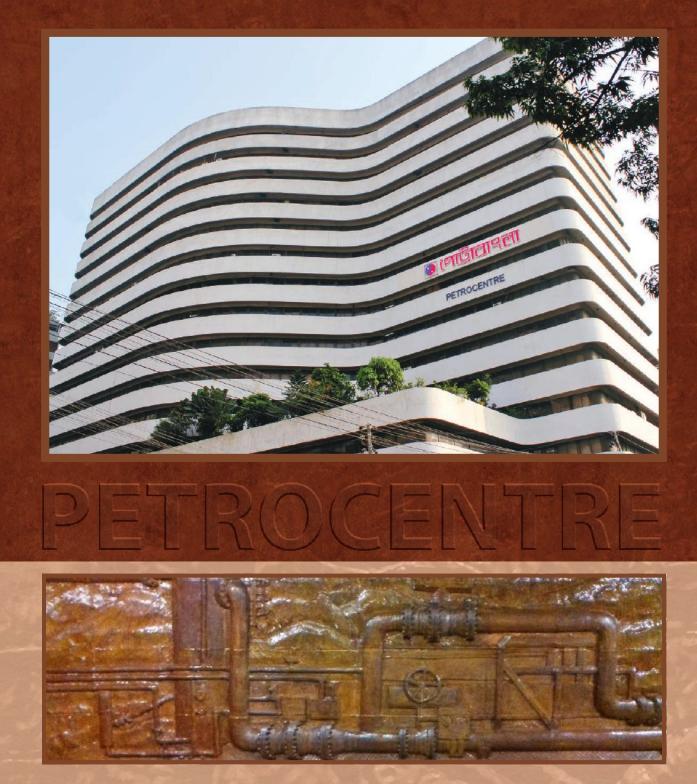




# PETROBANGLA



# ANNUAL REPORT 2015



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# **PETROBANGLA** BANGLADESH OIL, GAS AND MINERAL CORPORATION

Petrocentre, 3 Kawran Bazar Commercial Area, Dhaka-1215, Bangladesh GPO Box No-849, Tel : PABX : 9121010-16, 9121035-41, Fax : 880-2-9120224 E-mail : petchair@petrobangla.org.bd, Website : www.petrobangla.org.bd



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# OUR <u>VISION</u>

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

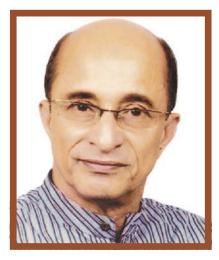


Hon`ble Prime Minister Sheikh Hasina at a meeting in the EMRD

# 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

# PETROBANGLA 201 ANNUAL REPORT





Tawfiq-e-Elahi Chowdhury, BB, PhD Adviser (Minister) to the Hon'ble Prime Minister Power, Energy and Mineral Resources Affairs Government of the People's Republic of Bangladesh.

# MESSAGE

Bangladesh has engineered a unique development paradigm of steady economic growth with broad range of improvements in the life of the ordinary citizens as demonstrated by the human development indicators. At its heart is the visionary and focused leadership of Prime Minister Sheikh Hasina. The country has already achieved low middle income status and is in the cusp of becoming middle income by 2021.

Steady and adequate supply of primary energy is the sine qua non for economic growth and development. Petrobangla with its subsidiary companies and through PSCs is the sole provider of domestic natural gas and coal supplies in the country. During the last seven years, 2009-2015, it has been able to increase the supply by almost 40%. Existing assets facing decline in not too distant future and the demand on a steady rise, it is faced with the challenge of finding new sources of hydrocarbon both onshore and the sea. The finalization of maritime boundaries between Bangladesh and India as also Myanmar has opened new opportunities that need to be harnessed too. With a vigorous plan for exploration, I am hopeful that Petrobangla, InshaAllah, would be able to meet the national aspirations. I am glad to learn that it is also working to arrange imported supply of LNG by setting up an FSRU to keep the wheel of the economy.

It is equally important that the users undertake measures to improve and enhance efficiency of existing and future operations. Demand management and responsible use of energy services will also significantly contribute in ensuring energy security.

I am confident that Petrobangla would rise to the challenges ahead and support the future development of Bangladesh - in the making of the Sonar Bangla - the dream of the Father of the Nation, Bangabandhu Sheikh Mujibur Rahman.

Joy Bangla, Joy Bangabandhu

Long Live Bangladesh

Dr. Tawfiq-e-Elahi Chowdhury, Bir Bikram





Nasrul Hamid MP Minister of State Ministry of Power, Energy and Mineral Resources Government of the People's Republic of Bangladesh

# MESSAGE

I am delighted to know that Bangladesh Oil, Gas and Mineral Corporation (Petrobangla) is going to publish its Annual Report, 2015 encompassing the activities of the organization for the financial year 2014-15. I welcome to all who are related to publish this time demanding report.

The demand for energy is increasing rapidly with socio-economic development of the country. To mitigate the demand-supply gap, we are in progress for installation of a Floating Storage and Re-gasification Unit (FSRU) at Moheshkhali in Chittagong with a capacity of supplying 500 million cubic feet gas daily. The construction of transmission pipeline from Moheshkhali to Anowara, for feeding gas to the national grid from this terminal, is underway. In addition, steps have been taken to construct two land-based LNG terminals - one at Moheshkhali and the other at Paira port. Initiation has been taken by the Government to drill 108 wells in onshore by 2021.

Presently, high quality bituminous coal worth four and a half thousand tons is extracted daily from the country's lone producing coal mine at Barapukuria. Studies are underway to produce coal from Dighipara coal mine vis a vis expansion of production from existing Barapukuria field.

I am confident that the robust growth attained by the energy sector due to the pragmatic policy of the government led by Hon'ble Prime Minister Sheikh Hasina will open up a new vista of economic development leading the country to achieve the status of a middle-income country within 2021. I hope every employee of Petrobangla and its associates organizations will do their best to ensure the energy security.

I wish every success of this Annual Report 2015.

Joy Bangla, Joy Bangabandhu

Long Live Bangladesh.

(Nasrul Hamid)

# PETROBANGLA 201 ANNUAL REPORT





#### Secretary

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

# MESSAGE

I am pleased to know that Bangladesh Oil, Gas and Mineral Corporation (Petrobangla) is publishing its Annual Report, 2015 focusing on the activities of Petrobangla and its companies.

Petrobangla, the flagship organization of the country's primary energy sector, is entrusted with the responsibilities of exploring, developing, producing and marketing natural gas and extracting coal. All those activities made this organization extremely potential in playing a vital role fuelling country's economy. At present, natural gas accounts for about three-quarters of commercial energy consumption of the country. 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 country's development goal as 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 am hopeful that Petrobangla will play a greater role in catapulting our economy to a higher growth trajectory. I wish Petrobangla every success in its ongoing and future ventures.

andrum

(Nazimuddin Chowdhury)



Chairman Petrobangla



# INTRODUCTION

Since the early 1960's, indigenous natural gas has been playing very important role in the economy of Bangladesh. Due to its versatile use and affordable price, natural gas has been the principal fuel in the country for a quite long time. Although the energy mix of Bangladesh is diversifying slowly, indigenous natural gas still accounts for about three-quarters of commercial primary energy and more than half of the all primary energy supplies in the country. It is indeed a constant challenge to ensure supply of natural gas resources to fuel the economic growth of the country against the backdrop of sharply rising demand.

Bangladesh Oil, Gas and Mineral Corporation (Petrobangla) entrusted with the responsibilities of exploration, production, transportation and marketing of natural gas in the country has been continuing its efforts for making natural gas available to its consumers. Along with its traditional role of producing and supplying fuel from the indigenous sources, Petrobangla is set to be a importer and marketer of imported natural gas in the form of Liquefied Natural Gas (LNG) from 2017 in order to supplement indigenous natural gas to meet the demand.

Annual Report, 2015 of Petrobangla provides an overview of the key activities, projects and performances of the corporation in the FY 2014-15, together with its future plans and priorities as it moves forward with 13 companies under it with the objective of achieving an energy system that is environment-friendly, sustainable and affordable.

In the year 2014-15, Petrobangla and its companies produced 892 Billion Cubic Feet (BCF) of natural gas, which was equivalent to 22.3 million metric tons of oil worth 11.7 billion US dollars. Besides, about 3 million barrels of condensate was extracted from natural gas this year. A portion of it was fractionated into petrol, diesel and kerosene at the process plants of 3 companies under Petrobangla, and rest of the condensate was sold to Bangladesh Petroleum Corporation (BPC) and private fractionation plants. The only coal mining company of Petrobangla extracted about 676 thousand metric tons of coal this year. Petrobangla and the companies under its umbrella provided fuels worth around US\$ 12.0 billion in aggregate to the energy basket of the country in FY 2014-15.

PETROBANGLA 2015 ANNUAL REPORT

Since the discovery of natural gas first in Bangladesh in the year 1955, until today 26 gas fields have been discovered in this country. Total initial recoverable proven and probable gas reserve of 26 fields has been estimated to be at 27.12 TCF, out of which estimated proven recoverable reserve (P1) is 20.77 TCF and the recoverable probable (P2) reserve is 6.35 TCF. Up to December, 2015 as much as 13.52 TCF gas was produced, leaving only 13.60 TCF of recoverable gas in 2P category. Currently, 20 gas fields are in production with 101 wells on-stream. Gas supply in the country increased from 600.86 BCF in FY 2007-08 to 892 BCF in FY 2014-15 due to various development programmes undertaken by Petrobangla during this period. Of this production, grid power consumed the largest part about 354.8 BCF (40.44%) followed by industry and captive power which consumed 147.7 BCF (17.10%) and 150.0 BCF (16.84%) respectively, fertilizer 53.8 BCF (6.13%), domestic 118.2 BCF (13.47%), CNG 42.9 (4.89%) and commercial and tea-estates together 9.5 BCF (1.1%) in FY 2014-15.

As an industry, we are facing formidable challenges. New sources of hydrocarbons have become more difficult to reach. At the same time, growing population and per capita incomes are continuing to driven growing demand for energy. In recent years, the demand for natural gas has seen a sharp rise outpacing supply. Consequently, the gap between supply and demand is increasing day by day at a higher rate persistently despite marked increase in production. It may be noted that the country's gas requirement is mounting keeping pace with the growth in economic activity. With rising demand, the known reserve of natural gas in the country is depleting at increasing rates. However, to replenish the depleted resource, massive exploration and drilling activities have been launched. It may be noted with great concern that during the preceding seven years until 2009, exploration activities were almost stagnant. However, exploration activities got a momentum as soon as the Government under the leadership of Hon'ble Prime Minister Sheikh Hasina, the daughter of the Father of the Nation came to power in 2009. Since then, a number of new gas structures have been delineated, 8 exploration and 43 development wells have been drilled and workover of 18 wells have been completed. At the same time, a total of 767 km transmission pipeline has been laid under different projects, which has contributed to larger flow of gas in the system. A remarkable success achieved in 2014-15 in the transmission sector is the commissioning of Bibiyana-Dhanua 137 km pipeline of 36" diameter, the largest diameter gas transmission pipeline ever constructed in the country, which has increased transmission capacity as well as the much needed line-pack capacity for maintaining stability of the transmission system.

Petrobangla is also working to introduce new mechanism for maximizing recovery from existing producing wells. The well head pressure of producing wells is set to decline gradually as a result of production over a long period of time and depletion of reserves. To overcome the situation, steps are underway to install well head compressors at Titas, Bakhrabad and Narsingdi Gas Fields to boost up well head pressure in keeping with the grid line pressure so that production and supply of gas from these wells can be continued smoothly for some more time.

Currently, demand for gas in the country has already surpassed 3,200 million cubic feet per day (MMSCFD) whereas the average supply of gas is around 2,740 MMSCFD, leaving a shortfall of about 500 MMSCFD. The demand-supply mismatch has been a longstanding problem in the country's energy sector. With a view to easing the demand and supply disparity, Petrobangla chalked out time bound programmes. As a result of implementation of various projects, a gross production of 1,390 MMSCFD has been added during last

seven years, while net augmentation sustained as of today is 1000 MMSCFD. Petrobangla has been putting its utmost effort to enhance the production and supply of gas. The records of performance of Petrobangla will speak for its all-out efforts put in to improve the scenario. Gas production capacity increased from 2,500 MMSCFD in January, 2015 to 2,740 MMSCFD in January, 2016.

Petrobangla is continuously upgrading the transmission network for supplying gas to the load centers at desired pressure. The installation and operation of turbine driven compressors at Muchai, Habiganj in 2012 has spurred the flow of gas through the North-South transmission pipeline and increased gas flow by approximately 120 MMSCFD. Besides, compressor station at Ashuganj and another station at Elenga were commissioned in 2104-15. These compressors have improved the overall supply pressure at the downstream regions of the supply network. Especially, commissioning of compressor at Ahuganj has enhanced gas supply to the Chittagong region by around 50 MMSCFD, giving some relief to city dwellers and industries in the second largest city and commercial hub of the country, which is suffering from the acute shortage of gas after depletion of Sangu gas field.

Known reserve of natural gas in the country is depleting very fast with increasing withdrawal to meet the rising demand. Serious attempts are necessary to replenish and increase the gas reserve through aggressive exploration. With this objective in view, Bangladesh Petroleum Exploration and Production Company Limited (BAPEX), the lone national exploration company under Petrobangla, has declared extensive exploration programmes that include drilling of 53 exploration wells and 35 development wells within 2021 along with 3000 line-kilometre of 2D seismic survey during 2016 to 2019 in the onshore.

In order to reduce overwhelming dependence on natural gas and diversify the sources of energy supply, Petrobangla has developed the first coal mine of the country at Barapukuria. At present, Barapukuria Coal Mine is producing approximately 4000-5000 metric tons of coal daily. The coal extracted from this mine is mainly used to fuel the only coal fired 250 MW power generation plant of the country located in Barapukuria. The remainder of coal is used in brick fields, boiler industry, steel re-rolling mills, etc. Initiatives are underway to conduct a feasibility study for extension of existing underground mining operation of Barapukuria Coal Mine towards the southern and the northern side of the basin without interruption of the present production, and another feasibility study for the development of an open pit coal mine in the northern part of the Barapukuria coal basin. A 2D seismic survey conducted by Petrobangla on the Dighipara Coal Field found that it has good prospects for mining. A techno-economic study will be carried out by Barapukuria Coal Mine Company Limited as a next step towards development of this field. Furthermore, a project named "Feasibility Study for the Extraction of Coal Bed Methane (CBM) at Jamalganj Coal Field" is underway. 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 construction material. Initiative has been taken to conduct a feasibility study to expand the operation of the existing mine.

In order to supplement indigenous natural gas, Petrobangla is going to import Liquefied Natural Gas (LNG) to bridge or minimize the demand-supply gap. Towards this end, Petrobangla has initialled agreement with Excelerate Energy, USA for installation of a floating LNG terminal on Build, Own, Operate and Transfer (BOOT) basis at Moheshkhali



Island in the Bay of Bengal with a capacity of handling 4 million tons of LNG per year and re-gasification capacity of at least 500 million cubic feet per day. Met-oceanic study has been conducted, and geophysical and other studies are in progress. This project is expected to be commissioned by the end of 2017.

Just after the delimitation of the maritime boundary between Bangladesh and Myanmar by the International Tribunal for the Law of the Sea (ITLOS) in March, 2012, Petrobangla realigned the blocks considering the new boundary and announced a bidding round in December, 2012. Under this round, 3 PSCs for shallow sea blocks have already been signed. ONGC Videsh, Oil India and BAPEX joint venture has signed 2 PSCs for blocks SS-04 and SS-09. On the other hand, Santos, KrisEnergy and BAPEX joint venture has been contracted for block SS-11. Seismic surveys of all these blocks are in progress.

Petrobangla has planned to conduct 2D Non-Exclusive Multi-Client Seismic Survey in the offshore area of Bangladesh to provide the oil and gas industry with 2D Non-Exclusive Multi-Client Seismic data of the offshore areas. Bids were invited in December, 2015. Signing of agreement with successful bidder is awaiting approval of the Government. Bidding for deep sea blocks DS-12, 16 and 21 has been initiated by the Government. After evaluation of EOIs, Request for Proposal (RFP) has been sent to 3 short-listed companies.

During FY 2014-15, Petrobangla group contributed to national exchequer an amount to the tune of Tk. 62,042.5 million and saved a considerable amount of foreign exchange by substituting import of fuel.

Petrobangla is duty-bound to continue its all-out efforts for maximizing the supply of fossil fuels to the country. And Petrobangla 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 flow for a long time to come.

I hope this issue of Annual Report will be of interest to a wide variety of readers as a reference document.

Istiaque Ahmad

# **BOARD OF DIRECTORS (INCUMBENT)**



**Istiaque Ahmad** Chairman Petrobangla Chairman of the Board



**Md. Moinul Islam** Addl. Secy. Finance Division representing MoF Director of the Board



Md. Saiful Alam Hamidi Chief, Industry & Energy Division Planning Commission representing MoP Director of the Board



Kazi Zebunnessa Begum Joint Secy. (Development) representing EMRD Director of the Board



Md. Mostafa Kamal Director (Admin) Petrobangla Director of the Board



Md. Towhid Hasanat Khan Director (Finance) Petrobangla Director of the Board



Engr. Md. Quamruzzaman Director (PSC) Petrobangla Director of the Board



Jameel Ahmed Aleem Director (Operation and Mines) Petrobangla Director of the Board



Engr. Md. Mostafizur Rahman Director (Planning) Petrobangla Director of the Board



# PAST AND PRESENT CHAIRMEN OF PETROBANGLA

| SL 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<br>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 - 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. The reconstituted Bangladesh Oil and Gas Corporation (BOGC) was short-named "Petrobangla" by Ordinance no. XV of 22 August, 1974. Through the repeal of Ordinance no. LXX of 1974, Oil and Gas Development Corporation was abolished and all its assets and liabilities were vested in Petrobangla. On 13 November, 1976, by promulgation of the Ordinance no. 88, 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. 21 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 XI of February, 1989.

