

বাংলাদেশের
সুদর্শনজয়ন্তী
Bangladesh



Annual Report

20



PETROBANGLA

Bangladesh Oil, Gas and Mineral Corporation

MUJIB



100
YEARS OF
FATHER OF THE NATION
OF BANGLADESH
BANGABANDHU
SHEIKH MUJIBUR RAHMAN
1920-2020



মুজিব MUJIB
শতবর্ষ 100

NATIONAL COMMITTEE FOR THE CELEBRATION OF THE BIRTH CENTENARY OF FATHER OF THE NATION
BANGABANDHU SHEIKH MUJIBUR RAHMAN. BANGLADESH

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our Vision

To provide energy for sustainable economic growth and maintain energy security of the country

our Mission

- To enhance exploration and exploitation of natural gas
- To provide indigenous primary energy to all areas and all socio economic groups
- To diversify indigenous energy resources
- To develop coal resources as an alternative source of energy
- To promote CNG, LNG and LPG to minimize gas demand and supply gap as well as to improve environment
- To contribute towards environmental conservation of the country
- To promote efficient use of gas with a view to ensuring energy security for the future

Message



Tawfiq-e-Elahi Chowdhury, BB, PhD

Adviser (Minister) to the Hon'ble Prime Minister
Power, Energy & Mineral Resources Affairs
Govt. of the People's Republic of Bangladesh



It is my pleasure to learn that Bangladesh Oil, Gas and Mineral Corporation (Petrobangla) is going to publish its Annual Report 2021 focusing on the activities of Petrobangla and its companies.

Father of the Nation, Bangabandhu Sheikh Mujibur Rahman laid the foundation of the energy security of independent Bangladesh. He bought five gas fields from Shell Oil at a nominal price on 9th August, 1975. For decades the country has relied upon these fields to support the forward march of the country. In the course of time, under the leadership of Hon'ble Prime Minister Sheikh Hasina with steady economic development, Bangladesh has already been recognized as a role model for developing countries.

It is important to introduce innovative ideas for enhancing efficiency, providing better services and creating awareness of responsible use of energy among the consumers to ensure energy security of the country in future.

Petrobangla and its companies have been playing a pioneering role in the energy sector of the country. Even during the COVID-19 pandemic, they are trying to ensure uninterrupted production, transmission and distribution of gas.

I express my felicitations to the officials associated with the effort of publication of the Annual Report 2021. I wish for the continuous progress of Petrobangla in the coming days.

Joy Bangla, Joy Bangabandhu

Long Live Bangladesh

Dr. Tawfiq-e-Elahi Chowdhury, Bir Bikram

Message



Nasrul Hamid MP

State Minister

Ministry of Power, Energy & Mineral Resources
Government of the People's Republic of Bangladesh



I am pleased that the Annual Report 2021 of Bangladesh Oil, Gas and Mineral Corporation (Petrobangla) highlighting its activities for the financial year 2020-21, is going to be published. The report consists of diversified activities undertaken by Petrobangla along with its 13 companies and its future plans and priorities. My heartiest thanks and gratitude to all of its officials who contributed in publishing the time demanding Annual Report.

The indispensable role of energy, a global commodity, in shaping the world economy has also been widely acknowledged. Energy enhances the productivity of other non-energy factors of production and also contributes towards improvement in the living standard of the people, apart from playing its ultimate role in dictating the development process within an economy. It is a prime task for a growing economy like Bangladesh to tap all possible options that are optimal for the development of its energy sector. The development of the energy sector will not only elevate the economy to a higher status but also upsurge productivity and efficiency that will boost the overall economic achievement of Bangladesh.

Bangladesh achieved impressive economic growth over the recent years. It is striving to further accelerate the growth in order to materialize its vision to become a developed country by 2041 which will obviously require a secured and higher rate of energy supply. The Government is taking numerous initiatives for enhancing and ensuring energy security to keep the pace of development moving. Petrobangla, the flagship organization in the country's primary energy sector, has been operating a number of projects for enhancing supply through exploration and development of oil and gas both in onshore and offshore as well as improving the transmission capability of natural gas. In addition to its endeavor for boosting production and supply of gas from domestic sources, Petrobangla has already installed 2 FSRUs at Moheshkhali for regasifying imported LNG to ease the demand and supply gap of gas. Mining of coal and granite are also contributing in the power and construction sector respectively. Thus, Petrobangla is a major contributor to the national exchequer of fuel which is leading to ensure our national energy security.

I am hopeful and happy to keep confidence in Petrobangla and its associated companies towards their achievement to the high with their energy dedication, commitment, integrity and target-oriented performance with hard work and utmost sincerity.

Joi Bangla, Joi Bangabandhu

May Bangladesh Live Forever

Nasrul Hamid, MP

Message



Md. Mahbub Hossain

Senior Secretary

Energy & Mineral Resources Division

Ministry of Power, Energy & Mineral Resources

Government of the People's Republic of Bangladesh



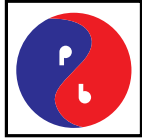
I am delighted to know that Bangladesh Oil, Gas and Mineral Corporation (Petrobangla) is going to publish its Annual Report, 2021 encompassing the activities of the organization and its companies for the FY 2020-21. I welcome the endeavour and works related to publishing this report.

Energy is the life blood of an economy which ultimately contributes to scaling up the living standards of the people. Bangladesh has achieved impressive economic growth over the recent years. We are striving for accelerating the growth in order to materialise the vision declared by Honourable Prime Minister Sheikh Hasina to become a developed country by 2041 which will obviously require a secure and high rate of energy supply. Petrobangla, the flagship organization in the country's primary energy sector entrusted with the responsibilities of exploring, developing, producing and marketing natural gas as well as extracting the country's coal resources has been playing a vital role in fuelling the economy. Petrobangla is also engaged in extracting granite which is used as construction materials. It may be noted that Petrobangla is a major contributor to the national exchequer. Moreover, it is saving a huge amount of foreign currency by substituting the import of energy. Petrobangla is playing a catalytic role in achieving the country's development goal as a whole. I hope, Petrobangla with its excellent track record of outstanding performance will be able to live up to the expectations by further intensifying its efforts in exploration and development of fossil fuels in the country and also by managing activities related to the import of liquefied natural gas (LNG) to ease the shortfall in the supply of natural gas.

I firmly believe that Petrobangla will play a greater role in catapulting our economy to a higher growth trajectory. I wish Petrobangla grand success in its ongoing and future ventures.

Md. Mahbub Hossain

Introduction



Nazmul Ahsan

Chairman

Petrobangla



Indigenous natural gas has been playing a very important role in the economy of Bangladesh since the early 1960's. Due to its versatile use and affordable price, natural gas has been the principal fuel in the country for quite a long time. Although the energy mix of Bangladesh is diversifying slowly, indigenous natural gas still accounts for about three-quarters of the total amount of commercial primary energy, which is more than half of the total primary energy supplies in the country. It is indeed a great challenge to ensure an unstinting supply of natural gas to sustain the economic growth of the country against the backdrop of sharply rising demand as well as the outbreak of COVID-19.

It gives me immense pleasure to present the Annual Report, 2021 of Bangladesh Oil, Gas and Mineral Corporation (Petrobangla) for the financial year (FY) 2020-21. It provides an overview of the key activities, projects and performances of the corporation in this very financial year as well as the future plans and priorities as it continues its endeavor with its 13 companies to ensure environment-friendly, sustainable and affordable primary energy supply in the country.

After the independence of Bangladesh in 1971, the great dreamer of self-reliant Bangladesh, the Father of the Nation Bangabondhu Sheikh Mujibur Rahman desired to ensure the energy security of the country. He took over 5 gas fields (namely - Titas, Habiganj, Rashidpur, Kailashtila and Bakhrabad) from 'Shell Oil' at the rate of 4.5 million pound sterling on 9 August, 1975. Today, even after 47 years of usage, the remaining gas reserve of these fields is about 5.44 TCF which is worth about Taka 1 lakh 83 thousand crore (about US\$19.11 billion). The strong foundation of our economy has been established based on these gas fields.

Bangladesh Oil, Gas and Mineral Corporation (Petrobangla), the apex organization in the country's primary energy sector, entrusted with the responsibilities of exploration, production, transportation and marketing of natural gas along with extracting mineral resources in the country, has been continuing its endeavors to make natural gas available to its consumers at a reasonable price and playing a vital role in fueling the economy. Along with its traditional role of producing and supplying fuel from indigenous sources, Petrobangla has been acting as an importer and marketer of liquefied natural gas (LNG) from August, 2018 in order to supplement indigenous natural gas to meet the demand.

In FY 2020-21, Petrobangla and its companies produced 889 billion cubic feet (BCF) of natural gas, which was equivalent to 23.11 million metric tons of oil worth 8.57 billion USD. Besides, about 3.38 million barrels of condensate were extracted from natural gas in this time period. A portion of it was fractionated into petrol, diesel and kerosene at the process plants of 3 companies under Petrobangla, and the rest of the condensate was sold to Bangladesh Petroleum Corporation (BPC) and private fractionation plants.

The lone coal mining company of Petrobangla, BCMCL extracted about 7,53,973 metric tons of coal in this fiscal year. That is, Petrobangla and the companies under its umbrella provided fuels, around three-quarters of the country's total commercial energy supply, worth around 8.88 billion USD in aggregate to the energy basket of the country in FY 2020-21. Thus, Petrobangla has become the lifeline of the economy of the country.

Since the first discovery of natural gas in Bangladesh in 1955, until today, 28 gas fields have been discovered in this country. The total initial recoverable proven plus probable gas reserve of 28 fields has been estimated to be at 28.42 trillion cubic feet (TCF); out of this, the estimated proven recoverable reserve (P1) is 21.58 TCF while the recoverable probable (P2) reserve is 6.84 TCF. Up to December, 2021 as much as 19.11 TCF gas was produced, leaving only 9.30 TCF of recoverable gas in the 2P category. Currently, 20 gas fields are in production with 106 wells on-stream. Gas supply in the country increased from 600.86 BCF in FY 2007-08 to 1,017.5 BCF, including R-LNG in FY 2020-21 due to various development programmes undertaken by Petrobangla during this period. Of this production, grid power consumed the largest share, about 425.8 BCF (42%) followed by captive power and industry which consumed 169.1 BCF (17%) and 181.7 BCF (18%) respectively; fertilizer 64.7 BCF (6%), domestic 134.2 BCF (13%), CNG 35.1 (3%) and commercial and tea-estates together 7.0 BCF (1%) in FY 2020-21.

The gradual transformation of the country's economy from an agrarian to an industrial one, marked by higher economic growth and consequent uplift in standard of living has called for rapid growth in energy demand in recent years. Shunning the sluggish policies of previous regimes, exploration and development activities in the gas sector got a momentum as soon as the government under the leadership of Hon'ble Prime Minister Sheikh Hasina came to power in 2009. Since then, 5 new gas fields (Sundalpur, Srikail, Rugganj, Bhola North and Zakiganj) have been discovered, 21 exploration and 50 development wells have been drilled, and workover of 56 wells has been completed. As a result, gas supply including regasified LNG has been risen to more or less 3,300 MMscfd. At the same time, a total of 1,354 km transmission pipelines has been laid under different projects in addition to the installation of 3 compressor stations, which has contributed to a greater flow of gas in the system.

Although the problem of energy shortages has been being confronted for a long time, the pace of exploration has been rather slow before, leaving large areas of the country still unexplored or underexplored. To come out of this paradox, Bangladesh Petroleum Exploration and Production Company Limited (BAPEX) along with Bangladesh Gas Fields Company Limited (BGFCL), Sylhet Gas Fields Limited (SGFL) and international oil companies (IOCs) have embarked on the implementation of extensive exploration programmes that include the drilling of 19 exploration wells, 35 workover wells and 18 development wells during the FY 2020-21 to 2024-25. Other than this, BAPEX has conducted 7,863 line-kilometers (lkm) of 2D seismic survey from 2017 to December, 2021 onshore.

In order to reduce the overwhelming dependence on natural gas and diversify the sources of energy supply, Petrobangla has developed the first coal mine in the country at Barapukuria. At present, Barapukuria Coal Mine is producing approximately 2,800-3,000 metric tons of coal daily. About 7,53,973 metric tons of coal were produced in FY 2020-21. Currently, the entire coal extracted from this mine is used to fuel the only coal-fired 525 MW thermal power plant in the country located in Barapukuria.

Apart from these, Maddhapara Granite Mining Company Limited at Dinajpur, the only company of its kind in the country, extracts granite, which is used mostly as a construction material. At present, Maddhapara Mine is producing approximately 4,500 metric tons (in 3 shifts) of granite daily. In FY 2020-21, a total of 10,17,030.83 metric tons of granite were produced from Maddhapara Mine and 12,87,687.00 metric tons were sold.

In order to augment energy supply and thereby support the development of Bangladesh, Petrobangla is importing liquefied natural gas (LNG) in tandem with its endeavors to scale up exploration activities for new resources in the country. With a view to facilitating the government to attain the target of

2041 (high income country), measures have been taken to accomplish all necessary activities relating to LNG including the installation of floating and land-based terminals. In the meantime, 2 floating storage and regasification units (FSRU) have been installed (by EEBL and Summit LNG Terminal Co. PVT. Ltd) at Moheshkhali for supplying 500 MMscfd of regasified LNG (RLNG) each and RLNG is being supplied to the national grid from these 2 terminals. Further, to install a land-based LNG terminal at Matarbari, Cox's Bazar having the capacity to handle 7.5 MTPA of LNG equivalent to 1,000 MMscfd of RLNG (gas), the feasibility study has been completed and an RFP has been prepared for issuing to the shortlisted terminal developers. In accordance with the 2 long-term sale and purchase agreements (SPA), RasGas, Qatar and OQ Trading Limited, Oman are supplying LNG to the said terminals. Additionally, a master sale and purchase agreement (MSPA) was signed with 16 suppliers/traders to purchase LNG from the spot market.

On the other hand, exploration offshore is also gathering momentum. Initial exploration activities are in progress in blocks SS-04 and SS-09. ONGC Videsh Ltd. (OVL) has completed 3,008 lkm of 2D marine seismic survey data acquisition and carried out 2,083 lkm 2D OBC survey. The drilling of one exploratory well named Kanchan-1 in block SS-04 has already been completed. The well was successfully drilled up to 4,228m but no hydrocarbons were discovered. As a result, the well has been plugged and abandoned. OVL is also in the process of awarding a contract for the drilling of two more offshore exploratory wells to be drilled in 2023, both in block SS-04 and SS-09. In block SS-11, Santos acquired and interpreted 3,146 lkm of 2D seismic data and identified 7 leads. Santos carried out 305 sq. km. 3D seismic survey over one of the potential leads. Despite promising post-3D data interpretation outcomes, Santos's decision to wrap up overall activities from the Asia region led them to relinquish the entire block SS-11. Accordingly, the PSC has been terminated. In block DS-12, POSCO acquired and interpreted 3,580 lkm of 2D seismic data and identified 5 leads, of which 2 are very promising. But, POSCO came up with some proposals for improved commercial terms in the signed PSC which were not considered by Petrobangla. Subsequently, POSCO relinquished the block.

In order to attract more investment in offshore oil and gas exploration, an agreement was signed between TGS-SCHLUMBERGER JV and Petrobangla to conduct a total of 32,000 lkm of 2D Non-Exclusive Multi-Client Seismic Survey in the offshore area of Bangladesh with the object of getting an idea of the offshore geology. Considering the post-pandemic international oil and gas market situation, Petrobangla has taken an initiative to further improve the fiscal terms of the Offshore Model PSC 2019 by engaging a reputed international consulting firm. A bidding round will be declared as soon as the updated version of the Offshore Model PSC is approved.

During FY 2020-21 the Petrobangla group contributed to the national exchequer an amount to the tune of Tk. 1,43,774.5 million and saved a considerable amount of foreign exchange by substituting the import of fuel.

Petrobangla is duty-bound to continue its all-out efforts to maximize the supply of fossil fuels in the country. And it is diligently trying to fulfill its obligation towards the nation. With continued investment in exploration and production, the significant economic benefits this country reaps from natural gas and coal will continue for a long time to come.

I hope that this issue of the Annual Report will be helpful as a reference book and will provide elements of interest for the concerned.



Nazmul Ahsan

Board of Directors (Incumbent)



Nazmul Ahsan
Chairman
Petrobangla
Chairman of the Board



Mohammad Saiful Islam
Additional Secretary
Finance Division
Director of the Board



A K M Benjamin Riazi
Director (Finance)
Petrobangla
Director of the Board



Md. Khorshed Alam
Joint Secretary
Planning Division
Director of the Board



Mohammad Elius Hossain
Joint Secretary
EMRD
Director of the Board



Md. Altaf Hossain
Director (Administration)
Petrobangla
Director of the Board



Engr. Md. Shaheenur Islam
Director (Production Sharing
Contract)
Petrobangla
Director of the Board



Engr. Ali Iqbal Md. Nurullah
Director (Planning)
Petrobangla
Director of the Board



Engr. Md. Kamruzzaman Khan
Director (Operation & Mines)
Petrobangla
Director of the Board

Past and Present Chairmen of Petrobangla

No.	Name	Tenure
01	Dr. A. Y. M. Habibur Rahman	21.04.1972 – 14.06.1976
02	Dr. Nazrul Islam	19.07.1976 – 14.02.1980
03	Syed Hasan Ahmed	18.02.1980 – 05.10.1981
04	M. A. Faiz	12.10.1981 – 28.02.1983
05	Gr. Capt. Qazi Aftab Ahmed, psc	01.03.1983 – 26.05.1984
06	Shafiul Alam	26.05.1984 – 27.08.1984
07	Jalaluddin Ahmed	27.08.1984 – 10.03.1985
08	Md. Habibur Rahman	07.04.1985 – 09.10.1988
09	Jamiluddin Ahmed	10.10.1988 – 03.12.1988
10	Lt. Col (Retd.) Heshamuddin Ahmed, psc	03.12.1988 – 25.11.1989
11	Ataul Karim	27.11.1989 – 31.12.1990
12	M. A. Lutful Matin	01.01.1991 – 09.05.1992
13	S.K.M. Abdullah	09.05.1992 – 31.12.1995
14	Dr. Mujibur Rahman Khan	04.01.1996 – 25.05.1996
15	Md. Mosharraf Hossain	25.05.1996 – 31.12.1996 15.04.1997 – 22.05.2001
16	Professor Dr. Md. Hussain Monsur	05.07.2001 – 01.11.2001
17	Syed Sajedul Karim	03.12.2001 – 28.04.2003
18	S.R. Osmani	30.10.2005 – 14.12.2005
19	A.M.M. Nasiruddin	30.10.2005 – 14.12.2005
20	M Musharraf Hossain Bhuiyan	14.12.2005 – 09.01.2007
21	Md.Wahidunnabi Chowdhury	14.01.2007 – 14.02.2007
22	Dr. Sheikh Abdur Rashid	14.02.2007 – 24.09.2007
23	Jalal Ahmed	24.09.2007 – 19.04.2009
24	Major Md. Muqtadir Ali (Retd.)	19.04.2009 – 17.10.2009
25	Professor Dr. Md. Hussain Monsur	18.10.2009 – 18.10.2014
26	Istiaque Ahmad	23.10.2014 – 21.12.2016
27	Abul Mansur Md. Faizullah, ndc	01.01.2017 – 29.11.2018
28	Md. Ruhul Amin	29.11.2018 – 29.12.2019
29	A B M Abdul Fattah	13.01.2020 – 25.11.2021
30	Nazmul Ahsan	06.12.2021 – Incumbent

The Genesis

Bangladesh Minerals, Oil and Gas Corporation (BMOGC) was established pursuant to President's Order No. 27 of 26 March, 1972 for dealing with the exploration and development of oil, gas and mineral resources of the country. The activities of the corporation relating to minerals was segregated and placed under a new organization named Bangladesh Mineral Exploration and Development Corporation (BMEDC) formed by President's Order No. 120 of 27 September, 1972. Later, BMOGC was substituted as Bangladesh Oil and Gas Corporation (BOGC) and also short-named "Petrobangla" by Ordinance No. XV of 22 August, 1974. Through the Repeal Act No. LXX of 28 November, 1974, Oil and Gas Development Corporation established by the Ordinance No. XXXVII of 1961 was repealed and all its assets and liabilities were transferred to and vested in the BOGC (Petrobangla). On 13 November, 1976, by promulgation of the Ordinance No. LXXXVIII, the import, refining and marketing of crude and petroleum products were separated and vested in the newly formed Bangladesh Petroleum Corporation (BPC).

BOGC and BMEDC were merged into a single entity under the name "Bangladesh Oil, Gas and Mineral Corporation (BOGMC)" by Ordinance No. XXI of 11 April, 1985. The corporation was short named "Petrobangla" and given power to hold shares or interest in any company formed for the purpose of exploration and exploitation of oil, gas and mineral resources by Act No. 11 of 28 February, 1989.



Newly Joined Chairman Mr. Nazmul Ahsan was warmly greeted by the Directors and High Officials of Petrobangla

Functions and Powers of Petrobangla

Petrobangla has been assigned with the following functions by the Bangladesh Oil, Gas and Mineral Corporation Ordinance, 1985 :

- a. to undertake research in the field of oil, gas and minerals;
- b. to prepare and implement programmes for the exploration and development of oil, gas and mineral resources;
- c. to produce and sell oil, gas and mineral resources; and
- d. to perform such other functions as the Government may, from time to time, assign to the Corporation.

Without prejudice to the generality of the foregoing provisions, the Corporation shall, in particular, have power :

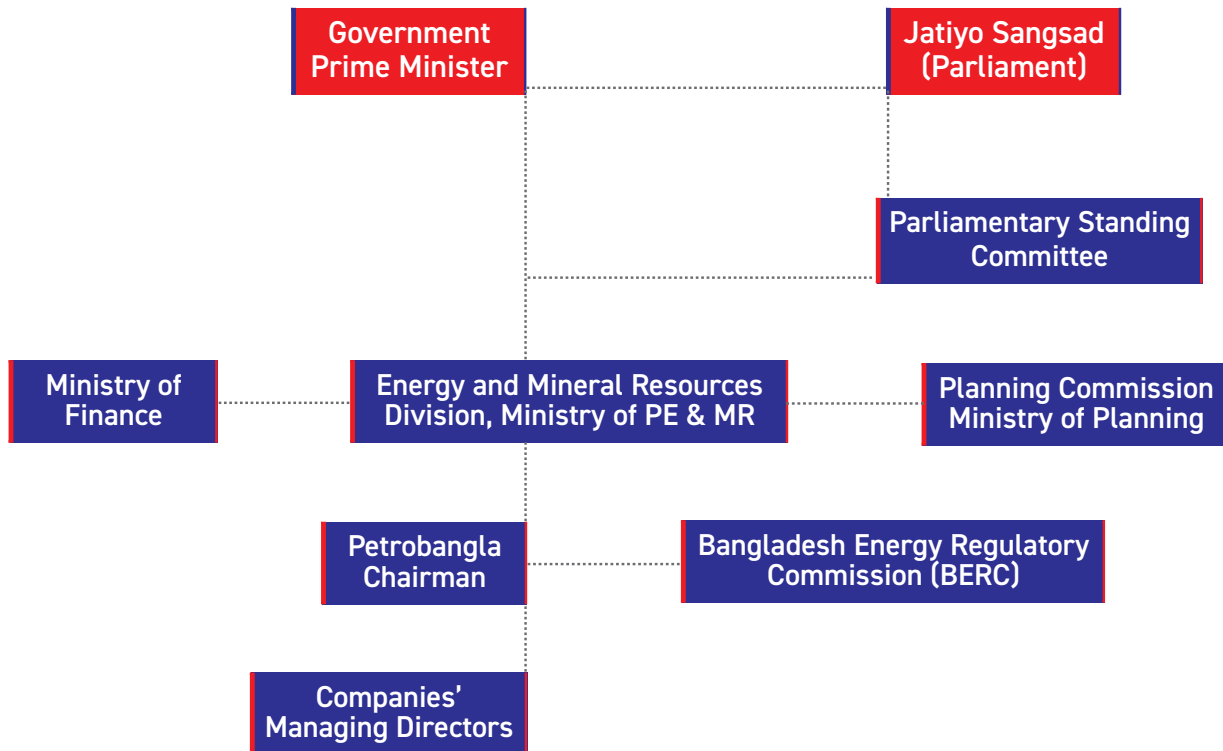
- a. to undertake research for alternative use of natural gas;
- b. to carry out geological, geophysical and other surveys for the exploration and development of oil, gas and mineral resources;
- c. to carry out drilling and other prospecting operations to prove and estimate the reserves of oil, gas and mineral resources and collect all data required for adopting the most suitable extraction and mining method;
- d. to set up mining industries and to continue production and sale of mined commodities;
- e. to take up, execute and operate any project on mining and mineral development;
- f. to contribute towards the cost of any studies, experiments or technical research, connected with the functions of the Corporation and undertaken or done in the interest of the Corporation by any other person, body or agency; and
- g. to undertake, assist or encourage the collection, maintenance and publication of statistics, bulletins and monographs pertaining to the business of the Corporation.

