The Commission has also formulated a uniform accounting system for power sector. From the feedback of power distribution companies/organisation, the Commission has undertaken necessary steps for the review and amendment of the system to accelerate speedy implementation of the system. The Commission has taken initiatives to introduce uniform accounting method in all gas and power utilities through computerised/web based software. In order to purchase Uniform System of Accounts system (Computerised/web-based software) for gas companies/utilities is under processed.

Preservation of Consumer's Rights

The Commission is working sincerely to protect the consumer's rights. With a view to establishing the consumer's right, the Commission regularly organise outreach program, conducts open meeting and public hearing in fixing tariff as well as to preparing regulations and guidelines in order to protect consumer interest. Others important steps taken by the Commission are pre-paid meter system, introduction of mobile billing system, online customer services and issuing bill clearance certificates yearly.

Energy Auditing

The Commission believes that energy auditing will ensure energy efficiency in the energy sector by use of appropriate and improved technologies. Energy audit will provide the Commission with the opportunity to review and regulate the energy waste through setting standard for machineries and instruments. Three power plants of Bangladesh Power Development Board have already prepared energy audit related information and sent to the BERC in the prescribed form.

E-licensing activities

In order to make the licensing process easily accessible and fast to the service recipients, online e-licensing system software has been installed and training has been provided to the concerned officers/employees. From October 1, 2019, the application and issuance of licenses for various categories of energy sector is being maintained through e-licensing system. This reduces the time and cost for service recipients to obtain a license. As a result, service seekers are able to receive services without any hassle and harassment.

Research Activities

To find out problems, solutions and prosperity of power and energy sector, the Bangladesh Energy Regulatory Commission has conducted some activities in research sector.