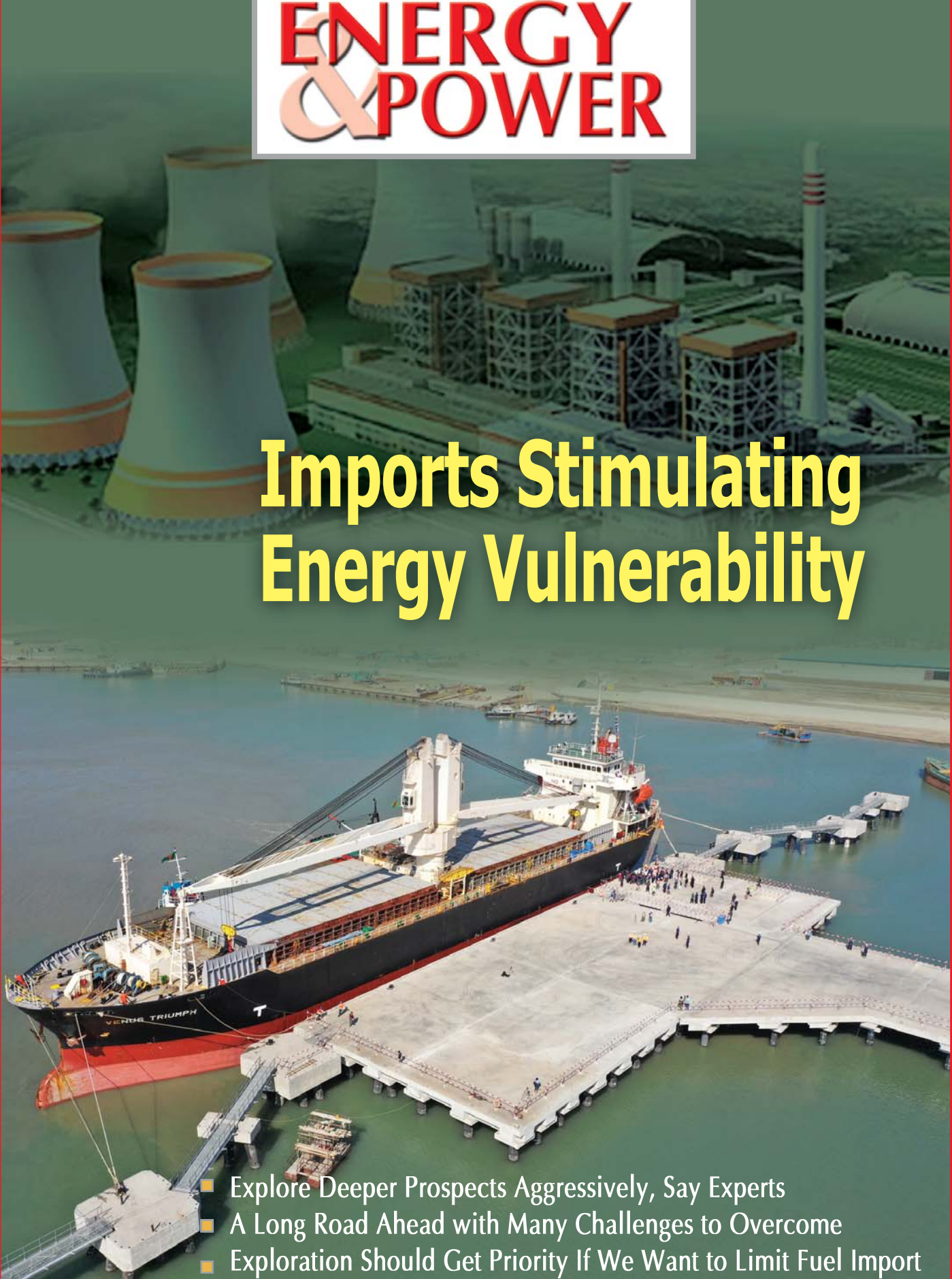


ENERGY & POWER

Imports Stimulating Energy Vulnerability

- 
- Explore Deeper Prospects Aggressively, Say Experts
 - A Long Road Ahead with Many Challenges to Overcome
 - Exploration Should Get Priority If We Want to Limit Fuel Import



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BANGLADESH:

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Tel : +880 2 5716 0955 Fax : +880 2 5716 0966 E-mail : m2kttc@gmail.com

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Block 428, Clementi Avenue 3 # 10/430, Singapore 120428.
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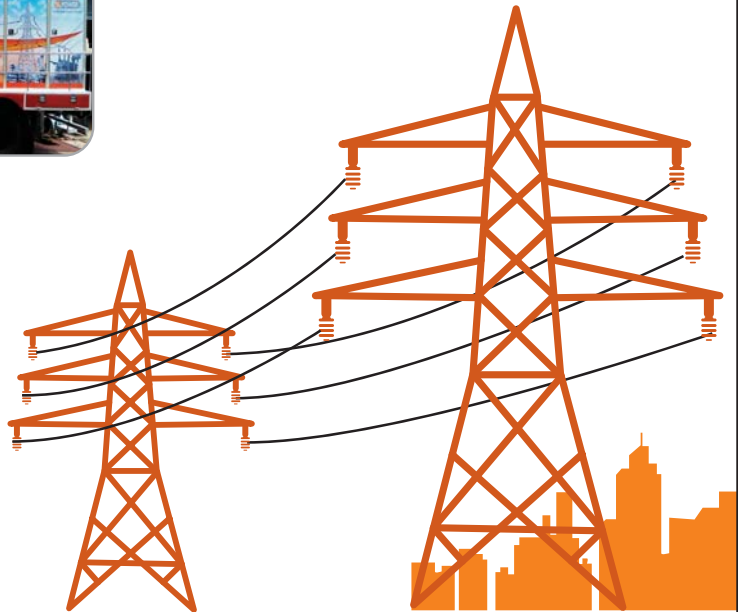
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Head Office: B-6 (Part) 9-10 & 23-24, BSCIC Industrial Estate, Block-A Post Office - Custom Academy, Sagarika Road, Chattagram - 4219, Bangladesh.
Phone: +88-02-43151995, +88-02-43150035, +88-02-43150036, Fax: +88-02-43151091, E-mail: info@lub-rref.com

Corporate Office: Rupayan Trade Center, Space # 5 (7th Floor), 114 Kazi Nazrul Islam Avenue, Dhaka-1000, Bangladesh
Mobile: +88 01977 266061, 01977 266005, Phone: +88 02 55138710, Fax: +88 02 55138711, Email: infodhk@lub-rref.com

Editor
Mollah M Amzad Hossain

Advisory Editor
Anwarul Islam Tarek
Mortuza Ahmad Faruque
Saiful Amin

International Editor
Dr. Nafis Ahmed

Contributing Editors
Saleque Sufi

Online Editor
GSM Shamsuzzoha (Nasim)

Managing Editor
Afroza Hossain

Deputy Editor
Syed Mansur Hashim

Reporters
Arunima Hossain

Assistant Online Editor
Aditya Hossain

Manager A & A
Md. Ariful Islam

Design & Graphics
Md. Monirul Islam

Photography
Bulbul Ahmed

Production
Mufazzal Hossain Joy

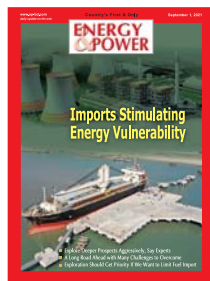
Computer Graphics
Md. Uzzal Hossain

Circulation Assistant
Khokan Chandra Das

Editorial, News & Commercial
Room 509, Eastern Trade Center
56 Inner Circular Road (VIP Road)
Naya Paltan. GPO Box : 677
Dhaka-1000, Bangladesh
Tel & Fax : 88-02-58314532
Email: ep@dhaka.net
energypower@gmail.com
Website: www.ep-bd.com

Price

Bangladesh: Tk 50, SAARC: US\$ 6,
Asia: US\$ 8, Europe: US\$ 10, North
America, Africa & Australia: US\$ 14



Fortnightly Magazine, Vol 19, Issue 6, September 1-15



EDITORIAL

The power tariff in Bangladesh increased by around 90% over the past 11 years. Yet, the government subsidies to the power sector were rising due to higher generation costs of power. The government has to allocate BDT 9000 crore in the budget for the current fiscal year to provide the subsidy. Moreover, the country has to pay a subsidy of BDT 5000-6000 crore annually due to import of LNG. The deficit in gas supply has widened and the country is steadily moving towards exclusive reliance on imported fuel. Consequently, the cost of power generation would go up even more, which may also force the government to raise the retail prices or subsidy allocation.

Failure in increasing the own fuel contribution to the country's fuel mix would push Bangladesh increasingly towards the imported fuel. It would make energy security vulnerable as the prices would depend on the volatile global energy market.

Cover: Matarbari Energy Hub (Coal Port and Power Plant). Photo Credit: CPGCL

h i g h l i g h t s

COVER



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There are high chances of getting more oil and gas in the country's deep structures and suggested the authorities concerned to immediately start exploration works at 8-10 carefully-selected locations in the country considering it as urgent as a war-like situation. He emphasized that it is not possible to go through a tendering process to procure arms and ammunition during a war... More in Special Report

The country is increasingly leaning towards imported primary fuel. Gas, coal and power all are being imported. It would increase further in 2030 and 2041. Beyond these, import of liquid fuel is also continuing. The coincident peak demand of connected consumers is now 3800 MMCFD. The production capacity has depleted over the last few years. According to different assessments, the entire proven reserve of its own gas would be completely used up by 2031.



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The subsidies for the power and energy sectors keep rising due to growing dependence on imported primary fuel. Planned actions have been launched to increase the contribution of own gas to the fuel mix within 3-4 years. However, exploitation of own coal has not been totally abandoned although it is not under consideration now... Md Anisur Rahman tells EP



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Greenpage

Encouraged by the readers and patrons, the EP would continue bringing out Green Pages to contribute to the country's efforts in its journey towards environment-friendly energy.