# 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 :

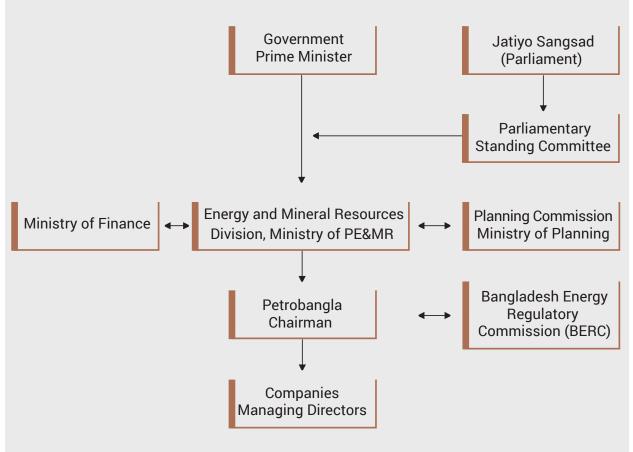
- a. to undertake research for alternative use of natural gas;
- b. to carry out geological, geophysical and other surveys for the exploration and development of oil, gas and mineral resources;
- c. to carry out drilling and other prospecting operations to prove and estimate the reserves of oil, gas 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 under-taken 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 has also 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 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 for relevant purposes.

The activities of the Corporation is 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 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 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, Bogra and Kuchma in the north-western part of the country without success. PPL drilled wells in Haripur, Patharia, Chhatak, 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 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, Bogra, 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 well remains the deepest one drilled so far in Bangladesh (4,977m). 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 Chittagong Hill Tracts for petroleum exploration under PSC. Shell conducted geological and seismic survey and drilled the Sitapahar well which was 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 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/TAXACO/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 some bids. However, the ensuing maritime boundary dispute in most of the blocks created a stalemate. In this backdrop, two blocks were negotiated with Conoco Phillips and a PSC for 2 blocks were signed in 2011. Conoco Phillips completed the initial seismic survey in the blocks. They 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 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, 3 shallow water PSCs have been signed with ONGC Videsh, Oil India & BAPEX for blocks SS-04 and SS-09. and Santos, KrisEnergy and BAPEX for block SS-11. Deep water bids, received in January, 2014, are now being processed. Since the signing of the PSCs, several changes in ownership and restructuring in the contracts have taken place. 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, 2015 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 Bangura Gas Field operated by Tullow.

Even though exploration history of oil and gas in Bangladesh goes back almost a century, exploration density could not be enhanced as much 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 explorations were also contributing to the enhancement of gas production. As of December, 2015 out of 26 gas fields discovered, 20 were under production. Meanwhile, peak gas production per day crossed the level of 2,700 MMSCFD by December, 2015. Despite increase in production, the rising demand could not be met and the gap between supply and demand is widening. As such, the government has taken steps to import LNG and to implement massive exploration programmes in both onshore and offshore areas to minimize the gap.



Start Up of New Wells' Gas Production at Jalalabad Gas Field

#### MINERALS :

Petrobangla is also entrusted with mineral development in the country. While the exploration part of minerals activity falls under the charter of Geological Survey of Bangladesh (GSB), subsequent development of economic deposits are undertaken by Petrobangla. Mineral activities were part of the erstwhile Bangladesh Mineral Exploration and Development Corporation (BMEDC) till its merger with BOGMC. 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 operation, 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. Furthermore, extraction of coal and granite are also conducted by Petrobangla.

#### EXPLORATION :

**Geological:** Lithological thickness calculation of Chengutang formation in the district of Khagrachhari has been completed using the data and statistics obtained. Works of preparing lithological column and correlation are in progress using the lithological data, section location and other geological data and statistics obtained from geological survey at Chengutang formation. Software-assisted preparation of geological map, other maps and preliminary geological report is in progress using the lithological data, survey data, bed attitude, gas/rock sample location and so on.

**2D Seismic Survey** : Under 2D seismic project of BAPEX, a total of 790 LKM 2D seismic data have been acquired in Jamalpur, Sherpur, Mymensingh, Tangail areas under exploration Block 8 and 11. After preliminary assessment around 20 potential seismic lead have been identified which demands in detail exploration activity to keep up the growing demand of natural gas for the fast growing economic development of the country.

3D Seismic Survey : A Project entitled "3D Seismic Project of BAPEX" has been initialled to conduct 1950 sq. km 3D Seismic survey during December, 2012 to November. 2017 over Sunetro. Sundalpur-Begumganj, Shahbazpur, Srikail, Narsingdi and Habiganj Gas Fields/ Structures with an approved DPP cost of Tk. 1825.00 million. During 2015 calendar year, data acquisition of 290 sg. km over Shahbazpur Gas Field, 150 sg. km over Srikail Gas Field and 21 sq. km over Begumganj- Sundalpur Gas Field area; totaling 461 sq. km data acquisition was completed. The processing of 600 sg. km acquired data of Shahbazpur Gas Field was completed in 2015.



Geological Survey in the Bandarban area By BAPEX

#### DRILLING :

Kailashtila-7 well : Under an agreement concluded between BAPEX and SGFL, drilling of Kailashtila-7 well was completed at a depth of 3,555 metres on 11 January, 2015 using ZJ70DBS (Bijoy 10) rig. This well was brought under production with initial flowing capacity of 6 MMSCFD of gas in August, 2015.

**Mobarakpur-1 well** : The drilling of Mobarakpur-1 well started on 22 August, 2014 using ZJ50DB (Bijoy 12) rig. After drilling at a depth of 3,555 metres, the string was pulled out of the well for logging. While rimming again, the drill pipe got stuck at a depth of 4,175 metres on 3 June, 2015. BAPEX conducted subsequent operation with the help of M/s Halliburton Inc. and concluded the drilling at a depth of 4,625 metres. Based on the result, an apprisal/exploration well will be drilled very soon.

**Saldanadi-4 well** : Drilling of Saldanadi-4 directional well was started on 8 August, 2014 using Gardner Denver E-1100 (IPS Cardwell) rig. Drilling of 2,776m (MD) was completed. Perforations were conducted at 2,570.50m – 2,576.00m, 2,576.00m – 2,582.50m and 2,403.50m – 2,415.50m depth intervals. DSTs were being conducted till end of December, 2015.



Bijoy Rig-12 of BAPEX

#### **PRODUCTION :**

In the FY 2014-15, total 892.17 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 39.42% of total gas produced during FY 2014-15. BAPEX was assigned with production activities in 2000. It produced 39.77 BCF gas in FY 2014-15. Total production of these 3 national companies stood 391.53 BCF which was 43.89% of total production of gas during FY 2014-15. The remaining 500.64 BCF gas was produced by IOCs (Chevron and Tullow), which was 56.11% of total production of gas during 2014-15.

Compared to the previous year, Chevron produced 15% higher while BGFCL and SGFL produced 4% and 1% higher amount of gas respectively, in FY 2014-15. BAPEX and Tullow maintained their production almost at the same level of the previous year. The total production in FY 2014-15 stood at 892.17 BCF, averaging about 2,444.3 MMSCFD. Out of this, BGFCL produced 297.67 BCF, SGFL 54.09 BCF, BAPEX 39.77 BCF, Chevron 462.05 BCF and Tullow 38.59 BCF. The major gas producing fields of the companies under Petrobangla are : Titas Gas Field contributing 21.1%, Habiganj 9.15%, Kailashtila 2.97%, Rashidpur 2.37% and Fenchuganj 1.55%, whereas major producing fields under IOCs are : Bibiyana contributing 39.66%, Jalalabad 9.85%, Moulvibazar 2.28% and Bangura 4.33%.

At the end of FY 2014-15, 20 gas fields were in production with 98 flowing wells. Out of these fields, 5 were operated by BGFCL, 4 by SGFL, 7 by BAPEX, 3 by Chevron and 1 by Tullow.

During the period from July to December, 2015, Chevron and Tullow produced 265 BCF and 19 BCF gas respectively while local companies produced 202.24 BCF gas, making total of 486.24 BCF.



#### 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 creation of GTCL have been integrated with the GTCL system. Apart from installing compressor stations at Ashuganj and Elenga, GTCL has undertaken a number of gas transmission pipeline construction projects to ensure the transmission capacity; these include Monohordi-Dhanua and Elenga-East Bank of Jamuna Bridge 30" x 51 km gas transmission pipeline, Hatikumrul-Ishwardi-Bheramara gas transmission pipeline, Bonpara-Rajshahi 12" x 53 km gas transmission pipeline, Bheramara-Khulna gas transmission pipeline, Bakhrabad-Siddhirganj 30" x 60 km gas transmission pipeline, Ashuganj-Bakhrabad gas transmission pipeline, gas transmission pipeline from Titas location no. 7 to A-B pipeline, Bibiyana-Dhanua gas transmission pipeline and Installation of Compressor Stations at Ashuganj and Elenga by GTCL to enhance the gas transmission capacity. Among them, construction of 30" x 51 km Monohordi-Dhanua and Elenga-East Bank of Jamuna Bridge gas transmission pipeline, Hatikumrul-Ishwardi-Bheramara gas transmission pipeline (excluding Padma river crossing), 12" x 53 km Bonpara-Rajshahi gas transmission pipeline, 36" x 137 km Bibiyana-Dhanua gas transmission pipeline, 24" x 7.5 km gas transmission pipeline from Titas location no. 7 to A-B Pipeline, Srikail - A-B 1.5 km gas transmission pipeline, Bheramara-Khulna 20" x 165 km gas transmission pipeline and Construction of 10" x 7.70 km Interconnection gas transmission pipeline from Titas Gas Field (Location C-B-A) to Titas-A-B Pipeline Projects have already been completed.

**Substantially completed projects by GTCL are** : (i) Installation of Compressor Stations at Ashuganj and Elenga, (ii) Hatikumrul-Bheramara 30" x 87 km gas transmission pipeline, (iii) 30" x 61 km Gas Transmission Capacity Expansion-Ashuganj to Bakhrabad and (iv) Rehabilitation 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** : (i) Moheshkhali-Anowara 30" x 91 km gas transmission pipeline. (ii) Dhanua-Elenga and Bangabandhu Bridge West Bank-Nalka 30" x 66 km gas transmission pipeline and (iii) Sarail-Khatihata and Malihata-Khatihata 20" x 3.5 Km Gas Transmission Pipeline Project.

#### **PIPELINES** :

Gas pipeline network continued to expand both in transmission and distribution. In total about 1,020.94 km pipelines of various sizes and grades were completed during the year 2014-15; these included 214.44 km transmission pipeline, 19.56 km distribution pipelines, 719.37 km feeder main and service lines and 67.57 km others (customer financing) pipelines. As on June, 2015 the gas pipeline network encompassed about 23,491.75 km comprising of about 2,475.26 km transmission lines, 2,371.48 km distribution lines, 16,453.71 km feeder main and service lines and the rest 1977.73 km other (customer financing) lines.

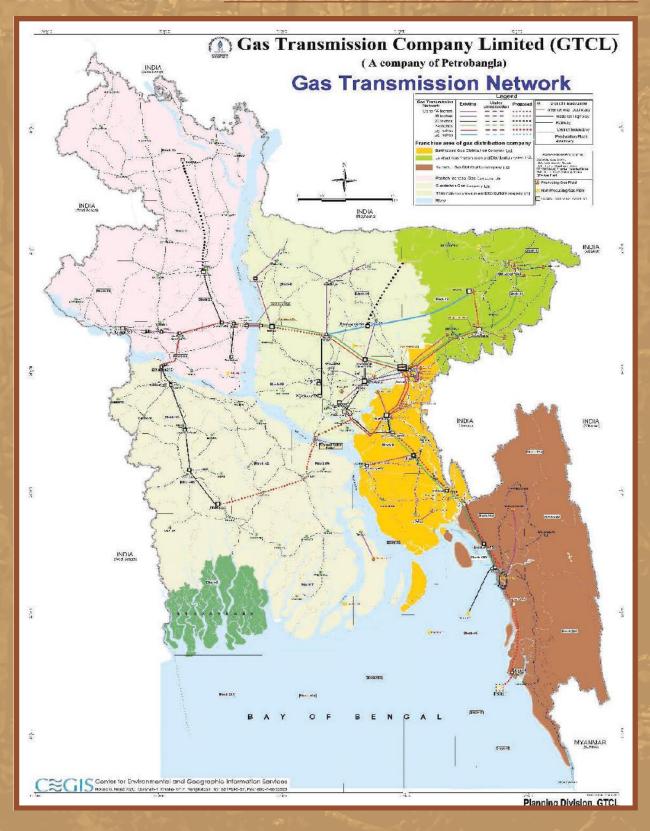
As in December, 2015 the pipeline network increased to about 23,725.73 km, which included about 2,536.26 km transmission lines, 2,371.80 km distribution lines, 16,602.99 km feeder main and service lines and the rest 2,001.11 km pipelines constructed under customer financing.



Moheshkhali-Anowara Pipeline by GTCL

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GAS TRANSMISSION NETWORK IN BANGLADESH



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#### **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 (TGTDCL), (2) Bakhrabad Gas Distribution Company Limited (BGDCL), (3) Jalalabad Gas Transmission and Distribution System Limited (JGTDSL), (4) Paschimanchal 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 recently started its operation in Bhola.

The total gas sales of the aforesaid six marketing companies in operation during this financial year was about 877.3 BCF, of which TGTDCL, being the largest shared about 64%, followed by BGDCL 13%, KGDCL 10%, JGTDSL 9%, PGCL 4% and SGCL fraction of a percent. Gas sector catered to 3.15 million customers under various categories as in June, 2015 which rose to 3.33 million at the end of December, 2015. Most of these customers are of domestic category.

#### CONDENSATE AND NATURAL GAS LIQUIDS (NGL) :

Some of the gas fields located in north-eastern part of Bangladesh contain high concentration of liquid hydrocarbon. Production of value added finished petroleum products from this liquid hydrocarbon or condensate is becoming a growing activity. With the introduction of Liquid Recovery Unit (LRU), condensate production from Bibiyana Gas Field has been increased from 5,500 barrels/day to 9,500 barrels/day. Apart from the fractionating condensate from national fields in fractionation plants installed at different gas fields, Rashidpur Condensate Fractionation Plant with a capacity of 3,750 barrels/day is producing petrol, diesel and kerosene by fractionating the condensate received from Bibiyana Gas Field. During 2014-15, a total of 560,550 barrels of condensate was produced by SGFL, BGFCL and BAPEX and 2,499,583 barrels by IOCs as a by-product of gas. During the same period, SGFL extracted 173,730 barrels of NGL from the gas processed in its Mole-Sieve Turbo Expander plant at Kailashtila. On the other hand, a total of 897,866 barrels of petrol, 543,153 barrels of diesel and 184,477 barrels of kerosene was produced by fractionating the condensate at the fractionation plants located at different fields of SGFL, BGFCL and RPGCL.



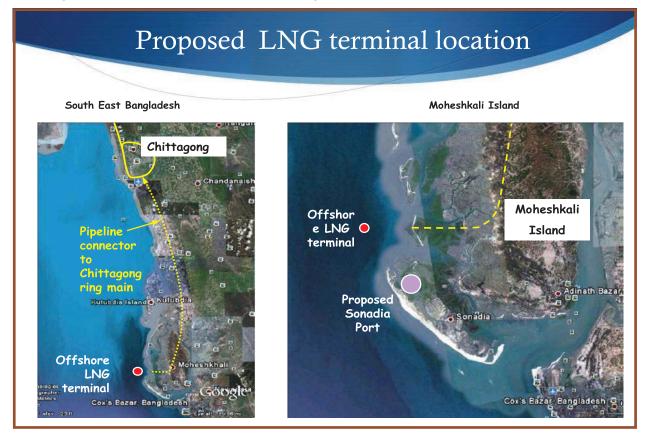
Liquid Recovery Unit (LRU) at Bibiyana Gas Field of Chevron

#### CNG AND LPG :

Rupantarita Prakritik Gas Company Limited (RPGCL), a company under Petrobangla, has been entrusted with the functions to manage, supervise and co-ordinate the use of 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. Approximately 3.6 BCF of CNG is used every month from 548 CNG stations, which is about 5% of the total gas consumption in the country. Consequently, The Government has been able to save about Tk. 10,710.0 million per month as foreign exchange in the sector against fuel import. With a view to curbing the import along with production of pollution-free fuel and to maximize the utilization of NGL obtained from the gas fields, the company also produced 6,699 metric tons of LPG by processing NGL in its fractionation plants (Plant-1 and 2) at Kailashtila in Sylhet in 2014-15.