Petrobangla and the Government

Petrobangla operates as a public sector statutory body pursuant to Bangladesh Oil, Gas and Mineral Corporation Ordinance, 1985 and Bangladesh Oil, Gas and Mineral Corporation (Amendment) Act, 1989. The general direction and administration of the affairs and business of the corporation vest in its Board of Directors. It is the policy making and managing body of the corporation, with members from Energy, Finance and Planning Ministries. The Board in discharging its functions acts on commercial consideration having due regard to public interest. The corporation is under the administrative control of the Energy and Mineral Resources Division of the Ministry of Power, Energy and Mineral Resources. The corporation also has a close relationship, through the Ministry of Power, Energy and Mineral Resources, with the Ministry of Finance and the Ministry of Planning for its development programmes. There is also an active relationship between the corporation and other functional bodies such as Bangladesh Energy Regulatory Commission, National Board of Revenue, the Department of Explosives and the Department of Environment for relevant purposes.

The activities of the corporation are reviewed and examined by the Public Accounts Committee and the Parliamentary Standing Committee on Power, Energy and Mineral Resources.

Accountability Chain



A Brief History of Oil, Gas and Mineral Industry in Bangladesh

The beginning : up to 1947

The search for oil and gas in the area constituting Bangladesh began in the later part of the 19th century through some isolated geological mapping. The first serious attempt to find oil and gas was undertaken in Sitakund in 1908 by the Indian Petroleum Prospecting Company, 18 years after the first oil discovery in Digboi, Assam. During 1923-31 Burmah Oil Company (BOC) drilled 2 shallow wells in Patharia. The wells were abandoned though there was a reported show of oil. A total of 6 exploratory wells were drilled, the deepest being 1047 meters. There was, however, no discovery and the Second World War disrupted further activities.

The interim : 1948 to 1971

The promulgation of the Petroleum Act in 1948 generated a lot of interest in oil and gas exploration by international oil companies. The Standard Vacuum Oil Company (STANVAC) of the USA, Pakistan Petroleum Ltd. (PPL), Burmah Oil Company affiliate and Pakistan Shell Oil Company (PSOC) carried out exploration till the end of the sixties. STANVAC drilled 3 wells at Hazipur, Bogura and Kuchma in the north-western part of the country without success. PPL drilled wells in Haripur, Patharia, Chatak, Fenchuganj, Patiya and Lalmai and made the first gas discovery in Haripur in 1955, followed by Chattak in 1959. PSOC was the most successful company and discovered 5 gas fields named Titas, Habiganj, Rashidpur, Kailashtila and Bakhrabad. They also drilled the first offshore well, Cox's Bazar-1, which was dry.

Oil and Gas Development Corporation (OGDC) was established in 1961 providing an institutional foundation for exploration of oil and gas in the country. OGDC carried out geological and geophysical surveys including gravity, magnetic and seismic types and drilled wells in Jaldi and Semutang, discovering gas in Semutang in 1970.

The way forward : 1972 to 1979

After the independence of Bangladesh, exploration activities by both national and international companies gathered pace. Bangladesh Oil, Gas and Mineral Corporation (Petrobangla) continued its exploration efforts while the Bangladesh Petroleum Act was passed in 1974 to facilitate international participation under production sharing contract (PSC). The offshore area of Bangladesh was divided into 6 blocks, which were taken up by Ashland, ARCO, BODC (Japex), Union Oil, Canadian Superior Oil and Ina Naftaplin under PSCs. These companies carried out gravity, magnetic and seismic surveys (about 32,000 km) and drilled 7 wells. Of them, only Union Oil Company discovered an offshore gas field Kutubdia in



Ownership Transfer Agreement of 5 Gas Fields from Shell Petroleum Company to Petrobangla

1977. This phase of PSC ended in relinquishment of the blocks by the PSC operators in 1978. On 9 August, 1975, government led by the Father of the Nation Bangabandhu Sheikh Mujibur Rahman purchased 5 gas fields, namely Titas, Habiganj, Rashidpur, Kailashtila and Bakhrabad from British company, Shell Petroleum Company Limited, for a nominal amount of 4.5 million pound sterling. This landmark decision taken by the then government laid the foundation of energy security of the country by introducing sole ownership of the state over these major gas fields.

Gathering Momentum : 1980 onwards

The 1980s saw accelerated exploration activities by Petrobangla. During the time, 12 exploration wells were drilled at Muladi, Begumganj, Singra, Beanibazar, Atgram, Feni, Fenchuganj, Sitakund, Bogura, Kamta, Marichakandi (Meghna) and Belabo (Narshindi); and 7 gas fields were discovered at Begumganj, Beanibazar, Feni, Fenchuganj, Kamta, Marichakandi (Meghna) and Belabo (Narshindi). Among these, Fenchuganj no. 2 wells remain the deepest one drilled so far in Bangladesh (4,977 m). Meanwhile, a new milestone was achieved when Petrobangla discovered the first commercial oil pool in Sylhet no. 7 on 23 December, 1986. Since 1989, after the formation of BAPEX as the national exploration company and thereafter exploration and production company, the company has continued exploration and production activities and drilled 4 exploratory wells discovering gas at Shahbazpur, Saldanadi, Srikail and Sundalpur.

In 1981 Shell Oil Company (Shell) was awarded the Chattogram Hill Tracts for petroleum exploration under PSC. Shell conducted geological and seismic surveys and drilled the Sitapahar well which was found dry. Subsequently Shell undertook exploration in the extreme north west of the country and drilled the first well in the area - the Salbanhat well which was also dry. In 1988 Scimitar Exploration Limited was awarded another PSC of what is now block no. 13 in the Surma basin. They failed to prove the extent of the oil discovery at Sylhet structure but discovered the Jalalabad gas field.

Formulation of National Energy Policy, 1996 and adoption of a model production sharing contract (PSC) document together with redefining the whole of Bangladesh territory into 23 exploration blocks ushered in a new phase of exploration and development of oil and gas in the country. In the first stage under the new arrangement, 8 blocks were awarded to 4 companies under PSC. Exploration and development activities in these blocks were rather limited and most of the blocks were moderately covered by seismic surveys. A total of 11 exploration wells were drilled and 3 gas fields were discovered in these blocks. These fields are Moulvibazar, Sangu (offshore) and Bibiyana. These 3 fields along with the Jalalabad gas field discovered by Scimitar Exploration Ltd. were developed under PSC and are currently in production. The first 3D seismic survey of the country took place in Bibiyana during its appraisal. Bibiyana came under production in March, 2007. Another PSC bidding round during the late nineties culminated in awarding 4 more blocks. These were SHELL/CAIRN/ BAPEX in blocks no. 5 and 10, UNOCAL/BAPEX in block no. 7 and TULLOW/CHEVRON/TEXACO/BAPEX in block no. 9. Exploration activity was conducted in these blocks. Substantial activities were undertaken in block no. 9 only where 5 exploration wells were drilled on the basis of seismic survey including 3D seismic discovering Bangura gas field.

The Offshore Bidding Round 2008 being limited to newly-formed deep water blocks, attracted a significant number of bids. However, the ensuing maritime boundary dispute in most of the blocks created a stalemate. In this backdrop, PSC for 2 blocks was signed with ConocoPhillips in 2011. During the FY 2012-13, ConocoPhillips completed acquisition of 5,860 lkm of 2D seismic survey and interpretation of data identified 4 leads. Among them, one of the leads has an estimated in place gas resource of 2.8 TCF (P50). Despite having good potential for the block, the then fiscal terms and conditions were not

in favor of the ConocoPhillips' portfolio for further investment. As a result, ConocoPhillips relinquished these blocks in 2014 without drilling any exploratory well.

After the resolution of the maritime boundary dispute with Myanmar by virtue of the judgment awarded on 14 March, 2012 by the International Tribunal For The Law of The Sea (ITLOS), the deep water blocks on the eastern part were rearranged. This is a widely acclaimed achievement of the government led by Hon'ble Prime Minister Sheikh Hasina. The Bangladesh Offshore Bid Round 2012 was announced in December, 2012 and substantial initial response was received. Under this bid round, 2 shallow water PSCs were signed with the consortium of ONGC Videsh Limited (OVL), Oil India Limited (OIL) and BAPEX for blocks SS-04 and SS-09 and 1 shallow water PSC was signed with the consortium of Santos, KrisEnergy and BAPEX for block SS-11. Under "Quick Enhancement of Electricity and Energy Supply (Special Provisions) Act, 2010", a PSC has been signed for deep sea block DS-12 with POSCO DAEWOO Corporation (presently POSCO INTERNATIONAL Corporation) in March, 2017.

As per PSC for blocks SS-04 & SS-09, OVL acquired & interpreted 5,080 lkm of 2D seismic data and identified 3 locations for drilling of 3 exploratory wells. In Block SS-11 Santos acquired & interpreted 3,146 lkm 2D seismic data and identified 7 leads. Santos carried out 305 km 3D seismic survey over one of the potential leads. Despite promising post 3D data interpretation outcome, Santos's decision of wrapping up overall activities from Asia region led them relinquishing the entire block SS-11. Accordingly, the PSC has been terminated. In Block DS-12 POSCO acquired & interpreted 3,580 lkm of 2D seismic data identified 5 leads. However, POSCO relinquished the block considering the fiscal terms of the signed PSC not favorable for their further investment.

On the other hand all of the onshore PSCs have matured from the exploration phase to the production phase and major areas of the blocks have been relinquished. As of December, 2021 PSCs are active in production areas of blocks 12, 13 and 14 with Bibiyana, Jalalabad and Moulvibazar gas fields operated by Chevron, and block 9 with Bangora Gas Field operated by Tullow Bangladesh Limited.

Even though exploration history of oil and gas in Bangladesh goes back almost a century, exploration density could not be enhanced as much as it is required to convert domestic oil and gas resources into proven reserves. However, the exploration success ratio is high as of about 1 in 3 wells. PSC was the major contributor in the country's gas production throughout the year of 2021. As of December, 2021 out of 28 gas fields discovered, 20 were under production. Meanwhile, peak gas production per day crossed the level of 2,700 MMscfd in December, 2016. Despite an increase in production, the rising demand could not be met and the gap between supply and demand is widening. To minimize the gap, LNG has been imported since August, 2018 and massive exploration programmes in both onshore and offshore areas are being implemented.

Minerals

Petrobangla is also entrusted with mineral development in the country. While the exploration part of mineral activity falls under the charter of Geological Survey of Bangladesh (GSB), subsequent development of economic deposits is undertaken by Petrobangla. Mineral activities were part of the erstwhile Bangladesh Mineral Exploration and Development Corporation (BMEDC) till its merger with BOGC. Petrobangla has developed 2 underground mines, one for coal at Barapukuria which started commercial production in September, 2005 and the other for granite at Maddhapara which went into commercial production in May, 2007. Certain other extraction operations, like limestone, white clay and boulder, are controlled by the Government through the Bureau of Mineral Development (BMD).

Activities of Petrobangla

The activities of the Petrobangla group encompass the whole spectrum of oil, gas and mineral sector of the country. The companies under Petrobangla are involved in each of the stages from the drill bit to burner tips. Through its companies, Petrobangla conducts geological and geophysical exploration with the help of its own crew, drills exploration and development wells with its own rig or with the help of hired contractors, processes raw gas to the pipeline specification, transports the processed gas through an increasing network of high-pressure transmission lines and distributes gas to the customers, be it a large power plant or fertilizer factory or a single household. Value added LPG and liquid fuel such as motor spirit, diesel, kerosene etc. are extracted from NGL and condensate which are by-products of gas. Compressed natural gas (CNG) is extensively used in vehicles substituting for imported liquid fuels. Extraction of coal and granite are also conducted by Petrobangla. Furthermore, Petrobangla is set to be an importer and marketer of imported gas in the form of liquefied natural gas (LNG) from 2018 in order to supplement indigenous natural gas to meet the demand.

Exploration

Geological: During 2021, 98 line-km geological survey has been completed in Sitakund structure of Chattogram district. A complete geological map of the structure is being prepared after analyzing the collected data and information. BAPEx discovered Zakiganj-1 as the 28th gas field of the country which is capable of producing about 10 MMscfd gas. The estimated reserve of Zakiganj gas field is 68 BCF among which recoverable reserve is 48 BCF. Well proposals for Srikail North-1A exploratory well, Sundalpur-3 appraisal-cum development well and Begumganj-4 (west) appraisal-cum development well have been prepared after analyzing relevant 2D and 3D seismic data and information as well as the information collected from the previously drilled wells in the surrounding areas. In line with the study, well locations of Sylhet-10 and Kailashtila-9 appraisal-cum development wells under SGFL have been confirmed through field surveys. In order to meet the growing demand for gas in the country, to explore the presence of gas in the deeper zone of the existing gas field, well proposals have been prepared for Srikail Deep-1 exploratory well and Mubarakpur Deep-1 exploratory well. Well location with other technical parameters of Srikail-5 appraisal cum development well have been finalized.

Two consultants have been appointed for smooth implementation of the geological and geophysical survey. In order to explore gases from dry, abandoned and suspended wells, 2 EOI have been called from the eligible companies experienced in this regard. A Memorandum of Understanding (MoU) was signed between BAPEx and Gazprom EP International to evaluate Bhola Island fields. In addition, a Memorandum of Understanding (MoU) has been signed between BAPEx and Mitsui Oil Exploration Co. Ltd. (MOECO), Japan on "Joint exploration proposal for Bangladesh Onshore Blocks 8 and 11". For both the MOU, data has been transferred for joint study.

2D Seismic Survey: With a view to identifying locations of exploratory wells under the scope of a project entitled 'Rupkalpa-9 2D Seismic Project' financed by the gas development fund (GDF), a total of 500 lkm 2D seismic data has been acquired over Noakhali and Laxmipur districts. Total 3,500 lkm data has been processed and interpreted by foreign experts. Three well locations have been recommended in Block-10 by foreign interpretation experts which are in Char Jublee at depth 3,500m, Ewazbalia at depth 4,500m and Char Amanullah at depth 3,500m. Ten lead areas (in Madarganj and Southeast of Hazipur area) have been identified in blocks- 8 and 11. Till 30 June, 2021, a total of Tk. 1,630.37 million has been spent out of the total allocated amount of Tk. 2,120.88 million marking 76.87% financial and 100% physical progress.

With a view to identifying locations of exploratory wells under the scope of a project titled '2D Seismic Survey over Exploration Block 15 & 22' financed by the gas development fund (GDF) and its own fund, a total of 3,000 lkm 2D seismic data acquisition (1,000 lkm by BAPEX and 2,000 lkm By SINOPEC), processing, interpretation, and resource estimation has been underway in 8 districts namely Chattogram, Cumilla, Noakhali, Feni, Khagrachari, Rangamati, Bandarban and Cox's Bazar. The project has just been approved on 26th July, 2021. Till 31 December, 2021 258 lkm data has been acquired with the financial progress of Tk. 63.30 million.

Drilling

Rupakalpa-2 Drilling Project: Drilling of Zakiganj-1 well started on 1 March, 2021 with Bijoy-12 rig with the GDF finance and was completed on 8 May, 2021. The 27 gas fields of the country have been discovered after drilling the well at a depth of 2,981 meters. About 48 BCF recoverable gas reserves have been estimated in this gas field. After completion of a transmission line, it will be possible to supply ±10 million cubic feet of gas daily from this well to the national grid. About Tk. 410.40 million has been spent out of the Tk. 415.00 million allocated for the project in this financial year under consideration. As such, the financial progress of the project is 99%.



Seismic drilling in 2D seismic survey over exploration blocks 15 and 22 project by BAPEX

Drilling of Sylhet-9 well: Drilling of Sylhet-9 well under Sylhet Gas Fields Limited (SGFL) started on 1 October, 2020 and completed on 31 January, 2021. The well was drilled with a Bijoy-12 rig up to 2,136 metres. From this well 4-5 MMscfd of gas is being supplied to the national grid.

Shariatpur-1 Exploratory Well Drilling Project: The project has been undertaken with a view to drilling 1 exploratory well in Naria Upazila of Shariatpur. The project has already been approved by the Energy and Mineral Resources Division. The estimated cost of the project is Tk. 959.00 million and the tenure is from 1 July, 2021 to 31 December, 2022.

Workover

Shahbazpur-3: The risky extra high pressure well drilling started on 8 August, 2020 with BAPEX's own rig and manpower without foreign consultants and the workover was successfully completed on 20 September, 2020. At present, 20-25 MMscfd gas is being supplied from the well to Sundarban Gas Company Limited.

Srikail-4: The workover activities started on 24 September, 2020 through BAPEX's rig and manpower which ended successfully on 21 November, 2020. Currently, 20-24 MMscfd gas is being supplied to the national grid from this well.

Fenchuganj-4: The workover activities started on 3 February, 2021 with BAPEX's rig and manpower which ended successfully on 4 May, 2021. At present, about 10 MMscfd gas is being supplied to the national grid from this well.

Titas-6: The workover programme on this well under the agreement between BAPEX and BGFCL started on 1 September, 2020. The foreign consultant appointed by BGFCL couldn't join owing to the ongoing COVID-19 pandemic. Yet the work was continuing with the help of a local consultant of BAPEX. Considering the overall condition of Titas-6 well, the well was almost abandoned. However, BAPEX's manpower continued to work in the well persistently to achieve their goals. Going beyond the conventional method, the skilled and dedicated employees of BAPEX applied their own talents and techniques to make harpoon locally and pull wireline logging cables and worn out tubing. Subsequently, 4 gas zones were identified after wireline logging. Finally, on 30 May, 2021, the well was successfully completed. About 20-25 MMscfd of gas is being supplied to the national grid from this well.

Fenchuganj-3: The workover activities started on 8 August, 2021 with BAPEX's rig and manpower which ended successfully on 23 December, 2021. At present, about 9 MMscfd gas is being supplied to the national grid from this well.

Sylhet-8: The workover activities started on 31 October, 2021 with BAPEX's rig and manpower under Sylhet Gas Fields Limited (SGFL) and completed on 5 January, 2022. At present, about 5 MMscfd of gas is being supplied to the national grid from this well.

Production

In the FY 2020-21, total 889 BCF gas was produced in the country. Two major public sector gas production companies Bangladesh Gas Fields Company Limited (BGFCL) and Sylhet Gas Fields Limited (SGFL), added 30.59% of total gas produced during the FY. BAPEX was assigned with production activities in 2000. It produced 35.61 BCF gas in FY 2020-21. Total production of these 3 national companies stood 307.57 BCF, which was 34.6% of total production of gas during the FY. The remaining 581.43 BCF gas was produced by IOCs (Chevron and Tullow), which was 65.4% of total production of gas.

Compared to the previous year, Chevron produced 5.2% higher, whereas Tullow, BAPEX, SGFL and BGFCL produced 3.74%, 2.26%, 15.86% and 4.87% lower amounts of gas respectively in FY 2020-21. The total production in FY 2020-21 stood at 889 BCF, averaging about 2,435 MMscfd. Out of this, BGFCL produced 236.5 BCF, SGFL produced 35.46 BCF, Bapex produced 35.61 BCF, Chevron produced 549.75 BCF and Tullow produced 31.68 BCF. The major gas producing fields of the companies under Petrobangla are: Titas Gas Field contributing 16.33%, Habiganj 7.31%, Rashidpur 1.81% and Shahbajpur 1.67%, whereas major producing fields under IOCs are: Bibiyana contributing 52.91%, Jalalabad 8.23% and Bangura 3.56%.

At the end of December, 2021, 20 gas fields were in production with 104 flowing wells. Out of these fields, 5 were operated by BGFCL, 4 by SGFL, 7 by BAPEX, 3 by Chevron and 1 by Tullow.

In addition to the indigenous gas, 215 BCF imported RLNG was fed into the national gas grid in the FY 2020-21.

During the period from July to December, 2021, Chevron and Tullow produced 261.25 BCF and 11.96 BCF gas respectively, while local companies produced 154.40 BCF gas, making a total of 427.57 BCF. In the same period, 123.35 BCF imported RLNG was fed into the national gas grid.