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PTTEP Announces New CEO



PTT Exploration and Production Public Company Limited (PTTEP) has revealed that the company's board of directors has appointed Montri Rawanchaikul, PTTEP's president, to be the new chief executive officer and director of the company.

PTTEP's current CEO and director, Phongsthorn Thavisin, will end his roles on September 30, 2021, PTTEP confirmed.

The appointment of the new CEO and director will be effective from October 1, 2021, the company outlined. PTTEP highlighted that the appointment of Rawanchaikul to the position of director is subject to the State Enterprise Policy Committee's approval.

Thavisin has held several roles at PTTEP, including president, president of exploration and production, chief operating officer of the production asset and operations support group and senior manager of international assets. He became PTTEP's CEO back in October 2018.

PGCIL Board Approves Rs 425cr Equity Investment in EESL

State-owned Power Grid Corporation of India Ltd (PGCIL) board has decided to infuse fresh equity up to Rs 425 crore in Energy Efficiency Services.



The Board of Directors of Power Grid has, in its 394th Meeting held on August 10, 2021, approved the proposal to infuse fresh equity up to Rs. 425 crore in Energy Efficiency Services Limited (EESL), a Joint Venture Company of Power Grid, NTPC, PFC and REC, a company statement said.

BHP to Sell Oil, Gas Business to Woodside

BHP Group said recently it will sell its petroleum assets to Woodside Petroleum in an all-stock deal as the world's biggest listed miner posted its best annual profit in nearly a decade.



BHP has been under increasing pressure to trim its fossil fuel exposure, and has already sold some coal assets while looking to sell more.

Following the large share issue associated the deal, Woodside will be owned 52% by existing shareholders and 48% by BHP shareholders.

The companies expect annual savings more than \$400 million a year.

BHP's underlying profit attributable for the year ended June rose to \$17.01 billion from \$9.06 billion last year, missing a consensus of \$17.46 billion from 17 analysts compiled by Vuma.

The company said it will pay a final dividend of \$2 per share, higher than the 55 cents paid last year.

LG Elec Cuts Q2 Operating Profit by 21pc

South Korea's LG Electronics Inc said recently it has revised down its second quarter operating profit by more than a fifth to reflect a provision for recall costs for General Motor Co's Bolt electric vehicles (EVs).

It said operating profit for the three months to end-June was now 878 billion won (US\$763.56 million) from a previously announced 1.1 trillion.

LG Electronics has supplied GM with battery modules made with battery cells produced by LG Chem's wholly-owned battery subsidiary LG Energy Solution (LGES).

In July, GM issued a second recall for nearly 69,000 Chevrolet Bolt EVs worldwide after reports of two fires and will replace defective battery modules as needed.

"We will continue to fully cooperate with the joint investigation conducted by GM, LG Electronics and LG Energy Solution and ensure smooth recall process," an official at LG Electronics told media.

LG Chem said in July during its second-quarter earnings call that the fires could be related to two defects which occurred during the battery module manufacturing process.

Bangabandhu's Ideals Foundation for Sonar Bangla: Nasrul



State Minister for Power, Energy and Mineral Resources Nasrul Hamid recently said the ideals of Father of the Nation Bangabandhu Sheikh Mujibur Rahman is the main foundation for building a developed Sonar Bangla.

"Bangladesh will turn into a prosperous and developed country in line with the Vision-

2021 and Vision-2041," he said while inaugurating 'Mujib Corner' at corporate office of the North-West Power Generation Company Ltd on virtual platform on the occasion of Mujib Borsho.

Chaired by power secretary and also chairman of North-West Power Generation Company Ltd. Md Habibur Rahman, the program was also addressed, among others, by Chairman of Bangladesh Power Development Board (BPDB) Engineer Md Belayet Hossain and Managing Director and Chief Executive Officer of North-West Power Generation Company AM Khorshedul Alam.

Nasrul Hamid said the more the contribution of Father of the Nation Bangabandhu Sheikh Mujibur Rahman will be publicized the more patriotism will develop among the next generations.

Ifad Autos to Invest \$51m in Bangabandhu Shilpa Nagar

Ifad Autos Limited has signed a land-lease agreement with Bangladesh Economic Zones Authority (Beza) by which the company will expand its manufacturing facilities on 30 acres of land at the Bangabandhu Sheikh Mujib Shilpa Nagar.

Tanvir Ahmed, managing director of Ifad Autos, and Md Ali Ahsan, executive member of Beza, signed the deal on behalf of their respective organizations at a Beza headquarters in Dhaka recently.

According to a Beza press statement, the company Ifad will invest \$51 million to set up a car assembly factory, lubricant blending plant, and light engineering industry, that will create employment for about 880 people.

Commenting on the matter, Ifad Autos Managing Director Tanvir Ahmed said they chose the

Bangabandhu Sheikh Mujib Shilpa Nagar for expanding their manufacturing facilities because Beza has been providing world-class facilities to investors there, a prerequisite for a business to thrive.

The company will start with motorcycle assembly, lubricant blending, and other light engineering factories within the shortest possible time, he added.

UN Appoints Dr Nazrul Islam as Chief of Development Research

Dr Nazrul Islam will lead the preparation of UN flagship reports on global development issues and provide policy input and advise the senior management of the organization, said a press release.

Dr Nazrul earned his PhD in economics from Harvard University and MSc in economics from Moscow State University.

He taught at Dhaka University, Harvard University, Emory University, Kyushu University, and St John's University and joined the United Nations in 2006.

Dr Nazrul earned international reputation for his contribution to several areas of economics, including growth, transition, sustainable development, and political economy.

He has published twenty books and numerous articles in reputed international journals.

He founded Bangladesh Environment Network (BEN) in 1998 and initiated the formation of Bangladesh Poribesh Andolon (BAPA) in 2000.



Gas Supply Crunch in City Areas

The natural gas consumers of some areas in the capital city experienced supply interruptions with low pressure for few days in the recent past.

Residents of Mirpur, Mohammadpur, Dhanmondi, Shyamoli, Hajaribag and other nearby areas reported getting low gas pressure.

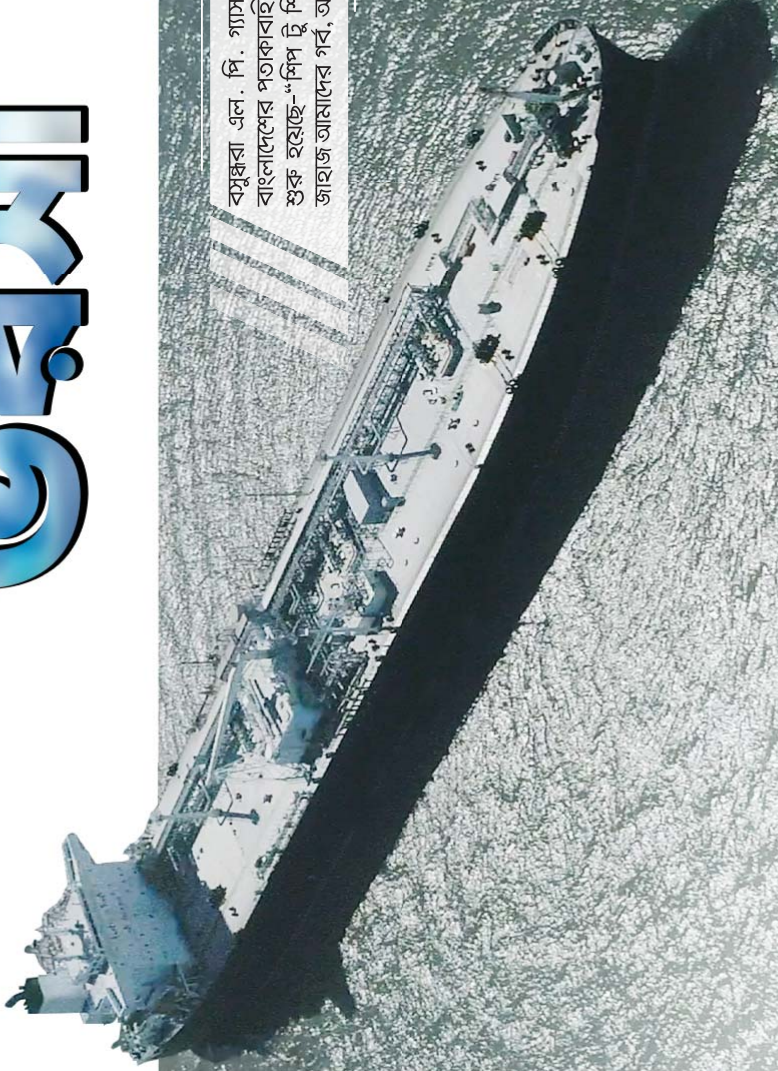
The gas-guzzling industries, household consumers and CNG (compressed natural gas) filling stations were affected the most due to the disruption.

Less quantity of LNG (liquefied natural gas) re-gasification in both operational FSRUs (floating storage and re-gasification units) and lower than expected gas flow from Bibiyana gas field might have reduced the overall gas production, said a senior Petrobangla official.

The FSRUs were supplying around 700 million cubic feet per day (mmcf) of re-gasified LNG over the past several days, which was around 850 mmcf before.

Besides, natural gas production from Bibiyana gas field came down to around 1200 mmcf, which was around 1300 mmcf earlier, the official added.