#### LIQUEFIED NATURAL GAS (LNG) :

At present, the country is experiencing shortage of natural gas of about 500 MMSCFD. To minimize the demand supply gap, the Government has taken up necessary steps to import 500 MMSCFD of LNG particularly to meet the need of the Chittagong area. Under this project, installation of a Floating Storage and Re-gasification Unit (FSRU) at Moheshkhali approximately 90 kilometers south of Chittagong and construction of 30" x 115 km transmission pipeline from Moheshkhali to Ring-Main at Foujdarhat in Chittagong are expected to be completed by 2017. In addition, Petrobangla has started initial activities to install two land based LNG terminals, one at Moheshkhali and the other at Paira port area. Each of these two terminals will have a capacity of handling LNG equivalent to 1,000 MMSCFD of 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 from which commercial production have been going on. The country's only granite mining company "Maddhapara Granite Mining Company Ltd." at Dinajpur has been extracting granite which is used mostly as construction material.



Coal Stock Yeard of BCMCL

#### COAL :

At present, natural gas accounts for about three-fourths of the commercial energy used in the country. Excessive dependence on natural gas has contributed to sharp growth in its demand. But gas is depleting very fast. Given the uncertainty of sustainable supply of natural gas, it is imperative to diversify the primary energy sources in the country. And coal can be a major source of primary energy supply in this country in future. Five coal fields have been discovered with estimated reserve of more than 3 billion tones, out of which Petrobangla has developed the first coal mine of the country at Barapukuria. At present, Barapukuria coal mine is producing approximately 4000-5000 metric tons daily. In the FY 2014-15, total 675,775 metric tons of coal was produced from this mine. The coal extracted from this mine is mainly used to fuel the only coal fired 250 MW power generation plant in the country located at Barapukuria. The remainder is used in brick fields, boiler industry, steel re-rolling mills, etc. With the objective of enhancing present production, various initiatives are underway which include feasibility study for extension of existing underground mining operation of Barapukuria Coal Mine towards the southern and the northern side of the basin without interrupting the present production, feasibility study for the Development of an Open Pit Coal Mine in the Northern part of the Barapukuria Coal Basin, phase-2 feasibility study for development of Dighipara Coal Field at Dighipara, Dinajpur. Petrobangla has already implemented a 2D seismic survey for feasibility study of coal deposit at Dighipara under phase-1 and coal reserve has been estimated at 865 million metric tons. Furthermore, a project named "Feasibility Study for the Extraction of Coal Bed Methane (CBM) at Jamalganj Coal Field" has been undertaken by Petrobangla. The study is expected to be completed by June, 2016.

Presently, the Government has been putting efforts to finalize a coal policy wherein the strategies and rules of coal extraction will be spelled out. It is expected that the upcoming coal policy will help achieve the targets and take appropriate steps for developing the prospective coal sector.

#### 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 2014-15, total 9,31,476.20 metric tons of granite was extracted from the mine and 5,15,497.17 metric tons was sold.

# GAS PRODUCTION IN BANGLADESH



#### MARKETING :

In keeping with the increased production, gas sales also showed an upward trend. By the end of 2014-15 financial year, total sales was 877.3 BCF, of which power sector (Grid + Non-Grid) consumed the largest part amounting to 354.8 BCF followed by fertilizer sector 53.8 BCF, captive power 150 BCF, industry 147.7 BCF, domestic sector 118.2 BCF, and other non-bulk sectors 52.8 BCF. As in December, 2015 gas sector catered to more than 3.3 million customers of various categories. Most of this customers fall under domestic category; however, power sector remained the largest consumer.

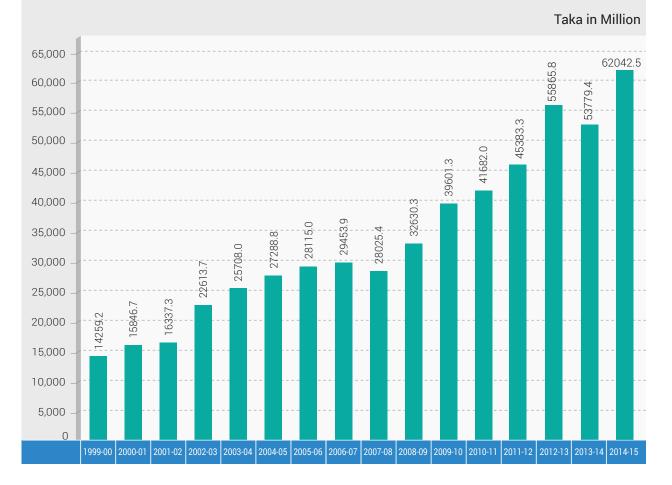
# SECTOR-WISE GAS CONSUMPTION (2014–15)



# FINANCIAL

The gross income in the FY 2014-15 by Petrobangla group from sales of gas, gas derived liquids, coal and granite stood at Tk 2,80,758.58 million. After paying Supplementary Duty (SD) and VAT, net income was Tk. 2,53,148.53 million. Gross expenses, comprising of Tk. 27,610.05 million as SD and VAT along with Tk. 2,19,356.10 million as cost of sales, amounted to Tk. 2,46,966.15 million. After paying income tax, net profit stood at Tk. 32,716.90 million. And after paying dividend of Tk. 8,917.84 million, net profit turned out to be Tk. 31,825.11 million.

# PAYMENT TO NATIONAL EXCHEQUER



# INNOVATION PROGRAMME

In order to provide better service to the people through establishing transparency and to ensure good governance in the public administration, Government has undertaken innovation programme. Pursuant to the government's circular in 2013, Petrobangla and its companies have already formed innovation teams. They are performing their assigned duties.

## 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. The consultants conducted field audit and measurement in selected industrial operations that use gas. As per the design and supervision of the consultants, 3 pilot programs have been implemented. The consultants submitted their Final Report with Energy Management Options (EMOs) to improve the gas utilization efficiency and recommendations.

**Findings of the pilot programs** : (i) Boiler Economiser Pilot Program (to fit an economiser 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 Program (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 Program (to install a recuperator to the exhaust of the furnace to pre-heat the combustion air) : gas consumption has been reduced by 9.10%. Excess air has been controlled by installing a butterfly damper at 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 EMOs proposed by the consultants are implemented.

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

#### POTENTIAL GAS SAVINGS AND CARBON EMISSIONS REDUCTION

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.

Furthermore, Petrobangla has set up 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.



# ANNUAL PERFORMANCE AGREEMENT (APA):

Government of Bangladesh has introduced Government Performance Management System (GPMS) for ensuring assessment of performance from qualitative to quantitative figures in the public sector. Under this programme, Annual Performance Agreement (APA) system has been initiated. APA between EMRD and Petrobangla, and between Petrobangla and its companies are being signed every year. Petrobangla signed APA with EMRD for FY 2014-15 and effectively endeavored to achieve the targets therein. APA for the FY 2015-16 was signed between EMRD and Petrobangla on 11 October, 2015, while between Petrobangla and its companies on 28 October, 2015. A Director of Petrobangla has been assigned as the focal point for monitoring APA properly, and for necessary communication with EMRD and its companies. Report of achievement against APA is sent to EMRD on monthly, quarterly, half-yearly and yearly basis.



Petrobangla signed APA with its companies on 28 October, 2015.

## **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 Right To Information (RTI) Act, Petrobangla has specifically designated an officer.

# HUMAN RESOURCES DEVELOPMENT :

As a part of the continuing efforts to upgrade its manpower resources to meet the changing need 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 gas industry, introduction of private venture as sole or joint collaboration, taxation regime, tariff mechanism and overall reinvigoration of the sector, regular and frequent participations are ensured by the widest possible selection of personnel in various training, workshops and seminars.

During the FY 2014-15, Petrobangla group arranged foreign training of different durations and disciplines for 542 personnel, while 11 participants were sent for attending seminars, 32 for attending workshops, 1 for attending conference, 34 for inspections and 5 for attending meetings. During the same period, local training was imparted to 100 personnel, while 3 were sent for attending seminars and 15 in workshops held in the country.

Petrobangla has also undertaken a plan to automate the management system. The head office complex has already been brought under LAN with almost all personnel and sections connected with the network. Petrobangla introduced Human Resource Information System (HRIS) in the early 2008, wherein database for the officials has been developed for smooth running and efficient management of the human resources of the Corporation. All the companies under Petrobangla have already introduced the Human Resources Information System (HRIS) which is helpful for efficient human resources management of the companies under Petrobangla as well.

# NATIONAL INTEGRITY STRATEGY :

As per government's decision and to implement national integrity strategy at the corporation level, time bound action plan (revised) from January, 2015 to June, 2016 has been prepared. A Committee has been formed to implement National Integrity Strategy in the Corporation. Time bound action plan with minutes of the first meeting was sent to EMRD on 18 May, 2015. An officer has been appointed as focal point for implementation of National Integrity Strategy. Major portion of the time bound action plan has already been implemented.

# **GRIEVANCE REDRESS SYSTEM (GRS)**:

Grievance Redress System (GRS) provides a way to reduce risk for public service delivery, an effective avenue for expressing concerns and achieving remedies for 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, Energy and Mineral Resources Division and Petrobangla have signed an Annual Performance Agreement (APA), which includes grievance redress system. An officer has been appointed as focal point for implementation of grievance redress system in Petrobangla. Activities of Petrobangla and its subsidiaries 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 winded 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 Chittagong 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 is producing from Bibiyana, Jalalabad and Moulvibazar fields;
- Cairn Energy for blocks 15 (Onshore) and 16 (Offshore); Cairn discovered Sangu gas field in 1996 which produced until 2013. Blocks 15 and 16 have now been relinquished, except for the ring-fenced offshore Magnama structure which was transferred to Santos;
- Oakland-Rexwood for blocks 17 and 18 (Offshore); transferred to CFP Total which has relinquished both blocks;
- United Meridian Corporation (UMC) for block 22 (Onshore); relinquished;
- Exploration ring-fenced of block 16 (Magnama ring-fence) is operated by Santos. Drilling operation is scheduled to take place in 2015.

#### 1997 Bidding Round :

Four blocks were awarded as follows :

- Tullow/Chevron/Texaco/BAPEX for block 9 (Onshore);
- 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 total 5,750 lkm of 2D seismic survey in 2012 and 2013. After interpretation, ConocoPhillips identified 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 boundaries and announced a bidding round in December, 2012.

#### a) Shallow Water Bids :

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

- ONGC Videsh, Oil India and BAPEX for blocks SS-4 and SS-9; and
- Santos, KrisEnergy and BAPEX for block SS-11.

Initial exploration activities has already started in the newly signed blocks SS-4 and SS-9 (ONGC Videsh/Oil India Ltd./BAPEX). ONGC has completed 3,000 lkm of 2D seismic survey data acquisition.



2D seismic survey in the Bay of Bengal

Santos, KrisEnergy and BAPEX conducted 3,050 line kilometers of 2D seismic survey in 2014 for block SS-11, interpretation and integration of the data sets have been completed and submitted the report to Petrobangla in the first quarter of 2016. They are going to conduct 300 sq. meters of 3D survey in the next weather window beginning from September, 2016.

#### b) Deep Water Bid :

Three proposals were received for blocks DS-12, 16 and 21. However, no PSC was signed for any deep sea block under this bidding round. Negotiation is going on with the lone bidder Stat-Oil, a Norwegian oil exploration company.



#### Operating Fields under PSC in 2014-15 :

Currently, 4 gas fields are being operated by IOCs under PSC. Of them 3 fields, namely Bibiyana, Jalalabad and Moulvibazar Gas Fields are being operated by Chevron and Bangura Gas Field by Tullow.

**Bibiyana** : Bibiyana field is now the largest supplier of gas to the national grid, delivering around 1,200 MMSCFD gas and 9,500 bbl/day condensate from 25 out of 26 wells. One well, Bibiyana no. 2, is now under upgradation phase. The design capacity of the process plant is 1,350 MMSCFD. The proposed wellhead compression project, undertaken with the objective of increasing hydrocarbon recovery and sustaining future production, is under evaluation.

**Jalalabad** : Jalalabad Gas Field has 7 wells including 3 additional new wells drilled at 2015. Currently, total production from this field is around 270 MMSCFD gas and 2,000 bbl/day condensate.

**Moulvibazar** : Moulvibazar is producing 45 MMSCFD (down from 110 MMSCFD) from 6 wells while the installed process plant capacity is 125 MMSCFD. As production is now declining, the operator is investigating ways to enhance or at least sustain present rate of production.

**Bangura** : The Bangura field started producing in 2006, peaking at 120 MMSCFD in 2010 and thereafter declining to 100 MMSCFD from 4 wells. Two development wells are planned for 2016 to sustain the current rate of production.

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 FY 2014-15 was 500 BCF together with 24,99,583 barrels of associated condensate. Since the beginning of PSC operations in Bangladesh in the 1970s, a total of 27 exploration wells have been drilled resulting in the discovery of 6 gas fields.

#### Preparation for Another Offshore Bidding Round :

Bangladesh's maritime victory over Myanmar and India have opened the door to immense possibilities for the nation. Our neighbours are already exploiting their subsea energy resources with rich dividends. High investments are required for deep sea exploration and production and countries successful in attracting foreign investments for offshore exploration have been quick to recognize, address and

accommodate this issue in their model PSC offerings. We have to make it attractive for IOCs to explore in our waters. Only intensive offshore exploration activity can enable Bangladesh to tap the huge reservoirs of riches trapped beneath our seas. To achieve these objectives up gradation of model PSC is in progress.

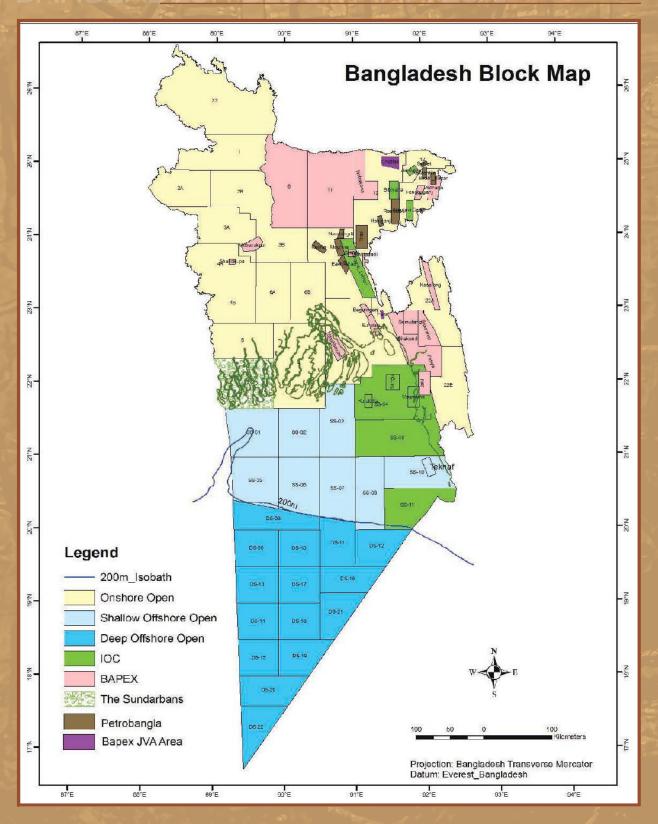
Petrobangla has planned to undertake 2D Non-Exclusive Multi-Client Seismic Survey in the offshore area of Bangladesh. The objective of the survey is to provide oil and gas industry with 2D Non-Exclusive Multi-Client Seismic data of the offshore areas in order to help with basin evaluation, prospect generation and robust bid round participation. Bids were invited in December, 2015 with last date of bid submission on 31 January, 2016. Bids are now under evaluation.



Sangu Gas Field in the Bay of Bengal

# ANNUAL REPORT 2015

**BANGLADESH BLOCK MAP, 2015** 

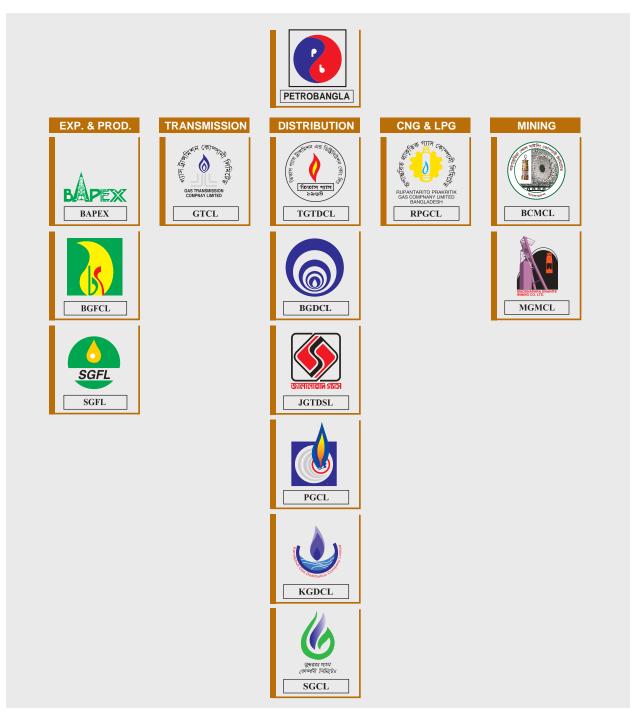


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# **COMPANIES OF PETROBANGLA**

Over the years, the activities of Petrobangla has 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 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 (Toilo Sandhani) till 1974 and continued under Exploration Directorate of BOGMC (Petrobangla) for the next 15 years, after which, 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.