Transmission

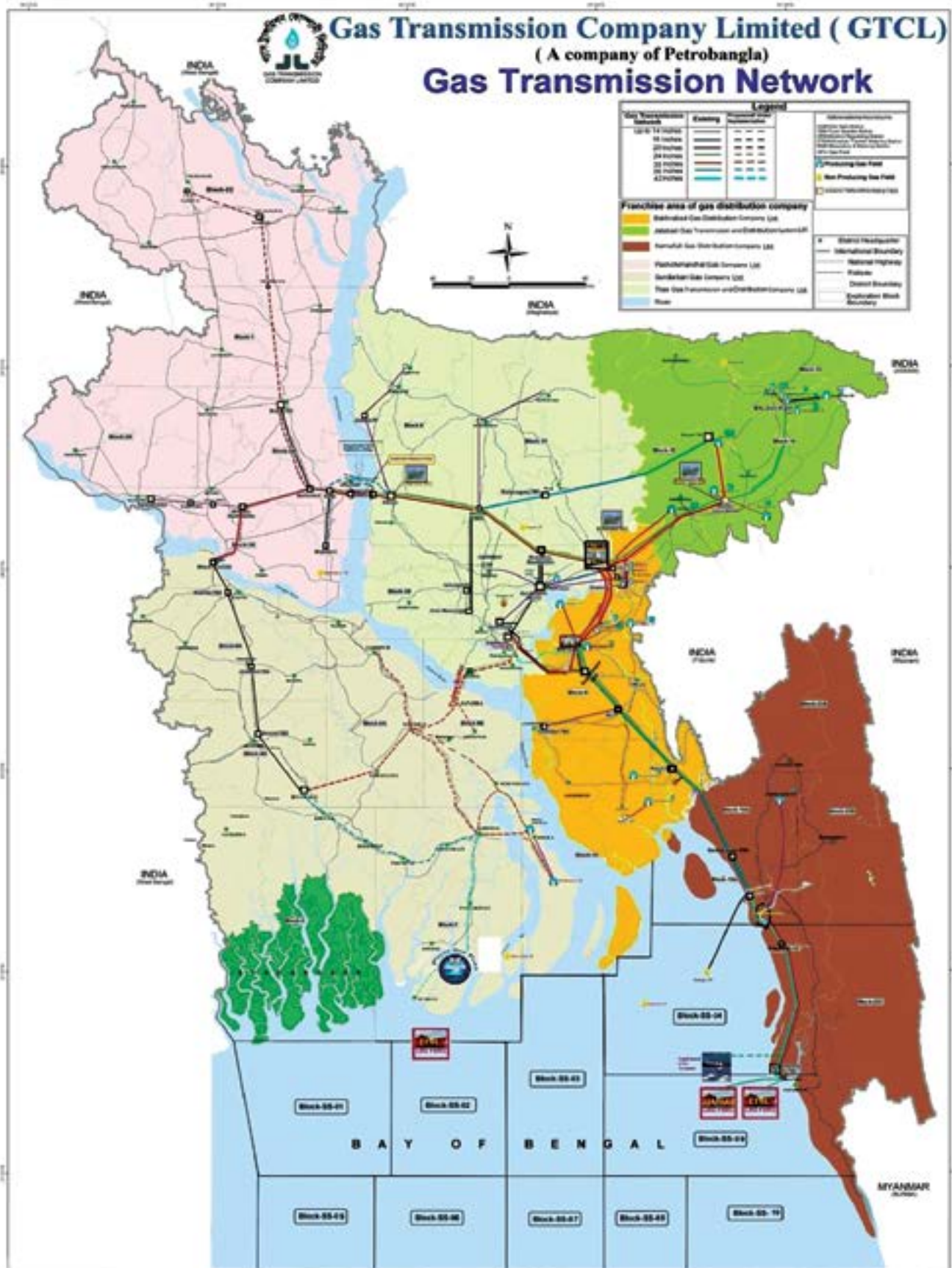
Transportation of high pressure gas in the country is the responsibility of Gas Transmission Company Limited (GTCL). GTCL owns and operates major gas transmission pipelines throughout the country. Gas transmission pipelines built by other companies before the creation of GTCL have been integrated with the GTCL system. Currently GTCL operates the following gas transmission pipelines:

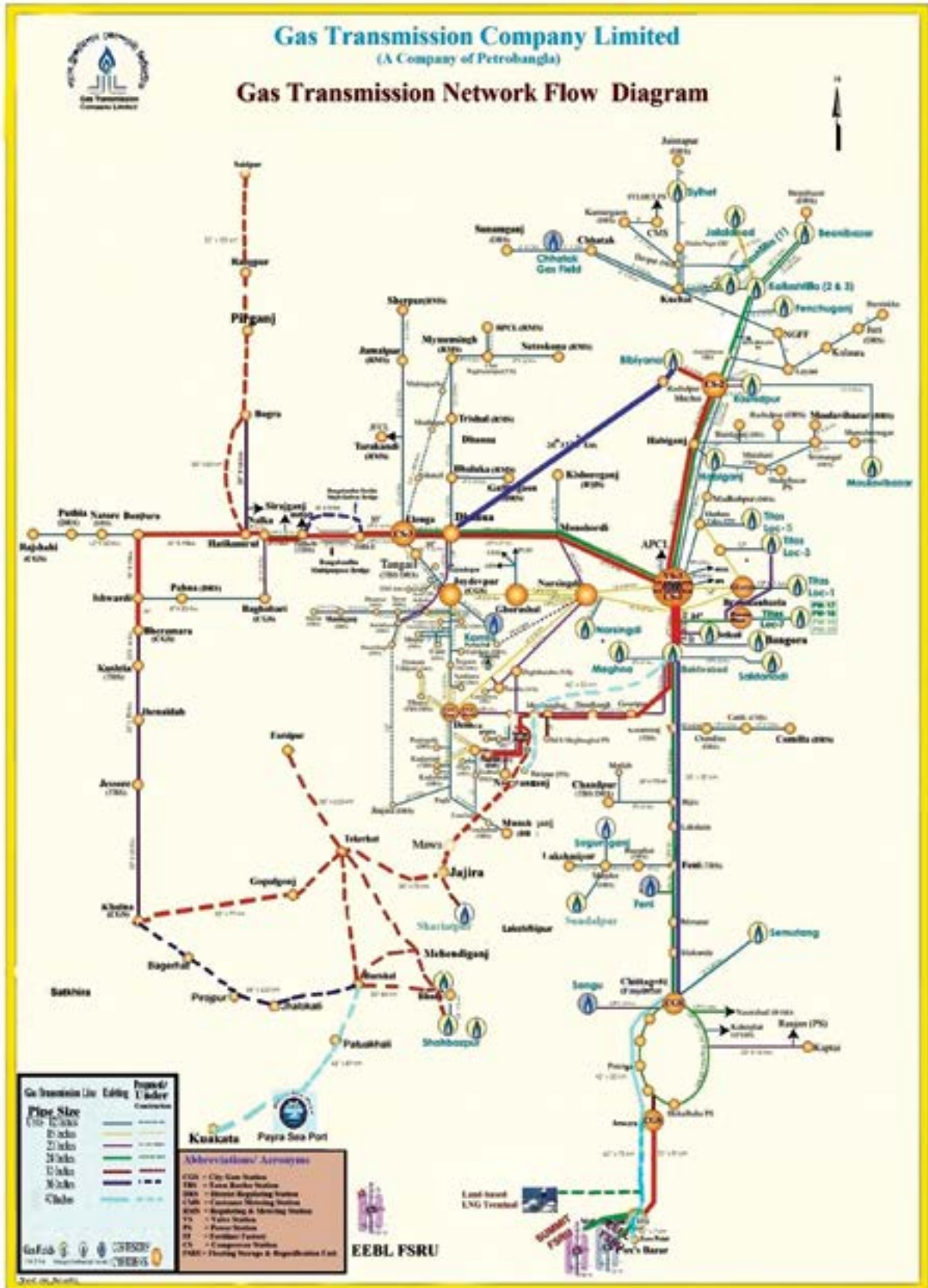
Bakhrabad-Demra 20" x 68.72 km gas transmission pipeline; Bakhrabad-Chattogram 24" x 174.65 km gas transmission pipeline; North-south 24" x 175 km gas transmission pipeline; Ashuganj-Bakhrabad (AB) 30" x 58.50 km gas transmission pipeline (1st phase); Paschimanchal gas transmission projects - (a) 30" x 9 km Bangabandhu (B-B) Bridge, (b) 24" x 28.50 km Elenga-Nalka and (c) 20" x 35.5 km Nalka-Baghabari gas transmission pipeline; Beanibazar-Kailashtila 20" x 18 km gas transmission pipeline; Rashidpur- Habiganj 30" x 28 km gas transmission pipeline (1st Phase); Habiganj-Ashuganj 30" x 54 km gas transmission pipeline (2nd Phase); Ashuganj-Elenga 24" x 124 km gas transmission pipeline; Ashuganj-VS3 20" x 3.5 km gas transmission pipeline; Nalka-Bogura gas transmission pipeline - (a) 30" x 6 km Nalka-Hatikumrul and (b) 20" x 54 km Hatikumrul-Bogura gas transmission pipeline; Ashuganj-Monohordi 30" x 37 km gas transmission pipeline; Dhaka Clean Fuel 20" x 60 km gas transmission pipeline; Monohordi-Dhanua and Elenga-Bangabandhu Bridge East 30" x 51 km gas transmission pipeline; Titas Gas Field (Location-G)-AB pipeline 24" x 8 km gas transmission pipeline; Sriail Gas Field (Location-2)-AB pipeline 20" x 1.5 km gas transmission pipeline; Bonpara-Rajshahi 12" x 53 km gas transmission pipeline; Bibiyana-Dhanua 36" x 137 km gas transmission pipeline; Titas Gas Field (Location- C, B and A) to Titas A-B 10" x 7.7 km gas transmission pipeline; Bheramara-Khulna 20" x 163.03 km gas transmission pipeline; Hatikumrul-Bheramara 30" x 84 km gas transmission pipeline; Titas Gas Field Well No. 23, 24 (Sarail) to Khatiahata and Well No. 25, 26 (Malihata) to Khatiahata 20" x 3.30 km gas transmission pipeline; Gas transmission capacity expansion - Ashuganj-Bakhrabad 30" x 61 km gas transmission pipeline; Moheshkhali-Anowara 30" x 91 km gas transmission pipeline; Bakhrabad-Siddhirganj 30" x 60 km gas transmission pipeline; Anowara-Fouzdarhat 42" x 30 km gas transmission pipeline; Dhanua-Elenga-Bangabandhu Bridge-Nalka 30" x 67 km gas transmission pipeline; Moheshkhali (Zero Point)-Moheshkhali CTMS 42" x 7 km gas transmission pipeline; Moheshkhali CTMS-Anowara 42" x 79 km parallel gas transmission pipeline and Chattogram-Feni-Bakhrabad 36" x 181 km gas transmission pipeline.

GTCL has also completed the installation of compressor stations at Ashuganj and Elenga and expansion of existing supervisory control and data acquisition (SCADA) system of national gas grid under GTCL (Component B of Bheramara Combined Cycle Power Plant Development Project).

Running projects are:

- a. Construction of 30" x 150 km Bogura-Rangpur-Syedpur gas transmission pipeline;
- b. Construction of 42" x 50 km Bakhrabad-Meghnaghat-Haripur gas transmission pipeline;
- c. Installation and modification of gas stations at GTCL off-transmission point.
- d. Construction of 36" x 10 km gas transmission pipeline along Bangabandhu Sheikh Mujib railway bridge; and
- e. Construction of 30" x 6.15 km gas transmission pipeline along Padma multipurpose bridge.





Pipelines

Gas pipeline network continued to expand both in transmission and distribution. In total about 79.66 km pipelines of various sizes and grades were completed during the year 2020-21; these included 1.68 km transmission pipelines, 4.96 km distribution lines, 0.55 km lateral lines, 20.90 km feeder main and service lines and 51.57 km others (customer financing) pipelines. As on June, 2021 the gas pipeline network encompassed about 24,715.83 km comprising of about 3,216.33 km transmission lines, 2,389.69 km distribution lines, 216.89 km lateral lines, 16,754.17 km feeder main and service lines and the rest 2,138.75 km other (customer financing) lines.

As in December, 2021 the pipeline network increased to about 24,773.16 km, which included about 3,218.54 km transmission lines, 2,398.03 km distribution lines, 216.89 km lateral lines, 16,778.96 km feeder main and service lines and the rest 2,160.74 km pipelines constructed under customer financing.

Distribution

Six marketing or distribution companies under Petrobangla are entrusted with the responsibility of marketing of natural gas to the customers varying from large power and fertilizer plants to small households. These companies are: (1) Titas Gas Transmission and Distribution Company Limited (TGTDC), (2) Bakhrabad Gas Distribution Company Limited (BGDCL), (3) Jalalabad Gas Transmission and Distribution System Limited (JGTDSL), (4) Pashchimanchal Gas Company Limited (PGCL), (5) Karnaphuli Gas Distribution Company Limited (KGDCL) and (6) Sundarban Gas Company Limited (SGCL). Each company has its own marketing franchise area, covered by a fairly extensive distribution network. Among these marketing companies, Sundarban Gas Company Limited is the youngest one, which has started its operation in Bhola.

The total gas sales of the aforesaid 6 marketing companies in operation during the FY 2020-21 was about 1,017.09 BCF, of which TGTDC, being the largest, shared about 55.04%, followed by BGDCL 11.01%, KGDCL 11.04%, JGTDSL 14.2%, PGCL 5.4% and SGCL 3.3%. Gas sector catered to 4.319433 million customers under various categories as in June, 2021 which increased to 4.319928 million at the end of December, 2021. Most of these customers are of the domestic category.

Condensate and NGL and LPG

Some of the gas fields located in north-eastern part of Bangladesh contain high concentrations of liquid hydrocarbons or condensate. This condensate has been being processed in refineries and turned into petrol, diesel and kerosene since the beginning. In FY 2020-21, a total of 33,78,564 barrels of condensate and 20,203 barrels of natural gas liquids (NGL) have been produced as gas byproducts from the gas fields operating under national gas production companies and production sharing contract (PSC). From this condensate, 27,93,140 barrels of condensate have been sold directly to Bangladesh Petroleum Corporation and private companies. The rest of the condensate and the whole of NGL produced are processed in plants owned by companies operating under Petrobangla and in this way 4,29,378 barrels of petrol, 61,538 barrels of diesel, 45,074 barrels of kerosene and 720 metric tons of liquefied petroleum gas (LPG) have been produced in FY 2020-21. These products are sold to various companies operating under Bangladesh Petroleum Corporation. In 2018, a fractionation plant of 4,000 barrel capacity was established in Rashidpur by SGFL to process the condensate produced. Moreover, in 2021 a catalytic reforming unit (CRU) with 3,000 barrels capacity has been established by SGFL.

CNG

Rupantarita Prakritik Gas Company Limited (RPGCL), a company under Petrobangla, has been entrusted with the functions to manage, supervise and coordinate the use of compressed natural gas (CNG) in Bangladesh. The extensive use of CNG has been playing an important role in reducing our dependence on imported liquid fuel for use in vehicles. A total of 603 CNG refuelling stations were operated across the country till December, 2021 and on an average about 0.5053 million vehicles were refilled CNG from these stations every day. On an average 2.93 BCF of CNG is being used every month, which is about 3.52% of the total gas consumption in the country.

LNG

To accomplish Vision 2021 and sustainable development goals (SDGs) particularly Goal # 7: Secure access to affordable, reliable, sustainable and modern energy for everyone by 2030 and to minimize the demand supply gap, the Government has invigorated its effort to enhance gas production along with initiatives to import significant quantities of liquefied natural gas (LNG).

Consequently, 2 separate terminal use agreements (TUA) have been signed with Excelerate Energy Bangladesh Limited (EEBL) and Summit LNG Terminal Co. (Pvt.) Ltd. to install 2 floating storage and regasification units (FSRU) at Moheshkhali approximately 90 kilometers south of Chattogram for supplying 500 MMscfd of RLNG each. The first ever FSRU (by EEBL) was commissioned in August, 2018 and the second FSRU (by Summit) was commissioned in April, 2019.

Besides, Petrobangla engaged the joint venture of Tokyo Gas Engineering Solutions Corporation (TGES), Japan, and Nippon Koei Co. (NK), Japan for techno-economic feasibility study, engineering services, and tender management services for the construction of a land-based LNG terminal at Matarbari, Cox's Bazar having a capacity of handling 7.5 MTPA of LNG equivalent to 1,000 MMscfd of RLNG (gas). The feasibility study for the construction of a land-based LNG terminal at Matarbari has been completed and an RFP has been prepared for issuing to the shortlisted terminal developers.

Two long-term LNG sale and purchase agreements (SPA) were signed with Ras-Laffan Liquefied Natural Gas Company Limited (3) of RasGas, Qatar and with Oman Trading International (OTI) (presently known as OQ Trading Limited/OQT), Oman for supplying LNG to these terminals. Additionally, a master sale and purchase agreement (MSPA) was signed with 16 nos. suppliers/traders to purchase LNG from the spot market. The first ever spot cargo was imported in September, 2020.

Construction of 30" x 91 km transmission pipeline and a parallel 42" x 79 km pipeline from Moheshkhali to Anowara in Chattogram and another 42" x 30 km gas transmission pipeline from Anowara to Faujdarhat have been completed to evacuate RLNG (gas).

Mining

Petrobangla is also entrusted to develop mineral resources in the country. As the pioneer in subsurface mining in the country, Petrobangla has developed a coal mine at Barapukuria and a granite mine at Maddhapara of Dinajpur district. The commercial production started from the coal mine in 2005 and from the granite mine in 2007. Coal is being used mostly for power generation at the mine mouth thermal power plant of BPDB and granite is used mostly as construction material. At present, several feasibility study projects have been undertaken to develop more mines in our country to extract valuable natural resources.

Coal

Energy is the main indicator of economic growth for a country and constitutes one of the vital infrastructural inputs in socio-economic development. At present, natural gas is the main indigenous energy source of Bangladesh which accounts 51% of the total electricity generation. Several studies reveal that domestic production of natural gas will be depleting soon in the near future. Taking into account the uncertainty of sustainable supply of primary energy it is imperative to diversify the primary energy sources in the country. In that case therefore, coal can be a major alternative energy source for the country.

Five coal fields have been discovered so far in the north-western part of Bangladesh. These are the Khalaspir coal field in Rangpur; Barapukuria, Phulbari and Dighipara coal fields in Dinajpur; and Jamalganj coal field in Joypurhat/Naogaon. The total estimated reserve of five coal fields is 7.82 billion metric tons.

Out of these 5 coal fields, Petrobangla has developed the first and only coal mine of the country at Barapukuria. Commercial coal production started from September, 2005 with a capacity of 1 million metric ton per annum and currently the production rate is 3,000-3,500 metric tons per day. Till December, 2021, total 12.76 million metric tons of coal has been produced from the commencement of commercial

production. Despite the challenges of COVID-19 pandemic situation, 0.747 million metric tons of coal has been produced in the year 2021 from the Barapukuria mine. Presently, the entire amount of produced coal is being supplied to Barapukuria 525 MW coal fired thermal power plant. A contract has been signed between BCMCL and XMC-CMC consortium in December, 2021 to extract 4.5 million metric tons of coal within a period of next 6 years.

According to the revised power system master plan (PSMP) 2016, the demand of coal by 2030 would be 58 million metric tons/year approximately. In September, 2018, a feasibility study project was completed for north-south extension of the existing Barapukuria mine to increase the current production. The study suggests that about 3.2 million

metric tons of coal from the northern part and about 6.9 million metric tons of coal from the southern part can be extracted. Under the present contract with XMC-CMC consortium, underground roadway construction is going on for extraction of coal from the northern extension of the basin and expected to launch production from 2024. In addition, another feasibility study project for an open pit mine in the northern part of Barapukuria coal mine has been submitted for approval of EMRD.

For development of Dighipara coal field, Petrobangla conducted a 1st stage feasibility study which proves the prospect of this coal field and coal reserve has been estimated as 865 million metric tons. In the 2nd Stage, a project named “Techno-Economic Feasibility Study of Coal Deposit at Dighipara, Dinajpur ” has



Coal Stack at Coal Yard of BCMCL

been completed to develop an underground coal mine at Dighipara with a target production of 3 million tons/year. From this study report it reveals that the total geological reserve of Dighipara coal basin is 706 million metric tons among which 90 million metric tons is extractable by underground mining. Considering high value investment cost and the necessity to review the present feasibility study report, further development activities of Dighipara coal field has been suspended temporarily.

During the year 2015-2016, a feasibility study project for extraction of coal bed methane (CBM) from Jamalganj coal field was carried out by Petrobangla. This study brings out that CBM production is not economically viable due to extreme gas under-saturation. The consulting firm of this project informed that 5.45 billion metric tons of coal resources are present over an area of 64 sq. km in Jamalganj coal basin. The consulting firm recommended detailed coal exploration especially in the demarcated 15 sq. km area where the upper coal seams occur in 600-800m depth. Petrobangla is planning to conduct further comprehensive feasibility study with a view to develop an underground mine in the north western comparatively shallower area of Jamalganj coal field.

To meet up the present and upcoming energy demand, it is required to increase coal production by conducting feasibility studies on other coal fields, for example. Jamalganj coal field, Khalaspir coal field and Phulbari coal field. Development of coal fields can be augmented by engaging foreign and local investors. However to get rid of the present and upcoming energy crisis the development/production of indigenous coal resources need to be exaggerated on a priority basis.

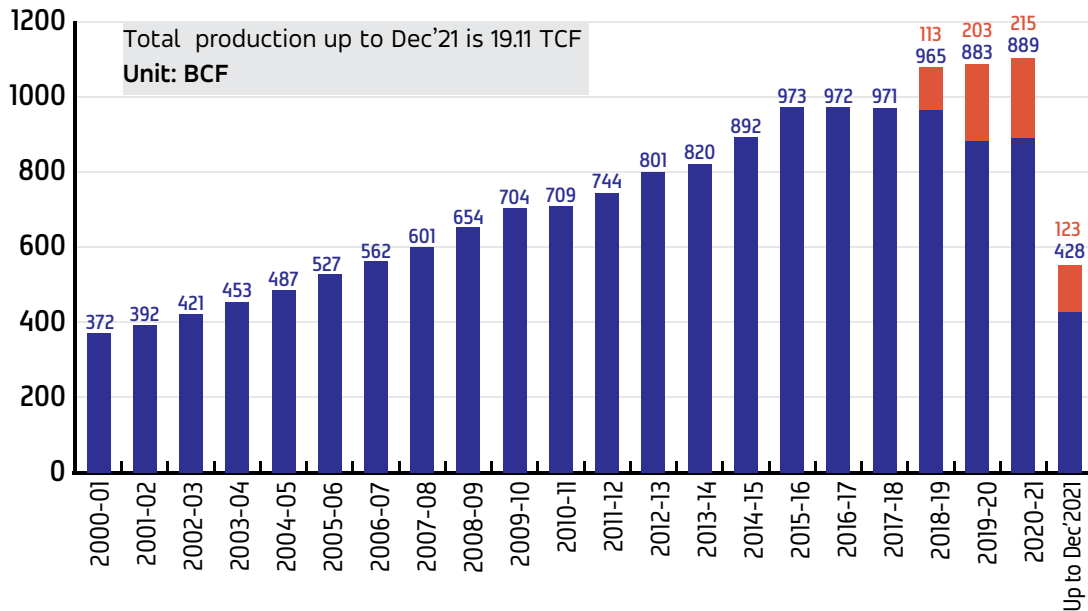
Granite

Maddhapara Granite Mining Company Limited (MGMCL) at Dinajpur, the only underground mining company of this kind in the world, has been extracting granite which is used mostly as construction material. During the FY 2020-21, a total of 10,17,030.83 metric tons of granite was extracted from the mine and 12,87,687.00 metric tons was sold.



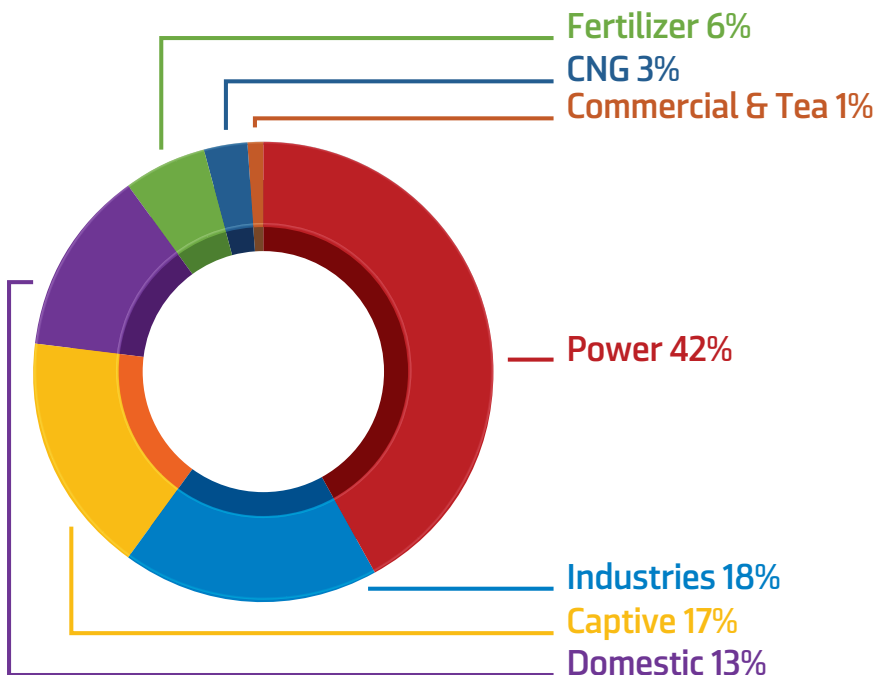
Mining Operation in progress at MGMCL

Gas Production in Bangladesh



Marketing

By the end of 2020-21 financial year, total sales was 1,017.5 BCF, of which power sector (Grid + Non-Grid) consumed the largest part amounting to 425.8 BCF followed by fertilizer sector 64.7 BCF, captive power 169.1 BCF, industry 181.7 BCF, domestic sector 134.2 BCF, and other non-bulk sectors 42 BCF. As of December, 2021 the gas sector catered to about 4.319433 million customers of various categories. Most of these customers fall under the domestic category; however, the power sector remained the largest customer.