সমুদ্রের বুকে ভোগে অমো ভরমা



বসুন্ধরা এল. পি. গ্যাস লিমিটেড-এ যুক্ত হয়েছে বিশ্বমানের প্রযুক্তি নিয়ে প্রথম বাংলাদেশের পতাকাবাহী এলপিগ্যাসকারিয়ার “বসুন্ধরা এলপিগ্যাস চ্যালেঞ্জার”। শুরু হয়েছে-“শিপ টু শিপ ট্রান্সফার”। ৪৪০০০ মেট্রিকটন সক্ষমতার বিশাল এ জাহাজ আমাদের গর্ব, আমাদের সকল গ্রাহকের অধিকার।



ভরমা রাখুন স্বাস্থ্যে থাকুন

হটলাইন: ১৬৩৩৯

Consumers' Satisfaction Our Main Target: Nasrul

State Minister for Power, Energy and Mineral Resources Nasrul Hamid recently said that the consumers have right to get better electricity services.

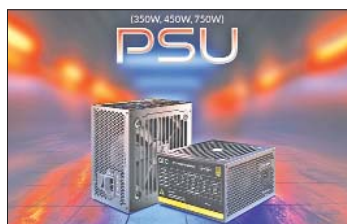
"According to our plan, better services must reach the doorsteps of the consumers. Our main goal should be the satisfaction of the consumers," he said while addressing a discussion on the occasion of National Mourning Day-2021 as the chief guest.

Bangladesh Rural Electrification Board (BREB) organized the discussion with its chairman Major General (retd) Moin Uddin in the chair, while power secretary Md Habibur Rahman and Director General of Power Cell Engineer Mohammad Hossain delivered their speeches virtually.

Nasrul Hamid said that presently the total consumers of the REB reached to 3.18 crore.

Considering rural economic development of the country, Bangabandhu had made the provision of supplying electricity at rural areas in the constitution, he said.

Walton Launches Four New Models of Power Supply Unit



Walton has launched four models of power supply unit (PSU) in the market including 80 plus gold certified efficiency and ARGB modular.

PSU is one of the most important parts of computers. It

converts alternating current to low-voltage direct current and distributes and supplies power to the computer's motherboard, RAM, hard drive and other parts as needed, said a press release.

Computer engineers said that a good quality and appropriate power supply unit is must to get best performance of desktop PCs.

However, most of the power supply units found in the market are non-branded and low quality.

Petrobangla Observes National Mourning Day

On behalf of Bangladesh Oil, Gas and Mineral Corporation (Petrobangla), a floral wreath was placed by the Chairman Mr. A B M Abdul Fattah at the portrait of the greatest Bangali of all times Father of the Nation Bangabandhu Sheikh Mujibur Rahman, marking the 46th anniversary of his martyrdom and the National Mourning Day at the premises of Gas Transmission Company Limited (GTCL) at Agargaon in the capital.

Directors along with officers and staff of Petrobangla were present on the occasion.

Editors Guild Gets Full Committee



The Editors Guild, Bangladesh has formed its full-fledged committee with Ekattor Television Editor-in-Chief Mozammel Babu as its president and The Business Standard Editor Inam Ahmed as general secretary.

The committee, formed during its general meeting held recently, will function for the next two years, said a press release.

Senior journalist Toab Khan, Daily Jagoron Editor Abed Khan, Daily Ajker Patrika Editor Golam Rahman, and Daily Ittefaq Editor Tasmima Hossain have been made its advisory council members.

The presidium members are: Bangladesh Sangbad Sangstha Editor-in-Chief Abul Kalam Azad, Daily Sangbad Editor Altamash Kabir, DBC Television Editor-in-Chief Manzurul Islam, Amader Orthoneeti Editor-in-Chief Naimul Islam Khan, DOT magazine Editor Mustapha Khalid Palash, Daily Jugantor Editor Saiful Alam, Bangladesh Journal Editor Shahjahan Sardar, Bhorer Kagoj Editor Shyamal Dutta, News Bangla Editor Swadesh Roy, and bdnews24.com Editor-in-Chief Toufique Imrose Khalidi.

Besides, Gazi Television Editor-in-Chief Syed Ishtiaque Reza and Desh TV Editor Sukanta Gupta have been made joint secretaries, Bangla Tribune Editor Zulfiqar Russell organizing secretary, and Asian Age Editorial Board Chairman Shueb Chowdhury treasurer.

Moreover, Independent TV Editor-in-Chief M Shamsur Rahman, Energy and Power Editor Mollah M Amjad Hossain, ATN News Chief Executive Editor Munni Saha, Amader Notun Shomoy Editor Nasima Khan Monti, Maasranga Television Chief of News Rejoanul Haq, Bangladesh Post Chief Editor Sharif Shahab Uddin, and ATN Bangla Chief Executive Editor ZI Mamun have been made members of the executive committee.

The Editors Guild, Bangladesh started its journey in 2018. The organization is comprised of editors and leaders from news publications and outlets across the media.

Its convening committee was formed on December 21 that year, with Toufique Imrose Khalidi as convener. Khalidi also served as the founding president of the guild since January 4, 2019.

Although Mozammel Babu was announced as the new president in March 2020, it was not possible to form a full-fledged committee back then amid the coronavirus pandemic.

Imports Stimulating Energy Vulnerability

Mollah Amzad Hossain



There are too many politicians talking about the people to exploit political interests, but not even a handful of politicians and organizations who raise their voice to protect the rights of consumers. This is particularly true in case of the inconvenience being faced by the users of utility services in Bangladesh. However, a recent review by the lone watchdog, Consumers Association of Bangladesh (CAB), evidenced that the power tariff increased by 90% over the past 11 years. Even then, the subsidies were consistently rising due to higher generation cost. The budgetary allocation for power sector subsidy in the current fiscal year is BDT 9000 crore. This is not the end of the story. Right from the outset of LNG import for balancing the gas shortage, Bangladesh requires paying BDT 5000-6000 crore in subsidy. The contribution of gas to power generation would be reduced for suspending the LNG import from the spot market. Consequently, increased reliance on liquid fuel based generation would push up the generation cost yet more.

The generation cost of power of Bangladesh Power Development Board (BPDB), excluding interest on cost of maintenance and budgetary support in 2020, was BDT 5.58 /kWh. Gas based generation cost is BDT 3.26/kWh. Adding the interest on costs of maintenance and interest on debt servicing, the generation cost increases to BDT 5.91 /kWh. Petrobangla supplies gas for grid power at BDT 4.95/Cubic Meter. For captive power gas costs BDT 13.85/Cubic Meter. BERC has revised the price of gas once after introduction of the imported LNG to the gas grid. The average price of gas now US\$ 3.3/1000 cubic feet. For reducing subsidy, as required for meeting the expenses of imported LNG, gas price requires adjusting to US\$ 5.00/1000 cubic feet. The gas price increase would have to become a continuous process, as the depleting own gas production would prompt increased import of LNG from the volatile global market. The tariff projections of power per unit in 2021, 2030 and 2041 as per PSMP 2015 were BDT 8.52, BDT 11.02 and BDT 12.79 respectively.

Looking at the own resources of Bangladesh and plans for utilization, it is being said that the country is increasingly leaning towards imported primary fuel. Gas, coal and power all are being imported. It would increase further in 2030 and 2041. Beyond these, import of liquid fuel is also continuing. According to different assessments, the entire proven reserve of its own gas would be completely used up by 2031. State Minister for Power, Energy and Mineral Resources Nasrul Hamid MP made such a statement in the national parliament. The coincident peak demand of connected consumers is now 3800 MMCFD. The production capacity has depleted over the last few years. According to Petrobangla, the production capacity including 1000 MMCFD LNG import is 3760 MMCFD. But actual production as appeared in Petrobangla daily report of 25 August shows



A view of under construction Matarbari coal-fire power plant

Photo: CPGCL

2389.30 MMCFD from own source and 701.20 MMCFD from import, meaning a total of 3090.50 MMCFD. It establishes a current deficit of 701.20 MMCFD. LNG supply may deplete to 500 MMCFD following the government's decision to suspend LNG purchase from the spot market. This will leave no option for the power sector but turning towards increased liquid fuel based generation, as gas supply to power would be obviously reduced. The average cost of power generation would be increased. Senior Secretary of EMRD Md Anisur Rahman during a discussion with Energy & Power assured maximum possible gas supply to power would be made during peak hours through load staggering. Gas supply to CNG stations would be kept suspended from 3 pm to 9 pm and rationing of gas will be imposed on supply to industries from 6 pm to midnight. As an alternative to LNG from the spot market, negotiations were advancing for concluding 3 more long-term LNG supply contracts in addition to the existing two with Qatar and Oman.

The existing capacity of coal power generation cannot be used for lack of coal supply and constraints of the power transmission grid. The 525 MW mine-mouth power plants at Barapukuria is suffering from a coal supply shortage.

The 1320 MW capacity Payra power plant cannot be used for prolonged delays in the construction of power evacuation facilities. These have increased reliance on gas and liquid fuel based power generation. Some 38% of the 22,031 MW grid power generation capacity is furnace oil and diesel based. In 2020, least power was taken from the liquid fuel based power plants. Gas contributed 52%, the highest of all fuel. During the day, some contributions came from the grid-connected solar. The present capacity is 186 MW. Some studies state that by 2041, renewable sources may contribute 40% of total projected generation capacity. But SREDA Chairman Alauddin Ahmed informed the EP that 10% contribution by RE to the generation capacity in 2030 would be a significant achievement. Dr. Saleemul Huq, internationally reputed environment expert, observed that Bangladesh has no option but to progressively move out of the fossil fuel regime. This can be achieved through utilizing innovative technologies. Natural gas would be a transition fuel towards achieving Net Zero emission. Failure in increasing its own fuel contribution would push Bangladesh increasingly towards imported fuel. It would make energy security vulnerable as price would depend on the volatile global energy market.