Participating in an international open tender, BAPEX obtained a contract for drilling Bangora 6 and 7 development wells which fall under KrisEnergy-the operator of PSC block 9. The final contract was signed on 26 November, 2015. Aside from exploring oil and gas and drilling, BAPEX is now producing nearly 130 million cft of gas daily from Saldanadi, Shahbazpur, Fenchuganj, Semutang, Begumganj, Shahjadpur-Sundalpur and Srikail Gas Fields.

BAPEX has drilled 8 exploratory wells, out of which 5 gas fields have been discovered. Since its inception, BAPEX has successfully completed work-over operations of 27 wells, drilling of 8 exploration wells and 21 development wells. Experience of exploring oil and gas gathered over a period of 26 years has enhanced the technical capacity of BAPEX. New gas reserves to be explored through the ongoing drilling works will help implement the Vision 2021 by mitigating the energy crisis of the country.

Under Bangladesh Offshore Bidding Round, 2012, 2 production sharing contracts (PSCs) have been concluded with ONGC Videsh Ltd. (OVL) and Oil India Ltd. (OIL) for shallow-sea blocks SS-4 and SS-9, and one PSC with Santos Sangu Field Ltd. and KrisEnergy Bangladesh Ltd. for shallow-sea block SS-11. The Government of Bangladesh has nominated BAPEX as stakeholder carrying 10 percent interests for these blocks. A joint operating agreement was signed with Santos Sangu Field Ltd and KrisEnergy Bangladesh Ltd on 18 June, 2015. And signing of a joint operating agreement with ONGC Videsh Ltd. (OVL) and Oil India Ltd. (OIL) is in the offing.

The company made a post-tax net profit of Tk. 654.0 million in FY 2014-15. After adjusting Tk. 75.3 million of previous year's account and paying dividend of Tk. 73.1 million, the residue was added to last year's cumulative profit of Tk. 2,068.1 million which now stands at Tk. 2,724.3 million. Dividend of Tk 73.1 million fixed by the Government/Petrobangla on BAPEX for FY 2014-15 has already been paid. During this FY, BAPEX was nominated as the 5th highest taxpayer in company category. The Hon'ble Finance Minister handed over a certificate and a crest to BAPEX on 15 September, 2015.

Considering its overall activities, for BAPEX, 2014-15 fiscal was a year of making efforts for achieving success overcoming the setbacks. BAPEX has formulated a time-bound action plan with a view to accelerating the exploration of oil and gas and augmenting production by 2021. 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 reach its target.



#### **VISION 2021 OF BAPEX**

Hon'ble Prime Minister of the People's Republic of Bangladesh, during her visit to Ministry of Power, Energy and Mineral Resources on 6 February, 2014 and 9 April, 2015 expressed her deep interest in strengthening of BAPEX, the only state-owned petroleum exploration company, to trim down the dependence on IOCs. To materialize this objective, she instructed to take a 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 2021:

- BAPEX will conduct 3,000 lkm 2D seismic survey under proposed project named "Block 8 and 11 Regional 2D Seismic Survey Program" within July, 2016 to June, 2019;
- Drilling of 53 exploratory wells, 35 development wells and workover/remedial of 20 wells (a total of 108 wells) within July, 2015 to June, 2021; and
- To strengthening BAPEX and to implement the above work-plan employment of consultants and experts of different relevant fields on contractual basis is under active consideration.

Completed Projects during FY 2014-15 are : Drilling of 5 wells of BAPEX (Shahbazpur no. 3, 4, Begumganj no. 3, Semutang no. 6 and Srikail no. 3); 1500 HP Rig Procurement Project; Procurement of Standby Gas Process Plant; Rupganj Oil/Gas Exploratory Well Drilling Project.

On going Projects are : Mobarakpur oil/gas Exploration well drilling project; Saldanadi no. 3, 4 and Fenchuganj no. 4, 5 gas development project; Procurement of Gas Process Plant for Shahbazpur Field; 3D Seismic Project of BAPEX; 2D Seismic Project of BAPEX; Procurement of Gas Process Plant for Srikail Field; Shahjadpur-Sundalpur (Sundalpur no. 2) Appraisal/Development well Drilling Project; Rehabilitation of Engine, Mud tanks and Electrical power system of IDECO-Rig project.



Shahbazpur Gas Process Plant of BAPEX



#### BANGLADESH GAS FIELDS COMPANY LIMITED (BGFCL)

Bangladesh Gas Fields Company Limited (BGFCL) is the largest state-owned natural gas production company in the country. 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 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). The Company is currently contributing about 35% of total gas production of the country. Presently, this company owns 6 gas fields - Titas, Habiganj, Bakhrabad, Narsingdi, Meghna and Kamta.

BGFCL continued gas production from 5 gas fields out of its 6 fields in the FY 2014-15. At present, daily maximum 829 million cubic feet gas is being supplied to the national grid from 37 wells of 5 producing fields. During 2014-15 FY 297.67 BCF of gas and 179,076 barrels of condensate, extracted as by-product from the gas, were produced by the Company. There are 2 fractionation plants at Titas Gas Field and 1 at Bakhrabad Gas Field. The recovered condensate from Titas. Habigani and of BGFCL Narsingdi Gas Fields and of SGFL Beanibazar Gas Field are fractionated into MS (Petrol) and HSD (Diesel) in 2 fractionation plants of Titas Gas Field. The recovered condensate from Bakhrabad and Meghna Gas Fields of BGFCL, Bangura Gas Field of Santos, Saldanadi, Srikail, Sundalpur and Semutang Gas Fields of BAPEX is fractionated into MS and HSD in the fractionation plant of Bakhrabad Field. The products, MS and HSD, are delivered to Padma Oil Company Limited and Meghna Petroleum Limited regularly for marketing.

As per latest report of Petrobangla, total recoverable gas reserve of 6 fields under the Company is about 12.252 TCF, out of which 7.129 TCF or about 58.18 percent was recovered till 30 June, 2015.



Maintenance of reboiler of well No. 4 at Titas Field by BGFCL





Installation of well head compressor at Bakhrabad Gas Field of BGFCL

With a view to mitigating the ongoing gas crisis, BGFCL has kept up its relentless effort to ensure uninterrupted gas supply and implemented various development projects with the financial assistance of GoB and Gas Development Fund (GDF) in addition to various development partners such as ADB, JICA etc. Under the projects, 5 new wells (Titas-27, 19, 20, 21 and 22) have been drilled and re-completion of 1 existing well (Bakhrabad-5) and installation of 2 gas process plants each having capacity of 75 MMSCFD have been completed. At present, 70 MMSCFD gas from these wells is being supplied to national grid. Gas production from Titas well no. 21 suspended due to excessive water production. Under 3D seismic survey project, 335 sq. km field level survey over Titas structure and 210 sq. km over Bakhrabad structure have been completed. In the survey report drilling of 11 new wells at Titas Gas Field and drilling of 3 new wells at Bakhrabad Gas Field has been proposed. Of these, 1 well (Titas-27) was drilled and the activities for drilling of 5 wells (Titas- 23, 24, 25, 26 and Bakhrabad-10) are in progress. After completing drilling of these 5 wells, 90-100 MMSCFD gas is expected to be added to the national grid. To reduce gas seepage problems through workover programme of 5 wells at Titas Gas Field and to bring back the suspended well Titas-21, two separate projects were undertaken with GDF finance. Besides, due to gradual decline of wellhead pressure of producing wells at Titas, Bakhrabad and Narsingdi Gas Fields and for supplying gas from producing wells matching grid line pressure, a GDF financed project for installation of compressor at Bakhrabad field has been completed; another project funded by JICA has been undertaken for installation of compressors at Location-C of Titas field and Narsingdi Gas Field. Besides, a project funded by ADB has been proposed to be undertaken for installation of wellhead compressors at Location-A of Titas gas field.

The company earned a gross revenue of Tk. 32,116.7 million and a pre-tax profit of Tk. 6,983.8 million during the FY 2014-15. The company also paid Tk. 22,842.9 million to the National Exchequer in the form of SD, VAT, DSL, dividend and income tax during the year.



### **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.

The company, under its umbrella, currently operates Sylhet (Haripur), Kailashtila, Rashidpur and Beanibazar Gas Fields. A total of 13 wells (2 at Sylhet, 5 at Kailashtila, 5 at Rashidpur and 1 at Beanibazar) are presently on stream which produce an average of 150 MMSCFD. The produced gas is supplied to Jalalabad, Bakhrabad, Pashchimanchal and Karnaphuli gas distribution companies franchised areas. SGFL shares about 6% of country's total gas production. In the FY 2014-15, SGFL produced 54.08 BCF of gas and 358,425 barrels of petroleum products and 173,730 barrels of NGL. The company also produced 980,125 barrels of finished petroleum products - petrol, diesel and kerosene-by fractionating condensate from its own fields and Bibiyana Gas Field operated by Chevron.

The company has been implementing various development projects with the objective of diversifying its activities and enhancing gas production capacity. The ongoing projects include: (i) Installation of a 4,000 bbl/day capacity Condensate Fractionation Plant at Rashidpur, (ii) Installation of a 3,000 bbl/day Catalytic Reforming Unit at Rashidpur to convert petrol into octane, (iii) Construction of 2 storage tanks at Rashidpur for increasing the storage capacity of Petroleum Products, (iv) Drilling of 5 new wells (Kailashtilla-9, Sylhet-9, Rashidpur-9, 10 and 12).

During the FY 2014-15, the company earned an amount of Tk. 4,155.8 million from the sales of gas and Tk. 12,515.5 million from the sales of finished liquid products such as petrol, diesel, kerosene, NGL and condensate. Company earned pre-tax profit to the tune of Tk. 6,144.3 million during the year and paid Tk. 5,221.4 million as supplementary duty and VAT, Tk. 1,860.7 million as income tax

and Tk. 1,400.8 million as dividend. The total contribution by the Company to the Government exchequer in the financial year stood at Tk. 4,482.9 million which was 50.88% of the total income from sales.

Sylhet Gas Fields Limited has been adjudged as the top-most VAT paying organization in the production sector at national level for the last consecutive 4 years up to FY 2014-15 and has been rewarded by the National Board of Revenue.

During the year gas production from the newly drilled well Rashidpur-8 started in August, 2014 and around 13 MMSCFD of gas is added the national gas grid.



RCFP 60,000 BBL Diesel Tank of SGFL



# PETROBANGLA 2015



### 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.

During the FY 2014-15, GTCL transmitted in total 693.67 BCF of gas, 12.82% higher than the previous year, delivering 27.35 BCF, 472.78 BCF, 71.60 BCF, 87.75 BCF and 34.19 BCF to franchise areas of Jalalabad, Titas, Bakhrabad, Karnaphuli and Paschimancahal gas distribution companies respectively. The Company transported a total of 5,29,101 barrels of condensate through its 193 km long North-South condensate pipeline during the year, which was 59.54% higher than the previous year.



Moheshkhali-Anowara 30" x 91 km Gas Transmission Pipeline of GTCL

**Projects completed in recent years are :** (i) Monohordi-Dhanua and Elenga-Bangabandhu Bridge 30" x 51 km Gas Transmission Pipeline Project, (ii) Bonpara-Rajshahi 12" x 53 km Gas Transmission Pipeline Project, (iii) Bakhrabad-Siddhirganj 30" x 60 km Gas Transmission Pipeline Project, (iv) Bibiyana-Dhanua 36" x 137 km Gas Transmission Pipeline Project, (v) Construction of 24" x 8 km Gas Transmission Pipeline from Titas Gas Field to AB Pipeline Project, (vi) Construction of 20" x 1.5 km Gas Transmission Pipeline from Srikail Gas Field (Location-2) to AB Pipeline Project, (vii) Bheramara-Khulna 20" x 165 km Gas Transmission Pipeline Project and (viii) Construction of 10" x 7.70 km Interconnection Gas Transmission Pipeline from Titas Gas Field (Location C-B-A) to Titas-AB Pipeline Project.

**Substantially Completed Projects are** : (i) Installation of Compressor Stations at Ashuganj and Elenga, (ii) Hatikumrul-Bheramara 30" x 87 km Gas Transmission Pipeline, (iii) 30" x 61 km Gas Transmission Capacity Expansion-Ashuganj to Bakhrabad, (iv) Rehabilitation 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), and (v) Construction of 13-Storied Head Office Building with Two Basements of Gas Transmission Company Limited (GTCL) at Sher-e-Bangla Nagar Administrative area, Agargaon, Dhaka.

**Running projects are** : (i) Moheshkhali-Anowara 30" x 91 km Gas Transmission Pipeline, (ii) Dhanua-Elenga and Bangabandhu Bridge West bank-Nalka 30" x 66 km Gas Transmission Pipeline, and (iii) Sarail-Khatihata and Malihata-Khatihata 20" x 3.5 km Gas Transmission Pipeline Project.

**Up-coming Projects are** : (i) Chittagong-Feni-Bakhrabad 36" x 190 km Gas Transmission Pipeline, (ii) Padma Bridge section 30" x 6.15 km will be completed as an integral part of Padma Multi Purpose Bridge Project, and iii) Moheshkhali-Anowara 36" x 90 Km Loop Line Project.

The Company earned an amount of Tk. 6,369.7 million as revenue and Tk. 5,340.3 million as pre-tax profit and contributed an amount of Tk. 2,990.1 million to Government Exchequer during the FY 2014-15.



#### TITAS GAS TRANSMISSION AND DISTRIBUTION COMPANY LIMITED (TGTDCL)

The discovery of a huge gas field on the bank of the Titas River in Bhramanbaria in 1962 created a new horizon for the utilization of natural gas. Titas Gas Transmission and Distribution Company Limited (TGTDCL) 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 93 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.

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. 17.8 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 share holders 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 12,889.03 km including 383.53 km built during the FY 2014-15. The total number of customers of the company was 1,897,316 as on 30 June, 2015 which rose to 1,996,801 in December, 2015. Bulk customers of the company include 3 fertilizer plants, 7 government and 28 private power stations. The company hogs about 62.07% of natural gas market share in Bangladesh.

During FY 2014-15, total 544.44 BCF of gas was sold and a sales revenue of Tk. 80,855.0 million was earned and the total revenue was Tk. 81,606.2 million including meter rent and surcharge. Compared



Contract signing ceremony of TGTDCL for "Procurement of Hardware and Software, Development of Customized Software and Data Migration.

to previous year's revenue of Tk. 77,732.8 million, the growth rate in revenue income for the year under review was 4.98% higher. During FY 2014-15 a sum of Tk. 81,606.2 million (including arrear revenue) was realized against the revenue income of Tk. 79,317.3 million, which was Tk. 2,288.9 million less than the receivable. The company earned a net profit before tax and a net profit after tax of Tk. 12,101.3 million and Tk. 8,886.1 million respectively. The Company paid Tk. 6,572.6 million to the Government Exchequer during FY 2014-15.



# ETROBANGLA 201



### 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 was 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 pipe lines of the company, 24" X 110 km Bakhrabad-Chittagong and 20" X 69 km Bakhrabad-Demra gas transmission pipe lines were handed over to GTCL leaving only the responsibility for marketing gas in the Chittagong 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 Comilla 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 30 June, 2015 is 3,868.79 km. During the FY 2014-15, a total of 81,103 domestic gas connections (burner) were given. The cumulative gas connection stood at 3,99,540 as on 30 June, 2015 which includes 15 power, 1 fertilizer, 157 industrial, 74 captive power, 2,140 commercial, 88 CNG and 3,97,067 domestic (Burner) connections. In order to enhance the gas supply to the greater Noakhali region, a project was undertaken to supply gas to Maijdee Lateral Line from Begumganj Gas Field with a cost of Tk. 59.9 million. As per approval 10 bar 8" X 5.378 km pipeline from Begumganj Gas Field to Maijdee Lateral Line at Setubhanga Point and 30 bar 6" X 207 metre pipeline in the premises of Begumganj Gas Field were constructed. One RMS of 20 MMSCFD capacity was also installed in the Begumganj Gas Field.

During the FY 2014-15, BGDCL sold 120.59 BCF gas to its customers, of which power plants consumed 85.81 BCF. The company earned Tk. 14,074.4 million as sales revenue, net profit before tax stood at Tk. 2,111.3 million and paid Tk. 1,261.2 million to the national exchequer. The company purchased 117.12 BCF gas and sold 120.59 BCF gas this year. As a result, the system gain of the company stood at 3.47 BCF i.e 2.96%.



APSCL 450MW(s) and 450MW(n)-7 in franchise area of BGDCL



### JALALABAD GAS TRANSMISSION AND DISTRIBUTION SYSTEM LIMITED (JGTDSL)

Jalalabad Gas Transmission and Distribution System Limited (JGTDSL) was formed under the Companies Act on 1 December, 1986 with an authorized capital of Tk. 1,500.00 million after infrastructural development of gas transmission and distribution system under the management of Petrobangla for supplying gas to different categories of customers in Sylhet Division.

During the FY 2014-15, the Company possessed a gas network comprising of 465.08 km transmission, 1,336.29 km distribution, 1,205.42 km feeder mains and service lines and 777.34 km other (customer financing) pipelines. During the year, the company provided 16,546 new gas connections - 1 power station, 11 captive power, 7 industrial, 4 CNG, 115 commercial and 16,408 domestic connections - which was 10.55% higher than the previous year.