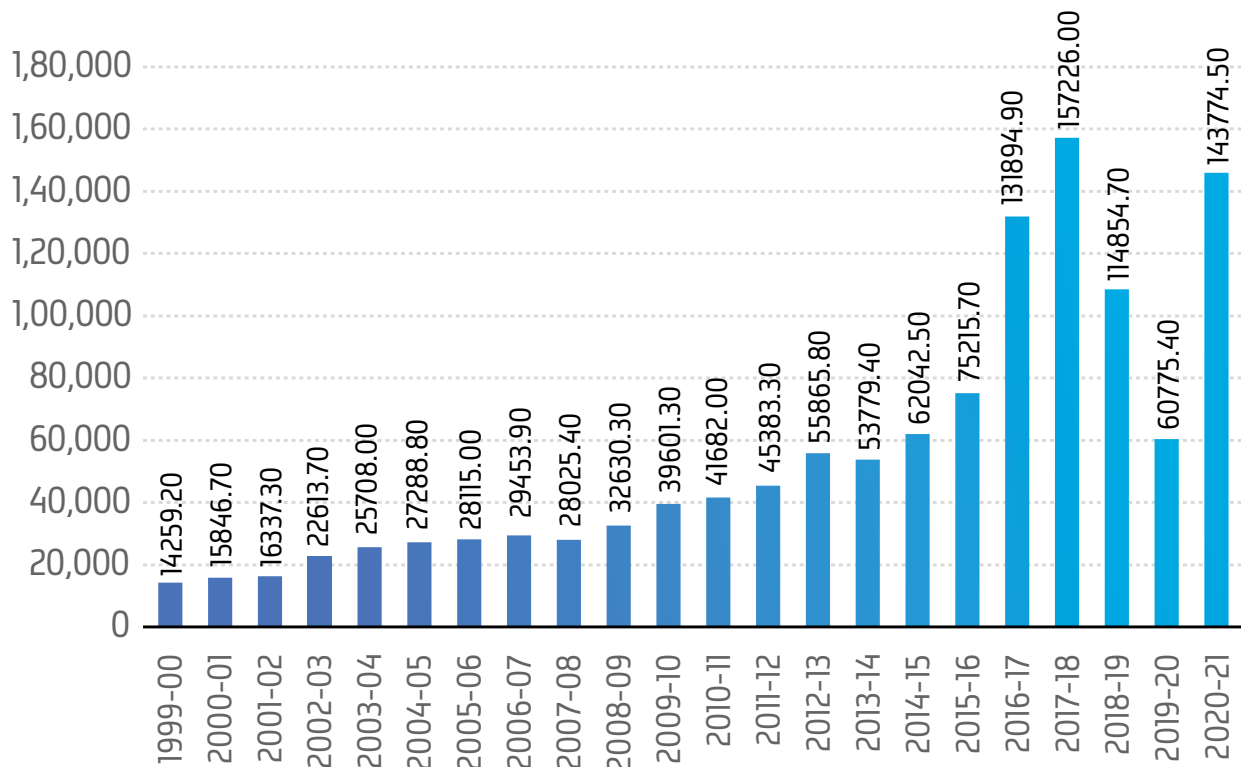
Total Sales: 1017.5 BCF

Financial

The gross income in 2020-21 by Petrobangla Group from Sales is Tk. 562736.9 million. After paying SD & VAT net income was Tk. 508957.48 million. Gross expenses comprising of Tk. 53779.42 million as SD & VAT along with Tk. 508099.92 million as cost of sales, amounted to Tk. 561879.34 million. After paying income tax, net profit/(loss) is Tk. (8036.18) million. After paying dividend of Tk. 7796.40 million, net profit/(Loss) is Tk. (15832.58) million.

Payment to National Exchequer

Taka in Million



Innovation Programme

Innovation is a key driver of Bangladesh's goal of becoming a developed country by 2041 and in achieving the sustainable development goals (SDGs) by the year 2030. Petrobangla has taken some innovative action plans to accelerate the speed of work, ensure better services, accountability, transparency and easy access to its stakeholders. These are (a) Providing digital card (Bill card) for customers instead of Bill Book by BGDCL, (b) SMS notification to the customer on gas bill and other related information by PGCL, (c) Digitize map of existing gas transmission and distribution pipeline of SGCL, (d) Implementing RFID sticker system and maintaining an online database to recognize and checking the CNG vehicle in RPGCL CNG station by RPGCL, (e) Implementation smart delivery system for granite from the stock yard to the customer by MGMCL, (f) Developing web based system of daily gas production and marketing by BAPEX and BGFCL. Petrobangla encourages its employees, stakeholders and visitors to participate in developing innovative ideas for better services.

Energy Efficiency

Petrobangla has implemented a TA project namely “TA to Review the Approach for Increasing the Efficiency of Gas Utilization in Certain Major Users” under JDCF financing for identifying opportunities to increase gas utilization efficiency of major users such as fertilizer industries, captive power plants, glass industries, steel re-rolling mill and other industrial establishments that use boilers through consultancy services.

Findings of the pilot programmes : (i) Boiler Economizer Pilot Programme (to fit an economizer to exhaust of the boiler to recover waste heat for heating the boiler feed water): gas consumption has been reduced by 4.4%. (ii) Generator Jacket Water Pilot Programme (to recover heat from the generator jacket water for use as process heat): gas consumption has been reduced by 14.4%. (iii) Reheating Furnace Recuperator Pilot Programme (to install a recuperator to the exhaust of the furnace to preheat the combustion air) : gas consumption has been reduced by 9.10%. Excess air has been controlled by installing a butterfly damper at the chimney. Excess air as well as oxygen controlled by these two dampers as a result furnace losses scale reduced significantly. Reduction of scale loss gives a dramatic result i.e. gas consumption was reduced by 35%.

The potential natural gas savings and greenhouse gas (GHG) emission reductions that could be achieved if the energy management opportunities (EMOs) proposed by the consultants are implemented.

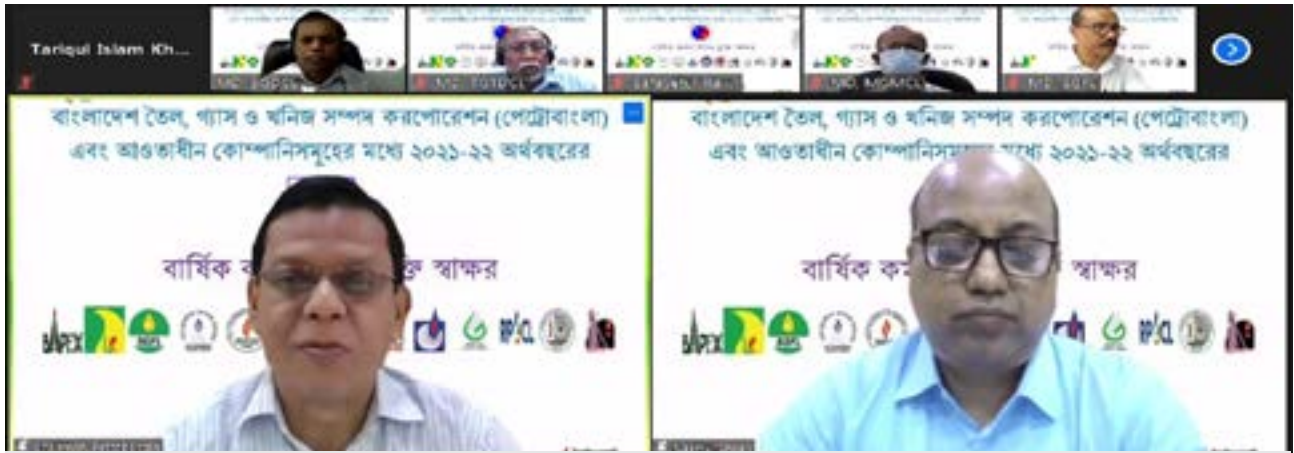
Petrobangla proposed to include the EMOs suggested by the consultants in the Energy Efficiency and Conservation Master Plan to be prepared by Power Division to improve industrial boiler efficiency, captive power generator and industrial furnace as well as ensure energy conservation and the master plan has been prepared by the Power Division during the month of May, 2016.

Furthermore, Petrobangla has set up a standard for gas utilization efficiency for industrial plants using appliances i.e. boiler, captive power generator and industrial furnace and also given directives to its gas distribution companies to maintain the standard. The findings of the pilot programs are being implemented by the distribution companies of Petrobangla.

Potential Gas Savings and Carbon Emissions Reduction

Energy Management Opportunities	From Audited Industries		Nationwide projection			
	Possible Annual Gas savings (MMscf)	Savings to Consumption Ratio of Gas	Total Gas consumption (MMscfd)	Potential Gas savings (MMscfd)	%	Carbon Emission reduction (Ton/year)
Industrial Boilers	664	0.17	350	58	17	1,172,254
Captive Generator	1054	0.50	444	224	50	4,167,538
Re-heating Furnace	202	0.18	22	4	18	11,172
Total			816	286		5,350,964

Annual Performance Agreement



Signing of APA between Petrobangla and its companies in a virtual meeting

The Government of Bangladesh has launched a government performance management system (GPMS) for qualitative and quantitative evaluation of the performance made by public sector organizations. Under this system, a mechanism of annual performance agreement (APA) had been introduced from the FY 2014-15. APA between Energy & Mineral Resources Division (EMRD) and Petrobangla and individually between Petrobangla and its companies are being signed before the start of every FY. Regarding APA in the FY 2020-21, Petrobangla has achieved a score 96.7 out of 100, which was 93.0 in the previous year. In the FY 2021-22, APA was signed between EMRD and Petrobangla on 30 June, 2021 while between Petrobangla and its companies on 24 June, 2021. Reports of achievement regarding APA are being sent to EMRD on monthly, quarterly, half-yearly and yearly basis.

Right to Information

To make provisions for ensuring transparency and accountability in all public, autonomous and statutory organizations and in other private institutions constituted or run by government or foreign financing, the Parliament of the People's Republic of Bangladesh passed the 'Right to Information Act, 2009 on 27 March, 2009. To ensure the effective implementation of the Act, the Government has already formulated rules and regulations regarding preservation of information, publication of information, disclosure of information and access to information. According to the Right to Information (RTI) Act, Petrobangla has specifically designated an officer. Besides, Petrobangla has taken initiatives to make its employees well acquainted with the provisions of the Act, Rules and Regulations.

National Integrity Strategy

As per Government's decision, a time bound action plan on national integrity strategy at corporation level has been implemented since 2014. In light of the Government's direction, a committee has been formed to implement the national integrity strategy action plan in the corporation. An official has been deployed in order to implement the national integrity strategy of Petrobangla. In the guidelines of the Cabinet Division of Bangladesh Government, Petrobangla has prepared a time bound action plan on national integrity strategy for FY 2021-22. The 1st quarter report of the national integrity strategy action plan was sent to EMRD on October, 2021 as per schedule. The major portion of the time bound action plan works have already been implemented within the stipulated time and hope that this national

integrity strategy will play a pivotal role in building the Golden Bengal-the dream of the Father of the Nation and the people of Bangladesh as well.

Human Resources Development

As a part of the continuing efforts to upgrade its manpower resources to meet the changing needs of the industry, Petrobangla and its companies pursue skill development and diversification programmes on a regular basis. Apart from conventional training opportunities for job-specific subjects, new areas of specialization are being inducted to cater to a new milieu of activity. In view of gradual deregulation of certain aspects of the gas industry, introduction of private ventures as sole or joint collaboration, taxation regime, tariff mechanism and overall reinvigoration of the sector, regular and frequent participation are ensured by the widest possible selection of personnel in various training, workshops and seminars.

During the FY 2020-21, local programmes were imparted to 828 personnel, while 771 were sent for attending training, 23 for seminars, 30 in workshops and 4 in conferences held in the country. Due to the global pandemic of COVID-19, it was not possible to send any one for overseas training in this FY.

Information Technology

Petrobangla and its companies are working for digital services. Petrobangla is using e-Nothi system and e-Government procurement (e-GP) system. Official meetings have been arranged by various kinds of video-conferencing systems for direct communication to save time and labor. Redundant internet bandwidth has been ensured with auto failover to ensure internet availability. Besides, Petrobangla has wi-fi connectivity in each floor and all officials and staff have access to wi-fi networks. Petrobangla maintains an updated website which is both in English and Bangla versions. Petrobangla also maintains a mail server to ensure authentic, rapid and digital communication. Besides this, Petrobangla and its companies are trying to initiate some e-services to ensure smooth, fast and better services to its stakeholders. Petrobangla has already taken an initiative to implement enterprise resource planning (ERP) with its own data centre (DC) and disaster recovery (DR) across its 13 companies.

Grievance Redress System

Grievance redress system (GRS) provides a way to reduce risk for the public service delivery, an effective avenue for expressing concerns and achieving remedies for the public, and promote a mutually constructive relationship. The aim of GRS is to develop a range of procedures to facilitate airing, and resolution of grievances in a non-threatening, supportive environment. Under the government performance management system, the Energy & Mineral Resources Division and Petrobangla have signed an annual performance agreement (APA), which includes a grievance redress system. An officer has been appointed as focal point for implementation of grievance redress system in Petrobangla. Activities of Petrobangla and its companies under GRS are being regularly monitored and evaluated.

Production Sharing Contracts (PSC)

Under its charter, Petrobangla has the right to enter into petroleum agreements with any international oil company (IOC) for the purpose of any petroleum operations. One of Petrobangla's major activities consists of organizing, supervising and administering the production sharing contracts (PSC) it enters into with the IOCs. Major block bidding and awards took place under the 1974 offshore bidding round, 1993 bidding round, 1997 bidding round, 2008 offshore bidding round and 2012 offshore bidding round.

1974 Offshore Bidding Round

Bidding was limited to near offshore areas and 6 of the then 7 offshore blocks were contracted with the following IOCs:

- Atlantic Richfield (ARCO);
- Ashland Oil;
- Union Oil;
- Canadian Superior;
- BODC (JNOC/JAPEX JV); and
- Naftaplin (Yugoslav oil company INA).

These companies conducted 31,069 km of marine seismic surveys, drilled 7 wells, discovered the Kutubdia Gas Field in 1977 and all wound up by 1978.

PSCs in the 1980s

In the interim, 3 PSCs were concluded. Of these, 2 PSCs were concluded with Shell Oil Company for the Chattogram Hill Tracts (later Block 22) and North West Bangladesh (later block 23). Shell conducted seismic surveys, and drilled 2 wells at Sitapahar and Salbanhat without any success, and relinquished their concessions. One PSC was concluded with Scimitar Exploration of Canada for exploration of oil in the Surma basin (the area later became Block 13). Scimitar only discovered gas in the Jalalabad field and relinquished the field.

1993 Bidding Round

At that time, 23 onshore and offshore blocks were offered. Of these, 8 blocks were awarded to the following 4 IOCs:

- Occidental (OXY) for blocks 12, 13 and 14 (Onshore): Later transferred to Chevron which produces from Bibiyana, Jalalabad and Moulvibazar fields.
- Cairn Energy for blocks 15 (Onshore) and 16 (Offshore): Cairn discovered the Sangu gas field in 1996 which produced until 2013. Blocks 15 and 16 were relinquished, except for the ring-fenced offshore Magnama structure which was transferred to Santos. After drilling two exploratory wells in Magnama without success, the ring fenced area was relinquished by Santos in 2017.
- Oakland-Rexwood for blocks 17 and 18 (Offshore): Transferred to TOTAL who relinquished both the blocks in 2010.
- United Meridian Corporation (UMC) for block 22 (Onshore): Relinquished the block in 2004.

1997 Bidding Round

4 blocks were awarded as follows:

- Tullow/Chevron/Texaco/BAPEX for block 9 (Onshore); Discovered Bangora Gas Field in 2004 which is now producing, operated by Tullow.
- Shell/Cairn/BAPEX for blocks 5 and 10 (Onshore); relinquished in totality; and Unocal/BAPEX for Block 7 (Onshore); relinquished in totality.
- During this bidding round, the provision for a mandatory 10% carried interest for BAPEX was introduced and implemented for all blocks.

2008 Bidding Round

It attracted some bids, but the ensuing maritime boundary dispute with Myanmar in most of the blocks created a stalemate. However, the Government succeeded in signing a PSC for 2 deep sea blocks on 16 June, 2011 with ConocoPhillips for DS-10 and DS-11. ConocoPhillips conducted a total 5,750 lkm of 2D seismic survey in 2012 and 2013. After interpretation, ConocoPhillips identified a few prospects. However, ConocoPhillips relinquished the blocks considering their investment not feasible.

2012 Offshore Bidding Round

Following the delimitation of the maritime boundary between Bangladesh and Myanmar by ITLOS in March, 2012, Petrobangla reshaped the blocks considering the new boundary and announced a bidding round in December, 2012.

➤ **Shallow Water Bids:**

Under this round, the following 3 shallow water PSCs were signed:

ONGC Videsh Ltd. (OVL), Oil India Ltd. (OIL) and BAPEX for blocks SS-04 and SS-09; and Santos, KrisEnergy and BAPEX for block SS-11.

➤ **Deep Water Bids :**

Three proposals were received for blocks DS-12, 16 and 21 Jointly from ConocoPhillips and Statoil. However, no PSC was signed for any deep sea block under this bidding round.

Operating Fields under PSC during 2021

Currently, 4 gas fields are being operated by IOCs under PSC. Of these 3 fields, namely Bibiyana, Jalalabad and Moulvibazar gas fields are being operated by Chevron and Bangora gas field by Tullow Bangladesh Limited.

Bibiyana: Bibiyana field is now the largest supplier of gas to the national grid, delivering around 1,250 MMscfd gas and 4,500 bbl/day condensate from 26 wells. The design capacity of the process plant is 1,350 MMscfd. To maintain the current production plateau, few work programmes and activities such as thin bed analysis, infill drilling, process plant optimization, tubing change programme and flank development projects are being planned. Under the tubing change programme tubing size of 08 wells of this field are increased from 05 inches to 07 inches in 2021. Under flank development projects, one new development well is being planned to drill in 2022-23.

Jalalabad: Currently Jalalabad gas field is producing around 185 MMscfd gas and 900 bbl/day condensate from 06 wells. Under production sharing contract (PSC) production period of this gas field was recently extended for an additional 10 years. To ensure additional recovery from this field, tubing of 02 wells will be changed in 2022 and a wellhead compressor is being planned to be installed in 2025.

Moulvibazar: Moulvibazar gas field is experiencing natural production decline and currently producing around 15 MMscfd. At present 4 wells are producing out of 9 wells. To increase the field deliverability, it has been decided to supply the produced gas directly to the local distribution line at a lower regulated pressure.

Bangora: The Bangora field started producing in 2006, peaking at 120 MMscfd in 2010 and thereafter declining to 80 MMscfd in November, 2018 from 5 wells. Later on a successful well intervention programme held in November, 2018 augmented the field's production by 20 MMscfd. However, the production of Bangora field started declining from early December, 2021 reaching at a daily rate of around 60 MMscf.

PSCs have resulted in addition of significant sources and supplies of gas in the country. Productions from the PSC blocks have increased significantly over the last few years. The total gas production from the PSC operations during 2021 was 564.67 BCF. Since the beginning of PSC operations in Bangladesh in the 1970s, a total of 29 exploration wells have been drilled resulting in the discovery of 6 gas fields.

Initial exploration activities are in progress in blocks SS-04 and SS-09. ONGC Videsh Ltd. (OVL) acquired a total 5,080 lkm of 2D marine plus transition zone seismic survey in Blocks SS-04 and SS-09. OVL is committed to drill 2 exploratory wells in block SS-04 and 1 exploratory well in block SS-09. Out of these commitments, one exploratory well named Kanchan-1 was spud-in on 29 September, 2021 in the Moheshkhali Island situated in block SS-04. The well was successfully drilled up to 4,228m but subsequently plugged and abandoned, not being able to discover any gas. Two more exploratory wells will be drilled in blocks SS-04 and SS-09 during 2022-23.

In Block SS-11 Santos acquired and interpreted 3,146 lkm 2D seismic data and identified 7 leads. Santos carried out a 305 sq. km 3D seismic survey over one of the potential leads. Despite promising post 3D data interpretation outcome, Santos's decision of wrapping up overall activities from Asia region led them relinquishing the entire block SS-11. Accordingly, the PSC has been terminated.

In Block DS-12 POSCO acquired and interpreted 3,580 lkm 2D seismic data and identified 5 leads. However, POSCO relinquished the block considering the fiscal terms of the signed PSC were not favorable for their further investment.

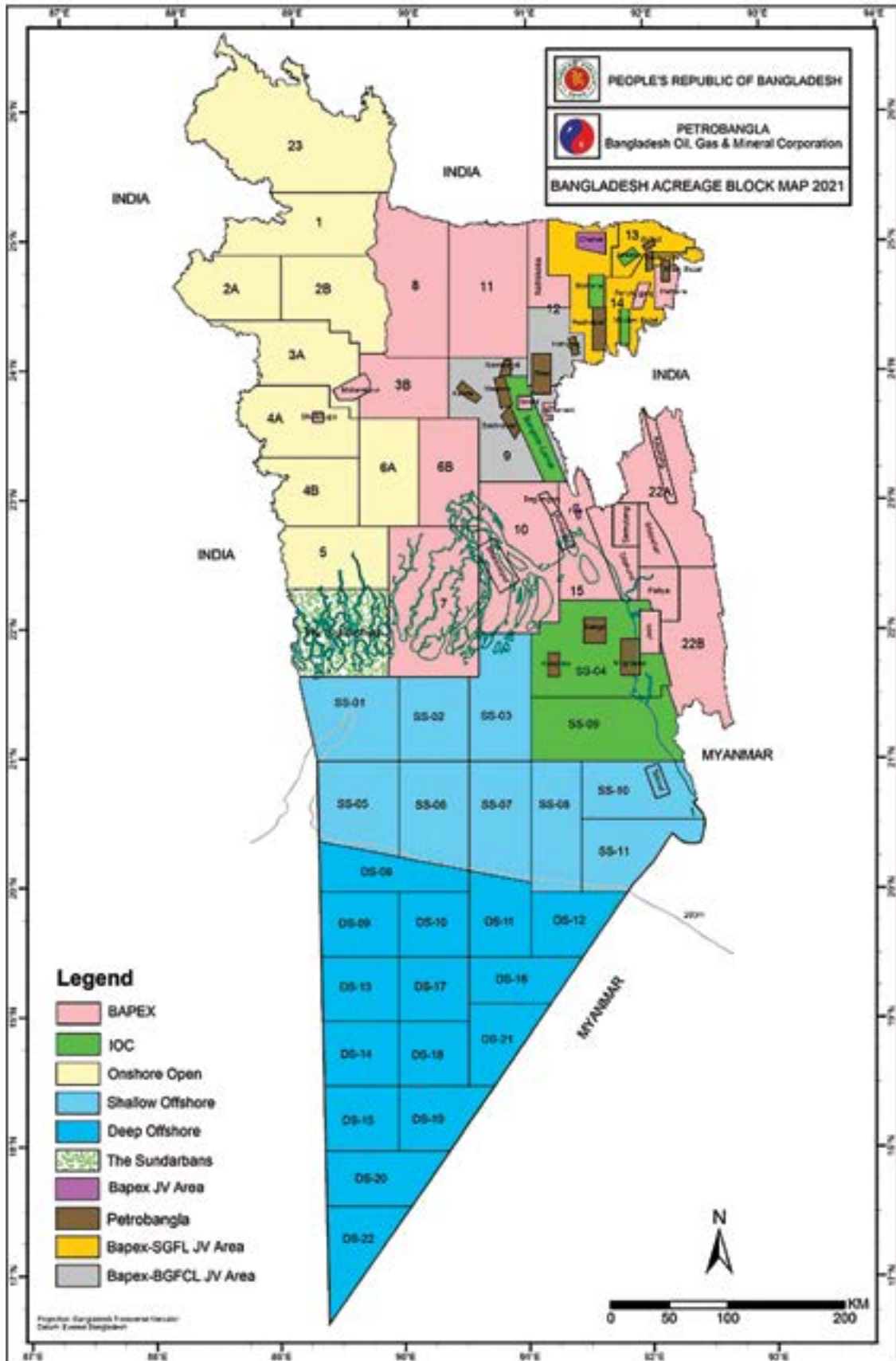
Blue Economy

Bangladesh's maritime victory over Myanmar and India have opened the doors to immense possibilities for harnessing resources from the 26 blocks in deep and shallow seas, covering more than 118,813 square kilometers of area. Petrobangla is currently implementing three programmes related to Blue Economy on a fast track and short term basis.