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A view of recently developed Matarbari channel

Photo: CPGCL

Coal is now being imported using Payra port. Coal port is under construction along Matarbari Port Channel for importing coal for Matarbari power plant. The government has a plan to convert the coal port to Coal Transshipment Terminal (CTT). When this will be completed, it would create facilities for smoother coal supply for coal power plants along Bangladesh coastal area and would also reduce cost. Work on a land based LNG terminal at Matarbari is also advancing. With an ultimate target of 2,000 MMCFD LNG capacity, it would start with a capacity of 1,000 MMCFD. EMRD expects that the first phase would be operational by 2025. Two proposals – one each of Excelerate Energy and Summit Group – for supplying LNG by setting up deep offshore LNG import facilities at Payra were now under review of EMRD. It is uncertain at

this stage whether these would be approved. Two Indian companies have signed an MOU with Petrobangla for supplying LNG through pipelines. It is also not sure when or whether the LNG would be supplied at all under this initiative.

Bangladesh is already in the grip of a gas supply shortage. More and more LNG based power generation plants are being planned. Around 100 Special Economic Zones are being developed. Gas demand is increasing every passing day. On the contrary, our own production is steadily depleting. A few tiny 5/10 MMCFD capacity new fields are being added. LNG supply is currently coming from two FSRUs at Maheshkhali offshore. Maximum possible supply now is 800 MMCFD. The government's decision not to purchase

LNG from spot market might reduce availability to 500-600 MMCFD till signing long-term agreements with more suppliers. This would trigger a serious gas supply crunch to grid power, captive generation and industries. The government is working on plans for increasing gas supply from local sources within 3-4 years. Under this program, drilling of 4 wells including 2 exploration wells would start in November 2021. For further exploration in Chittagong Hill Tracts Prospects and Deep Drilling, BAPEX has let out 5 Expression of Interest (EOI) seeking Joint Venture partners. Beside these, a plan has been finalized for keeping 4 BAPEX rigs engaged till 2023. Petrobangla is optimistic that these would relieve some stress from gas supply situation. The import dependency would be restricted a little bit. The Senior Secretary

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of EMRD acknowledged that lack of effective initiatives for exploring new petroleum resources over the past 20 years has landed Bangladesh in the current uncomfortable situation. He also admitted that unless Bangladesh can increase the contribution of its own gas to energy generation, the country would face price and energy security challenges.

Bangladesh has taken initiatives for increasing the contribution of its own fuel. But fresh challenges have emerged in attracting investment for offshore exploration. It was possible to conclude a contract for conducting multi-client survey(s) after prolonged delays. But work could not be started. Neither Petrobangla nor EMRD is confident that without adequate data planned to be acquired through multi-client surveys, there would be encouraging response going for PSC bidding now. Hence the activities are mostly centered around onshore. Despite having realistic opportunities of exploiting own coal resources, the government currently has no plan for it. The Senior Secretary of EMRD confirmed that Engr. Belayet Hoassin, Chairman of BPDB, considers reliance on imported fuel as a huge risk. According to him, the RE does not have that much potential to make significant contributions. Consequently, import of coal and LNG would steadily increase. I have genuine concern that the price cannot be kept at an affordable limit.

The priority set by the visionary founding father of Bangladesh Bangabandhu Sheikh Mujibur Rahman was developing Bangladesh into an industrial economy to be facilitated by the agriculture base. The great leader had stressed on exploitation of own mineral and petroleum resources. The present crisis situation has emanated from the country's drifting away from Bangabandhu's energy vision. Uncertainties have been created in energy supply and its affordability. The state minister for energy in

some recent discussions continued insisting that Bangladesh has not moved away from Bangabandhu's energy vision. The decision for importing coal and LNG stemmed from limitation of local sources for meeting the growing demand of power and energy generation. According to him, the price would not matter much for industrial development. Industries through increasing efficiency can offset increased prices and remain competitive even paying increased prices of energy. But some energy intensive industries may have some problems. We'll have to move out of some industries in future, he observed.

Buried resources only turn into reserves only after value addition through exploration, discovery and production. There exist two contrasting philosophies globally about utilization of resources. One school of thought believes that resources must not be exhausted all at once. Some resources must be kept reserved for us by posterity. Other groups believe that the highest utilization of resources must be made for achieving maximum economic development. That gives new dimensions to the economy and standard of living. That ensures a better living world for the future generation. Sustainable development would be ensured. Bangladesh possibly belongs to the first group. That is why extraction of valuable alternate resource coal remains in suspended animation. This has impeded the opportunity for generation and supply of power at an affordable price. In the present and emerging reality, Bangladesh may not at all get an opportunity to convert coal resources to reserves. Bangladesh coal may stay buried forever.

Mostly for Bangladesh belonging to the first school of thought, the success

achieved in oil and gas exploration through foreign oil companies could not be made sustainable. Significant gas resources were discovered during the last millennium. But over the past 20 years in the present millennium that momentum came to a halt. No significant discovery could be made. The BAPEX-alone policy for onshore exploration could deliver dividends. Still the government is hanging on to that strategy. Now the consideration is that the Joint Venture route would be pursued where BAPEX-alone policy would not be able to deliver. Some leading IOCs working for some years offshore relinquished their blocks after failures in unlocking some complexities. One Indian company is now working on two shallow offshore blocks. Over the last 20 years, only a little over 2 TCF new gas could be added, but 14 TCF has been consumed from the reserve. Consequently, the deficit in gas supply has widened and the country is steadily moving towards exclusive reliance on imported fuel.

But the price in the global market is not stable at all. It gets volatile off and on for many reasons. The crude price of US\$75 per barrel in July 2021 was the highest in the past few years. LNG price in Asian market is rapidly fluctuating over wider ranges. The gas price in NYMEX increased about 80% in 2018. There may be a huge burst if winter in the Northern Hemisphere gets severe and prolonged. Increased fuel prices have created significant inflation impacts (10-25%) in Japan, France, Italy, UK, Germany, USA and OECD countries. Bangladesh has also suspended purchasing LNG from the spot market for higher prices. Qatar and Oman also cannot supply more than contracted volumes. Bangladesh has started alternate additional sources for concluding long-term supply contracts.

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How Long Can Bangladesh Survive Price Volatility?

Saleque Sufi

Bangladesh has made commendable achievements towards energy security over the past decade. The situation is much better than what it used to be in 2009. Still, a lot needs to be doing for achieving the sustainable energy security – supplying quality, uninterrupted power to all at affordable cost. For different reasons, the balanced development across all segments of the power value chain could not be achieved. The energy sector failed to keep pace with the power sector. Nothing could be done for exploiting substantial reserve of superior quality coal. Very limited exploration and development activities have been made for exploiting the petroleum resources.

Consequently, power generation and energy supply are increasingly moving towards imported primary fuel. Bangladesh's coastal areas having shallow draft offers very limited window for setting up import-enabling infrastructure. Bangladesh does not have open sea near its shore like Japan, Korea, India and Pakistan. Moreover, Bangladesh economy cannot sustain the price volatility of global fuel market. Panic signals have already been issued from BPDB and Petrobangla about the possibility of going bankrupt even at the present situation. BPDB has to account for payment of capacity charge for several private sector peaking plants due to gas shortage and many gas-based power plants remained idle. Petrobangla has to pay through its nose for expensive LNG imported from volatile LNG market. Some 25% population have to rely on

LPG supply. Heavily invested LPG operators are in great challenge in supplying LPG at affordable cost. Bangladesh cannot offer generous subsidy. Absorbing price shock is going to be a major challenge in achieving sustainable energy security of Bangladesh. Bangladesh needs well-planned aggressive exploration campaign for own fuel for a balanced and affordable fuel mix. Bangladesh economy cannot sustain exclusive reliance on imported primary fuel.

Bangladesh has attained an installed power generation capacity of 25,235 MW (2,800 MW Off Grid Captive Generation and 1160 MW import through cross border trading). About 7,000 MW generation capacity is based on liquid fuel. The actual generation capacity never peaked beyond 14,000 MW.

Price Volatility

Price volatility is the fluctuations of any commodity measured by day to day percentage changes in the price. We know that the price is a function of demand and supply. High level of volatility reflects extraordinary characteristics of supply and/or demand. Global and regional geopolitics – war conflicts, recent COVID-19 pandemic caused the fuel market volatilities.

Petroleum products and electricity price is more volatile. The reason for that volatility is that a major section of users has very limited ability to buy other alternative fuel. Consumers can opt for alternative foodstuff but cannot change so easily the fuel.

Oil prices jumped on 24 August as a fire

on a Mexican offshore oil rig killed five and cut the country's output by nearly a quarter. Mexico's state-owned oil company projected that the 125 impacted wells could be up and running within days. Another factor boosting oil prices on the day was sunnier feelings about projected oil demand, especially from China, as the Delta variant of coronavirus ravages the globe.

What is the Present and Emerging Scenario?

We are all concerned about fossil fuel that is impacting the climate change. All are talking about Net Zero 2025 pledge. Transition from fossil fuels to renewables has many challenges. This must pass through very slippery path. Natural gas, according to many, is the preferred transition fuel along with nuclear energy. Natural gas is another fuel subject to volatility.

Some factors like weather change, production/imports, storage level, delivery constraints, market information are among the reasons for gas market fluctuations.

Countries like Bangladesh does not have major fluctuations in weather as far as heating requirements. But summer and winter power demand fluctuates at a wide range as most of the demand is still being met from the domestic use. The Bangladesh case is mostly emerged from own production and import. Bangladesh does not have any storage capacity at all for imported LNG to benefit from low price situation of global market.