During the FY 2014-15, the gas sales of the company was about 77.643 BCF, of which power plant consumed 51.663 BCF (66.54%) and others 25.980 BCF. During the year, the Company earned Tk. 10,063.50 million as sales revenue, Tk. 1,511.20 million as net profit before tax and Tk. 982.30 million after tax. The Company also paid Tk. 710.10 million to the national exchequer.

During the FY 2014-15, the Company, through the efficient management and proper maintenance of pipeline and equipment, kept the system loss within 0.32%. Vigorous efforts are being made by the company throughout the year to control and minimize the system loss.

The activities of the project titled "Sylhet Gas Transmission Network Up-gradation Project" is in progress with a view to bringing some Upazilas under gas supply network and constructing high pressure balancing gas pipelines in different areas under the Company. The project is expected to be completed by the stipulated time June, 2016. It is worth mentioning that cumulative physical and financial progress of the project achieved up to November, 2015 were 85 % and 93 % respectively.



Coating and wrapping works of newly constructed 8" dia pipeline from Noyapara to Jogodispur under JGTDSL



# ETROBANGLA 2018



#### PASHCHIMANCHAL GAS COMPANY LIMITED (PGCL)

This is the 4<sup>th</sup> 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. By the end of June, 2015 the Company encompassed a network of 1,626.21 km pipeline.

At the end of FY 2014-15, the company provided gas connection to 1,19,483 customers. During this year a total of 36.40 BCF of gas was sold by the company as against 38.06 BCF gas in the previous year. It is noted that the power station of PDB in Baghabari was closed for six months at stretch. So, PGCL could not able to supply gas to the said power station. Consequently the volume of gas sold by PGCL has been decreased compared to previous year. The company earned Tk. 5,017.3 million revenue from sales during FY 2014-15 and earned Tk. 660.1 million as net profit before tax. The company paid Tk. 478.5 million to the national exchequer during this year.

The company is always putting its best efforts for achieving its desired goal. Meanwhile the company has extended its gas network facilities in Sirajganj, Baghabari, Bera, Santhia, Shahjadpur, Pabna, Ishwardi (including Ishwardi EPZ), Bogra, Rajshahi and other important areas for carrying the benefits of gas facility on the doorstep of the masses.



CMS of Sirajganj 225MW combined cycle power plant under PGCL



#### KARNAPHULI GAS DISTRIBUTION COMPANY LIMITED (KGDCL)

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

Gas sales by KGDCL during the FY 2014-15 stood at about 94.91 BCF. The company earned Tk. 16,842.2 million as sales revenue and Tk. 5,201.9 million as net profit before tax. The company paid Tk 2,032.6 million to the national exchequer during this year. The company attained 5.73% system gain during the FY 2014-15. At the end of the FY 2014-15, KGDCL had a customer base of 5,33,273 of which 60,671 (CNG 2, Industry 5, Captive Power 1 and Domestic 60,663) were new customers connected in this year. During FY 2014-15, 124.83 km distribution pipelines with diameters ranging from  $\frac{3}{4}$ " to 8" were constructed.

#### Following Steps have been taken to prevent misuse and to ensure the accuracy of metering system:

Tele-metering system has been introduced initially in the RMS of 5 bulk industrial customers (KAFCO, Shikolbaha Power Station, 210MW CTPS, KPM and CUFL) for monitoring the quantum of gas supplied to them. Meters with Electronic Volume Correctors (EVCs) are being installed in the RMS of load intensive customers. By now, meters with EVCs have been set up in the premises of 164 customers including 62 CNG, 64 captive power and 38 industrial customers, and they are billed on the basis of EVC data. With the finance of Japan International Co-operation Agency (JICA), a project for installation of 60,000 pre-paid gas meters for the domestic users in the Chittagong city area is in progress to prevent the misuse of gas. Rest of the domestic customers will be brought under this system in phases.

Development of customized software by IICT, BUET to bring all the activities of KGDCL under ERP software is in progress. Installation of online gas bill system by IICT, BUET is in process to ensure easy and fast bill payment by all categories of customer of KGDCL. The company has undertaken the work of mapping its network of gas pipelines and gas installation through the Center for Environment and Geographic Information Services (CEGIS).



DRS Maintenance at KAFCO by KGDCL



# ETROBANGLA 2018



### 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, Barisal Division and 5 districts of Dhaka division. In the initial stage, the Company has been implementing gas distribution network in 5 districts, namely Kushtia, Jhenaidah, Jessore, Khulna and Bagerhat under "South West Region Gas Distribution Network Project" since February, 2011. The project is being implemented through joint financing by the Government of Bangladesh and Asian Development Bank (ADB). To implement the project, the necessary procurement of pipeline materials and other items have been completed. On the other hand, the Rupsha river crossing work for laying 20" diameter line pipe through HDD is in progress.

Land acquisition for company's head office building in Khulna and regional offices of other 3 districts have been completed. A MOU has been signed with House Building Research Institute as consultant for performing the work of design, drawing, estimating and preparing tender document. It may be mentioned here that after the implementation of the Project, it will be possible to supply gas to 150 MW Power plant in Khulna, 360 MW at Bheramara as well as to commercial and Industrial customers in the area.

Presently, gas supply by this company is limited within the island district Bhola only. One 34.5 MW rental power plant of Venture Resources Ltd, 225 MW power plant of PDB and around 3,000 domestic customers in Bhola town are connected with gas distribution network of the company. On an average 30-35 MMSCFD gas is being supplied to these customers every day. Extension of gas distribution network in Bhola town and new network at Borhanuddin are in progress.

In the FY 2014-15, the company earned a total revenue of Tk. 289.4 million, out of which Tk. 262.9 million was earned from sales of 3.21 BCF of natural gas and the rest Tk. 26.6 million from other operational income. In FY 2014-15, the company made a total expenditure of Tk. 256.2 million; out of which Tk. 212.0 million was spent to meet the cost of purchased gas and the rest Tk. 44.2 million for meeting the cost of gas distribution. After considering other non-operational income, interest income on deposit and allocation made to workers profit participation fund, net income before tax and after tax for 2014-15 were Tk. 55.3 million and Tk. 35.9 million respectively. In 2014-15 total capital of the company increased by Tk. 15.3 million due to Government investment against the GoB fund allocation in the South-West Region Gas Distribution Network Project and rest Tk. 35.9 million revenue reserve was derived from income and Expenditure statement. Besides, project loan increased this year by Tk. 170.9 million which included Tk. 155.4 million from Government and Petrobangla, and Tk. 15.5 million from ADB. Fixed Assets increased by Tk. 10.9 million and Tk. 120.0 million added to work-in-progress of SGCL's two running projects in FY 2014-15. The company's current assets liabilities ratio was 2.02:1, Rate of return was 19.11%, Return on capital employed was 1.40% and Debt-Equity Ratio was 86.27 : 13.73 in the FY 2014-15. The performance level of profitability and solvency of the company has not reached to the expected level. After successful implementation of the projects, the sales of gas will be increased and the financial condition of the company will stand on a sustainable base.



### RUPANTARITA PRAKRITIK GAS COMPANY LIMITED (RPGCL)

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 CNG, building a transport infrastructure in the country based on CNG, and production and distribution of LPG, petrol and diesel obtained from NGL. RPGCL has been playing an effective and important role in arresting air pollution, saving foreign exchange by substituting import of fuel and accelerating multidimensional use of indigenous natural gas. The Government has undertaken various programmes for arresting air pollution, saving foreign exchange and ensuring uses as well as expanding diversified use of indigenous natural gas. RPGCL has been working untiringly to implement the programmes taken up by the Government in the gas sector. Within the gas network of the country the Government and the private entrepreneurs have setup 548 CNG filling stations and 180 conversion workshops till June, 2015. These stations, located across the country, are supplying CNG to almost 250 thousand vehicles daily.

Approximately 3.6 BCF of CNG is being used every month from 548 CNG stations, which is 5% of the total gas consumption of the country. Hence, the Government has been able to save about Tk. 10,710.0 million per month in foreign exchange in the sector against fuel import. Widespread use of CNG has reduced air pollution to a great extent. The latest data provided by the International Association of Natural Gas Vehicles (IANGV) indicates that Bangladesh holds the 9th position in the world in respect to the total number of CNG vehicles and in terms of concentration of CNG driven vehicles; Bangladesh is ranked 2nd in Asia and 6th in the whole world.

To meet the growing demand of natural gas, Government/Petrobangla is in the process to importing LNG starting by the end of 2017. RPGCL has been directed by the Government to take up the responsibilities of importing and marketing LNG. Effort is underway to train the officers of RPGCL in home and abroad to take up the responsibility.

In the FY 2014-15, the company earned Tk. 3,679.3 million as revenue before VAT from sales of CNG, LPG, MS and HSD. The company earned an amount of Tk. 600.3 million as net profit before tax and made a payment of Tk. 1,176.4 million to the National Exchequer.



Delivery of Condensate from Condensate Handling Installation at Ashuganj of RPGCL



# PETROBANGLA 2018



### BARAPUKURIA COAL MINING COMPANY LIMITED (BCMCL)

Barapukuria Coal Mine is the 1<sup>st</sup> 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 much environment friendly, very low in sulphur content (0.53%) and very high in heat generation capacity (11,040 btu/lb).

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 form the mine, a Management, Production and Maintenance Contract was signed with the Consortium of CMC-XMC on 4 June, 2005 for a period of 71 months with a contract price of US\$ 82.30 million (Foreign Portion US\$ 55.551 + Local Portion Tk. 1,572.7 million). The company went into commercial production on 10 September, 2005. The contract was completed on 10 August, 2011.

On expiration of the M&P Contract, a new draft "Management, Production, Maintenance & Provisioning Services (MPM&P)" contract was signed on 6 August, 2011 with the successful bidder Consortium of Xuzhou Coal Mining Group Corporation Limited and China National Machinery Import and Export Corporation (XMC-CMC). New M&P contract came into effect on 11 August, 2011 and will remain effective for a period of 72 months. According to new M&P contract, a target of 5.50 million metric tons of coals production has been set. During the contract period, coal production from longwall face and new roadway development activities will continue simultaneously.



Coal Stack Yard at Barapukuria Coal Mine



Honorable State Minister of Power, Energy and Mineral Resources Ministry, Charman, Petrobangla High Officials of BCMCL and Others Visiting Undreground Coal Mine.

In the FY 2014-15, total coal production and roadway development was achieved by 6,75,775.50 metric tons and 3,028.20 meters respectively. The present commercial production rate is 4000-5000 metric tons/day. During the FY 2014-15, the company earned Tk. 8,538.4 million from sale of coal and Tk. 712.1 million from other sources comprising a total amount of Tk. 9,250.5 million, which is the highest ever revenue collection. During this period the expenditures for operating and other costs were Tk. 4,857.4 million and Tk. 398.6 million respectively. The company made a net profit of Tk. 3,994.5 million. In this fiscal year, the net profit stood at Tk. 2,466.6 million after deducting of Beneficiary Profit Participation Fund (BPPF) and income taxes, which was Tk. 2,184.7 million in the previous fiscal year. In addition to this, the actual revenue expenditure was Tk. 3,974.1 million in the current fiscal year against an allocated budget of Tk. 5,653.2 million which is 29.70% less. In addition, during the FY 2014-15, the company deposited Tk. 2,256.1 million to the government exchequer as supplementary taxes, custom duties, VAT, income tax and royalty, etc.

Remarkable activities by BCMCL in FY 2014-15 included 6.76 metric tons coal production from 1205, 1208, 1212 longwall face and roadway development; development of 3,028.20 meters roadway; construction of Dedicated Air Return Roadway (partial); installation of one 3.50 MW and 3.38 MW generators; installation of 3 big size pumps of 1,800 KW (720m3/hr) capacity at -430 m pump house; installation of One Track Weighing Scale with capacity of 60 tones; drilling of 5 nos. of surface hydrogeological boreholes for supplementary hydrogeological exploration in the central and southern mining area of Barapukuria Coal Field to determine the water conducting fracture height of second slice of seam VI. Other activities in the year included completion a study on "Hydrogeological study and round water modeling for northern part of Barapukuria coal basin area" for adopting open pit coal mining in the northern part of Barapukuria, resettlement of about 300 landless families affected by land subsidence, and donation of Tk. 38.3 million as CSR activities, etc.



# PETROBANGLA 2018

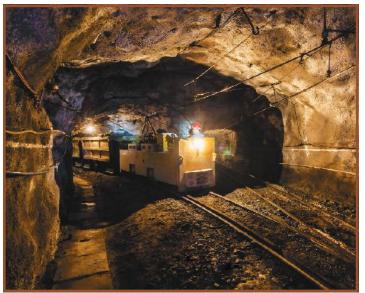


#### MADDHAPARA GRANITE MINING COMPANY LIMITED (MGMCL)

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 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 important, as there is hardly any other source of construction aggregate. It is set to produce about 1.65 million metric tons of granite per year. In order to continue full range of target production (5,500 metric tons/day) from Maddhapara Granite Mine and development of underground roadways and stopes, a contract was signed between Maddhapara Granite Mining Company Limited and Germania-Trest Consortium (GTC) on 2 September, 2013 for management and operation of the mine having contract price of US\$ 171.86 million. According to the contract, the contractor will develop 12 new stopes and produce 9.20 million metric tons of rock over a period of 6 years. Under the commencement of new management contract, the contractor has been extracting granite in 3 shifts, and started development of new underground roadways and stopes. In this FY only 2 stopes (partial) were developed out of 12 stopes. The rate of daily average production was 3,000-3,500 metric tons which will increase in future to fulfill the contractual target.

In the FY 2014-15, a total 9,31,476.20 metric tons of granite was produced and 5,15,497.17 metric tons was sold. The company earned Tk. 744.9 million from the sale of granite and made a payment of Tk. 252.3 million to the national exchequer.



Rock Transportation System in Underground of MGMCL

Considering the huge demand for granite in the country and in order to save the foreign currency used for import of granite, the company has undertaken a scheme for studying the feasibility for increasing production of granite from the Maddhapara Mine. Before going for a huge investment to materialize the scheme, planning for market feasibility study and techno-economic feasibility study is under process. Moreover, considering production, marketing, loan, cost-benefit etc, a 5 member committee has been formed for giving opinion about financial restructuring of the company. The report of the committee is in the final stage.

#### **DEVELOPMENT PROGRAMMES FOR THE FISCAL YEAR 2014–15**

The Annual Development Programme of Petrobangla for the FY 2014-15 had a total allocation of Tk. 9,493.60 million which included Tk. 2,124.90 million as Project Aid. The programme includes 21 projects, of which 13 are foreign aided projects, 1 is under Japan Debt Cancellation Fund (JDCF) project and 7 are GOB funded projects. In addition, there are 9 projects financed by the Corporation/Companies themselves (Self Financing) for the FY 2014-15 involving a total allocation of Tk. 2,708.50 million, of which Cash Foreign Exchange (CFE) involvement is Tk. 581.50 million and local currency is Tk. 2,127.00 million. Moreover, there are 19 projects under Gas Development Fund (GDF) in the FY 2014-15 with total allocation of Tk. 6,804.50 million, of which Cash Foreign Exchange (CFE) involvement is Tk. 2,659.80 million. Lists of ongoing projects with estimated project costs, execution period and financing sources are as follows:

| SI. | Name of the project   | Project<br>Period    | Executing<br>Agency | Estimated<br>Cost (PA) | Development<br>Partners |
|-----|---|----------------------|---------------------|------------------------|-------------------------|
| 1   | Installation of Compressor Stations at Ashuganj and<br>Elenga   | Jan'06-<br>Sep'17    | GTCL                | 14941.33<br>(9191.22)  | ADB                     |
| 2   | Hatikumrul-Bheramara Gas Transmission Pipeline<br>Project (30" x 98.10 km)  | July'06-<br>Dec.'16  | GTCL                | 7268.51<br>(4408.03)   | ADB                     |
| 3   | Bonpara-Rajshahi Gas Transmission Pipeline Project (12" x 53 km)  | July'06-<br>Dec.'14  | GTCL                | 1835.40<br>(887.60)    | ADB                     |
| 4   | Bheramara-Khulna Gas Transmission Pipeline Project (20" x 162.50 km)  | July'07-<br>Dec.'15  | GTCL                | 9038.14<br>(4752.66)   | ADB                     |
| 5   | Bakhrabad-Siddhirganj Gas Transmission Pipeline<br>Project (30" x 60 km)  | July'07-<br>June'16  | GTCL                | 8000.00<br>(5113.35)   | World Bank/<br>IDA      |
| 6   | Gas Seepage Control and Appraisal and Development of Titas Gas Field (Titas Well no. 23, 24, 25 and 26)   | Jan.'10-<br>June'15  | BGFCL               | 10000.00<br>(8100.00)  | ADB                     |
| 7   | Supply Efficiency Improvement of Titas Gas Transmission and Distribution Company Ltd.   | Jan.'10-<br>June'15  | TGTDCL              | 632.80<br>(424.60)     | ADB                     |
| 8   | South-West Region Gas Distribution Network Project  | Jan.'10-<br>Sept.'15 | SGCL                | 6000.00<br>(2850.00)   | ADB                     |
| 9   | Rehabilitation and Expansion of Existing Supervisory<br>Control and Data Acquisition (SCADA) System of<br>National Gas Grid under GTCL                    | Jan.'13-<br>June'16  | GTCL                | 2940.04<br>(2402.35)   | JICA                    |
| 10  | Natural Gas Efficiency Project (Installation of Wellhead<br>Compressor at Titas Gas Field Location-C and<br>Narshingdi Gas Field)                         | July'14-<br>June'18  | BGFCL               | 8680.00<br>(7290.00)   | JICA                    |
| 11  | Natural Gas Efficiency Project (Installation of Prepaid Gas Meter for KGDCL)  | July'14-<br>June'18  | KGDCL               | 2465.60<br>(1541.89)   | JICA                    |
| 12  | Natural Gas Efficiency Project (Dhanua- Elenga and West<br>Bank of Bangabandhu Bridge - Nalka Gas Transmission<br>Pipeline) (30" x 52 km and 24" x 14 km) | July'14-<br>June'19  | GTCL                | 9791.76<br>(5070.19)   | JICA                    |
| 13  | Natural Gas Efficiency Project (Installation of Prepaid Gas Meter for TGTDCL)   | July'15-<br>Dec.'18  | TGTDCL              | 7120.99<br>(4531.06)   | JICA                    |
|     |   | Sub-Total (Fo        | preign-Aided)       | 88714.57<br>(56562.95) |                         |

#### A. Ongoing Projects (Foreign Aided) : FY 2014-15

Source : Planning & Monitoring Division, Petrobangla.