Under the fast track programme, an agreement to conduct 2D non-exclusive multi-client seismic survey in the offshore area of Bangladesh has been signed between TGS-SCHLUMBERGER JV and Petrobangla in March, 2020. The objective of this survey is to provide the oil and gas industry with 2D non-exclusive multi-client seismic data of the offshore areas in order to help with basin evaluation, prospect generation and robust bid round participation. Under this agreement a total of 32,000 lkm of 2D seismic survey will be conducted offshore in a phased manner. The TGS-SCHLUMBERGER JV has already collected the environmental clearance certificate (ECC) for the survey. However, the JV is still looking for requisite pre funding to start the survey. The first phase of the survey is likely to start in the last quarter of 2022.

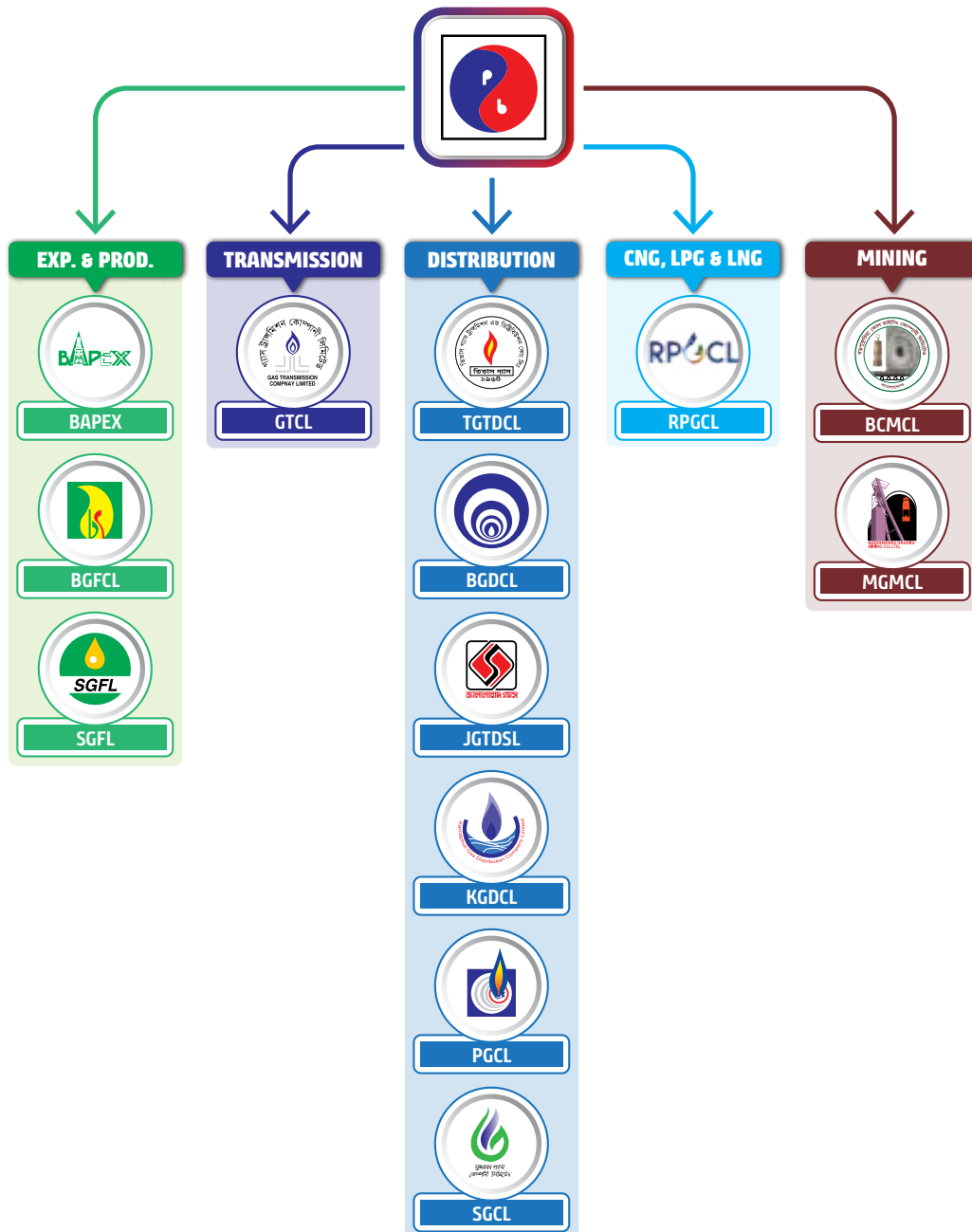
Under the short term programme existing Model PSC 2012 has been updated and split into "Onshore Model PSC 2019" and "Offshore Model PSC 2019". However, considering the post pandemic oil and gas market situation, Petrobangla has taken an initiative to further improve the fiscal terms of the Offshore Model PSC 2019 by engaging a reputed international consulting firm. A bidding round will be declared as soon as the updated version of the Model PSC will be approved.

Another short term programme is the drilling of 2 exploratory wells in blocks SS-04 and one exploratory well in block SS-09. The drilling of one exploratory well named Kanchan-1 in block SS-04 has already been completed. The well was successfully drilled upto 4,228m but no hydrocarbon was discovered. As a result the well has been plugged and abandoned. Two more exploratory wells will be drilled in the offshore blocks SS-04 and SS-09 during 2022-23.



Companies of Petrobangla

Over the years, the activities of Petrobangla have expanded and diversified to a great extent. To manage these activities, specialized companies are operating to achieve specific objectives. Currently, there are 13 companies operating under Petrobangla, dealing in oil and gas exploration, production, transmission, distribution, conversion and promotion of LNG as well as development and marketing of coal and granite.





Bangladesh Petroleum Exploration and Production Company Limited (BAPEX)

BAPEX was established in 1989, as the national exploration company by abolishing the Exploration Directorate of Petrobangla with a view to accelerating oil and gas exploration in the country. The main functions of BAPEX were to undertake Geological and Geophysical surveys, and Drilling operations for the purpose of exploring oil and gas in the country. The work of exploring oil and gas in the public sector, now undertaken by BAPEX, was originally initiated in 1964 under the aegis of the then OGDC of Pakistan. After independence in 1971, exploration works were conducted by OGDC (Bangladesh) and Oil Exploration (ToiloSandhani) till 1974 and continued under Exploration Directorate of BOGMC (Petrobangla) for the next 15 years, later in 1989, BAPEX emerged as a company. Its objective was to undertake exploration works for oil and gas within the country. In 2000, the Government granted BAPEX the permission to go into production aside from exploration activities to increase its financial capability. At present, BAPEX is running its production in addition to continuing the activities of exploring oil and gas onshore within the country.

BAPEX's gas production activities continued as usual during the COVID-19 epidemic. In the FY 2020-21, the total amount of gas produced from 7 gas fields of BAPEX, namely Saldandi, Fenchuganj, Shahbazpur, Semutang, Srikail, Begumganj, Shahjadpur-Sundalpur is about 35.61 BCF maintaining daily production ranging from 130-140 million cubic feet. However, during the financial year, a maximum of 148 million cubic feet of gas has been produced. The produced gas was sold to Bakhrabad Gas Distribution Company Limited, Karnaphuli Gas Distribution Company Limited, Sundarban Gas Company Limited and Titas Gas Transmission and Distribution Company Limited. Besides, about 52,955 barrels of condensate was produced as a byproduct which was sold to Bangladesh Gas Fields Company Limited, Sylhet Gas Fields Limited and Bangladesh Petroleum Corporation.

BAPEX has drilled 17 exploratory wells, out of which 10 gas fields have been discovered (7 of them are producing). Since inception, BAPEX has successfully completed workover operations of 48 wells and drilling of 31 development wells. Experience of exploring oil and gas gathered over a period of 32 years has enhanced the technical capacity of BAPEX. New gas reserves to be explored through the ongoing drilling works will help implement the Vision 2041 by mitigating the energy crisis of the country.

BAPEX has a 10% credit partnership in 2 production sharing contracts (PSCs) signed with ONGC Videsh Ltd. (OVL) and Oil India Ltd. (OIL), the state-owned enterprises of India, for the shallow seas blocks SS-4 and SS-9 under Bangladesh Offshore Bidding Round 2012. There are plans to drill 2 more exploration wells in these blocks. In addition, BAPEX is monitoring the operations of Bangura gas field as a 10% participatory partner with Tullow Bangladesh Limited (Kris Energy) and Niko Resources Block-9 Limited in PSC Block-9. After a long 10 years of legal pleading, the International Center for Settlement of Investment Disputes (ICSID) proclaimed the verdict in the Niko case on behalf of Bangladesh where the Canadian company Niko Resources (Bangladesh) Limited caused 2 consecutive blow-outs in January and June, 2005 due to their negligence while drilling a well in Chattak Gas Field.

During the FY 2020-21, total earnings of BAPEX stood at Tk. 5,078.30 million, of which Tk. 3,202.50 million (excluding SD and VAT) earned from sales of natural gas and condensate of own gas fields and Tk. 1,875.80 million earned from PSC Block-9, interest income and income from other sources. Against this

earnings, total cost stood at Tk. 4,824.20 million during the year. The net profit after tax of the company stood at Tk. 169.00 million. During the FY, the revenue reserve stood at Tk. (4,398.50) million after prior year's adjustment costs of Tk. 0.20 million and accumulated revenue of Tk. (4,562.7) million. The company paid Tk. 1,275.10 million to the Government exchequer during FY 2020-21.

Future work plans (2022-2041)

With a view to achieving the aspired goal to uplift the country to middle income by 2021 and to a developing country by 2041 under "Vision 2041", BAPEX has prepared a future plan for the period of 2022-2041. It has been planned to implement 20 projects in the short-term (2022-2025), 8 projects in the mid-term (2026-2030) and 10 projects in the long-term (2031-2041). The overall activities of BAPEX is closely associated with the aspired goal of the Government.

Overcoming the fear of COVID-19 pandemic, BAPEX's activities including drilling, workover, production and seismic survey activities continued as usual. BAPEX has formulated a time-bound action plan with a view to accelerating the exploration of oil and gas and augmenting production by 2041. The overall support and cooperation of the present government for turning BAPEX into a technically and financially strong institution will continue to add momentum to its operation in the days ahead and help to reach its target.

Vision 2041 of BAPEX

The Hon'ble Prime Minister of the People's Republic of Bangladesh, expressed her deep interest in strengthening BAPEX, the sole state-owned petroleum exploration company on different occasions, with a view to trimming down the dependence on IOCs. To materialize this objective, as per her instruction BAPEX adopted the strategy of time-bound action plan. Pursuant to the Hon'ble Prime Minister's instruction, BAPEX has undertaken the following work-plan to reach the goal of Vision 2041:

- Geological survey: 1,500 lkm
- 2D seismic survey project: 20,720 lkm
- 3D seismic survey project: 6,880 sq. km
- Drilling of exploratory wells: 40
- Drilling of development wells: 21 and workover: 10

On-going projects during FY 2021-22 are: 2 exploratory wells (Tabgi-1 and Illisha-1) and 1 appraisal cum development well (Bhola North-2) drilling project; procurement and installation of wellhead compressors for Srikail Gas Field; 2D seismic survey over exploration blocks 15 and 22; Shariatpur-1 exploratory well drilling project; Bijoy-10, 11, 12, IDECO rig maintenance, IPS rig upgradation and rig supporting equipment replacement project; and procurement and installation of 60 MMscfd process plant for Shahbazpur Gas Field.



SINOPEC working in hilly region in 2D seismic survey over exploration blocks 15 and 22.



Bangladesh Gas Fields Company Limited (BGFCL)

Bangladesh Gas Fields Company Limited (BGFCL) is the largest state-owned natural gas production company in the country. The company is the successor to the Shell Oil Company established on 30 May, 1956. After independence of Bangladesh, on a far-sighted decision of the Father of the Nation Bangabandhu Sheikh Mujibur Rahman, 5 gas fields of the erstwhile Pakistan Shell Oil Company Limited (PSOC), namely Rashidpur, Kailashtila, Titas, Habiganj and Bakhrabad were brought under state ownership on 9 August, 1975 by purchasing at a minimal price. Accordingly, Shell Oil Company was renamed as Bangladesh Gas Fields Company Limited on 12 September, 1975 and management of Titas, Habiganj and Bakhrabad was entrusted to BGFCL. It is a public limited company registered under Companies Act, 1994 (Revised) and also is a company of Bangladesh Oil, Gas and Mineral Corporation (Petrobangla).

BGFCL produces natural gas and processes condensate into petrol and diesel. Presently, BGFCL owns 6 gas fields – Titas, Habiganj, Bakhrabad, Narsingdi, Meghna and Kamta. This company continued gas production from 5 gas fields except Kamta out of its 6 fields in the FY 2020-21 and daily on an average 648 million cubic feet of gas has been supplied to the national grid from 42 wells of 5 producing fields. BGFCL shares about 20% of the country's total gas production and around 75% of state-owned gas production companies. During 2020-21 FY, 236.52 BCF of gas and 151,194 barrels of condensate, extracted as by-product from the gas, were produced by the company. There are 29 different types of gas process plants (such as – glycol, silica gel, LTX and LTS dehydration) for processing produced gas. The processed gas is being supplied to TGTDC, BGDCL, KGDCL, JGTDSL, PGCL and SGCL through transmission networks under GTCL and TGTDC. Besides, processed petrol and diesel are being supplied to the oil marketing companies under Bangladesh Petroleum Corporation. To ensure energy security of the country, BGFCL is carrying out drilling of new wells, workover of existing wells, installation of gas compressors and process plants etc. in accordance with the Government work plan.

According to the study report-2010 of Gustavson Associates, USA engaged by Hydrocarbon Unit (HCU) of Energy and Mineral Resources Division, total recoverable gas reserve of 6 fields under the company is about 12.252 TCF, out of which 8.916 TCF or about 72.77% was recovered till 31 December, 2021.

To meet the growing demand of natural gas in the country, BGFCL has kept up its relentless efforts to ensure uninterrupted gas supply from its different fields and implementation of various development projects of drilling of new wells, workover of existing wells, installation of gas compressors and process plants etc. with the financing of the gas development fund (GDF) and financial assistance of ADB, AIB, GOB and JICA aligning with the government work plan.

During the fiscal year, workover of 2 wells (Narsingdi-1 and Titas-9) have been completed under GDF financing project. Daily 16 and 18 million cubic feet of gas are being produced from those wells respectively. Installation of wellhead compressors at Titas Location-C and Narsingdi Gas Fields have been started by the EPC contractor under a JICA and GOB financing project. Another project for installation of wellhead compressors at Titas Location-A is underway meanwhile a contract was signed on 05 November, 2020 with EPC contractor for installation of a wellhead compressor.

Based on the recommendation of a technical committee constituted for implementing the 64th AGM decision and the review report of consulting firm, BGP, China on 3-D seismic survey data, BGFCL has taken the work-programmes to drill 03 new wells including 01 deep well at Titas Gas Field and workover of 07 wells at Titas, Habiganj, Bakhrabad and Meghna Gas fields and to conduct 3-D seismic survey

covering 480 sq.km. areas of Habiganj, Bakhrabad and Meghna Gas Fields.

The company earned gross revenue of Tk. 11,256.00 million and a pre-tax profit of Tk. 1,740.20 million during the FY 2020-21. The company also paid Tk. 5,587.10 million to the national exchequer in the form of SD, VAT, DSL, dividend and income tax during the year.

Environment and safety related regulations are being complied during operational and development activities of the company. In project implementation, environmental clearance certificates are taken/renewed from the Department of Environment after carrying out initial environmental examination (IEE), environmental impact assessment (EIA) and environmental management plan (EMP). Proper safety measures are taken on imported explosives and radioactive materials for use in different projects



Wellhead compressor of Narshingdi Field of BGFCL

of the company. The relevant recommendations of the final report of Petrobangla's ESMS (environment and safety management systems) project are implemented in the company. Special precautions are being taken during operation and maintenance of gas process plants to avoid environmental pollution. Produced water from the wells is treated through ETP for environmentally friendly disposal. As a part of maintaining ecological balance, plantations in different fields/locations of the company and their nursing are being continued.



Sylhet Gas Fields Limited (SGFL)

Sylhet Gas Fields Limited is the second largest state-owned gas producing company in the country. It used to be operated in the name of Pakistan Petroleum Ltd. (PPL) during pre-independence days. After independence, the company ran its business operations in the name of “Bangladesh Petroleum Limited” until a company in the name and style of “Sylhet Gas Fields Limited” was formed, and incorporated under Companies Act on 8 May, 1982 with a view to taking over from the Government of Bangladesh all gas fields, installations, production facilities, all other assets at Sylhet and Chhatak fields or elsewhere in Bangladesh owned by Pakistan Petroleum Ltd. (PPL).

The company, under its umbrella, currently operates 4 gas fields namely Sylhet (Haripur), Kailashtila, Rashidpur and Beanibazar. It also operates 2 condensate fractionation plants and one catalytic reforming unit namely Rashidpur Condensate Fractionation Plant (RCFP), 4000 BPD CFP plant and 3000 BPD CRU plant. A total of 12 wells (3 at Sylhet, 3 at Kailashtila, 5 at Rashidpur and 1 at Beanibazar) are presently on stream which produces an average of 96 MMscfd gas. The produced gas is supplied to Jalalabad, Bakhrabad, Pashchimanchal and Karnaphuli gas distribution companies franchised areas.

SGFL shares about 5% of the country’s total gas production. In the FY 2020-21 (up to December, 2021), SGFL produced 51.46 BCF of gas and 338,333.24 barrels of condensate and 20,202.87 barrels of natural gas liquids (NGL) from its own fields. The company also produced 1,095,852.29 barrels of finished petroleum products (petrol, diesel, kerosene and Octane) by fractionating condensate from its own fields and Bibiyana Gas Field operated by Chevron and supplied to different marketing companies of Bangladesh Petroleum Corporation.

The company has been implementing various development projects to meet the growing demand of energy and enhancing the company’s revenue income. The ongoing projects include: (i) 3D seismic survey of Beanibazar field of SGFL; (ii) Drilling of well no. Kailashtila-8 (exploratory well); (iii) Work over of well nos. Sylhet-8, Beanibazar-1 and Kailashtila-7; (iv) 3D seismic survey at relinquished area of acreage block-13 and 14 and (v) Drilling of well no. Sylhet-10 (exploratory well). The company has also taken the following projects to increase the gas production the country in future: (a) Gas gathering pipeline construction from RP-9 well to process plant, (b) Workover of the wells Kailashtilla-2, Rashidpur-2, Rashidpur-5 & Sylhet-7, (c) Installation of 45 MMscfd capacity gas process plant at Haripur field, (d) Drilling of well no. Rashidpur-11 (exploratory well), (e) Drilling of Rashidpur deep well no. 1 (exploratory well), (f) Drilling of well no. Sylhet-11 (appraisal/development well), (g) Drilling of well no. Dupitila-1 and Batchia-1 (exploratory well), (h) Work-over of the Well no. RP-3, RP-6, KTL-1 and KTL-3, (i) Drilling of 2 wells at relinquished area of block-13 and 14 (appraisal/development well), (j) Drilling of well no. Kalishtilla-9 (exploratory well).

The company earned pre-tax profit to the tune of Tk. 2,360.00 million during the FY 2020-21 and paid Tk. 1,631.80 million as supplementary duty and VAT, Tk. 762.60 million as income tax, Tk. 1,250.00 million as dividend and Tk. 160.80 million as DSL. The total contribution by the company to the Government exchequer in the financial year stood at Tk. 3,805.10 million which was 65.37% of the total income from sales.

Sylhet Gas Fields Limited was adjudged as the top-most VAT paying organization in the production sector at national level for the last consecutive 9 years up to FY 2020-21 and was rewarded by the National Board of Revenue.



CRU Plant of SGFL



Gas Transmission Company Limited (GTCL)

Gas Transmission Company Limited (GTCL) was incorporated on 14 December, 1993 with the objectives of (i) centralized operation and maintenance of national gas grid; and (ii) expanding of national gas grid and as required, ensuring balanced supply and usage of natural gas in all regions of the country. GTCL owns and operates major gas transmission pipelines throughout the country. Gas transmission pipelines built by other companies before creation of GTCL have been integrated with the GTCL system.

During the FY 2020-21, GTCL transmitted in total 903.95 BCF of gas, 1.27% higher than the previous year, delivering 563.85 BCF, 93.15 BCF, 111.89 BCF, 60.24 BCF, 56.13 BCF and 18.68 BCF to franchise areas of Titas, Bakhrabad, Karnaphuli, Jalalabad, Paschimanchal and Sundarban gas distribution companies



Modification activities at Ashugonj Gas Compressor Station by GTCL

respectively. The company transported a total of 22,72,6973 barrels of condensate through its 175 km long north-south condensate pipeline during the year, which was 54.63% higher than the previous year.

The company earned an amount of Tk. 11,201.70 million as revenue and Tk. 2,378.50 million as pre-tax profit and contributed an amount of Tk. 7,531.70 million to Government exchequer during the FY 2021-21.

Ongoing projects were: (i) Construction of 30" x 150 km Bogura-Rangpur-Syedpur gas transmission pipeline project; (ii) Construction of 42" x 50 km Bakhrabad-Meghnaghat-Haripur gas transmission pipeline project; (iii) Installation and modification of gas stations at GTCL off-transmission point. (iv) Construction of 36" x 10 km gas transmission pipeline along Bangabandhu Sheikh Mujib railway bridge; and (v) 30" x 6.15 km gas transmission pipeline along Padma multipurpose bridge.

Up-coming projects are: (i) Construction of 30" x 100 km Shahbazpur-Bhola North-Mehendigonj-Barishal gas transmission pipeline project; (ii) Construction of 36" x 75 km Langalband-Mawa and



150 MMscfd capacity RMS under Dhanua-Nalka project by GTCL

Janjira–Tekerhat gas transmission pipeline project; (iii) Construction of 36" x 77 km Khulna–Gopalganj–Tekerhat gas transmission pipeline project; (iv) Construction of 42" x 120 km Kuakata–Payra–Barishal gas transmission pipeline project; (v) Construction of 36" x 110 km Barishal–Khulna gas transmission pipeline project; and (vi) Construction of 30" x 115 km Tekerhat–Barishal and Tekerhat–Faridpur gas transmission pipeline project.

LNG and transmission pipeline

To meet the ever-increasing gas demand in the country, the Government has taken initiatives to import a considerable quantity of liquefied natural gas (LNG). In this regard, 2 FSRUs having the capacity of 500 MMscfd each have been installed at Moheshkhali in Cox's Bazar and commenced transmission to the national gas grid from 18 August, 2018 and 29 April, 2019 respectively. With the aim of supplying RLNG from the imported LNG to the national grid, GTCL has already constructed 30" x 91 km transmission pipeline from Moheshkhali to Anowara, Chattogram; 42" x 30 km gas transmission pipeline from Anowara to Fouzdarhat; 42" x 79 km parallel transmission pipeline from Moheshkhali to Anowara; 42" x 7 km transmission pipeline from Moheshkhali zero point (Kaladiar Char) to CTMS (Dhalghat Para) and 36" x 181 km Chattogram–Feni–Bakhrabad parallel transmission pipeline. With these pipelines and associated stations, 216.10 BCF RLNG has been transported through the national gas grid during FY 2020-21.