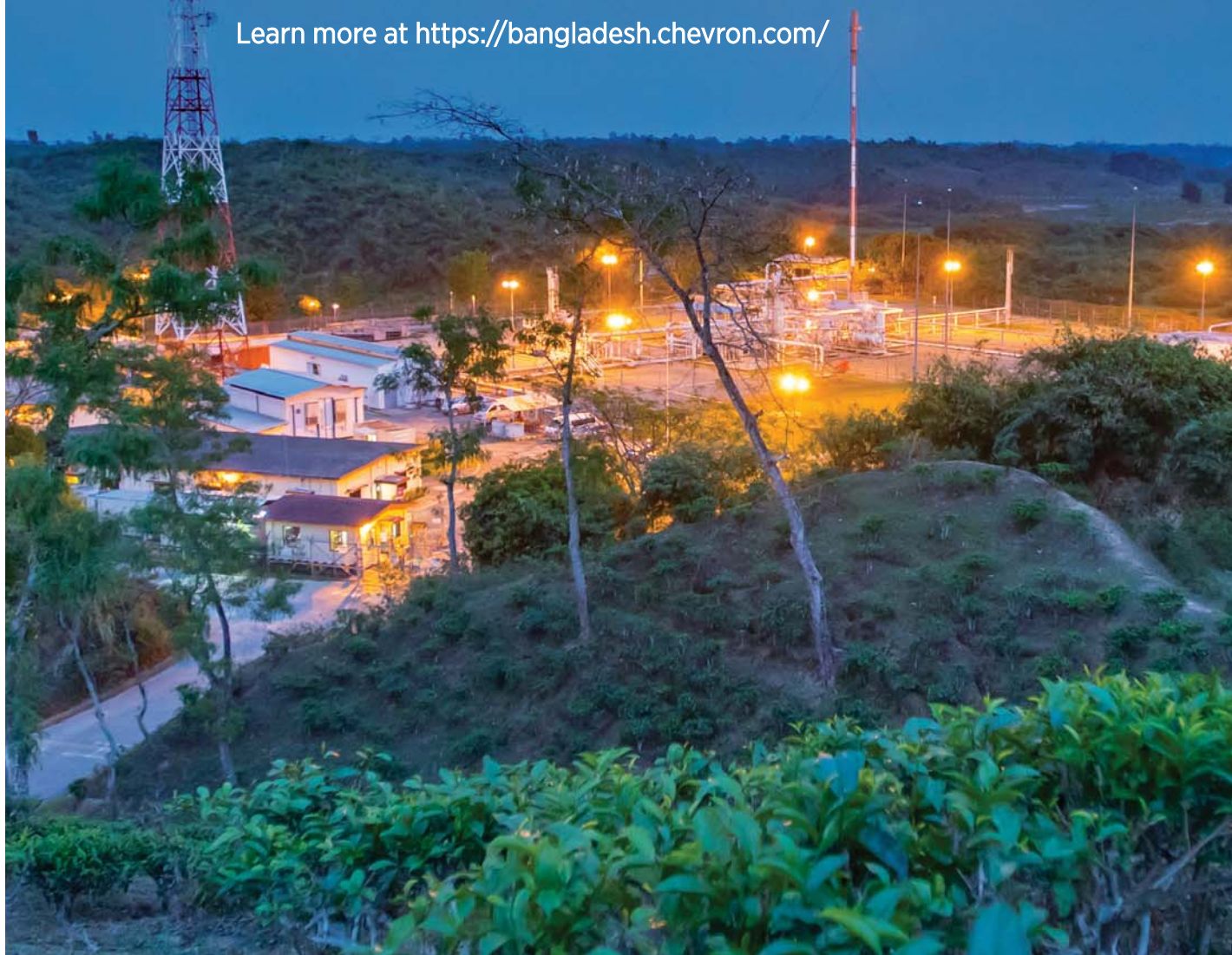
Bangladesh has one advantage at pres-



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ent that it has already developed almost nationwide gas transmission network. If own gas production from onshore and offshore can be increased over the next decade significantly and complemented with LNG import, the present network can manage up to 6000 MMCFD with a little bit of compression at some locations.

Obviously, gas and coal deficit leverages imported liquid fuel-based contingency power plants kept in operation as peak shavers. BPDB has to account for huge capacity charge in addition to paying higher power price.

Where Bangladesh Failed?

Lack of perspective planning for exploration and development of own fuel since the beginning of 2000 caused irreversible damage. Successive government including the present government failed in taking political decision on mining coal. It is estimated that up to 10,000 MW mine mouth power could be produced for 50 years if own coal could be extracted by applying state-of-the-art environment caring mining method. In the present situation, mining coal and utilizing it even has to encounter serious global resistance.

The other major failure is making Petrobangla and energy sector increasingly bureaucrat-dependent. The capacity constrained Petrobangla failed to explore own petroleum resources from onshore frontier and offshore. From 2000-2021, only about a little over 2 Tcf new gas could be added while exponential growth of demand used about 15 Tcf from discovered resources. The BAPEX-only policy for onshore exploration failed. Petrobangla even failed attracting IOCs in offshore exploration. Stubborn and ultraconservative attitude of Petrobangla and EMRD have made some IOCs exiting after failing to renegotiate gas price. In 2021, Bangladesh has landed in a situation when about 500 MMCFD gas deficit leverages keeping the expensive liquid fuel based contingency power plants on stream.

There is an apprehension that gas resources may completely run out by 2031. But the present depleting trend

Power Generation Capacity		
	Number of Plants	Installed Capacity
Public Sector	57	10,146MW (46%)
Joint Venture	01	1,244MW (06%)
Private Sector	88	9,481MW (43%)
Power Import	Bheramara HDVC and Tripura	1,160MW (05%)
Total	146	22,031 MW

Including captive power and off grid renewable energy, total installed capacity would be (22,031+2800+ 404) 25,235MW.

Maximum grid demand served 13,792 MW as on 27 April 2021.

Fuel Mix Per Installed Capacity (June 2021)	
Fuel	%
Natural Gas	11,450 MW (51.97%)
Furnace Oil	6,000 MW (27.25%)
Diesel	1,290 MW (05.86%)
Coal	1,788 MW (08.03%)
Renewable (Grid Connected)	129MW (0.59%)
Power Import	1,160MW (05.27%)
Hydro Power	230MW (01.04%)
Total	22,031 MW

Source: BPDB Website

has created an apprehension that major depletion may trigger even by 2023. To offset this situation, Bangladesh planned for importing LNG in 2010. A better-planned action could let Bangladesh achieving LNG import starting from 2014. But novice management could let it start from 2018. Without assessing the depth and diversity of the challenges of LNG import (price shock, supply chain management) several FSRUs and some land based terminals were given go ahead. In 2021, Bangladesh developed capacity for importing 1000 MMCFD LNG from volatile LNG market. Excepting two FSRUs all other planned projects were shelved at certain stage. Now with gas crisis looming, the EMRD is contemplating to go for FSRU adventure again. Petrobangla is said to be struggling in meeting the expenses of two FSRU-managed LNG import.

Other Flaws in Planning

In fuel diversification initiative, the government had planned to go for 50% dependency on coal by 2030 as per PSMP 2010. Local coal was set to contribute 29%. But failure in

taking political decision has forced the government to drastically altering fuel mix as per PSMP 2016. Coal was considered for contributing 35% by 2041 (34% imported). Without assessing the challenges of coal import, 17 medium to large coal powered projects were given go ahead. Now after spending money, time and resources, 10 such projects have been shelved. Many students who opted for studying mining engineering and mining technology are struggling in finding jobs. The government is going to struggle in importing coal for all plants excepting those at Matarbari region. Higher costs in transportation would make coal power generation cost dearer. The government cannot go against global tide of saying no to use coal.

The Barapukuria mine mouth coal power plants would be forced to shut down as mining at Barapukuria following the present underground mining method proved uneconomic. There is no way for transporting imported coal there too.

Pricing Challenges

Bangladesh did well in achieving over 22,000 MW installed capacity. But grid power demand did not grow above 14,000 MW. Apart from fuel supply (gas and coal) shortages, other reasons are power transmission and distribution constraints. The full capacity of the iconic Payra 1,320 MW power plant cannot be utilised for delays in construction of power transmission line. There is no usable distributed generation infrastructure as well. Rampal Coal Power Plant and Rooppur Nuclear Power Plant are due to coming into operation by 2023. Matarbari coal plant may start generation from 2024. There is no guarantee that power evacuation facilities would be ready by then. The government instead of planning for mining own coal and expediting petroleum resources exploration considered to set up FSRUs. Can Bangladesh sustain price shocks? Can Bangladesh bear with supply chain disruptions?

Demand Would Not Grow at an Expected Pace

The world investment community is well aware of the fuel supply constraints, lack of infrastructure and protracted decision-making scenario of Bangladesh. The planned mega investment in 100 special economic zones may not happen for offsetting price shock. Bangladesh cannot afford to stay longer with 35-40% spinning reserve. In such situation exclusive reliance on imported fuel would act as double edged sword. Till power supply chain gets truly reliable even industries may not abandon captive power generation. Industries cannot remain competitive using the expensive grid power.

Oil Market Volatility

Analysts observe that oil market volatility is little hard to absorb now. Crude oil price and with that prices of all linked petroleum products and gas fell significantly since the beginning of 2020, largely due to the economic contraction due to COVID-19 pandemic. The sudden increase in crude oil supply following the suspension of agreed pro-

Oil and Natural Gas Price (27/08/2021)

	Price in US\$	Change	% Change	Contract
WTI	68.58	+1.16	+1.72%	Oct 2021
Brent	72.28	+1.21	+1.70%	Oct 2021
NG (Nymex)	04.34	+0.154	+3.68%	Oct 2021

Reference: Weekly Report: Oil and Gas Insider.

duction cuts among the OPEC countries and partner countries also contributed to the volatility. Falling demand and increasing supply led to daily price changes for the U.S benchmark crude oil WTI. Likewise, oil price and price of gas even became subject to volatility. The historical lowest price of natural gas and LNG in spot market created booby traps for countries like Bangladesh. But as COVID-19 situations also remained uncertain (first and second wave seen and third is looming), the policymakers are grappling with energy strategies. Amidst all these change in US administration and USA re-joining Paris Climate Change Agreement has changed the entire scenario. Drive to Net Zero 2050 has achieved fresh momentum. We are unsure what is going to happen in Afghanistan following Taliban storming into the state power. But for sure emerging global geopolitics would also continue keeping the global oil market volatile.