(Taka in Million)



#### B. Ongoing Projects (under JDCF) : FY 2014-15

|     |   |                   |                     |                        | (Taka in Million)       |
|-----|---|-------------------|---------------------|------------------------|-------------------------|
| SI. | Name of the project   | Project<br>Period | Executing<br>Agency | Estimated<br>Cost (PA) | Development<br>Partners |
| 1   | TA to Review the Approach for Increasing the Efficiency of Gas Utilization in Certain Major Users |                   | Petrobangla         | 45.30<br>(0.00)        | JDCF                    |
|     |   | Sub-T             | otal (JDCF)         | 45.30<br>(00.0)        | JDCF                    |

#### C. Ongoing Projects (GoB Funded) : FY 2014-15

|     |  |                      |                     | (Taka in Million)       |
|-----|--|----------------------|---------------------|-------------------------|
| SI. | Name of the project  | Project<br>Period    | Executing<br>Agency | Estimated<br>Cost (CFE) |
| 1   | Mobarakpur Oil/Gas Exploration Well Drilling<br>Project  | Jan.'06-<br>Dec.'15  | BAPEX               | 89.26<br>(52.73)        |
| 2   | Gas Transmission Capacity Expansion Project<br>(Ashuganj-Bakhrabad) (30" x 61 km)                      | Jan.'10-<br>June'16  | GTCL                | 7433.80<br>(3836.70)    |
| 3   | Augmentation of Gas Production under Fast Track<br>Program (Drilling of 4 wells under BGFCL and 1 well | July'10-<br>March'16 | BGFCL               | 10537.00<br>(8262.00)   |
|     | under SGFL) (Titas Well no. 19, 20, 21, 22 and<br>Rashidpur Well no. 8)                                | July'10-<br>March'16 | SGFL                | 1705.00<br>(1220.00)    |
| 4   | 2D Seismic Survey under Fast Track Program   | Jan.'10-<br>June'13  | BAPEX               | 2302.80<br>(1947.20)    |
| 5   | Gas Fields Development Project of BAPEX (Saldanadi Well no. 3, 4 and Fenchuganj Well no. 4, 5)         | Jan.'10-<br>June'16  | BAPEX               | 3056.40<br>(2410.10)    |
| 6   | Sylhet Gas Transmission Network Up-gradation Project   | Jan.'12-<br>June'16  | JGTDSL              | 1068.30<br>(237.20)     |
| 7   | Moheshkhali-Anowara Gas Transmission Pipeline<br>Project (30" x 91 km)                                 | Jan.'13-<br>June'16  | GTCL                | 9819.00<br>(4689.10)    |
|     |  | Sub                  | o-Total ( GoB)      | 36011.56<br>(22655.03)  |

Source : Planning & Monitoring Division, Petrobangla.



Elenga Gas Comprssor Station of GTCL

#### D. Ongoing Projects (Self Financing) : FY 2014-15

| D. ( | Singoing Projects (Sen Pinancing) . P  | 1 2014 10            | )                   | (Taka in Million)       |
|------|--|----------------------|---------------------|-------------------------|
| SI.  | Name of the project  | Project<br>Period    | Executing<br>Agency | Estimated<br>Cost (CFE) |
| 1    | Installation of 4,000 barrels/day capacity<br>Condensate Fractionation Plant at Rashidpur  | July'12-<br>Dec.'16  | SGFL                | 4635.00<br>(3288.00)    |
| 2    | Installation of 3,000 barrels/day capacity Catalytic<br>Reforming Unit (CRU) at RCFP to Convert Petrol<br>into Octane  | Mar.'12-<br>June'17  | SGFL                | 3541.30<br>(2763.80)    |
| 3    | Construction of 2 Storage Tanks at Rashidpur<br>Condensate Fractionation Plant (RCFP)  | Sept.'12-<br>June'16 | SGFL                | 213.10<br>(0.00)        |
| 4    | Construction of 13 Storied Head Office Building<br>with Two Basements of Gas Transmission<br>Company Limited (GTCL) at Sher-e-Bangla Nagar<br>Administrative Area, Agargaon, Dhaka | July'12-<br>Dec.'16  | GTCL                | 1084.80<br>(0.00)       |
| 5    | Construction of Bibiyana-Dhanua Gas Transmission<br>Pipeline (36" x 137 km) (Revised)  | Apr.'11-<br>June'15  | GTCL                | 18126.33<br>(10339.40)  |
| 6    | Construction of 10" DN x 1000 psig x 30 km Gas<br>Transmission Pipeline from Sreepur to Joydevpur<br>CGS   | July'13-<br>June'17  | TGTDCL              | 1982.13<br>(693.15)     |
| 7    | Feasibility Study for Coal Bed Methane at Jamalganj Coal Field   | Jan.'14-<br>June'16  | Petrobangla         | 233.79<br>(176.20)      |
| 8    | Seismic Feasibility Study of Coal Deposit at Dighipara, Dinajpur   | Jan.'13-<br>March'15 | Petrobangla         | 72.20<br>(6.68)         |
| 9    | Construction of Gas Transmission Pipeline from<br>Titas Gas Field Location-C-B-A to Intake Point of<br>Titas-A-B pipeline at Chhayabari  | Dec.'13-<br>June'15  | GTCL                | 425.49<br>(0.00)        |
|      |  | Sub-Total (So        | elf Financing)      | 30314.14                |

30314.14 (17267.23) Sub-Total (Self Financing)

Source : Planning & Monitoring Division, Petrobangla.



Rupsha River Crossing work at Lobonchara, Khulna by SGCL



#### E. Ongoing Projects (under GDF) : FY 2014-15

| SI. | Name of the project  | Project<br>Period    | Executing<br>Agency | Estimated<br>Cost (CFE)  |
|-----|--|----------------------|---------------------|--------------------------|
| 1   | Procurement of 1500 HP Rig   | July'12-<br>June'15  | BAPEX               | 2117.24<br>(1857.08)     |
| 2   | Drilling of 5 Wells of BAPEX (Shahbazpur no. 3 and 4, Begumganj no. 3, Semutang no. 6, Srikail no. 3)  | Mar.'12-<br>June'15  | BAPEX               | 10139.70<br>(8233.10)    |
| 3   | Procurement of Gas Process Plant for Shahbazpur<br>Field   | July'12-<br>Dec.'15  | BAPEX               | 778.11<br>(674.35)       |
| 4   | Workover of Wells at Titas Gas Field Seepage Area (Workover of 5 Wells no. 1, 2, 5, 10 and 11)         | July'13-<br>Dec.'16  | BGFCL               | 2350.00<br>(635.50)      |
| 5   | Procurement of Standby Gas Process Plant   | Sept.'12-<br>June'15 | BAPEX               | 461.80<br>(392.30)       |
| 6   | Drilling of 1 Appraisal Oil Well/Development Gas<br>Well (Kailashtila no. 7) at Kailashtila Structure  | Sept.'12-<br>Dec.'15 | SGFL                | 2181.88<br>(589.89)      |
| 7   | 3D Seismic Project of BAPEX  | Dec.'12-<br>Nov.'17  | BAPEX               | 1825.00<br>(914.00)      |
| 8   | 2D Seismic Project of BAPEX  | Dec.'12-<br>June'18  | BAPEX               | 933.30<br>(340.50)       |
| 9   | Rupganj Oil/Gas Exploratory Well Drilling Project  | July'12-<br>June'15  | BAPEX               | 970.00<br>(598.04)       |
| 10  | Drilling of Titas Well no. 27  | July'13-<br>June'16  | BGFCL               | 942.50<br>(285.00)       |
| 11  | Recompletion of Bakhrabad Well no. 5   | Oct.'13-<br>Dec.'14  | BGFCL               | 427.50<br>(73.50)        |
| 12  | Drilling of Kailashtila Well no. 9 (Appraisal/<br>Development Well)                                    | Nov.'13-<br>Dec.17   | SGFL                | 1400.70<br>(609.90)      |
| 13  | Drilling of Sylhet Well no. 9 (Appraisal/<br>Development Well)   | Dec.'13-<br>June'16  | SGFL                | 1602.70<br>(558.00)      |
| 14  | Drilling of Rashidpur Well no. 9 (Appraisal/<br>Development Well)                                      | Jan.'14-<br>June'17  | SGFL                | 2922.54<br>(1787.13)     |
| 15  | Drilling of Rashidpur-10 and Rashidpur-12<br>(Exploration Well)  | July'14-<br>Dec.'17  | SGFL                | 5562.74<br>(3314.26)     |
| 16  | Installation of Compressor at Bakhrabad Gas Field  | Jan.'14-<br>June'16  | BGFCL               | 1197.50<br>(948.00)      |
| 17  | Procurement of Process Plant for Srikail Gas Field   | July'14-<br>June'16  | BAPEX               | 1166.70<br>(1020.00)     |
| 18  | Shahjadpur-Sundalpur (Sundalpur-2) Appraisal/<br>Development Drilling and Sundalpur-1 Workover Project | Oct.'14-<br>June'16  | BAPEX               | 754.50<br>(485.50)       |
| 19  | Rehabilitation of Engine, Mud Tank and Electrical<br>Power System of IDECO Rig                         | Nov.'14-<br>June'16  | BAPEX               | 389.00<br>(344.00)       |
|     |  | Su                   | b-Total (GDF)       | 38123.41<br>(23660.05)   |
|     | Grand Total (Foreign-Aided + JDCF + Gol  | 3 + Self Fina        | incing + GDF)       | 193208.98<br>(120145.26) |

Source : Planning & Monitoring Division, Petrobangla.

### 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 the GDP growth rate of 7% for the country, it is possible to improve the living standard of huge population through proper utilization of the limited resources. It may be mentioned here that 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 power sector. To overcome the stagnant situation, the present Government has been putting its best efforts for ensuring energy supply to accelerate the 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, necessary steps have been taken to import 500 MMSCFD of LNG by 2017. 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 finalising 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 ensuring proper pricing of gas to conserve energy and improve the financial operations of the gas sector.

#### COUNTRY WIDE GAS DEMAND PROJECTION UP TO 2019

|    |                                      |        |        | F      | igures are i | n MMSCFD |
|----|--------------------------------------|--------|--------|--------|--------------|----------|
|    | Company                              | Y-2015 | Y-2016 | Y-2017 | Y-2018       | Y-2019   |
| A. | Titas Gas T & D Company Ltd.         | 1989   | 2099   | 2170   | 2209         | 2220     |
| Β. | Karnaphuli Gas Distribution Co. Ltd. | 447    | 449    | 512    | 526          | 552      |
| C. | Bakhrabad Gas D Company Ltd.         | 493    | 618    | 554    | 555          | 555      |
| D. | Jalalabad Gas T & D System Ltd.      | 341    | 424    | 522    | 524          | 529      |
| E. | Pashchimanchal Gas Company Ltd.      | 129    | 200    | 201    | 258          | 259      |
| F. | Sundarban Gas Company Ltd.           | 45     | 80     | 83     | 139          | 141      |
|    | Total Gas Demand                     | 3444   | 3870   | 4042   | 4211         | 4256     |
|    | Overall Countrywide Total Gas Demand | 3274   | 3664   | 3823   | 3979         | 4023     |
|    |                                      |        |        |        |              |          |

Source : Production & Marketing Division, Petrobangla.



## PLAN FOR PRODUCTION AUGMENTATION

Over the 7 years since January, 2009, gross gas production capacity has been enhanced by 1,390 MMSCFD. Due to natural decline of deliverability of some wells, depletion of one field, net capacity added to the network amounted to be about 1000 MMSCFD. All out efforts for raising the gas production capacity is continuing; about 385 MMSCFD production capacity is expected to be added from the existing fields after completion of ongoing and planned augmentation projects during next 5 years, which include drilling of development/appraisal wells plus work-over. As the time goes on, number of such projects may increase. A list of ongoing and identified augmentation projects is shown below:

#### GAS PRODUCTION AUGMENTATION PROGRAMME

#### a) Development/Apprisal Wells

| SI No. | Gas Fields and Wells | Well type   | Completion     | Flow (MMSCFD) |
|--------|----------------------|-------------|----------------|---------------|
| 1.     | Salda no. 4          | Development | February, 2016 | 15            |
| 2.     | Titas no. 25         | Development | March, 2016    | 20            |
| 3.     | Bakhrabad no. 10     | Development | May, 2016      | 10            |
| 4.     | Srikail no. 4        | Development | April, 2016    | 20            |
| 5.     | Titas no. 26         | Development | June, 2016     | 20            |
|        |                      |             | Total          | 85            |

#### January, 2016 - June, 2016

#### July, 2016 - June, 2017

| SI No. | Gas Fields and Wells   | Well type   | Completion     | Flow (MMSCFD) |
|--------|------------------------|-------------|----------------|---------------|
| 1.     | Rashidpur no.10 and 12 | Apprisal    | August, 2016   | 30            |
| 2.     | Titas no. 24           | Development | October, 2016  | 20            |
| З.     | Rashidpur no. 9        | Development | December, 2016 | 10            |
| 4.     | Titas no. 23           | Development | January, 2017  | 20            |
| 5.     | Bangura no. 6 and 7    | Development | January, 2017  | 10            |
| 6.     | Sundalpur no. 2        | Development | January, 2017  | 10            |
|        |                        |             | Total          | 100           |

#### July, 2017 - June, 2018

| SI No. | Gas Fields and Wells | Well type   | Completion      | Flow (MMSCFD) |
|--------|----------------------|-------------|-----------------|---------------|
| 1.     | Begumganj no. 4      | Development | September, 2017 | 15            |
| 2.     | Srikail no. 5        | Development | December, 2017  | 20            |
| З.     | Kailashtila no. 9    | Development | April, 2018     | 25            |
|        |                      |             | Total           | 60            |



#### July, 2018 – June 2021

| SI No. | Gas Fields and Wells | Well type   | Completion      | Flow (MMSCFD) |
|--------|----------------------|-------------|-----------------|---------------|
| 1.     | Sylhet no. 9         | Development | August, 2018    | 10            |
| 2.     | Titas no. 28         | Development | December, 2018  | 20            |
| 3.     | Titas no. 29         | Development | April, 2019     | 20            |
| 4.     | Saldanadi no. 5      | Development | September, 2020 | 10            |
| 5.     | Shahbazpur no. 5     | Development | February, 2021  | 20            |
|        |                      |             | Total           | 80            |

January, 2016 to June, 2021 = 325 MMSCFD from 21 wells.

#### b) Workover Projects

| SI No. | Gas Field and Wells      | Completion Time | Flow (MMSCFD)              |
|--------|--------------------------|-----------------|----------------------------|
| 1.     | Titas no. 1, 2, 5 and 11 | 2016            | Sustain present production |
| 2.     | Titas no. 21             | May, 2016       | 20                         |
| 3.     | Titas no. 10             | June, 2016      | 10                         |
| 4.     | Kailashtila no. 1        | August, 2017    | 15                         |
| 5.     | Beanibazar no. 1         | November, 2017  | 10                         |
| 6.     | Rashidpur no. 2          | February, 2018  | 5                          |
|        |                          | Total           | 60                         |

Total Augmentation from existing (a+b) = 385 MMSCFD Source : Production & Marketing Division, Petrobangla.

Source : Production & Marketing Division, Petrobangia.

In addition to identified projects in existing gas fields, exploration ventures are also underway to enhance the gas reserve and subsequently enhancing production further. BAPEX has declared an aggressive exploration programme to be carried out under their Vision 2021. They have planned to drill 53 exploration wells in the onshore and drill 24 development wells in fields to be discovered as result of these massive exploration activities. Meanwhile, IOCs will also drill exploratory wells in already contracted offshore blocks. In all, the country may expect to see an addition of 1,100-1,200 MMSCFD new capacity from indigenous sources during next 5 years.