Network analysis at steady state are being conducted for all existing transmission pipelines under the company to quickly and accurately determine the pipeline pressures and pipeline transmission capacities by using pipeline studio software. Under supervision of the Cabinet Division with assistance from the access to information (a2i) program of the Prime Minister's Office for creating digital Bangladesh, the company's e-file management was activated on 27 March, 2017. All tender notices and important information are being published in the company's own website regularly. All tenders of the company relating to procurement of goods and works are being completed through the national e-Government procurement (e-GP) portal for ensuring wide participation and establishing equal rights of all bidders and maintaining procurement skill, transparency and accountability.



Titas Gas Transmission and Distribution Company Limited (TGTDC)

The discovery of a huge gas field on the bank of the Titas River in Brahmanbaria in 1962 created a new horizon for the utilization of natural gas. Titas Gas Transmission and Distribution Company Limited (TGTDC) was established on 20 November, 1964. The company began its commercial operation with the commissioning of gas supply to Siddhirganj Thermal Power Station on 28 April, 1968 after construction of 14" x 58 km Titas-Demra gas transmission pipeline by the then East Pakistan Industrial Development Corporation. In October, 1968 the first domestic natural gas connection was provided to the residence of renowned litterateur Shawkat Osman.



Installation of Prepaid Meter at TGTDC Franchise Area

In the beginning, 90% of its shares belonged to the then Pakistan Government, and Pakistan Shell Oil Company owned the rest. Under the Nationalisation Order of 1972, all the Government owned shares of the company were vested in the Government of Bangladesh (GoB). In accordance with an agreement signed between Shell Oil Company and GoB on 9 August, 1975 the ownership of the remaining 10% shares was transferred to the GoB through Petrobangla in exchange for a lump-sum

payment of £1,00,000. After the independence of Bangladesh in 1971, the company started its journey as a company of Petrobangla with an authorized and paid up capital of Tk. 178 million. At present, the authorized and the paid up capitals of the company are Tk. 20,000.0 and Tk. 9,892.2 million respectively. Presently, Petrobangla holds 75% shares of this company while private shareholders hold 25% of shares.

The main objective of the company is to supply natural gas to customers of different categories under its franchise area and thereby reduce dependency on imported liquid fuel. Towards this end, the company has to construct, operate and maintain pipelines, stations and associated facilities. Currently, the company distributes gas in the districts of Dhaka, Narayanganj, Narsingdi, Munshiganj, Manikganj, Gazipur, Tangail, Mymensingh, Jamalpur, Sherpur, Netrokona and Kishoreganj.

Presently, total length of pipeline owned by the company is 13,238.09 km including 46.93 km built during the FY 2020-21. The total number of customers of the company was 28,74,848 as on 30 June, 2020 which rose to 28,75,813 in June, 2021. Bulk customers of the company include 3 fertilizer plants, 47 power stations. The company hogs. about 55% of natural gas market share in Bangladesh.

During FY 2020-21, total 559.80 BCF of gas (including condensate) was sold and Tk. 1,78,312.70 million was earned as revenue with meter rent and surcharge, which was Tk. 1,69,504.10 in the previous FY. During the FY, a sum of Tk. 1,79,225.40 million was realized against the revenue income of Tk. 1,78,312.70 million, which was Tk. 912.70 million more than the receivable. The company earned a net profit before tax and a net profit after tax of Tk. 4,331.50 million and Tk. 3,459.80 million respectively. The company paid Tk. 6,556.30 million to the Government exchequer during FY 2020-21. During the year the earnings per share (EPS) was Tk. 3.50.

Modern and state of the art web-based total integrated computer system has been set up to boost up all the functions of the company to facilitate improved customer services which includes automatic updating of customer ledger if bill payment is made through banks having online banking facilities; informing registered customers about their gas bills through SMS, obtaining online update about payment and dues; complaining through online facility; e mail facility through own web-domain; processing of annual/half yearly financial reports and other related information through integrated accounting software; paying gas bills through Rocket and Nexus Pay of Dutch-Bangla Bank, Nagod and bKash.



DRS at Meghnaghat of TGTDC

A project captioned "Installation of Prepaid Gas Meter for TGTDC" (2nd Amendment) of Tk. 7,538.40 million financed by Japan International Cooperation Agency (JICA), Bangladesh Government (GoB) and TGTDC is being implemented for installation of 3,20,000 prepaid gas meters with the main objective of reducing system loss at the consumer level in the residential sector of Dhaka metropolitan area. The company has already established an e-tendering procedure for inviting bids. The company has 3 emergency gas control centers including a 24 hours central emergency control room. The company has launched a dedicated call center to serve customers. During the FY 2020-21, 619 km illegal gas distribution line has been removed and around 3,73,049 illegal gas burners have been disconnected.



Bakhrabad Gas Distribution Company Limited (BGDCL)

Bakhrabad Gas Distribution Company Limited (BGDCL), previously named as Bakhrabad Gas Systems Limited (BGSL), was established on 7 June, 1980 initially with the three-fold responsibilities of production, transmission and distribution. Gas supply commenced on 20 May, 1984. Subsequently, Bakhrabad Gas Field was handed over to BGFCL putting an end to its production wing. Further, the 2 main transmission pipelines of the company, 24" x 110 km Bakhrabad-Chattogram and 20" x 69 km Bakhrabad-Demra gas transmission pipelines were handed over to GTCL leaving only the responsibility for marketing gas in the Chattogram division excluding Brahmanbaria district and Kashba and Bancharampur upazilas (outside its franchise area). As per Government decision, the company has again been reconstituted keeping greater Cumilla and greater Noakhali districts under its franchise area and adding Brahmanbaria to its operational area.

The cumulative gas pipeline of different categories constructed by the company up to 31 December, 2021 was 3,891.84 km. The cumulative gas connection stood at 4,90,523 as on 31 December, 2021 which includes 14 power, 1 fertilizer, 184 industrial, 81 captive power, 2,138 commercial, 91 CNG and 4,88,014 domestic (Burner) connections.

During the FY 2020-21, BGDCL sold 111.89 BCF gas to its customers, of which power plants consumed 69.49 BCF (62.11%). The company earned Tk. 25,894.60 million as sales revenue, net profit before tax stood at Tk. 2,124.40 million and paid Tk. 860.10 million to the national exchequer. The company purchased 109.33 BCF gas and sold 111.89 BCF gas this year.

During the FY 2020-21, the gas connections of 2,165 nos. of different categories of customers were disconnected due to non-payment of gas bill amounting to 308.70 million. Besides, 69.67 km of illegal pipelines of different diameters have been removed/deactivated during the year.

In order to reduce the risk of the deadly coronavirus infection in the country, the offices were closed during the holidays announced by the Bangladesh government. Despite this, emergency gas control activities have continued. Gas control room and hot line (call center) have been kept open for 7 x 24 hours for conducting emergency gas control activities.

The innovation team of BGDCL has decided to implement 3 innovation ideas in the FY 2020-21. These are-

- a) **Implementing remote monitoring system for CNG customers:** 20 nos. of CNG stations of Cumilla region have been brought under Remote Monitoring System through installation of IP Camera and Data Connectivity;
- b) **Provide digital bill cards to residential customers instead of bill books:** Out of BGDCL's approximately 2,40,000 subscribers, 1,36,000 subscribers have collected 'Digital Bill Card' for online billing; and
- c) **Implementing FDR software:** FDR related work is being done in the company through FDR Software.

Furthermore, "BGDCL Gas Distribution Management System" software developed by IICT, BUET has been launched to integrate the company's revenue, marketing and engineering service activities. Also, online software for contractor enrollment and renewal has been developed. In order to ensure transparency and accountability in the procurement process the company is inviting tender through e-GP system. All the officials' work is being carried out through an e-filing system.



Gas Pipeline installation of BGDCL



জালালাবাদ গ্যাস

Jalalabad Gas Transmission and Distribution System Limited (JGTDSL)

The natural gas was first discovered in Sylhet during mid-fifties and its commercial use began during early sixties with the supply of gas to the Chhatak Cement Factory and Fenchuganj Fertilizer Factory in the sacred soil of Hazrat Shahjalal (R). The activities of Jalalabad gas was initially started as a project in 1977. Thereafter, Jalalabad Gas Transmission and Distribution System Limited (JGTDSL) was formed under Companies Act on 1 December, 1986 with an authorized capital of Tk. 1,500.00 million through infrastructure development of gas transmission and distribution system under the management of Petrobangla with the responsibility of distribution and marketing of natural gas to all categories of customers in its franchise area of Sylhet, Sunamganj, Moulvibazar and Habiganj district under Sylhet Division.

The company possessed a total of 3,836.08 km gas network comprising 524.90 km transmission, 1,339.02 km distribution, 1,224.72 km feeder mains and service lines and 74744 km other (customer financing) pipelines. During the fiscal year 2020-21, the company constructed 5.36 km pipelines including 3.21 km feeder mains and service lines and 2.15 km others. The company provided 17 new connections which included 1 power, 4 captive power and 9 industrial, 2 tea gardens and 1 small and cottage industry connections. The cumulative gas connection stood at 2,21,452 as on 31 December, 2021 which includes 19 power, 1 fertilizer, 120 industrial, 125 captive power, 803 commercial, 100 tea-estate, 59 CNG, 459 small and cottage industry and 2,19,766 domestic (Burner) connections.

During the FY 2020-21, the gas sales of the company was about 144.48 BCF of which power plants consumed 98.78 BCF (68.37%) and others 45.7 BCF (31.63%). During the FY 2020-21, the company earned Tk. 30,1974 million as revenue which included sales revenue of Tk. 28,285.90 million and other income Tk. 1,911.50 million, Tk. 2,639.50 million as net profit before tax and Tk. 1,847.60 million after tax. The company paid Tk. 1,668.80 million to the national exchequer.

JGTDSL has been conducting regular drives against illegal connections, construction of illegal pipelines and illegal installations/structures on Company's high pressure gas pipeline in line with the decision of Energy & Mineral Resources Division and Petrobangla. During the FY 2020-21, gas connection of 3,573 nos. of different categories of customers i.e. 3 industrial, 42 small and cottage industry, 63 commercial, 1 CNG and 3,464 domestic customers have been disconnected due to non-payment of gas bills amounting to TK. 609.40 million. Of which, gas connections of 1 industrial, 1 CNG, 42 commercial, 24 small and cottage industries and 2,951 domestic customers i.e. a total of 3,019 numbers of connections of the customers have been reinstated by realizing Tk. 216.58 million.

JGTDSL already started online gas bill collection through VISA/Master card, bKash, Rocket, Surecash, gpay, Robicash, Ok wallet and on real time with several bank by which a customer can pay their gas bills at any time without appearing any bank by using mobile internet.

With the objective of supplying 20 MMscfd of gas to Bangabandhu Sheikh Mujib Hi-tech Park, Companiganj, Sylhet which is being implemented under the Ministry of Information and Communication Technology of the Government, the construction of 30 km pipelines (6" x 7 km @ 1000 PSIG and 12" x 23 km @ 350 PSIG), 2 DRS/CMS and 2 CP stations and the construction of pipeline work for the Sari-Goain river crossing (HDD) work at Salutikor area have been completed. The gas commissioning to the DRS inside the Hi-tech park has been completed in order to supply 20 MMscfd gas for the industrial customers of Bangabandhu Sheikh Mujib Hi-tech park, Sylhet.

A project titled "Installation of 50000 prepaid gas meter in the franchise area of JGTDSL" has been undertaken for the domestic customers of Sylhet town with the company's own funding with a view to preventing gas wastage, introduction of time befitting billing system through pre-payment, increase of management efficiency of the company and help achieve the target of sustainable development goals of the government through the efficient use of natural gas. The project was approved by the Energy and Mineral Resources Division on 8 February 2021. The approved cost of the project is 11855.00 lakh and implementation period of the project is 1 January, 2021 to 31 December, 2022.



Pashchimanchal Gas Company Limited (PGCL)

Pashchimanchal Gas Company Limited (PGCL) is the 4th gas marketing company under Petrobangla set-up with the objective of distributing gas in the north-west region of the country. The company commenced its business on 23 April, 2000. During the FY 2020-21, a total of 10.412 km of pipeline of various diameters was constructed and by the end of June, 2021, the company encompassed a network of 1,662.063 km pipeline. By the end of December, 2021, the company encompassed a network of 1,670.918 km pipeline.

At the end of FY 2020-21, the company provided gas connection to 1,26,869 customers including 24 new gas connections (12 industrial, 5 captive power and 7 Domestic (Govt.)). By the end of December, 2021, the company provided 3 new gas connections (1 captive power and 2 Domestic (govt.)). During this fiscal year, a total of 53.30 BCF gas was sold by the company as compared to 60.40 BCF gas in the previous year. The company earned Tk. 10,595.41 million revenue from sales during FY 2020-21 and earned Tk. 1,289.002 million as net profit before tax. A total of Tk. 1,020.30 million has been deposited to the national exchequer during this fiscal year.

The company is always putting its best efforts for achieving its desired goals. Over the time, the company has extended its gas network facilities in Sirajganj, Baghabari, Bera, Santhia, Shahjampur, Pabna, Ishwardi (including Ishwardi EPZ), Bogura, Rajshahi and other important areas to reach the benefits of gas facility on the doorstep of the masses.

PGCL conducts drives against gas pilferage and illegal activities regularly. A total of 709 nos. gas connections have been disconnected for illegal gas consumption through legal connection and gas bill default in FY 2020-21 where 695 domestic, 12 commercial and 2 Industrial connections are included. On the other hand, by recovering the arrear gas bills amounting to Tk. 30.17 million and the penalty amounting to Tk. 3.29 million, a total of 572 nos. customers have been provided gas reconnection.

In FY 2021-2022, a total of 342 nos. gas connections have been disconnected for illegal gas consumption and gas bill default from July to December, 2021 where 338 domestic, 11 commercial and 40 Industrial connections were included. On the other hand, by recovering the arrear gas bills amounting to Tk. 5.55 million and the penalty amounting to Tk. 2.73 million, a total of 325 nos. customers have been provided gas reconnections during this period.

DPP for supplying the natural gas through pipeline at Rangpur Division covering Rangpur, Nilphamari, Pirganj town and its adjoining areas has already been approved by the Executive Committee of the National Economic Council (ECNEC) on 22 June, 2021. Besides, a DPP for installation of 42,000 prepaid gas meters at PGCL franchise is under consideration of EMRD (Energy and Mineral Resource Division) for its approval. Another proposal of DPP for installation of 86,000 prepaid gas meters at PGCL franchise area is in process with foreign aid of WB/AIIB.

All tenders of the company related to procurement of goods and services are being completed through the national e-Government procurement (e-GP) portal for ensuring wide participation and establishing equal rights of all bidders and maintaining procurement skill, transparency and accountability. Under supervision of the Cabinet Division and assistance of the access to information (a2i) programme of the Prime Minister's Office for creating digital Bangladesh, e-filing activities have been successfully implemented in PGCL. All file works of the company are being completed through the e-filing system. Payment of gas bills online has already been implemented in the company. Information pertaining to up-dated status regarding payment of gas bill has been provided to the customer through SMS. Besides, customer services are also going on uninterruptedly through hotline nos. 16514 (from any mobile) or 096130-16514 (from any BTCL connection).

Under the Government performance management system, an annual performance agreement (APA) was signed between Petrobangla and PGCL for the FY 2020-21. PGCL has achieved 100% of its targets set in the fields of gas sales, procurement of gas equipment, construction of gas pipelines, disconnection of illegal and defaulter customers, installation of EVC meter, human resources development, implementation of APA efficiently, implementation of e-filing system, implementation of innovative ideas/small improvement projects (SIP) and updating the list of tangible and intangible assets.



Karnaphuli Gas Distribution Company Limited (KGDCL)

Karnaphuli Gas Distribution Company Limited (KGDCL) was formed on 8 February, 2010, with greater Chattogram and Chattogram Hill tracts area which were under erstwhile BGSL franchise area, pursuant to a government decision to rationalize and improve the services rendered to the customer of the companies under Petrobangla. The commercial activities of the company commenced on 1 July, 2010.

Gas sales by KGDCL during the FY 2020-21 stood at about 112.60 BCF. The company earned Tk. 34,425.70 million as sales revenue and Tk. 5,161.20 million as net profit before tax. The company paid Tk. 4,393.00 million to the national exchequer during this year. The company purchased 110.89 BCF gas and sold 112.60 BCF gas this year. As a result, the system gain of the company stood at 1.71 BCF i.e. 1.54%. The cumulative gas



CMS of Mirasari Project of KGDCL

connection stood at 6,01,914 as on December, 2021 which includes 5 power, 4 fertilizer, 1,164 industrial, 199 captive power, 2,909 commercial, 2 tea-gardens, 70 CNG and 5,97,561 domestic connections.

The online bill payment system has been launched in KGDCL from July, 2017 with the aim of simplifying the gas bill payment system. The company's customers of all classes are currently paying their gas bills online through various branches of 23 banks in Chattogram. KGDCL's non-metered residential customers can pay gas bills through Rocket, Nexus Pay, Visa Card, MasterCard and 'Nagad'. Bills are also being collected from residential customers through various mobile financial services (Sure Cash, Telecash, MyCash) and Grameenphone's "Bill-Pay" system. The web-based customer portal (billing.kgdcl.gov.bd) has been further customized to make it easier for KGDCL customers to know their billing updates. The company is now performing official work to a large extent through the e-nothi system. The company is publishing its activities through the website in order to improve customer service and easy access to information.

In order to prevent misuse and to ensure effective use of natural gas, a project Tk. 1,486.50 million to install 60,000 nos. of pre-paid gas meters in domestic gas connections in Chattogram city area has already been completed within the timeline of 30 June, 2019. Pre-paid customers currently purchase gas volumes through NFC cards from 17 point of sales (POS) stations and use the gas by recharging the pre-paid meters installed in the customer's yard. Another project of Tk. 2,416.10 million by KGDCL own fund to install 1,00,000 nos. of pre-paid meters in domestic gas connection in Chattogram city area is underway. Consultant of this project has started its activity. The installation project is expected to be completed within June, 2023.

Moreover, another project has been implemented for the up-gradation of KGDCL gas distribution network, estimating cost of Tk. 3,396.80 million by KGDCL's own fund. Under this project, a pipeline has been constructed to receive imported LNG in the KGDCL system and to supply gas to Mirsarai Economic Zone, Chattogram. To protect existing pipelines from corrosion in KGDCL franchise areas, proper monitoring, necessary maintenance and development works are continuing.

KGDCL has been conducting drives against gas pilferage and illegal activities regularly. During FY 2020-21, a total of 9,931 nos. of illegal gas connections were disconnected and earned Tk. 276.10 million as revenue from unauthorized and unscrupulous customers.



Sundarban Gas Company Limited (SGCL)

The Sundarban Gas Company Limited (SGCL) was formed on 23 November, 2009 with the objective of supplying natural gas to the south-western region of the country which includes Khulna Division, Barishal Division and greater Faridpur district. The main responsibilities of the company are to construct distribution pipelines, provide gas connections and post connection services under its franchise area.

Currently, the total amount of transmission and distribution pipelines of different diameters of the company is 33.84 km and 107.71 km respectively. The company is continuing supply of natural gas and providing post connection service to VERL 34.5 MW RPP, Aggreko 95 MW RPP, NBBL 220 MW CCPP, Bhola 225 MW CCPP (BPDB), 2 captive power, 2 commercial, 5 industrial, 26 metered domestic connections and 2346 non-metered domestic customers in the island district Bhola. In addition, gas is being supplied to Bheramara 410 MW CCPP located at Kushtia District. Besides, gas is being supplied commercially to 220 MW CCPP of NutanBidyut (Bangladesh) Limited (NBBL) at Borhanuddin, Bhola by setting up temporary RMS and pipeline for power generation on an emergency basis. In the FY 2020-21, around 32.71 BCF gas has been supplied to power plants and 0.92 BCF gas to other non-bulk customers. On an average 92 MMscfd gas is being supplied to different customers in SGCL franchise area.

Currently, the cathodic protection system has been upgraded to prevent corrosion of the gas distribution pipeline. In this case a new pole mounted transformer rectifier (TR) set has been installed at Bhola Sadar. An online CP monitoring system has also been introduced.

Besides, initially a digital map of SGCL's existing 33 km transmission line and 72 km distribution line has been prepared which has already come live. Information regarding the location (latitude, longitude), depth of pipe, route alignment, gas pressure, pipe diameter, valve pit, and CP test point etc. of the pipeline can be found online through digital map.

The billing process through EVC meters has been introduced. The total number of customers where EVC meters can be installed under SGCL is 6 (industrial-4 and captive-2). At present, all the customers have EVC meters turned on and gas bills are being paid with readings through EVC meters.

During the FY 2020-21, the company earned a total revenue of Tk. 5,009.58 million out of which Tk. 4,434.76 million from sales of 33.62 BCF gas and rest Tk. 574.82 million from other operating income. In this year, the company's net profit before tax and after tax stood at Tk. 850.53 million and Tk. 595.37 million respectively and paid Tk. 452.70 million to the national exchequer.

SGCL has already joined the national e-Government procurement (e-GP) portal. The company is issuing certificates of "Amount of Outstanding Gas Bill"/"No Arrears" to all categories of customers to avoid customer harassment and to ensure the amount of arrears at the end of every calendar year. Customer service is being improved by keeping online billing activities. During the FY 2020-21, the gas connections of 16 domestic customers were disconnected due to various reasons.



Rupantarita Prakritik Gas Company Limited (RPGCL)



MLNG Terminal at Moheshkhali Off-shore Area

Rupantarita Prakritik Gas Company Limited (RPGCL) started its activity as a company of Petrobangla from 1 January, 1987. RPGCL is vested with the responsibilities of promoting compressed natural gas (CNG), building a transport infrastructure in the country based on CNG, and production and distribution of LPG, petrol and diesel obtained from NGL. On an average 2.93 BCF of CNG is being used every month from 603 CNG stations, which is 3.52% of the total gas consumption of the country.

The Government has decided to import liquefied natural gas (LNG) to meet the ever-increasing demand of natural gas against a backdrop of its shortage. All activities related to LNG have been vested in RPGCL. Two terminal use agreements (TUA) were signed with Excelerate Energy Bangladesh Limited (EEBL) and Summit LNG Terminal Co. (Pvt.) Ltd. to install 2 FSRUs at Moheshkhali approximately 90 kilometers south of Chattogram for supplying 500 MMscfd of LNG each. After installation of the FSRU by EEBL, commissioning started on 12 August, 2018 and RLNG supply to the national grid commenced commercially on 19 August, 2018. Total LNG import from this terminal was 7.659 million tons and the total RLNG supply to the national grid was 368,658.78 million cubic feet from inception to 31 December, 2021. After the set-up of the 2nd FSRU by Summit, commissioning took place on 29 April, 2019 and RLNG supply to the national grid commenced commercially on 30 April, 2019. Total LNG import from this terminal was 6.022 million tons and the total RLNG supply to the national grid was 289,557.64 million cubic feet from inception to 31 December, 2021.

In addition, the selection of a Terminal Developer to install a Land-Based LNG Terminal with a capacity of 1,000 MMscfd at Matarbari, Cox's Bazar has been undertaken. Request for proposal (RFP) has been issued to 8 shortlisted bidders. The last date of submission of the bid is 12 February, 2023. Acquisition of 111.72 acres of land at Matarbari is in progress. Beside this, a gas supply agreement (GSA) between H-Energy and Petrobangla is in progress for importing RLNG through cross-border pipeline.