What Can Bangladesh Do?

Bangladesh must not again take unprofessional casual approach relying mostly on international consultants preparing Power System Master Plans (PSMP). We understand that the government this time is preparing a comprehensive and inclusive master plan. Experienced and willing Non-Resident Bangladeshi resources should be integrated alongside local experts.

Fuel choice is the key. It will not be possible for Bangladesh sustaining longer on imported primary fuel. Bangladesh cannot have the luxury of leaving its substantial coal resource buried underground for ever. It has to harness its potential petro-

leum resources. Major investors would not invest in Bangladesh unless Bangladesh demonstrates investment friendly reliable power and energy supply scenario. The government must develop a comprehensive implementable energy and power sector master plan and implementation strategy.

A country like Bangladesh cannot absorb price shock of volatile global fuel market. The present and emerging regional and global geopolitics would continue keeping the fuel market volatile. Geographical constraints of low draft coastal area is a great challenge for setting up import infrastructures. Bangladesh needs supplying power and energy at affordable cost to its population for sustaining economic growth. It has no option but to expedite own fuel harnessing. Coal resource must be exploited as soon as possible before situation is created making it impossible to mine. Petrobangla must be strengthened with drawing competent professionals from local and NRB resources for managing exploration and development of offshore and onshore petroleum resources. All avenues of renewable energy sources solar, wind, green hydrogen must be explored and exploited. Maximum stresses must be given on accessing regional hydropower resources. BERC must be organised with young dynamic professionals (if necessary again with local and NRB resources) for devising and enforcing affordable pricing mechanism and policing energy auditing.

EP

Saleque Sufi;

Contributing Editor, EP

Explore Deeper Prospects Aggressively, Say Experts

Rezaul Ahsan

Energy expert Dr. M Tamim has said that there are high chances of getting more oil and gas in the country's deep structures and suggested the authorities concerned to immediately start exploration works at 8-10 carefully-selected locations in the country considering it as urgent as a war-like situation. He emphasized that it is not possible to go through a tendering process to procure arms and ammunitions during a war.

Similarly, hydrocarbon exploration in Bangladesh has become almost a war-like situation by now, Dr Tamim told a recent virtual discussion on "Deep and High-Pressure Zone Hydrocarbon Exploration Prospect in Bangladesh". He added that it would not be possible to derive expected exploration outcome by binding Bangladesh Petroleum Exploration and Production Company (BAPEX) with too much of the government rules and regulations.

Energy & Power magazine in collaboration with M2K Technology and Trading organized the virtual meeting titled "EP Talks" on August 14, moderated by EP Editor Mollah Amzad Hossain.

Mortuza Ahmed Faruque, former Managing Director of BAPEX presented the keynote paper. Former Professor of Dhaka University Dr. Badrul Imam (connecting from Canada), Former Vice President of UMC and Ocean Energy, Bangladesh M Fariduddin from Dhaka, Professor Anwar Hossain Bhuiyan of Dhaka University, and International Energy Consultant Engr. Khondkar A. Saleque Sufi from Melbourne, Australia joined the talk as panelists.

Taking part in the discussion, energy experts expressed the high hope of getting petroleum resources in the deeper structures of Bangladesh based on available data and information, and suggested starting immediately the exploration works after analyzing further the data already available.

"The deep structures needed to be identified as separate zones and the depths should be set appropriately," said Dr

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Tamim, who is the Dean of Engineering Faculty of BUET. "We'll have to work with any possibility in mind. Just as you have to drill in low-risk areas, you also have to work in the high-risk areas."

While working in virgin field, 3 wells were drilled and gas was found in one of them, he said, stressing the need for drilling at least 5 wells. He also suggested continuing drilling even if success is not achieved so quickly.

The energy expert, who was an advisor to the last caretaker government, also recommended allowing foreign compa-

year period, the production has depleted by 150-200 MMCFD. "We must immediately start exploration in areas having higher prospects of discovering new resources ... We must bear in mind that the possibility of finding gas in on-shore areas has diminished, but not completely finished yet."

He emphasized on engaging IOCs in offshore exploration as BAPEX alone cannot do that. "But we have to develop a database of information through conducting multi-client survey(s) before going for deep-water exploration. Without such database of information there would not be any encouraging response from major IOCs."

Presenting the keynote paper, Mortuza Ahmed Faruque, Former Managing Director of BAPEX, said that in accordance with the seismic survey, there is a possibility of getting oil and gas at 8-10 locations if deep structures can be explored.

He said the country's gas reserves will run out in the next 10 years. So far, 16 deep drills have been done in the country. Gas was found at 4 blocks. Nine deep-drills have been done in the off-

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nies to work in the offshore as BAPEX alone would not be able to do it. But before that, he stressed the need for completing offshore survey and building a database. "Otherwise, no one will invest in response to our call."

Dr Tamim, chief guest of the event, also warned that a sudden drop in gas supply by around 300-400 million cubic feet per day (MMCFD) could lead to a major disruption in fuel supply in the country, and said it will not be possible to meet this deficit by increasing the supply of LNG. He said that over the past one-

shore. However, no oil or gas field was found. However, seismic surveys evidence prospects of petroleum at least in 7-10 deeper structures of discovered gas fields and frontier areas.

Fenchuganj Well #2 was drilled to 4900 meters. High pressure was encountered. We used a French Rig for it. There were some issues. We could not do mud management even with the new rig. Fenchuganj 1 was dry, but gas was found in well #2.

It is possible to find new gas at Titas field. Six zones have been identified through

3D seismic surveys. There exists a proposal for 3 wells there. It is expected that gas would be discovered further lower as well. Drilling should be done to 7000-7500 meters deep. Even if gas is not found at deeper zones, gas in upper zones would justify the investments.

Deep drilling is essential now despite having risks of blow out. BAPEx cannot encounter this within the framework of PPR. BAPEx does not have such rigs. Opportunities must be created for BAPEx for working in Joint Venture with competent IOCs.

Mr. Fariduddin, Consultant of BAPEx, said that BAPEx was working on discovering new resources and on all possible options to manage the growing gas demand through increasing own production. That is why the necessity of exploring deeper prospects has become essential now.

We discovered gas at shallow structures. There was hardly any need to go deeper. But the data and information acquired so far suggest that we now have to drill deeper. EOI has already been let out for four exploration wells at high-pressure zone. BAPEx is now taking preparation for five more wells. There are opportunities for such drillings in Titas, Rashidpur and Bakhrabad gas fields along the identified prospects in the Chittagong Hill Tracts.

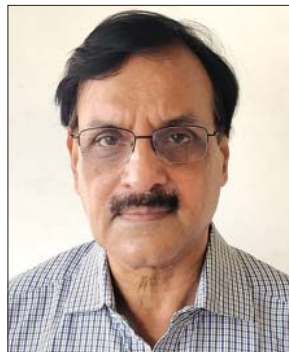
Prof. Anwar Hossain Bhuiyan pointed out that for understandable reasons the high pressure zone and deep drilling candidates in the eastern fold area would be relatively at shallow depth. Cluster compression has shortened to 46 kilometers in the eastern fold. Significant compression pressure was involved. Targets would appear in shallow depth. These zones would have high pressure. Without intensive seismic assessment drilling, drilling would be extremely risky while the broad submerge are a bit westward high-pressure zone would be a bit deeper. Costs and risks would be higher due to broader anticline. Hence the prospects have to be greater and higher to justify investments.

"I am not saying no to Chittagong Hill Tracts. There exist many synclines. There can be some smaller and few broad anticlines there."

Analyzing the 2D and 3D seismic data of BAPEx, we found even 20-30 KM long structures in some areas. The data sug-



M Tamim



Mortuza Ahmad Faruque



Badrul Imam



M Fariduddin



Anwar Hossain Bhuiyan



Khondkar Abdus Saleque

gest opportunities of exploration and discovery at deeper structures of Titas, Bakhrabad, Fenchuganj, Shahbajpur and Chittagong Hill Tracts. Evaluating information available with BAPEx, actions are underway for conducting another 2000 KM 2D and 3000 square Kilometers 3D seismic surveys over the next few years. These would assist better identifying locations for exploration of hydrocarbon.

Prof Dr. Badrul Imam mentioned that Bangladesh did not drill deeper than 5000 meters. If we talk about geological perspective, there is every reason for anyone to ask why we have to go deeper now? Why we are not trying in other shallow prospects before trying deeper ones? Gas is originally formed at deeper structures. The deeper we drill, the closer we go to the source rocks. Gas migrating from source is trapped in pockets higher above. But the challenges of deeper horizon are over pressure. These zones should be viewed as special zones.

Enough studies have not been done yet about hydrocarbon prospects in high-pressure zones. We must do it. There are opportunities of exploration for Petroleum in some identified prospects. But there are associated risks. Before going for deep exploration, reliable model must be made with available data and information.

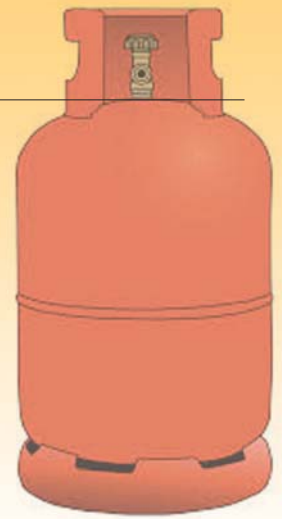
Engr. Khondkar Saleque Sufi stressed on expediting exploration in all identified onshore prospects including deeper prospects. He said deep exploration obviously have associated risks and challenges. But there exist appropriate technologies for addressing and managing those risks. The past failures of some IOCs had led to some major blowouts. These might have made government a bit conservative. But in view of the present and emerging gas deficit, it is time for actively considering deep drilling.