Shahbazpur Gas Field of BAPEX



| <del>.</del> |  | Water                |         | Chemical | Composition of Natural Gas | ion of Na      |          | (Volume Percent) | ercent) |                 |                     | Gross                  |                      |
|--------------|--|----------------------|---------|----------|----------------------------|----------------|----------|------------------|---------|-----------------|---------------------|------------------------|----------------------|
| No.          | Gas Fields (I  | Content<br>(Lb/MMSCF | Methane | Ethane   | Propane                    | lso-<br>Butane | N-Butane | High<br>Comp.    | $N_2$   | c0 <sub>2</sub> | specific<br>Gravity | Calorific<br>(Btu/cft) | nyurogen<br>Sulphide |
|              | Sylhet   | 1.200                | 95.349  | 2.542    | 0.974                      | 0.247          | 0.296    | 0.165            | 0.247   | 0.180           | 0.5896              | 1056.878               | Nïl                  |
| 2            | Chhatak  | n/a                  | 97.900  | 1.800    | 0.200                      | 1              | 1        | 1                | 1       | 1               | 0.5500              | 1005.710               | Nil                  |
| က            | 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            | Kailashtilla   | 0.700                | 96.217  | 2.588    | 0.674                      | 0.098          | 0.075    | 0.019            | 0.310   | 0.018           | 0.5773              | 1042.726               | Nil                  |
| Ŋ            | Titas  | 4.500                | 96.587  | 1.900    | 0.406                      | 0.099          | 0.060    | 0.166            | 0.343   | 0.440           | 0.5790              | 1032.000               | Nil                  |
| 9            | 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                  |
| œ            | Semutang   | n/a                  | 96.079  | 2.499    | 0.415                      | 0.103          | 0.056    | 0.096            | 0.209   | 0.542           | 0.5818              | 1037.080               |                      |
| 6            | Begumganj  | n/a                  | 95.460  | 3.190    | 0.640                      | 0.170          | 0.040    | T                | 1       | 0.300           | 0.5800              | 1045.610               | Nil                  |
| 10           | Kutubdia   | n/a                  | 95.720  | 2.870    | 0.670                      | 1              | 0.310    | 1                | 0.360   | 0.070           | 0.5900              | 1041.660               | Nil                  |
| 1            | 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    | I                | I       | 0.150           | 0.5800              | 1049.840               | Nil                  |
| 13           | Kamta  | n/a                  | 95.360  | 3.570    | 0.470                      | 060.0          |          | I                | 1       | 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           | Jalabad  | 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               | Nill                 |
| 25           | Srikail  | n/a                  | 95.928  | 2.452    | 0.527                      | 0.135          | 0.078    | 0.134            | 0.130   | 0.616           | 0.5847              | 1041.050               | Nill                 |
| Source.      | Source : Production & Marketing Division, Petrobangla. | angla.               |         |          |                            |                |          |                  |         |                 |                     |                        |                      |

Source : Production & Marketing Division, Petrobangla.



### NATURAL GAS TARIFF IN BANGLADESH

|                |       |                 |          |                 |               |               |                 |                           |         | la<br>Domestic   | aka/MCF          |
|----------------|-------|-----------------|----------|-----------------|---------------|---------------|-----------------|---------------------------|---------|------------------|------------------|
| Effective From | Power | Ferti-<br>lizer | Industry | Comme-<br>rcial | Tea<br>estate | Cap.<br>Power | CNG<br>feed gas | Brick field<br>(seasonal) | Metered | Single<br>Burner | Double<br>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           |
| 12.05.2009     | -     | -               | -        | -               | -             | -             | 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           |

Source : Accounts Division, Petrobangla.



# GAS FIELDS IN PRODUCTION

(As in December, 2015)

|          |                        |             |                    | Gas                  | s in MMSCFD, C | ondensate in BBL |
|----------|------------------------|-------------|--------------------|----------------------|----------------|------------------|
| 0        |                        | Total Wells | No of              | Production           | Produ          | uction           |
| Company  | Gas Field              | (No.)       | Producing<br>Wells | Capacity<br>(MMSCFD) | Gas            | Condensate       |
| 1. BGFCL | Titas                  | 23          | 21                 | 518                  | 516.5          | 367.0            |
|          | Bakhrabad              | 9           | 6                  | 43                   | 39.6           | 18.0             |
|          | Habiganj               | 11          | 7                  | 225                  | 225.1          | 11.4             |
|          | Narsingdi              | 2           | 2                  | 30                   | 28.0           | 49.2             |
|          | Meghna                 | 1           | 1                  | 11                   | 11.1           | 20.1             |
|          | Sub-Total              | 46          | 37                 | 827                  | 820.3          | 465.7            |
| 2. SGFL  | Sylhet                 | 3           | 2                  | 8                    | 8.3            | 61.1             |
|          | Kailashtila            | 6           | 5                  | 73                   | 70.5           | 581.8            |
|          | Rashidpur              | 8           | 5                  | 60                   | 58.1           | 50.7             |
|          | Beanibazar             | 2           | 1                  | 9                    | 9.6            | 150.4            |
|          | Sub-Total              | 19          | 13                 | 150                  | 146.5          | 844.1            |
| 3. BAPEX | Salda                  | 3           | 1                  | 10                   | 8.3            | 1.0              |
|          | Fenchuganj             | 5           | 3                  | 35                   | 35.6           | 25.5             |
|          | Shahbazpur             | 4           | 2                  | 50                   | 38.5           | 3.0              |
|          | Semutung               | 6           | 2                  | 3                    | 3.4            | 0.9              |
|          | Sundalpur              | 1           | 1                  | 3                    | 4.0            | 0.0              |
|          | Srikail                | 3           | 2                  | 40                   | 36.0           | 25.5             |
|          | Begumganj              | 3           | 1                  | 2                    | 1.2            | 0.0              |
|          | Sub-Total              | 25          | 12                 | 143                  | 126.9          | 55.9             |
|          | Sub-Total (1+2+3)      | 90          | 62                 | 1120                 | 1093.8         | 1365.7           |
| 4. IOCs  |                        |             |                    |                      |                |                  |
|          | Jalalabad              | 6           | 6                  | 260                  | 268.7          | 1577.1           |
| CHEVRON  | Maulavibazar           | 9           | 5                  | 50                   | 47.5           | 3.3              |
|          | Bibiyana               | 24          | 24                 | 1200                 | 1219.0         | 9234.0           |
| TULLOW   | Bangora                | 6           | 4                  | 110                  | 104.6          | 310.0            |
|          | Sub-Total              | 45          | 39                 | 1620                 | 1639.9         | 11124.4          |
|          | Grand Total (1+2+3+4): | 135         | 101                | 2740                 | 2733.6         | 12490.1          |

Source : Production & Marketing Division, Petrobangla.



DRS at Bhola of SGCL

# GROWTH TRAJECTORY OF CUSTOMER

| Year         | TGTDCL  | BGDCL  | JGTDSL | PGCL   | KGDCL  | TOTAL   |
|--------------|---------|--------|--------|--------|--------|---------|
| 1989-1990    | 330698  | 59937  | 32355  | -      | -      | 422990  |
| 1990-1991    | 346473  | 68129  | 34968  | -      |        | 449570  |
| 1991-1992    | 364403  | 75028  | 37844  | -      |        | 477275  |
| 1992-1993    | 386226  | 87741  | 40556  | _      | _      | 514523  |
| 1993-1994    | 414833  | 100402 | 43247  | -      | _      | 558482  |
| 1994-1995    | 453922  | 112118 | 47285  | _      | _      | 613325  |
| 1995-1996    | 493261  | 124159 | 51819  | -      | _      | 669239  |
| 1996-1997    | 541767  | 140443 | 56918  | -      | -      | 739128  |
| 1997-1998    | 588231  | 156294 | 61886  | -      | -      | 806411  |
| 1998-1999    | 636415  | 175525 | 65966  | -      | -      | 877906  |
| 1999-2000    | 684401  | 195374 | 70428  | 100    | -      | 950203  |
| 2000-2001    | 769000  | 214000 | 67000  | 1000   | -      | 1051000 |
| 2001-2002    | 833979  | 243887 | 72555  | 1558   | -      | 1151979 |
| 2002-2003    | 907946  | 271526 | 76923  | 3957   | -      | 1259798 |
| 2003-2004    | 979195  | 298060 | 83997  | 5714   | -      | 1366412 |
| 2004-2005    | 1041732 | 325089 | 90506  | 7684   | -      | 1465013 |
| 2005-2006    | 1110175 | 355958 | 98511  | 19254  | -      | 1583898 |
| 2006-2007    | 1239900 | 395508 | 107467 | 28898  |        | 1771773 |
| 2007-2008    | 1350187 | 433887 | 117142 | 38607  |        | 1939823 |
| 2008-2009    | 1458743 | 466355 | 127053 | 49522  |        | 2101673 |
| 2009-2010    | 1556560 | 510954 | 137523 | 58405  |        | 2263442 |
| 2010-2011    | 1563290 | 190596 | 149725 | 59086  | 369703 | 2332400 |
| 2011-2012    | 1563307 | 206213 | 162615 | 59171  | 369703 | 2361009 |
| 2012-2013    | 1565801 | 207938 | 177974 | 59725  | 369703 | 2381141 |
| 2013-2014    | 1722712 | 318435 | 192943 | 96492  | 472602 | 2803184 |
| 2014-2015    | 1897316 | 399540 | 209489 | 119483 | 533273 | 3159101 |
| up to Dec,15 | 1996801 | 441084 | 215971 | 125281 | 556581 | 3335718 |

Source : Production & Marketing Division, Petrobangla.



## NATURAL GAS RESERVE OF BANGLADESH

|           |                      | (As ir               | n Decembe       | r, 2015) |         |                |                              |                                    |   | Figure in BCF                    |
|-----------|----------------------|----------------------|-----------------|----------|---------|----------------|------------------------------|------------------------------------|---|----------------------------------|
| SL<br>No. | Fields               | Year of<br>Discovery | Rese<br>Estimat |          | GIIP    | Proved<br>(1P) | Proved +<br>Probable<br>(2P) | Proved +<br>Probable +<br>Possible | Cumulative<br>Production<br>(Dec, 2015) | Remaining<br>Reserve<br>w.r.t 2P |
|           |                      |                      | Company         | Year     |         |                | (2F)                         | (3P)                               | (Dec, 2015)                             | (Jan, 2016)                      |
| A. F      | Producing            | ing                  |                 |          |         |                |                              |                                    |   |                                  |
| 1.        | Titas                | 1962                 | RPS Energy      | 2009     | 8148.9  | 5384.0         | 6367.0                       | 6517.0                             | 4040.39                                 | 2326.61                          |
| 2.        | Habiganj             | 1963                 | RPS Energy      | 2009     | 3684.0  | 2238.0         | 2633.0                       | 3096.0                             | 2190.94                                 | 442.06                           |
| З.        | Bakhrabad            | 1969                 | RPS Energy      | 2009     | 1701.0  | 1052.9         | 1231.5                       | 1339.0                             | 788.95                                  | 442.58                           |
| 4.        | Kailashtilla         | 1962                 | RPS Energy      | 2009     | 3610.0  | 2390.0         | 2760.0                       | 2760.0                             | 622.79                                  | 2137.21                          |
| 5.        | Rashidpur            | 1960                 | RPS Energy      | 2009     | 3650.0  | 1060.0         | 2433.0                       | 3113.0                             | 564.84                                  | 1868.16                          |
| 6.        | Sylhet/Haripur       | 1955                 | RPS Energy      | 2009     | 370.0   | 256.5          | 318.9                        | 332.0                              | 208.33                                  | 110.57                           |
| 7.        | Meghna               | 1990                 | RPS Energy      | 2009     | 122.1   | 52.5           | 69.9                         | 101.0                              | 58.9                                    | 11.0                             |
| 8.        | Narsingdi            | 1990                 | RPS Energy      | 2009     | 369.0   | 218.0          | 276.8                        | 299.0                              | 170.55                                  | 106.25                           |
| 9.        | Beanibazar           | 1981                 | RPS Energy      | 2009     | 230.7   | 150.0          | 203.0                        | 203.0                              | 91.2                                    | 111.8                            |
| 10.       | Fenchuganj           | 1988                 | RPS Energy      | 2009     | 553.0   | 229.0          | 381.0                        | 498.0                              | 138.19                                  | 242.81                           |
| 11.       | Shaldanadi           | 1996                 | RPS Energy      | 2009     | 379.9   | 79.0           | 279.0                        | 327.0                              | 84.19                                   | 194.81                           |
| 12.       | Shahbazpur           | 1995                 | Petrobangla     | 2011     | 677.0   | 322.0          | 390.0                        | 488.0                              | 18.81                                   | 371.19                           |
| 13.       | Semutang             | 1969                 | RPS Energy      | 2009     | 653.8   | 151.0          | 317.7                        | 375.1                              | 11.07                                   | 306.63                           |
| 14.       | Sundulpur Shahzadpur | 2011                 | BAPEX           | 2012     | 62.2    | 25.0           | 35.1                         | 43.5                               | 9.43                                    | 25.67                            |
| 15.       | Srikail              | 2012                 | BAPEX           | 2012     | 240.0   | 96.0           | 161.0                        | 161.0                              | 39.5                                    | 121.5                            |
| 16.       | Jalalabad            | 1989                 | D & M           | 1999     | 1491.0  | 823.0          | 1184.0                       | 1184.0                             | 995.04                                  | 188.96                           |
| 17.       | Moulavi Bazar        | 1997                 | Unocal          | 2003     | 1053.0  | 405.0          | 428.0                        | 812.0                              | 282.42                                  | 145.59                           |
| 18.       | Bibiyana             | 1998                 | D & M           | 2008     | 8350.0  | 4415.0         | 5754.0                       | 7084.0                             | 2269.37                                 | 3484.63                          |
| 19.       | Bangura              | 2004                 | Tullow          | 2011     | 1198.0  | 379.0          | 522.0                        | 941.0                              | 323.41                                  | 198.59                           |
| 20.       | Begumganj            | 1977                 | BAPEX           | 2014     | 100.0   | 14.0           | 70.0                         |                                    | 0.79                                    | 69.21                            |
|           |                      |                      | Sub-t           | otal A:  | 36643.6 | 19739.9        | 25814.9                      | 29673.6                            | 12909.12                                | 12905.81                         |
| B. N      | on-Producing         |                      |                 |          |         |                |                              |                                    |   |                                  |
| 21.       | Kutubdia             | 1977                 | HCU             | 2003     | 65.0    | 45.5           | 45.5                         | 45.5                               | 0.00                                    | 45.5                             |
| 22.       | Rupganj              | 2014                 | BAPEX           | 2014     | 48.0    |                | 33.6                         | -                                  | 0.00                                    | 33.6                             |
|           |                      |                      | Sub-t           | otal B:  | 113.0   | 45.5           | 79.1                         | 45.5                               | 0.00                                    | 79.1                             |
| C. P      | roduction Suspen     | ded                  |                 |          |         |                |                              |                                    |   |                                  |
| 23.       | Chattak**            | 1959                 | HCU             | 2000     | 1039.0  | 265.0          | 474.0                        | 727.0                              | 26.46                                   | 447.54                           |
| 24.       | Kamta                | 1981                 | Niko/Bapex      |          | 71.8    | 50.3           | 50.3                         | 50.3                               | 21.1                                    | 29.20                            |
| 25.       | Feni                 | 1981                 | Niko/Bapex      |          | 185.2   | 125.0          | 125.0                        | 175.0                              | 62.4                                    | 62.60                            |
| 26.       | Sangu*               | 1996                 | Cairn/Shell     |          | 899.6   | 544.4          | 577.8                        | 638.7                              | 498.196                                 | 79.57                            |
|           |                      |                      |                 | otal C:  | 2195.6  | 984.7          | 1227.1                       | 1591.0                             | 608.2                                   | 618.9                            |
|           |                      | Grand To             | otal (A+B+C)    |          |         | 20770.1        | 27121.09                     | 31310.1                            | 13517.27                                | 13603.81                         |
|           |                      | Grand To             | otal (A+B+C)    | in TCE   | 39.0    | 20.8           | 27.12                        | 31.31                              | 13.52                                   | 13.60                            |

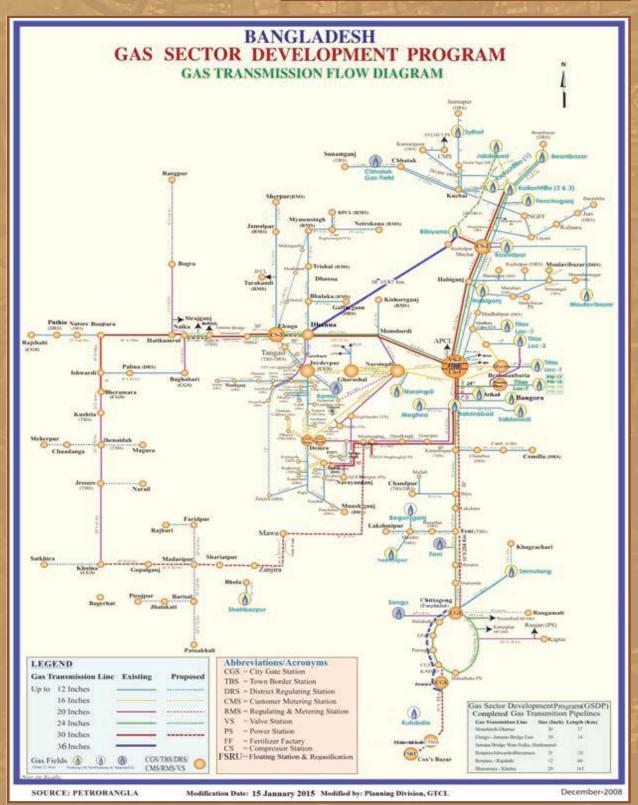
Note: \* Production from Sangu Gas Fields suspended from 1 October, 2013. \*\* Reserve of Chattak Gas Field is under reevaluation due to excessive seepage caused by two successive blowouts in 2005. Source : Reservoir and Data Management Division, Petrobangla.