The proposal from Summit Oil and Shipping Co. Ltd (SOSCL) to set up an FSRU at Moheshkhali has been approved in principle by the Government. Negotiation with SOSCL is in progress to finalize the draft



Tie-in Point Platform at Moheshkhali Zero-point Region

agreement (TUA and IA). The proposal from Excelerate Energy to set up an FSRU at Payra deep sea area has been approved in principle by the Government. Again, a proposal of Excelerate Energy to expand the existing FSRU (MLNG) to increase its regasification capacity has also been approved in principle by the Government. Negotiation with Excelerate Energy is in progress.

To import LNG from Qatargas, a sale and purchase agreement (SPA) was signed on 25 September, 2017 with Ras Laffan Liquefied Natural Gas Company Limited (3), a Qatar-based Government agency, to ensure the supply of 1.8 - 2.5 MTPA LNG for 15 years. A total volume of 8.178 million tons of LNG was imported from Qatar through 133 cargoes from inception to 31 December, 2021. Another SPA was signed with Oman Trading International Ltd. (present name: OQT), an Oman-based Government agency, on 6 May, 2018 for supplying 1.0-1.5 MTPA LNG for 10 years. A total volume of 4.429 million tons of LNG was imported from OQT through 70 cargoes from inception to 31 December, 2021. In addition, a master sale and purchase agreement (MSPA) was signed with 16 organizations (suppliers/traders) to purchase LNG from the spot market. The first cargo from the spot market was imported on 25 September, 2020. A total volume of 1.076 million tons of LNG was imported from the spot market through 17 cargoes from inception to 31 December, 2021.

In order to meet up the gap between demand and supply of gas, the Government is planning to increase LNG import. Accordingly, a proposal from SOSCL to supply LNG has been approved in principle by the Government. Negotiation is in progress. On the other hand, negotiations with Emirates National Oil Company Limited (ENOC) and for additional supply of LNG from Qatar gas on G to G Basis for long term contracts are in progress. In addition, an LNG supply contract on a long term basis with EEBL along with the expansion of MLNG is in progress as well.

In the FY 2020-21, the company earned Tk. 1,117.46 million as revenue before payment of VAT from sales of CNG, LPG, MS, and other heads. The company earned an amount of Tk. 638.99 million as net profit before tax and made a payment of Tk. 607.96 million to the national exchequer.

With a view to enhancing the speed of work and augmenting efficiency, the introduction of smart card payment system's and automatic vehicle identification (AVA) systems in CNG filling stations. The website of the company has linked to the national web portal, tender functions are being completed through e-GP. Since October 2017, the company has been communicating with other offices and agencies and disposing of files using an e-filing system through a live server.



Barapukuria Coal Mining Company Limited (BCMCL)

Barapukuria Coal Mine is the first and only coal mine in Bangladesh. In 1985, Geological Survey of Bangladesh (GSB) discovered high quality bituminous coal spread over an area of 6.68 sq. km at a depth of 118-509 metres in Barapukuria. China National Machinery Import and Export Corporation (CMC) developed this underground mine having a capacity of 1.0 million metric tons of coal per year. The Barapukuria coal is very environmentally friendly, very low in sulphur content (0.53%) and very high in heat generation capacity (11,040 btu/lb).



Coal Stack at Coal Yard of BCMCL

To ensure proper implementation of the project, Barapukuria Coal Mining Company Limited (BCMCL) was established on August 4, 1998. For maintaining uninterrupted production of coal from the mine, a Management, Production and Maintenance Contract was signed with the consortium of Xuzhou Coal Mining Group Corporation Limited (XMC) and CMC on 4 June, 2005 for a period of 71 months with a contract price of US\$ 82.30 million. The company went into commercial production on 10 September, 2005. The contract was completed on 10 August, 2011.

On expiration of the first M&P contract, the second “Management, Production, Maintenance & Provisioning Services (MPM&P)” contract was signed on 6 August, 2011 with the successful bidder consortium of XMC-CMC. This MPM&P contract commenced on 11 August, 2011 and completed on 10 August, 2017. To continue uninterrupted production from the mine, the third MPM&P contract (MPM&P Contract-2017) for a period of 48 months was signed on 8 July, 2017 and came into effect on 11 August, 2017 and expected to be completed by the extended intended completion date of 31 August, 2022. The fourth contract for

a period of 6 years was signed on 30 December, 2021 and came into effect on 30 December, 2021 and will continue up to 29 December, 2027 having the production target of 4.50 million metric tons.

In the FY 2020-21, total coal production was achieved by 7,53,972.83 metric tons and the commercial production rate was 3,000-3,500 metric tons/day. During the FY, the company earned Tk. 8,319.90 million from sale of coal and Tk. 787.50 million from other sources comprising a total amount of Tk. 9,107.40 million. During this period, Tk. 6,570.20 million was spent as cost of operation and expenditure against other heads. In this fiscal year, the pre-tax net profit stood at Tk. 2,537.20 million and deposited Tk. 2,220.80 million to the Government exchequer.

Mentionable, till December, 2021, a total of 12.75 million metric tons of coal has been produced from the commencement of commercial production.

To set up a floating solar power plant in reservoirs (lakes) created by the subsidence, a primary survey conducted by the Sustainable and Renewable Energy Development Authority (SREDA) has show that



Underground mining with Coal Shearer at BCMCL

the capacity is about 45.9 MW which is likely to be increased gradually and up to 200 MW with floating and ground solar plants. Proposal/matter for setting up of 2 floating solar power plants in the said subsidence area under the initiative of BCMCL is under process.

Apart from that BCMCL has taken a project “Preliminary Study for development of Alihat Iron Ore deposit at Hakimpur, Dinajpur, Bangladesh” to carry out the feasibility study of the iron ore field. For this purpose, EOI evaluation has already been completed to appoint an international consulting firm to carry out the preliminary study.

As CSR activities of BCMCL, construction of 3-Storeyed School Building with 4-Storeyed Foundation has been inaugurated and connecting road, Gate repair, Internal Sanitary and water supply and Electrification works of BCMCL is under progress. Above all, BCMCL extracting coal has become an alternative to burning wood, imported oil and coal in energy production.



Maddhapara Granite Mining Company Limited (MGMCL)

The Geological Survey of Bangladesh (GSB) discovered the deposits of hard rock at a depth of 136 meter at Maddhapara, Parbatipur of Dinajpur district in 1974. Later, a contract between Petrobangla and Korea South South Corporation (NAMNAM) of DPR Korea was signed on 27 March, 1994 for development of Maddhapara Hard Rock Mining Project and accordingly NAMNAM had undertaken the physical works of the project from September, 1994. Maddhapara Granite Mining Company Limited (MGMCL) was formed under Petrobangla on 4 August, 1998 to operate the hard rock mine at Maddhapara. Commercial production of Maddhapara Mine was started on 25 May, 2007, but the production was limited to about 600-800 metric tons per day in single shift operation.

Granite mining in Bangladesh is of great importance, as there is hardly any other source of construction aggregate. Maddhapara Mine having production capacity of 1.65 million metric tons of granite per year is set for partial fulfilment of the country's demand. In order to continue full range of target production (5,500 metric tons/day) from Maddhapara Granite Mine and development of underground roadways and stops, a contract was signed between Maddhapara Granite Mining Company Limited (MGMCL) and Germania-Trest Consortium (GTC) on 2 September, 2013 for management and operation of the mine having contract price of US\$ 171.86 million for six year. After the expiration of the contract period a side letter agreement was signed between MGMCL and GTC on 29 July, 2020. According to the side letter agreement, the contractor will develop 2 new stopes with 1.10 million metric tons of granite rock production and will hand over 1.18 million metric tons of granite rock reserves in the underground stopes of MGMCL at the end of the extended one year contract period. A new EPC contract was signed between MGMCL and GTC on 28 September 2021 for management and operation of the mine having contract price of US\$ 118.60 million (foreign currency) and Tk. 2,667.40 million (local currency). According to the contract, the contractor will develop at least 14 new stopes and produce 8.86 million metric tons of granite rock over a period of 6 years.

In the FY 2020-21, a total 10,17,030.83 metric tons of granite was extracted and 12,87,687.00 metric tons was sold. The company earned Tk. 2,989.29 million from the sale of granite and made a net profit of Tk 335.22 million and made a payment of Tk. 381.96 million to the national exchequer.

In July to December, 2021, a total of 5,54,014.75 metric tons of granite was produced and 6,51,913.00 metric tons was sold and the company earned Tk. 1,482.22 million during this time. Mentionable, since inception of the company, a total of 753 million metric tons of granite has been produced as of 31 December, 2021.

At present, the annual projected demand of stone in the country is about 14 million metric tons (Source: IIFC Report) as construction material. Large amount of stone is being imported from abroad to meet this demand. The existing Maddhapara mine has an annual production design capacity of 1.65 million metric tons. In order to determine the possibility of increasing production of granite rock and preparation of granite slabs through expansion of the mining zone/area of Maddhapara mine, a feasibility study project titled "Feasibility Study for Granite Slab Preparation and Enhancement of Stone Production by Expansion of Maddhapara Mine (1st Revised)" was undertaken by MGMCL with financing of Petrobangla. The project was completed in August 2019 and the project completion report (PCR) was submitted on 19 January, 2020. According to the PCR, it will be possible to develop a new mine with a production capacity of 3.30 million metric tons per year/11,000 metric tons per day by taking a new project in the study area (2.25 sq. km).



Mining Operation in progress at MGMCL

Development Programmes for the Fiscal Year 2020-21



Process Plant of Srikail Gas Field of BAPEX

The annual development programme of Petrobangla for the fiscal year 2020-21 had a total allocation of Tk. 12,447.9 million, which includes Tk. 6,000.0 million as project aid. The programme consists of 6 projects of which 5 are foreign-aided and 1 is GoB funded. In addition, there are 9 projects financed by the corporation/companies itself (self financing) involving total allocation of Tk. 2,402.0 million, where cash foreign exchange (CFE) involvement is Tk. 1,250.0 million and local currency is Tk. 1,152.0 million. Furthermore, there are 6 projects under the gas development fund (GDF) in the same fiscal year with a total allocation of Tk. 2,242.4 million, where CFE involvement is Tk. 664.3 million and local currency is Tk. 1,578.1 million. List of ongoing projects stating estimated total project cost, execution period and source of finance are as follows :

Ongoing Projects (Foreign Aided and GoB) : FY 2020-21

(Taka in Million)

Sl.	Name of the Projects	Projects Period	Executing Agency	Estimated Cost (PA)	Development Partners
1.	Natural Gas Efficiency Project [Installation of Gas Compressors at Titas (Location-C) & Narsingdi Gas Fields]	Jul '14 - Jun '22	BGFCL	7250.0 (6387.0)	JICA
2.	Dhanua-Elenga and West Bank of Bangabandhu Bridge-Nalka Gas Transmission Pipeline	Jul '14 - Jun '22	GTCL	8285.1 (4241.1)	JICA
3.	Installation of Prepaid Gas Meter for TGTDCCL	Jan '15 - Dec '22	TGTDCCL	7538.4 (6510.0)	JICA
4.	Installation of Wellhead Compressure at Location-A of Titas Gas Field	Jul '16 - Dec '23	BGFCL	7167.3 (6330.0)	ADB & AIIB
5.	Construction of Chattogram-Feni-Bakhrabad Gas Transmission Parallel Pipeline Project	Jul '16 - Dec '21	GTCL	24794.1 (7348.9)	ADB & AIIB
Sub-Total (foreign-aided)				55034.9 (30817.0)	

GoB funded: FY 2020-21

(Taka in Million)

Sl.	Name of the Projects	Projects Period	Executing Agency	Estimated Cost (PA)
1.	Construction of Bogura-Rangpur-Syedpur Gas Transmission Pipeline Project	Oct '18 - Jun '23	GTCL	13785.5 (0.00)
Sub Total (GoB Funded)				13785.5 (0.00)

Ongoing Projects (Self Financing) : FY 2020-21

(Taka in Million)

Sl.	Name of the Projects	Projects Period	Executing Agency	Estimated Cost (CFE)
1.	Installation of 3000 BPD capacity Catalytic Reforming Unit at Rashidpur to convert Petrol into Octane (2 nd Revised)	Mar'12 - Jun '21	SGFL	4979.8 (3698.7)
2.	Construction of Maheshkhali-Anowara Gas Transmission Parallel Pipeline Project	Jul '16 - Jun '21	GTCL	13147.2 (5117.8)
3.	Construction of Maheshkhali-Zero Point (Kaladiar Char)-CTMS (Dhalghat Char) Gas Transmission Parallel Pipeline Project	Oct '18 - Mar '21	GTCL	3017.7 (2002.3)
4.	Techno-Economic Feasibility Study, Engineering Services and Tender Management Services for Construction of a Land Based LNG Terminal at Matarbari Cox's Bazar	Sep '20-Aug '22	PB	437.0 (280.1)
5.	Consultancy Services for Implementing the Automation of Gas Transmission and Distribution Pipeline Networks under different Companies of Petrobangla	Aug '20-Dec '22	PB	124.4 (60.5)
6.	3D Seismic Survey at Beanibazar under Sylhet Gas Fields Limited	Oct'20-Dec '22	SGFL	463.3 (370.8)
7.	Installation of 50000 Pre-paid Gas Meter at JGTDSL Franchise Area	Jan'21-Dec '22	JGTDSL	1185.5 (560.9)
8.	Workover of Well No. Sylhet-8, Beanibazar-1 & Kailashtilla-7	Jan'21-Dec '22	SGFL	1633.2 (255.4)
9.	Drilling of well No. Kailashtilla-8 (Explotory Well)	Jan'21-Jun '23	SGFL	1502.7 (1067.0)
Sub Total (Self Financed)				26490.8 (13413.5)

Ongoing Projects (Under GDF) : FY 2020-21

(Taka in Million)

Sl.	Name of the Projects	Projects Period	Executing Agency	Estimated Cost (CFE)
1.	Drilling of well no. Sylhet-9 (Appraisal/ Development well)	Dec '13 - Dec '21	SGFL	1712.7 (533.0)
2.	RUPKALPO-2 Drilling Project : 2 Exploratory Wells (Semutang South-1 & Jakiganj -1)	Jul '16 - Sep '21	BAPEX	2140.0 (1408.0)

Sl.	Name of the Projects	Projects Period	Executing Agency	Estimated Cost (CFE)
3.	RUPKALPO-9 Drilling Project : 2-D Seismic	Apr '17 - Jun '21	BAPEX	1058.0 (491.9)
4.	Workover of 7 Wells at Titas, Hobigonj, Narsingdi & Bakhrabad Gas Field	Jan '17- Jun '22	BGFCL	3443.5 (776.5)
5.	RUPKALPO-5 Drilling Project : 2 Exploratory Wells (Srikail North-1 & Mobarokpur South East-1), 1 Development Well (Begumgonj-4) and 1 Workover (Begumgonj-3)	Apr '17 - Jun '19	BAPEX	3000.0 (2148.0)
6.	Procurement & Installation of 60 MMSCFD Process Plant for Shabazpur Gas Field	Jul '20 - Dec '22	BAPEX	960.3 (715.0)
Sub-Total (GDF)				12314.5 (6072.4)
Grand Total (Foreign Aided+ GoB+Self Financing+ GDF)				107625.7 (50302.9)

Source : Planning & Monitoring Division, Petrobangla.



Rashidpur Gas Field Process Plant of SGFL

Future Programmes

Energy is the driving force for the development of the country. The role of energy is important for the entire economic development such as poverty reduction and the overall development of the country. By achieving impressive economic growth for the country, it is possible to improve the living standard of a huge population through proper utilization of the limited resources. It may be mentioned here that the present energy crisis has become acute due to the absence of proper initiatives for the last 7 years until 2009 in the energy sector. As a result, the GDP growth of the country has been hampered in the industry and other production sectors including the power sector. To overcome the stagnant situation, the present Government has been putting its best efforts for ensuring energy supply to accelerate economic development. To achieve this goal short-term, mid-term and long-term plans have been taken for gas and coal extraction, development and production. Furthermore, to ensure the energy supply, 2 FSRUs having the capacity of 500 MMscfd each have been installed at Moheshkhali for regasifying imported LNG and commenced transmission to the national gas grid from August, 2018 and April, 2019 respectively. Initiatives have also been taken for the development of coal fields in line with coal policy being finalized.

In view of the above perspective, following strategies have been taken up for the oil, natural gas and mineral development under the Petrobangla umbrella:

- Adoption of time-based action plan for discovering new gas fields and development of the producing gas fields;
- Make BAPEX more effective in exploring oil and gas through acquiring new rigs and its ancillaries;
- Importing liquefied natural gas (LNG) to compensate increasing gas demand;
- Support Government in finalizing National Energy Policy and Coal Policy to create opportunity for using energy from multiple sources;
- Increasing financial capacity of BAPEX by forming gas development fund; and
- Putting efforts to ensure proper pricing of gas to conserve energy and improve the financial operations of the gas sector.

Sector wise gas demand forecast (FY 2021-22 to 2025-26)

Unit: MMscfd

Sector	2021-22	2022-23	2023-24	2024-25	2025-26
Power	1,428	1,443	1,446	1,454	1,513
Captive Power	645	663	674	685	713
Fertilizer	188	263	267	269	269
Industry	685	771	824	873	1,006
Commercial and Tea	25	25	25	25	25
Domestic	367	361	354	347	341
CNG	124	124	124	124	124
Total	3,461	3,650	3,715	3,777	3,990

Source : Production & Marketing Division, Petrobangla

Plan for Production Augmentation

National exploration and production companies (BAPEX, BGFCL and SGFL) and international oil companies (IOCs) working in Bangladesh have planned a gas production augmentation programme. This programme includes exploration drilling, appraisal cum development drilling and workover on the onshore areas of Bangladesh. It is expected that, after successful completion, the programme will yield an additional amount of gas of 803 MMscfd (state owned fields 618 MMscfd and IOCs 185 MMscfd) through workover and new drilling by the year 2025. Meanwhile, extensive effort has been taken to make offshore model PSC 2019 more attractive and bidding rounds for deep offshore blocks will be held as early as possible. One IOC is going to drill 2 exploration wells in shallow offshore blocks of Bangladesh by 2025. The following table shows the summary of the activities for production augmentation.

Table: Year-wise Drilling and Workover Programmes

FY	Exploration wells	Development wells	Workover wells	Total wells
2020-21	0	0	12	12
2021-22	1	2	6	9
2022-23	5	5	4	14
2023-24	8	4	7	19
2024-25	5	7	6	18
Total	19	18	35	72

Source: BGFCL, SGFL, BAPEX and PSC Directorate

The total number of wells for NOCs and IOCs are 57 and 15 respectively.



RMS Skids Inspection at NBBL 220 MW Combined Cycle Power Plant by SGCL

Natural Gas of Bangladesh

Chemical Composition, Specific Gravity and Calorific Value

No.	Gas Fields	Water Content (Lb/MMscf)	Chemical Composition of Natural Gas (Volume Percent)							Specific Gravity	Gross Calorific (Btu/cft)	Hydrogen Sulphide	
			Methane	Ethane	Propane	Iso-Butane	N-Butane	High Comp.	N2				CO2
1	Sylhet	1.200	95.349	2.542	0.974	0.247	0.296	0.165	0.247	0.180	0.5896	1056.878	Nil
2	Chhatak	n/a	97.900	1.800	0.200	-	-	-	-	-	0.5500	1005.710	Nil
3	Rashidpur	1.200	98.489	0.802	0.148	0.053	0.028	0.046	0.338	0.096	0.5637	1017.234	Nil
4	Kailashilla	0.700	96.217	2.588	0.674	0.098	0.075	0.019	0.310	0.018	0.5773	1042.726	Nil
5	Titas	4.500	96.587	1.900	0.406	0.099	0.060	0.166	0.343	0.440	0.5790	1032.000	Nil
6	Habiganj	4.200	97.650	1.543	0.006	0.000	0.000	0.002	0.790	0.008	0.5648	1014.000	Nil
7	Bakhrabad	4.800	93.700	3.790	0.834	0.246	0.116	0.233	0.495	0.585	0.5989	1057.000	Nil
8	Semutang	n/a	96.079	2.499	0.415	0.103	0.056	0.096	0.209	0.542	0.5818	1037.080	
9	Begumganj	n/a	95.460	3.190	0.640	0.170	0.040	-	-	0.300	0.5800	1045.610	Nil
10	Kutubdia	n/a	95.720	2.870	0.670	-	0.310	-	0.360	0.070	0.5900	1041.660	Nil
11	Beanibazar	4.400	93.536	3.499	1.324	0.309	0.274	0.603	0.354	0.099	0.6089	1086.418	Nil
12	Feni	n/a	95.710	3.290	0.650	0.150	0.050	-	-	0.150	0.5800	1049.840	Nil
13	Kamta	n/a	95.360	3.570	0.470	0.090	-	-	-	0.510	0.5700	1043.130	Nil
14	Fenchuganj	n/a	97.264	1.452	0.135	0.036	0.012	0.070	0.212	0.819	0.5743	1018.390	Nil
15	Jalalabad	n/a	95.986	2.509	0.433	0.300	0.066	0.375	0.254	0.075	0.5885	1056.066	n/a
16	Narsingdi	4.200	95.264	2.702	0.593	0.172	0.096	0.233	0.351	0.589	0.5893	1044.000	Nil
17	Meghna	4.400	95.185	3.050	0.667	0.169	0.096	0.209	0.390	0.234	0.5878	1050.000	Nil
18	Shahbazpur	n/a	94.553	3.555	0.569	0.159	0.058	0.062	0.201	0.842	0.5913	1044.570	Nil
19	Sangu	n/a	94.510	3.170	0.610	0.190	0.070	0.410	0.440	0.600	0.5900	1058.000	n/a
20	Saldanadi	n/a	96.959	1.781	0.324	0.079	0.048	0.095	0.129	0.583	0.5770	1029.860	Nil
21	Bibiyana	n/a	94.880	2.442	0.873	0.280	0.253	0.926	0.195	0.153	0.6107	1060.000	Nil
22	Bangura	2.110	95.482	2.564	0.661	0.146	0.146	0.194	0.309	0.664	0.5884	1049.200	Nil
23	Moulavibazar	n/a	98.198	1.002	0.160	0.042	0.022	0.087	0.356	0.131	0.5673	1020.220	Nil
24	Shahjadpur Sundalpur	n/a	98.349	0.908	0.070	0.001	0.004	0.003	0.558	0.106	0.5634	1013.520	Nil
25	Srikail	n/a	95.928	2.452	0.527	0.135	0.078	0.134	0.130	0.616	0.5847	1041.050	Nil

Natural Gas Tariff in Bangladesh

(As in December, 2021)

Taka/MCF

Effective From	Power	Fertilizer	Industry	Commercial	Tea estate	Cap. Power	CNG feed gas	Brick field (seasonal)	Domestic		
									Metered	Single Burner	Double Burner
29.07.1968	1.20	1.20	2.52	6.00	-	-	-	-	6.00	6.00	10.00
28.06.1969	1.60	1.60	2.92	6.40	-	-	-	-	6.40	6.30	10.50
19.06.1974	3.72	3.72	7.20	12.00	-	-	-	-	12.00	15.00	28.00
01.12.1977	5.00	5.00	9.00	13.00	-	-	-	-	13.00	16.00	30.00
02.06.1979	6.25	6.25	16.00	17.00	-	-	-	-	16.00	20.00	36.00
07.06.1980	7.75	7.75	18.00	19.00	-	-	-	-	18.00	22.00	40.00
07.06.1981	9.30	9.30	27.75	28.00	-	-	-	-	20.00	25.00	45.00
01.07.1982	10.50	10.50	31.00	31.00	-	-	-	-	27.00	35.00	65.00
30.06.1983	11.50	11.50	36.00	36.00	-	-	-	-	34.00	45.00	80.00
27.06.1984	13.05	13.05	36.00	45.20	-	-	-	51.00	34.00	45.00	80.00
30.06.1985	15.66	15.66	43.20	54.24	-	-	-	61.20	40.80	60.00	100.00
28.06.1986	19.09	19.09	52.14	65.39	-	-	-	78.30	44.88	66.00	110.00
18.06.1987	24.82	24.82	52.14	85.00	72.30	-	-	78.30	56.10	80.00	130.00
01.07.1988	28.54	28.54	59.96	97.75	83.15	-	-	90.05	56.10	92.00	150.00
01.07.1989	33.00	28.54	70.00	110.00	83.15	-	-	-	65.00	100.00	170.00
01.07.1990	37.95	32.82	80.42	126.50	95.62	-	-	-	74.75	115.00	195.00
01.07.1991	39.08	33.98	85.23	134.22	100.62	-	-	106.19	74.75	115.00	195.00
01.05.1992	43.05	37.39	93.74	134.22	110.16	-	43.05	116.67	82.12	126.00	215.00
01.03.1994	47.57	41.34	103.07	147.53	113.26	-	-	128.28	82.12	160.00	250.00
01.12.1998	54.65	47.57	118.93	169.90	130.26	86.37	-	147.25	94.86	185.00	290.00
01.09.2000	62.86	54.65	136.77	195.39	149.80	99.11	-	169.33	109.02	210.00	330.00
01.01.2002	65.98	57.48	143.57	205.30	157.16	104.21	-	177.83	114.40	275.00	350.00
01.09.2002	70.00	60.00	140.00	220.00	140.00	100.00	-	220.00	120.00	325.00	375.00
15.02.2003	-	-	-	-	-	-	70.00	-	-	-	-
01.07.2004	72.45	62.15	145.20	228.50	145.20	-	-	228.50	126.10	340.00	390.00
01.09.2004	-	-	-	-	-	103.50	-	-	-	-	-
01.01.2005	73.91	63.41	148.13	233.12	148.13	105.59	-	233.00	130.00	350.00	400.00
25.04.2008	-	-	-	-	-	-	282.30	-	-	-	-
01.08.2009	79.82	72.92	165.91	268.09	165.91	118.26	-	-	146.25	400.00	450.00
12.05.2011	-	-	-	-	-	-	509.70	-	-	-	-
19.09.2011	-	-	-	-	-	-	651.29	-	-	-	-
01.09.2015	-	-	190.86	321.68	182.64	236.73	764.55	-	198.22	600.00	650.00
01.03.2017	84.67	74.76	205.01	402.10	196.24	254.29	849.50	-	257.68	750.00	800.00
01.06.2017	89.48	76.74	219.74	482.52	210.11	272.41	906.14	-	317.15	900.00	950.00
01.08.2017	89.48	76.74	219.74	482.52	210.11	272.41	906.14	-	257.68	750.00	800.00
18.09.2018	89.48	76.74	219.74	482.52	210.11	272.41	906.14	-	257.68	750.00	800.00
01.07.2019	126.00	126.00	302.99	*651.28 **482.52	302.99	392.18	991.08	-	356.80	925.00	975.00

*Hotel & restaurant, **Small & cottage industry

Source : Accounts Division, Petrobangla.