Government should prepare attractive package of incentives and develop database of information for inviting fresh bidding rounds for engaging IOCs in deep drilling. BAPEx and Petrobangla may also form joint ventures with competent foreign drilling companies for deep drilling. With its existing strength, BAPEx cannot do much working with many government rules and regulations. Pipe stuck, fishing or even blowout can happen in exploration. In the present situation, BAPEx cannot take instant actions for managing these for PPR formalities. BAPEx should be a special company carrying out exploration combining local experts with non-resident experienced Bangladeshi resources. Special allocation must be made for BAPEx for such works.

EP

The Growth of LPG and Its Pricing in Bangladesh

AKM Monowar Hossain Akhand



The energy consumers are increasing gradually in Bangladesh. The key energy source is natural gas, but the supply is less than the demand. The country has an average daily natural gas production of 2794 MMCFD that is insufficient to meet the 3614 MMCFD demand for commercial and household purposes, including gas-based power plants. The pipeline supply of gas is not accessible in all parts of the country. Therefore, Liquefied Petroleum Gas (LPG) can be an alternative solution for the deficit. Bangladesh has liberal policies for using unlimited natural gas with a price of BDT 975 for double-burner stoves, while metered-gas price is BDT 7.0 per CF. But due to depleting the reserves, the natural gas demand will outstrip supply by 2030. For this reason, the LPG has already taken its place in the market as an alternative cooking fuel and commercial purposes, to meet the gas demand.

The LPG is clean burning, cost-effective and has easy transportation facilities. As a clean fuel, the LPG is globally recommended for cooking fuel to reduce household air pollution and the adverse health consequences of the traditional fuel, the LPG market is growing fast in the country. The LPG is considered as the alternative energy for cooking fuel and commercial purposes with a greater prospect in Bangladesh. LPG contains 48% propane, 50%

butane and 2% pentane, but most operators use a mixture of 30:70 for marginal interest. LPG is most environment friendly fuel and safe. It is pollution free, about 5 times more efficient than traditional fuels, produces less greenhouse gases and CO₂ production from LPG is 15% lower than diesel/kerosene, 36% lower than coal and 67% lower than fuel wood.

LPG Growth Trends in Bangladesh

The LPG production in the country started in 1978 when the LPG unit was set-up at ERL in Chattogram by the state-owned BPC. According to the energy policy 1996, a few private investors came-forward to install LPG plants to meet the gas demand in 1997. Laugfs Gas Bangladesh (formerly Petredec-Elpiji), was the first private company which started importing and distribution of LPG in 1997. Later, Bashundhara Group entered in 1999, Jamuna in 2000. During 2014-2016, the LPG market expanded with Omera, BM and Beximco. Now the LPG market is led by Bashundhara (24%), Omera (20%), Jamuna (17%) and BM (11%).

Some LPG plants have larger tanks (5000 MT) and production capacity (250000 MT): e.g. Banshundhara, BM, Meghna, JMI, Omera, Beximco, Unitex and Petromax. Others are smaller: Orion, Petromax, Energypac, Navana, Teledata, Meghna, Total, Premier, Universal, Padma and Unitex. Among 40 plants, 12

are located in Mongla, 12 in Sitakundu, and 16 in greater Dhaka.

Presently, a total of 40 LPG plants (with 8 satellite) producing 2.56 MMT of LPG with 88,000 MT storage capacity, and supply it through 3000 dealers and 38,000 retailers to the end-users. The LPG demand in Bangladesh is almost 10,00,000 MT per year. Kailashtila gas-field at Sylhet is supplying 5% of current demand through ERL and the remaining 95% is being imported by the private operators. In 2020, a total of 10,20,000 MT LPG was used. This demand will increase to 18,00,000 MT in 2025, and 25,00,000 MT in 2030.

LPG Pricing Features

Complying with an order issued by the High Court, the Bangladesh Energy Regulatory Commission (BERC) held a hearing on 14-17 January 2021 and fixed the LPG prices on 12 April 2021 with immediate effect for the first time ever at consumers' level. The BERC is committed to re-fix the LPG prices in every month based on the rate of the international market, mainly on CP price. Consumers were expecting rational pricing to keep their monthly costs within budget while LPG Operators were looking for a good margin on sales, considering the global price. BERC would ensure a unified price at retail level to reduce public sufferings.

LPG Contract Price (CP), commonly called the 'Saudi CP' is the primary driver of LPG pricing in the Asian and

বিশ্বাস আর আস্থায়
ফ্রান্সের টোটাল
এলপি গ্যাস



Far-East countries, including Bangladesh. It is the international price-benchmark set at the beginning of each month by Saudi Arabia's state-owned oil company Saudi-Aramco. Aramco's CPs, which set the price of LPG lifted from the Saudi-ports, are closely watched by the market as they tend to set a base-level for LPG pricing for most markets of the region. For fluctuating the CP price, domestic LPG prices also vary every first day of the month, but constant throughout the whole month. BERC fixes price on monthly-basis in accordance with the Saudi-CP price and make adjustment accordingly.

In Bangladesh, BERC fixes the LPG prices at consumers' (retail-price) end based on the Saudi-Aramco CP price, on the basis of Propane and Butane mixture ratio: 35:65. The price includes ship fair, traders premium charge, import parity price, landing charge, toll-duty charge, river dues, custom survey, LC charge, insurance charge, C&F commission, disport inspection charge, port charge, and vat. Although the BERC fixed the price, most private LPG retails each 12.5 kg cylinder at BDT 1,050-1150 in the local markets.

The BERC is following the 'Import Parity' formula for LPG pricing in Bangladesh. In this approach, the price is regulated through a direct-linkage to the international CP price of the products, and adds the relevant build-up logistics cost. The consumers pay only the actual cost of LPG (a subsidy mechanism of different tax exemption packages). The import parity approach is complex for the development of LPG market, as it balances the needs and concerns of the consumers, while offering market participants of investors on the existence of their investments.

Import Parity Price

Saudi CP+ freight charges and traders' premium+ other charges (landing-charge, river-dues, custom-charge, LC-charge, insurance, C&F commission, port-charge).

Private Companies 12 kg LPG Price at Retail Level

Month-Year	Per-Kg Price (BDT)	12 Kg Price (BDT)	Adjustment Per-Kg (+increase, -decrease)	Auto-gas Per liter (BDT)	CP-Price (US-\$/per MT)
August 2021	82.72	993.00	+ 1.42	48.71	620.00
July 2021	74.24	891.00	- 7.06	44.00	526.75
June 2021	70.17	842.00	- 11.13	41.74	482.00
May 2021	75.49	906.00	- 5.81	44.70	540.50
April 2021	81.30	975.00	0	47.92	605.00

BERC calculates the LPG prices with the following formula:

LPG Price at Consumers' Level

Import parity price (IPP)+ storage and bottling cost+ VAT at storage and bottling stage+ VAT at marketing stage+ distribution cost with transportation cost+ dealer/retailer cost.

BERC fixes the price according to the (draft) BERC Petroleum Products (Retail) Tariff Regulations-2012; BERC Petroleum Products Storage, Marketing, and Distribution Tariff Regulations-2012; and BERC Petroleum Products Transportation Tariff Regulations-2012.

BERC Fixes Revenue and Net-productions Cost with the formula

Manufacturing manpower (overhead) expenditure, sales and distribution expenditure (with manpower), general and administrative expenditure (with manpower), depreciation, return on rate-base, corporate income-tax, adding all as Total/Net Revenue demand, divided () by Total LPG sales amount = Net-production (storage and bottling) cost (Revenue).

LPG Operators' Proposed Pricing Formula at Retail Level

LPG Price at Retail Level (Ex-Factory Price) = A+ B+ C+ Dx9%+ Vat; where;

A= Saudi Aramco CP (Propane 30%, Butane 70%) + Freight charge.

B= Import cost Ax4% (including: river-dues, landing-charge, customs survey, port-charges, bank charges,

insurance, disport inspection charge and C&F commission.

C= Production cost (including: storage, bottling, administrative, financial charge, sales, marketing, and distribution (with transportation) cost.

D= Total expenditure. (Operators margin Dx9%+ Vat 5%+ distribution cost+ margin+ vat 5%+ retailer-cost+ margin+ vat 5%).

According to the formula, the proposed retail price for 12 kg is primarily calculated at BDT 1373 (based on CP January 2021), whereas BERC finally fixed BDT 975 for April 2021 (CP March 2021). The difference is about BDT 398 as per CP March, 2021. But, BERC not mentioning any source of this subsidy, which ultimately is being paid by the operators. As a result, the operators termed the BERC price not justified, and became dissatisfied.

The opinions are: the LC premium cost increased from \$90 to \$120; vessel chartering cost has gone higher; freight-rate also increased due to using smaller vessels and add an extra cost of BDT 60-70 for each 12 kg LPG; dollar rate fluctuates frequently which is an important variable; cylinder importing cost is about BDT 2500-3000 per piece, and manufacturing cost in Bangladesh is about BDT 1800-1900, but these are sold at only BDT 800-900 with a subsidy due to market competition and increased quality; 5% vat is being paid two times at retail level, NBR has also increased 2% vat; each cylinder

transportation cost is about BDT 70-80 which was not considered; BERC fixed Operators' margin is only BDT 143, whereas the operation cost is BDT 275 (differences BDT 132); fixed retailer's margin BDT 27 (a retailer sells about 200-300 per month, which is challenging for him to run the LPG business at local level, without a reasonable profit).