#### MAJOR GAS TRANSMISSION PIPELINES AND FLOW CAPACITY

| Compai | ny   | Name of The Line and Route                            | Diameter<br>(Inch) | Length<br>(Km) | Oper. Pres.<br>(Psig) | Max. Flow<br>Capacity<br>(MMSCFD) |
|--------|------|---|--------------------|----------------|-----------------------|-----------------------------------|
| TGTDCL | 01   | TITAS-DHAKA   | 14                 | 81.80          | 1000                  | 175                               |
|        | 02   | TITAS-NARSHINGDI                                      | 16                 | 46.31          | 1000                  | 265                               |
|        | 03   | NARSHINGDI-JOYDEVPUR                                  | 14                 | 37.51          | 1000                  | 220                               |
|        | 04   | NARSHINGDI-GHORASAL                                   | 14                 | 10.30          | 1000                  | 220                               |
|        | 05   | HABIGANJ-ASHUGANJ                                     | 12                 | 57.75          | 1000                  | 85                                |
|        | 06   | MONOHARDI-NARSHINGDI                                  | 20                 | 24.50          | 1000                  | 300                               |
|        | 07   | MONOHARDI-KISHORGANJ                                  | 4                  | 35.00          | 1000                  | 6                                 |
|        |      | ASHUGANJ V.S. # 3-ZFCL                                | 10                 | 4.00           | 1000                  | 95                                |
|        |      | ELENGA-TARAKANDI                                      | 12                 | 42.41          | 1000                  | 80                                |
|        |      | DHONUA-MYMENSINGH                                     | 12                 | 56.70          | 1000                  | 55                                |
|        |      | TARAKANDI-JAMALPUR                                    | 8/6                | 21.00          | 1000                  | 25                                |
|        |      | MYMENSINGH-NETROKONA                                  | 8/6                | 40.00          | 1000                  | 60                                |
| GTCL   |      | NORTH SOUTH   | 24                 | 175.00         | 1050                  | 330                               |
| 0.02   |      | ASHUGANJ-BAKHRABAD 1                                  | 30                 | 58.00          | 1000                  | 425                               |
|        |      | BANGABANDU BRIDGE                                     | 30                 | 9.00           | 1000                  | 300                               |
|        |      | ELENGA-NALKA  | 24                 | 28.50          | 1000                  | 250                               |
|        |      | NALKA-BAGHABARI                                       | 20                 | 35.50          | 1000                  | 250                               |
|        |      | BEANIBAZAR-KAILASHTILA                                | 20                 | 18.00          | 1050                  | 250                               |
|        |      | ASHUGANJ-HABIGANJ                                     | 30                 | 54.00          | 1050                  | 500                               |
|        |      | RASIDPUR-HABIGANJ                                     | 30                 | 28.00          | 1050                  | 500                               |
|        |      | NALKA-HATIKUMRUL                                      | 30                 | 6.00           | 1000                  | 425                               |
|        |      | HATIKUMRUL-BOGRA                                      | 20                 | 54.00          | 1000                  | 225                               |
|        |      | MONOHARDI-DHANUA ELENGA PIPELINE (1ST PHASE)          | 30                 | 51.00          | 1000                  | 750                               |
|        |      | BAKHRABAD-DEMRA                                       | 20                 | 68.72          | 1000                  | 250                               |
|        |      | BAKHRABAD-CHITTAGONG                                  | 20                 | 174.65         | 1000                  | 300                               |
|        |      | ASHUGANJ-ELENGA                                       | 24                 | 124.00         | 960                   | 330                               |
|        |      | ASHUGANJ-MONOHARDI                                    | 20                 | 37.00          | 1000                  | 425                               |
|        |      | DHAKA CLEAN FUEL (GTCL PART)                          | 20                 | 60.00          | 1000                  | 425                               |
|        |      | BONPARA-RAJSHAHI                                      | 12                 | 53.00          | 1000                  | 450                               |
|        |      | HATIKUMRUL-BHERAMARA                                  | 30                 | 78.00          | 1000                  | 400                               |
|        |      | 24" DIA 8 KM FROM TITAS GAS FIELD-AB PIPELINE PROJECT | 24                 | 8.00           | 1050                  | 330                               |
|        |      | SRIKAIL GAS FIELD (LOCATION 2)-AB PIPELINE PROJECT    | 24                 | 1.50           | 1000                  | 250                               |
|        |      | BIBIYANA-DHANUA                                       | 36                 | 137.00         | 1000                  | 640                               |
|        |      | BAKHRABAD-SIDDHIRGANJ                                 | 30                 | 60.00          | 1000                  | 450                               |
|        |      | SRIKAIL GAS FIELD (LOCATION 2)-AB PIPELINE PROJECT    | 10                 | 7.70           | 1000                  | 250                               |
|        | 30   | INTAKE POINT OF TITAS AB PIPELINE AT CHAYABARIA       | 10                 | 1.10           | 1000                  | 250                               |
|        | - 00 |   |                    |                | 1000                  | 450                               |
|        |      | ASHUGANJ-BAKHRABAD 2                                  | 30                 | 61.00          | 1000                  | 450                               |
| KGDCL  |      | CHITTAGONG RING MAIN                                  | 24/20/16           | 59.48          | 350                   | 451                               |
|        |      | KPM SPAUR   | 8                  | 36.15          | 350                   | 18                                |
|        |      | CHITTAGONG-RAUZAN                                     |                    | 18.00          | 350                   | 150                               |
|        |      | SEMUTANG-CHITTAGONG                                   | 10                 | 56.00          | 960                   |                                   |
| JGTDSL |      | HARIPUR-NGFF  |                    | 43.00          | 1000                  | 62                                |
|        |      | KAILASHTILA-KUCHAI                                    | 8                  | 13.00          | 1000                  | 62                                |
|        |      | KUCHAI-CHATAK   | 6                  | 39.00          | 1000                  | 36                                |
|        |      | DEVPUR-KUMARGAON                                      | 6                  |                | 1000                  | 36                                |
|        |      | HABIGANJ-SHAHJI BAZAR                                 | 8                  | 2.00           | 1000                  | 53                                |
|        |      | SHAHAJI BAZAR-SHAMSHER NAGAR                          | 6                  | 65.00          | 1000                  | 11                                |
|        |      | SRIMONGAL-MOULOVI BAZAR                               | 6                  | 26.00          | 1000                  | 11                                |
|        |      | CHATAK-TENGRATILA                                     | 4                  | 19.00          | 1000                  | 10                                |
|        | 49   | TENGRATILA-SUNAMGANJ                                  | 4                  | 13.00          | 1000                  | 10                                |



### BANGLADESH GAS SECTOR DEVELOPMENT PROGRAM



CATEGORY-WISE ANNUAL GAS SALES (FY 1990-91 to FY 2014-15)

Gas Volume In Billion Cubic Feet (BCF)

|               | 5<br>2<br>2 | BL     | <b>BULK SALES</b> |               |          |          | Non Bulk Sales  | Sales       |                |              | Total |       | Total      |
|---------------|-------------|--------|-------------------|---------------|----------|----------|-----------------|-------------|----------------|--------------|-------|-------|------------|
| Year          | Production  | Power  | Ferti-<br>lizer   | Sub.<br>Total | Industry | Domestic | Comme-<br>rcial | Tea/<br>CNG | Brick<br>Field | Sub<br>Total | Sales | UFG   | Production |
| 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         |                | 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      |
| 20 07-08      | 600.9       | *314.5 | 78.7              | 393.2         | 92.2     | 69.0     | 0.0             | 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 | (2.6) | 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     | 00<br>00        | 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      |
| . Julv-Dec 15 | 486.2       | *282.4 | 26.1              | 308.5         | 77.5     | 69.7     | 4.5             | 24.0        | 0.0            | 175.7        | 484.2 | 2.0   | 486.2      |



# PAYMENT TO NATIONAL EXCHEQUER

|        | Taka in Million  |
|--------|--|
| oyalty | Total  |
| -      | 13443.8  |
|        | 14800.4  |
|        | 14259.2  |
|        | 15846.7  |
|        | 16337.3  |
|        | 22613.7  |
|        | 25708.0  |
|        | 27288.8  |
| 12.5   | 28115.0  |
| 12.6   | 29453.9  |
| 60.9   | 28025.4  |
| 6.3    | 32630.3  |
| 655.3  | 39601.3  |
| 714.0  | 41682.0  |
| 1000.6 | 45383.3  |
| 1404.7 | 55865.8  |
| 1549.1 | 53779.4  |
| 245.5  | 62042.5  |
|        | -<br>12.5<br>12.6<br>60.9<br>6.3<br>655.3<br>714.0<br>1000.6<br>1404.7<br>1549.1 |

Source: Accounts Division, Petrobangla.



Seminar on the occasion of National Energy Security Day on 9 August, 2015

#### BANGLADESH OIL, GAS AND MINERAL CORPORATION (PETROBANGLA)

**Statement of Financial Position (Balance Sheet)** As at 30 June 2015

|  | 2015<br>BDT  | 2014<br>BDT   |
|--|--|---|
| Assets   |  |   |
| Non-current assets   |  |   |
| Property, plant and equipment  | 276,624,117  | 293,041,595   |
| Minor capital project (capital work-in-progress)   | 2,873,133  | 2,773,133   |
| Assets held under SPMC project   | 26,041,845   | 26,041,845  |
|  | 305,539,095  | 321,856,573   |
| Investments  | 4100 500   | 4106 500  |
| Investment in enterprises  | 4,196,580  | 4,196,580   |
| Internal accounts with projects  | 20,000,000   | -   |
| Investment in FDR  | 61,148,400,807   | 51,412,811,245  |
| Investment in shares   | 18,482,000   | 18,482,000  |
| Current assets   | 61,191,079,387   | 51,435,489,825  |
| Group current account  | 13,299,576,099   | 9,572,348,746   |
| Accounts receivable  | 33,257,715,662   | 35,082,498,832  |
| Advances, deposits and prepayments   | 303,152,349  | 498,598,091   |
| Loans and advances to employees  | 300,439,802  | 263,132,946   |
| Cash and bank balances   | 8,933,505,350  | 11,701,070,571  |
|  | 56,094,389,262   | 57,117,649,187  |
| Total assets   | 117,591,007,744  | 108,874,995,585   |
|  | , , ,  |   |
| Equity and liabilities   |  |   |
|  |  |   |
| Capital and reserves   |  |   |
| <b>Capital and reserves</b><br>Paid-up capital   | 1,500,000  | 1,500,000   |
| •  | 1,500,000<br>16,942,922,172  | 1,500,000<br>15,794,270,665   |
| Paid-up capital  |  |   |
| Paid-up capital<br>Capital reserve   | 16,942,922,172   | 15,794,270,665  |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund  | 16,942,922,172<br>62,114,467,253   | 15,794,270,665<br>59,069,562,211  |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br>Long-term liabilities   | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b>   | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br><b>101,335,004,827</b>  |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br>Long-term liabilities<br>Long-term borrowings   | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b><br>39,275,956   | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br><b>101,335,004,827</b><br>39,275,956  |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br>Long-term liabilities   | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b><br>39,275,956<br>114,657,238  | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br><b>101,335,004,827</b><br>39,275,956<br>111,718,429   |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br>Long-term liabilities<br>Long-term borrowings<br>Other long-term liabilities  | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b><br>39,275,956   | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br><b>101,335,004,827</b><br>39,275,956  |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br>Long-term liabilities<br>Long-term borrowings<br>Other long-term liabilities<br>Current liabilities   | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b><br>39,275,956<br>114,657,238<br><b>153,933,194</b>  | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br>101,335,004,827<br>39,275,956<br>111,718,429<br>150,994,385   |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br>Long-term liabilities<br>Long-term borrowings<br>Other long-term liabilities<br>Current liabilities<br>Creditors  | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b><br>39,275,956<br>114,657,238<br><b>153,933,194</b><br>6,939,835,929   | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br><b>101,335,004,827</b><br>39,275,956<br>111,718,429<br><b>150,994,385</b><br>6,485,625,753                              |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br>Long-term liabilities<br>Long-term borrowings<br>Other long-term liabilities<br>Current liabilities<br>Creditors<br>Deferred income                                   | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b><br>39,275,956<br>114,657,238<br><b>153,933,194</b><br>6,939,835,929<br>26,041,845                             | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br><b>101,335,004,827</b><br>39,275,956<br>111,718,429<br><b>150,994,385</b><br>6,485,625,753<br>26,041,845                |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br>Long-term liabilities<br>Long-term borrowings<br>Other long-term liabilities<br>Current liabilities<br>Creditors<br>Deferred income<br>Suspense account               | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b><br>39,275,956<br>114,657,238<br><b>153,933,194</b><br>6,939,835,929<br>26,041,845<br>689,334,632              | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br><b>101,335,004,827</b><br>39,275,956<br>111,718,429<br><b>150,994,385</b><br>6,485,625,753<br>26,041,845<br>853,851,256 |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br>Long-term liabilities<br>Long-term borrowings<br>Other long-term liabilities<br>Current liabilities<br>Creditors<br>Deferred income                                   | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b><br>39,275,956<br>114,657,238<br><b>153,933,194</b><br>6,939,835,929<br>26,041,845<br>689,334,632<br>2,014,322 | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br>101,335,004,827<br>39,275,956<br>111,718,429<br>150,994,385<br>6,485,625,753<br>26,041,845<br>853,851,256<br>23,477,519 |
| Paid-up capital<br>Capital reserve<br>Revenue reserve<br>Gas Development Fund<br><b>Long-term liabilities</b><br>Long-term borrowings<br>Other long-term liabilities<br><b>Current liabilities</b><br>Creditors<br>Deferred income<br>Suspense account | 16,942,922,172<br>62,114,467,253<br>30,720,958,397<br><b>109,779,847,822</b><br>39,275,956<br>114,657,238<br><b>153,933,194</b><br>6,939,835,929<br>26,041,845<br>689,334,632              | 15,794,270,665<br>59,069,562,211<br>26,469,671,951<br><b>101,335,004,827</b><br>39,275,956<br>111,718,429<br><b>150,994,385</b><br>6,485,625,753<br>26,041,845<br>853,851,256 |

S. F. AHMED & CO Chartered Accountants A. MATIN & CO Chartered Accountants



#### **BANGLADESH OIL, GAS AND MINERAL CORPORATION (PETROBANGLA)**

Statement of Profit or Loss and Other Comprehensive Income For the year ended 30 June 2015

|  | 2015<br>BDT      | 2014<br>BDT      |
|--|------------------|------------------|
| Income                                     |                  |                  |
| Sales proceeds from IOC gas and condensate | 80,421,044,204   | 72,374,717,885   |
| Petrobangla actual cost recovery           | 487,041,000      | 380,447,000      |
| Transport fare recovery                    | 759,406          | 565,962          |
| Rental income                              | 11,817,367       | 9,220,256        |
| Miscellaneous income                       | 44,545,278       | 76,723           |
|  | 80,965,207,255   | 72,765,027,826   |
| Expenditure                                |                  |                  |
| Cost of sales of gas and condensate        | 81,658,383,253   | 71,740,643,953   |
| Personnel costs                            | 413,389,489      | 331,063,544      |
| Professional services                      | 1,409,595        | 1,303,428        |
| Promotional costs                          | 8,274,804        | 7,194,934        |
| Power costs                                | 4,802,165        | 2,574,051        |
| Communication costs                        | 1,484,100        | 1,752,367        |
| Transport costs                            | 25,034,124       | 25,471,889       |
| Occupancy costs                            | 27,612,639       | 35,367,993       |
| Financial costs                            | 500,539          | 353,472          |
| Administrative costs                       | 5,448,361        | 5,661,756        |
| Miscellaneous costs                        | 72,442,354       | 5,226,596        |
| Depreciation                               | 18,722,605       | 16,144,298       |
| Total expenditure                          | 82,237,504,028   | 72,172,758,281   |
| Operating profit/(loss)                    | (1,272,296,773)  | 592,269,545      |
| Non-operating income                       |                  |                  |
| Interest on short term deposit             | 73,358,860       | 68,034,662       |
| Interest on house building loan            | 11,595,851       | 8,283,101        |
| Interest on motor cycle loan               | 409,278          | 517,656          |
| Interest on computer loan                  | 104,750          | 126,750          |
| PSC financial income from STD bank account | 540,000,000      | -                |
| PSC financial income from FDR              | 1,108,192,587    | 1,714,093,112    |
| Total non-operating income                 | 1,733,661,326    | 1,791,055,281    |
| Net surplus/(deficit)                      | 461,364,554      | 2,383,324,826    |
| Appropriation account                      |                  |                  |
| Un-appropriated surplus brought forward    | (30,868,887,116) | (33,274,644,523) |
| Prior year's adjustment                    | (6,198,804)      | 22,432,580       |
| Prior year's adjustment for PSC            | (133,560,390)    | _                |
| Surplus/(deficit) for the year             | 461,364,554      | 2,383,324,826    |
|  | (30,547,281,756) | (30,868,887,116) |
|  |                  |                  |

S. F. AHMED & CO **Chartered Accountants** 

A. MATIN & CO **Chartered Accountants** 

# PETROBANGLA 2015 ANNUAL REPORT

# ANNUAL REPORT 2015 PUBLICATION COMMITTEE

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