Gas Fields in Production and Supply Scenario

(As in December, 2021)

Gas in MMscfd, Condensate in BBL

Company	Gas Field	Total Wells (No.)	No of Producing Wells	Production Capacity (MMscfd)	Production	
					Gas	Condensate
1. BGFCL	Titas	27	22	408	398	348
	Bakhrabad	10	6	35	35	47
	Habiganj	11	7	153	157	9
	Narsingdi	2	2	27	27	49
	Meghna	1	1	7	7	14
	Sub-Total	51	38	630	625	467
2. SGFL	Sylhet	8	3	7	6	31
	Kailashtila #1 (Silicagel)	4	1	29	4	22
	Kailashtila #2 (MSTE)	3	2		25	333
	Rashidpur	11	5	44	45	39
	Beanibazar	2	1	7	7	110
	Sub-Total	28	11	87	87	536
3. BAPEX	Saldanodi	4	2	2	3	0
	Fenchuganj	5	2	17	14	10
	Shahbazpur	5	4	85	61	7
	Semutung	6	1	1	1	0
	Sundalpur	2	1	8	8	0
	Srikail	4	4	38	39	174
	Begumganj	3	1	9	8	2
	Rupganj	1	0	0	0	0
	Sub-Total	30	15	160	133	194
Sub-Total (1+2+3)	109	64	877	846	1196	
4. IOCs						
CHEVRON	Jalalabad	9	5	197	206	1037
	Moulvibazar	9	4	14	15	0
	Bibiyana	26	26	1170	1189	4862
TULLOW	Bangora	6	5	55	48	142
Sub-Total	50	40	1436	1458	6041	
5. RPGCL	Indigenous	159	104	2313	2303	7238
	R-LNG	0	0	1000	543	0
	Sub-Total	0	0	1000	543	0
	Grand Total (1+2+3+4+5):	159	104	3313	2846	7238

Source : Production & Marketing Division, Petrobangla.

Growth Trajectory of Customer

Year	TGTDCL	BGDCL	JGTDCL	PGCL	KGDCL	SGCL	TOTAL
Year	TGTDCL	BGDCL	JGTDCL	PGCL	KGDCL	SGCL	TOTAL
1989-90	330698	59937	32355	-	-	-	422990
1990-91	346473	68129	34968	-	-	-	449570
1991-92	364403	75028	37844	-	-	-	477275
1992-93	386226	87741	40556	-	-	-	514523
1993-94	414833	100402	43247	-	-	-	558482
1994-95	453922	112118	47285	-	-	-	613325
1995-96	493261	124159	51819	-	-	-	669239
1996-97	541767	140443	56918	-	-	-	739128
1997-98	588231	156294	61886	-	-	-	806411
1998-99	636415	175525	65966	-	-	-	877906
1999-00	684401	195374	70428	100	-	-	950203
2000-01	769000	214000	67000	1000	-	-	1051000
2001-02	833979	243887	72555	1558	-	-	1151979
2002-03	907946	271526	76923	3957	-	-	1259798
2003-04	979195	298060	83997	5714	-	-	1366412
2004-05	1041732	325089	90506	7684	-	-	1465013
2005-06	1110175	355958	98511	19254	-	-	1583898
2006-07	1239900	395508	107467	28898	-	-	1771773
2007-08	1350187	433887	117142	38607	-	-	1939823
2008-09	1458743	466355	127053	49522	-	-	2101673
2009-10	1556560	510954	137523	58405	-	-	2263442
2010-11	1563290	190596	149725	59086	369703	-	2332400
2011-12	1563307	206213	162615	59171	369703	-	2361009
2012-13	1565801	207938	177974	59725	369703	-	2381141
2013-14	1722712	318435	192943	96492	472602	-	2803184
2014-15	1897316	399540	209489	119483	533273	-	3159101
2015-16	2023005	489519	223784	128893	602074	3082	3470357
2016-17	2734546	492678	223715	128589	602074	3073	4184675
2017-18	2777343	491647	223668	128290	602085	4370	4227403
2018-19	2865907	491453	223673	128220	602189	6947	4318389
2019-20	2874848	490824	223663	128265	602245	8914	4328759
2020-21	2875813	490568	221459	126869	602338	2386	4319433
Up to Dec.'21	2876607	490523	221452	126597	602363	2386	4319928

Source : Production & Marketing Division, Petrobangla.

Natural Gas Reserve of Bangladesh

(As of 31 December, 2021)

Figure in BCF

SL. No.	Fields	Year of Discovery	Reserve Estimated By		GIIP	Recoverable Reserve			Cumulative Production December'2021	Remaining Reserve w.r.t 2P (1 st January, 2022)
			Company	Year		Proved (1P)	Proved + Probable (2P)	Proved + Probable + Possible (3P)		
A. Producing										
1	Titas	1962	RPS Energy	2009	8148.9	5384.0	6367.0	6517.0	5072.51	1294.49
2	Habiganj	1963	RPS Energy	2009	3684.0	2647.0	2647.0	3096.0	2634.69	12.31
3	Bakhrabad	1969	RPS Energy	2009	1701.0	1052.9	1231.5	1339.0	867.97	363.56
4	Kailashtilla	1962	RPS Energy	2009	3610.0	2390.0	2760.0	2760.0	745.77	2014.23
5	Rashidpur	1960	RPS Energy	2009	3650.0	1060.0	2433.0	3113.0	675.58	1757.42
6	Sylhet/Haripur	1955	RPS Energy	2009	370.0	256.5	318.9	332.0	219.67	99.23
7	Meghna	1990	Gustavson	2010	122.1	101.0	101.0	101.0	79.49	21.51
8	Narshingdi	1990	RPS Energy	2009	369.0	218.0	276.8	299.0	229.87	46.93
9	Beani Bazar	1981	RPS Energy	2009	230.7	150.0	203.0	203.0	111.15	91.85
10	Fenchuganj	1988	RPS Energy	2009	553.0	229.0	381.0	498.0	166.22	214.78
11	Shaldanadi	1996	RPS Energy	2009	379.9	79.0	279.0	327.0	95.03	183.97
12	Shahbazpur**	1995	Petrobangla	2011	918.1	-	642.7	488.0	110.70	531.98
13	Semutang	1969	RPS Energy	2009	653.8	151.0	317.7	375.1	13.92	303.78
14	Sundalpur Shahzadpur	2011	BAPEX	2012	62.2	25.0	35.1	43.5	20.13	14.97
15	Srikail	2012	BAPEX	2012	240.0	96.0	161.0	161.0	117.12	43.88
16	Begumganj	1977	BAPEX	2014	100.0	14.0	70.0	0.0	8.28	61.72
17	Jalalabad*	1989	D & M	1999	1499.0	1499.0	1499.0	-	1499.03	-
18	Moulavi Bazar	1997	Unocal	2003	1053.0	405.0	428.0	812.0	338.44	89.56
19	Bibiyana	1998	D & M	2008	8350.0	4415.0	5755.4	7084.0	4991.60	763.83
20	Bangura	2004	Tullow	2011	1198.0	379.0	714.0	941.0	515.54	198.463
Sub-total A:					36892.8	20551.4	26621.2	28489.6	18512.69	8108.46
B. Non-Producing										
21	Kutubdia	1977	HCU	2003	65.0	45.5	45.50	45.5	0.00	45.50
22	Bhola North1	2018	BAPEX	2018	621.9	-	435.32	-	-	435.32
23	Zakiganj	2021	BAPEX	2021	75.9	-	53.13	-	-	53.13
Sub-total B:					762.8	45.5	534.0	45.5	0.00	533.95
C. Production Suspended										
24	Rupganj	2014	BAPEX	2014	48.0	-	33.60	-	0.68	32.92
25	Chattak	1959	HCU	2000	1039.0	265.0	474.0	727.0	26.46	447.54
26	Kamta	1981	Niko/Bapex	2000	71.8	50.3	50.3	50.3	21.1	29.20
27	Feni	1981	Niko/Bapex	2000	185.2	125.0	125.0	175.0	62.4	62.60
28	Sangu***	1996	Cairn/Shell	2010	899.6	544.4	577.8	638.7	487.91	89.85
Sub-total C:					2243.6	984.7	1260.7	1591.0	598.5	662.11
Grand Total (A+B+C) in BCF					39899.1	21581.7	28415.77	30126.1	19111.24	9304.53
Grand Total (A+B+C) in TCF					39.90	21.58	28.42	30.13	19.11	9.30

Note: * The cumulative production of Jalalabad gas field have been shown as 1P and 2P reserve. Reserve re-evaluation of Jalalabad gas field is under way.

** 2P Reserve of Shabazpur gas field including Shabazpur East-1 re-estimated by BAPEX is 642.7 Bcf.

*** Production from Sangu gas field suspended since 1st October, 2013

Major Gas Transmission Pipelines and Flow Capacity

Company	Name of the Line and Route	Diameter (Inch)	Length (Km)	Oper. Pres. (Psig)	Max. Flow Capacity (MMscfd)	
GTCL	1. North – South	24	175.00	1000	400	
	2. Ashuganj-Bakhrabad	30	58.50	1000	400	
	Paschimanchal Gas Transmission Project					
	3.	(a) Bangabandhu Bridge Section	30	9.00	1000	450
		(b) Elenga-Nalka	24	28.50	1000	250
		(c) Nalka-Baghabari	20	35.50	1000	250
	4. BeaniBazar-Kailashtila	20	18.00	1000	200	
	5. Habiganj-Ashuganj	30	54.00	1000	500	
	6. Rashidpur-Habiganj (1 st Phase)	30	28.00	1000	500	
	Nalka-Bogura:					
	7.	(a) Nalka - Hatikumrul	30	6.00	1000	400
		(b) Hatikumrul - Bogura	20	54.00	1000	250
	8. Monohordi-Dhanua & Elenga-Bangabandhu Bridge East	30	51.00	1000	400	
	9. Bakhrabad – Demra	20	68.72	960	250	
	10. Bakhrabad – Chattogram	24	174.65	960	300	
	11. Ashuganj – Elenga	24	124.00	1000	350	
	12. Ashuganj - VS3	20	3.50	1000	200	
	13. Ashuganj-Monohordi	30	37.00	1000	450	
	14. Dhaka Clean Fuel Project (GTCL Part)	20	60.00	1000	280	
	15. Bonpara-Rajshahi	12	53.00	1000	150	
	16. Hatikumrul-Ishardi-Bheramara	30	84.00	1000	400	
	17. Titas Gas Field (Location-G) to AB Pipeline	24	8.00	1000	250	
	18. Srikail-AB	20	1.50	1000	250	
	19. Bibiyana-Dhanua	36	137.00	1000	650	
	20. Bakhrabad-Siddhirganj	30	60.00	1000	450	
	21. Titas Gas Field (Location- C, B & A) Titas-AB Interconnection Pipeline	10	7.70	1000	150	
	22. Gas Transmission Capacity Expansion-Ashuganj to Bakhrabad	30	61.00	1000	450	
	23. Bheramara-Khulna	20	163.03	1000	250	
	24. Titas Gas Field Well 23 & 24 (Sharail) to Khatihata & Well 25 & 26 (Malihata) to Khatihata	20	3.30	1000	250	
	25. Moheshkhali-Anwara	30	91.00	1000	500	
26. Anwara-Fouzdarhat	42	30.00	1000	1200		
27. Dhanua-Elenga-Bangabandhu Bridge – Nalka	30	67.00	1000	400		
28. Moheshkhali Zero Point (Kaladiar Char)-CTMS	42	7.00	1000	1200		
29. Moheshkhali-Anowara Parallel	42	79.00	1000	1200		
30. Chattogram-Feni-Bakhrabad	36	181.00	1000	800		

Company	Name of the Line and Route	Diameter (Inch)	Length (Km)	Oper. Pres. (Psig)	Max. Flow Capacity (MMscfd)	
TGDCL	31. Titas – Dhaka	14	81.80	1000	175	
	32. Titas – Narshingdi	16	46.31	1000	265	
	33. Narshingdi-Joydevpur	14	37.51	1000	220	
	34. Narshingdi-Ghorasal	14	10.30	1000	220	
	35. Habiganj-Ashuganj	12	57.75	1000	85	
	36. Monohardi-Narshingdi	20	24.50	1000	300	
	37. Monohardi – Kishorganj	4	35.00	1000	6	
	38. Ashuganj V.S. #3-ZFCL	10	4.00	1000	95	
	39. Elenga-Tarakandi	12	42.41	1000	80	
	40. Dhonua – Mymensingh	12	56.70	1000	55	
	41. Tarakandi-Jamalpur	8/6	21.00	1000	25	
	42. Mymensingh – Netrokona	8/6	40.00	1000	60	
	KGDCL	43. Chattogram Ring Main	24/20/16	57.00	350	330
		44. KPM Spur	8	18.00	350	18
45. Chattogram - Rauzan		20	18.00	350	150	
46. Semutang - Chattogram		10	56.00	960	70	
47. Haripur - NGFF		-	43.00	1000	62	
48. Kailashtila - Kuchai		8	13.00	1000	62	
JGTDSL	49. Kuchai - Chatak	6	39.00	1000	36	
	50. Devpur - Kumargaon	6	11.00	1000	36	
	51. Habiganj - Shahji Bazar	8	2.00	1000	53	
	52. Shahaji Bazar - Shamsheer Nagar	6	65.00	1000	11	
	53. Srimongal - Moulvibazar	6	26.00	1000	11	
	54. Chatak - Tengratila	4	19.00	1000	10	
	55. Tengratila - Sunamganj	4	13.00	1000	10	



Pipeline Welding & Tie-in Connection in Bogura by PGCL

Category-wise Annual Gas Sales

(FY 1990-91 to FY 2020-21)

Gas volume in billion cubic feet (BCF)

Year	Production & Imported		Bulk Sales		Non Bulk Sales				Sub Total	Total Sales	UFG	Total Production				
	Gas Production	R-LNG	Power	Fertilizer	Com-mercial	Tea/CNG	Brick Field	Industry								
1990-91	172.8		82.6	54.2	136.8			13.2	10.5	2.9	0.7	0.0	27.3	164.1	8.7	172.8
1991-92	188.5		88.1	61.6	149.7			13.4	11.6	2.9	0.7	0.2	28.8	178.3	10.2	188.5
1992-93	211.0		93.3	69.2	162.5			15.2	13.5	2.4	0.7	0.2	32.0	194.3	16.7	211.0
1993-94	223.8		97.3	74.5	171.8			20.3	15.4	2.9	0.7	1.1	40.4	211.0	12.8	223.8
1994-95	247.4		107.4	80.5	187.9			24.2	18.9	2.9	0.6	1.1	47.7	234.5	12.9	247.4
1995-96	265.5		110.9	91.0	201.9			27.3	20.7	3.0	0.7	1.0	52.7	253.6	11.9	265.5
1996-97	261.0		110.8	77.8	188.6			28.6	22.8	4.5	0.7	0.5	57.1	245.3	15.7	261.0
1997-98	282.0		123.6	80.1	203.7			32.3	24.9	4.6	0.7	0.4	62.9	266.2	15.8	282.0
1998-99	307.5		140.8	82.7	223.5			35.8	27.0	4.7	0.7	0.4	68.6	291.8	15.7	307.5
1999-00	332.4		147.6	83.3	230.9			41.5	29.6	3.9	0.6	0.4	76.0	306.5	25.9	332.4
2000-01	372.2		175.3	88.4	263.7			48.0	31.9	4.1	0.7	0.5	85.1	348.3	23.9	372.2
2001-02	391.5		190.0	78.8	268.8			53.6	36.7	4.3	0.7	0.5	95.8	364.1	27.4	391.5
2002-03	421.2		190.5	95.9	286.4			63.8	44.8	4.6	0.9	0.1	114.6	400.5	20.7	421.2
2003-04	452.8		*231.4	92.8	324.2			46.5	49.2	4.8	2.7	0.1	103.3	427.5	25.3	452.8
2004-05	486.8		*248.9	94.0	342.9			51.7	52.5	4.9	4.4	0.0	113.5	456.3	30.5	486.8
2005-06	527.0		*273.3	89.09	362.39			63.3	56.7	3.3	7.6	0.0	130.9	493.3	33.7	527.0
2006-07	562.2		*314.6	62.5	377.1			77.5	63.3	5.7	12.8	0.0	159.3	536.2	26.0	562.2
2007-08	600.9		*314.5	78.7	393.2			92.2	69.0	6.6	23.6	0.0	191.4	584.6	16.3	600.9
2008-09	653.8		*351.0	74.9	425.9			104.4	73.8	7.5	31.7	0.0	217.4	643.2	10.6	653.8
2009-10	703.6		*395.8	64.7	460.5			118.8	82.7	8.1	40.1	0.0	249.7	710.2	(6.6)	703.6
2010-11	708.9		*395.0	62.8	457.8			121.5	87.4	8.5	39.3	0.0	256.7	714.5	(5.6)	708.9
2011-12	743.7		*427.9	58.4	486.3			128.5	89.2	8.6	39.4	0.0	265.7	751.7	(8.0)	743.7
2012-13	800.6		*462.9	60.0	522.9			135.7	89.7	8.8	41.0	0.0	275.2	798.2	2.4	800.6
2013-14	820.4		*481.2	53.8	535.0			141.9	101.5	8.9	40.9	0.0	293.2	828.1	(7.7)	820.4
2014-15	892.2		*504.8	53.8	558.6			147.7	118.2	9.1	43.7	0.0	318.7	877.3	14.9	892.2
2015-16	973.2		*560.4	52.6	613.0			156.0	141.5	9.0	47.4	0.0	353.9	966.9	5.6	972.5
2016-17	969.2		*564.1	49.1	613.2			163.1	154.4	8.7	47.0	1.0	374.1	987.3	(19.6)	967.7
2017-18	968.7		*559.2	43.0	602.2			166.6	158.0	8.2	46.2	0.9	379.8	982.0	(13.9)	968.0
2018-19	961.7	116.0	*608.4	57.7	666.1			164.5	158.9	7.9	43.4	1.0	375.7	1041.8	18.3	1060.1
2019-20	882.6	203	*607.5	54.6	662.1			155.7	132.7	6.7	37.2	0	386.9	994.4	91.2	1085.6
2020-21	889	215	*594.8	64.7	659.5			181.8	134.2	6.0	36.1	0	358.0	1017.5	86.5	1104
Up to Dec, 21	428	123	*303.4	25.5	328.9			93.1	66.0	2.9	18.5	0	180.5	509.4	41.6	551

* Including captive power

UFG : Un-accounted for gas (system loss plus pilferage/system gain)

Source : Production & Marketing Division, and MIS Report (December, 2020), Petrobangla.

Payment to National Exchequer

Taka in Million

Year	SD+VAT	DSL	Income Tax	Dividend	CD/VAT	Royalty	Corporate Surplus Fund	Total
1998-99	9116.9	2984.9	1030.6	1500.0	168.0	-	-	14800.4
1999-00	8618.9	3253.3	1105.1	1150.0	131.9	-	-	14259.2
2000-01	11049.2	2503.8	1142.1	1058.6	93.0	-	-	15846.7
2001-02	10541.3	3327.3	917.2	1428.9	122.6	-	-	16337.3
2002-03	15576.4	3395.9	1456.8	1499.8	684.7	-	-	22613.7
2003-04	18235.2	3708.9	1620.4	1750.0	393.5	-	-	25708.0
2004-05	18481.0	3681.1	2530.6	2000.0	596.2	-	-	27288.8
2005-06	18526.7	3440.0	3597.8	2154.8	383.2	12.5	-	28115.0
2006-07	18801.5	4145.5	3665.1	2500.0	329.2	12.6	-	29453.9
2007-08	17900.6	3223.4	6490.5	-	350.1	60.9	-	28025.4
2008-09	19313.5	3533.0	7507.6	1715.3	554.7	6.3	-	32630.3
2009-10	20064.7	3331.2	10057.5	3281.6	2211.1	655.3	-	39601.3
2010-11	21625.5	3209.0	11050.9	4198.4	884.2	714.0	-	41682.0
2011-12	26668.1	2989.3	9378.9	3875.8	1470.6	1000.6	-	45383.3
2012-13	23861.6	3350.1	14257.2	8395.8	4596.4	1404.7	-	55865.8
2013-14	31616.0	2856.3	11854.2	4460.8	1443.0	1549.1	-	53779.4
2014-15	37498.6	2392.3	9471.7	11009.0	1425.4	245.5	-	62042.5
2015-16	48432.4	3269.4	15523.8	6900.9	744.2	345.2	-	75215.9
2016-17	93498.2	7589.7	20206.5	9089.1	1258.9	252.4	-	131894.9
2017-18	121934.7	4435.2	19440.0	8435.8	2306.7	673.7	-	157226.0
2018-19	79089.0	4435.2	19424.0	8063.9	3516.5	326.1	-	114854.7
2019-20	23253.9	6392.8	18655.2	8548.6	3210.7	714.2	-	60775.4
2020-21	373671.2	5971.0	7314.9	18235.1	34208.6	677.7	40000.0	143774.5

Source: Accounts Division, Petrobangla

annual report 2021

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