Challenges

- The main challenge is illegal gas piped-lines in many urban and rural areas of the country and its safety issue. The illegal gas connections are evading a big amount of government revenues, misusing the natural resources and creating a death threat for sudden explosion. These illegal activities are obstructing the expansion of LPG market in the country.
- The over-supplied LPG in the market, producing by a greater number of unplanned LPG plants that created the market imbalanced and over-flooded. This is a big-challenge for the LPG operators for their existences, market growing and threat for investment. Although the surpluses of the LPG production, brings the export opportunity to the neighboring countries through CBET.
- The LPG sector is not strictly controlled or monitored by the government. The departments concerned are only engaged for issuing NOC, licenses or renewals, which created the market imbalanced.
- Absence of deep sea-port, and shallow-draft in the Mongla and Chattogram port channels, need to pay additional freight-charges for hiring small vessels, which impact on pricing.
- The safety issue of LPG explosion threat among the consumers, create a dissatisfaction for extensive uses and an interruption for market expansion.
- Getting a LPG license, renewal or regulatory support need to move to 28 different government departments, cost an additional expense, fees, time con-

suming, and hassles. These should be minimized.

Recommendations:

- Government should take strict actions to remove all illegal gas connection immediately.
- Government should take appropriate measures ensuring LPG a safe-fuel, using quality cylinder parts (regulator, rubber hose-pipe, O-ring, clips, etc.) by the operators on internationally accepted codes and standards; also to arrange awareness program/campaign to educate the consumers on safety matters and strengthen their confidence level.
- Government to monitor and control LPG sector strictly at every stages of the production-supply chain and introduce a better "LPG Management System" with inclusive policies and rules-regulations. Policy to include for the option of "Exporting LPG" to neighboring countries.
- There is need for preparing a "LPG Master Plan", and a comprehensive "Guide Lines" with detail actions of programs to achieve energy security and vision 2041.
- Need to take immediate actions to import LPG jointly using medium-size vessels in the Mongla and Sandwip Channels. The Operators are to introduce "High Sea Sales Operating System" in the ports.
- Need to formulate an "Appropriate Pricing Formula" based on market study and stakeholder consultations, considering all variables to facilitate the best affordable price to reach all types of consumers, and to be justified by the Operators.
- Need to set-up a "One Stop Service" under a single regulator, who will issue license, and regulatory supports in an easy way to avoid extra hassles. All the offices are to be "Transparent", "Accountable" and act as "Energy-friendly".

- There should be a common "Data Center" to collect information, statistics, license data and plant activities. The data to be used for LPG pricing and future plan of actions.

- Government may introduce a common "LPG Security Fund", charging a nominal amount while pricing LPG. Government to contribute a budget for cross-subsidy and price-adjustment.

- Government to provide "Financial Packages" (e.g. exemptions on tax, vat, charges, fees) time to time. These will help yield a positive impact on lowering the LPG price.

Conclusions

The present world would encourage rapid consumption of LPG and its growth in the replacement of fossil fuels. Bangladesh has already undertaken the LPG option as a future energy (cooking, and commercial purposes) to meet the natural gas demand. Private investors are playing a vital role to develop the LPG sector in Bangladesh. Favorable government policies, duty exemptions packages with financial support, would promote the LPG sector across the country.

A medium size family uses unlimited piped natural gas with a fixed price of BDT 975 throughout the month, while using metered gas pays much less than the fixed price, but using LPG cost about BDT 2000-2500 per month. Rural villagers are struggling for cooking with traditional fuel keeping with health and environmental hazards. These unfair different prices need to be resolved, to a unified mechanism. An effective strategic-plan with actions and various awareness programs could expedite popularizing the LPG consumption and its growth instead of piped-gas to cope with the fast-depleting natural gas reserves in Bangladesh.

EP

AKM Monowar Hossain Akhand;
Former Additional Secretary (Director)
Bangladesh Energy Regulatory Commission (BERC)
Email: makhand14@yahoo.com

Net Zero Emission by 2050

Engr. Khondkar Abdus Saleque

With the change of the government in USA and its rejoining the Paris Agreement on Climate Change, a fresh impetus and momentum has been created for achieving the Net Zero Emission Vision by 2050. Since 2015 Paris Climate Summit (COP21), nothing much has happened so far that could evidence that the parties have taken required ac-

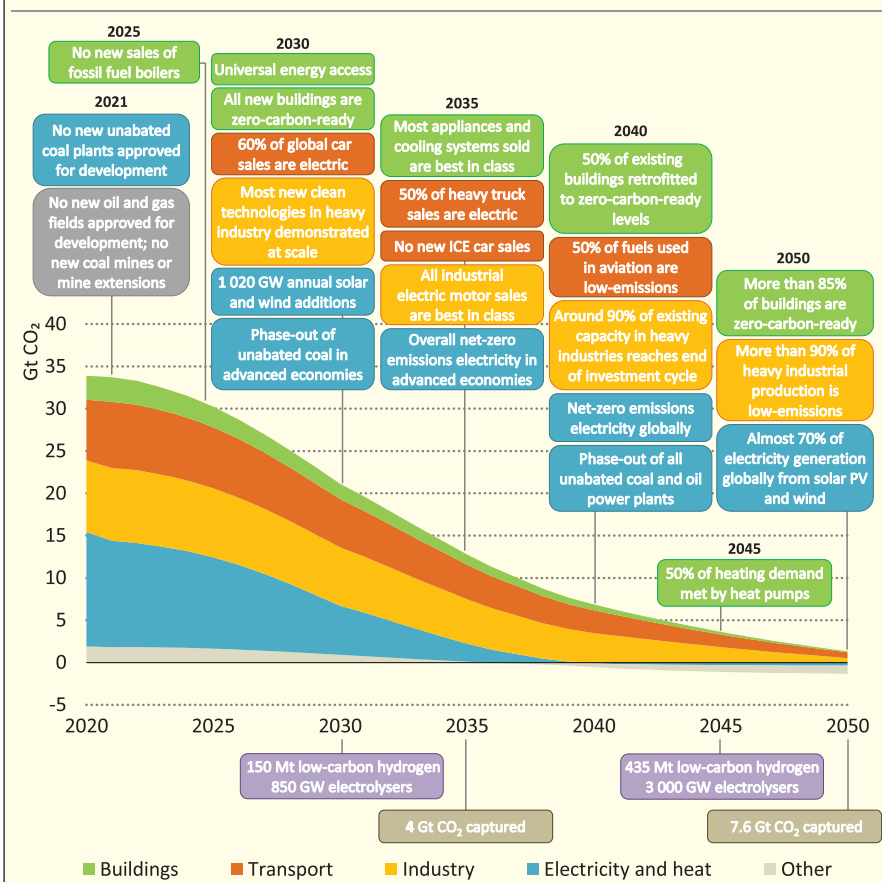
tions to reduce emissions as per the NDCs. On the other hand, climate catastrophes are frequently creating huge climate refugees. Apart from that the COVID-19 outbreak all over the world has caused a havoc and is still rocking the human civilization. In this situation, a question is now being raised whether it will be possible to achieve the Net Zero Emissions target by 2050. Is the

target truly realistic? Can green energy replace the fossil fuel? Will the technology innovation let power generation and supply to all at affordable price? This write up will try to analyze briefly all these.

The world community for several years now is exploring options for working out means and processes for effectively reducing global warming from CO₂ and greenhouse gas (GHG) emission. The agreed vision 2050 is Net Zero Emission. It was earlier agreed in the COP21 that the global warming must be reduced below 2 degrees Celsius by 2100 for saving the world from climate catastrophic extreme events. Some 196 parties at the 2015 United Nations Climate Change Conference negotiated the agreement. The 17 sustainable development goals agreed and adopted were: No Poverty, Zero Hunger, Good Health and Wellbeing, Quality Education, Gender Equity, Clean Water and Sanitation, Affordable and Clean Energy, Decent Work and Economic Growth, Industry Innovation and Infrastructure, Reduced Inequities, Sustainable Cities and Communities, Climate Action, Life Below Water, Life on Land, Peace, Justice and Strong Institution and Partnership for the Goals.

All countries worked out and pledged their respective NDCs. Things did not improve much while frequent events of earthquake, bushfire, draught, tidal surge, cy-

Figure 4.1 ▶ Selected global milestones for policies, infrastructure and technology deployment in the NZE



clone, flood from too much rain, excessive snow fall, severe winter are taking place. Studies found that it would require reducing global warming below 1.5 degree Celsius. It is from here the concept of Net Zero Emission vision originated. Scientists, researchers, environmentalists and activists engaged into debates whether or not the world can ever get rid of using fossil fuels and go green. Against the backdrop of continued technological innovations, the cost of renewable energy generation, storage and use started getting affordable. Few technically advanced and financially affluent countries have almost turned 100% depended on renewable energy. The developing economies and underdeveloped countries still have to depend on fossil fuel-based energy generation. However, modern technologies are limiting emissions. Rich nations

have to provide financial assistance to less fortunate countries, train people and transfer technologies as sustainable energy security is a must for economic development of all countries. It is not only ensuring quality power and energy supply to all, but it must be affordable and environment-friendly.

The World Economic Forum (WEF) in a recent report titled "Climate Breakthroughs: The Road to COP 26 and Beyond" has shown what needs to be done to achieve the Net Zero Emissions by 2050. It has shown with 4 charts what needs to be done.

It said the world can achieve net zero by 2050, but it will require some big changes:

- Our energy system will need to be totally transformed, the International Energy Agency report Net Zero by 2050 says

- Huge declines in the use of coal, oil and gas will be essential.
- The charts show what these changes could mean for the economy

Quoting the IEA report, the WEF stated that the pledges of governments so far made would fall well short of what is needed for achieving to limit global warming to 1.5 degrees C above the pre-industrial level. Otherwise, climate catastrophes some of which are already being experienced would seriously implicate food supplies, livelihood and biodiversity across the world.

Talks Must Translate into Actions:

The IEA report called for total transformation of energy system, which drives economies. Unfortunately, too many talks are not being followed up by actions. It is time to translate talks into actions, the IEA reiterated.

Many milestones will require to be achieved along the path. All sectors must achieve respective milestones. If anything lags behind, it cannot be balanced elsewhere.

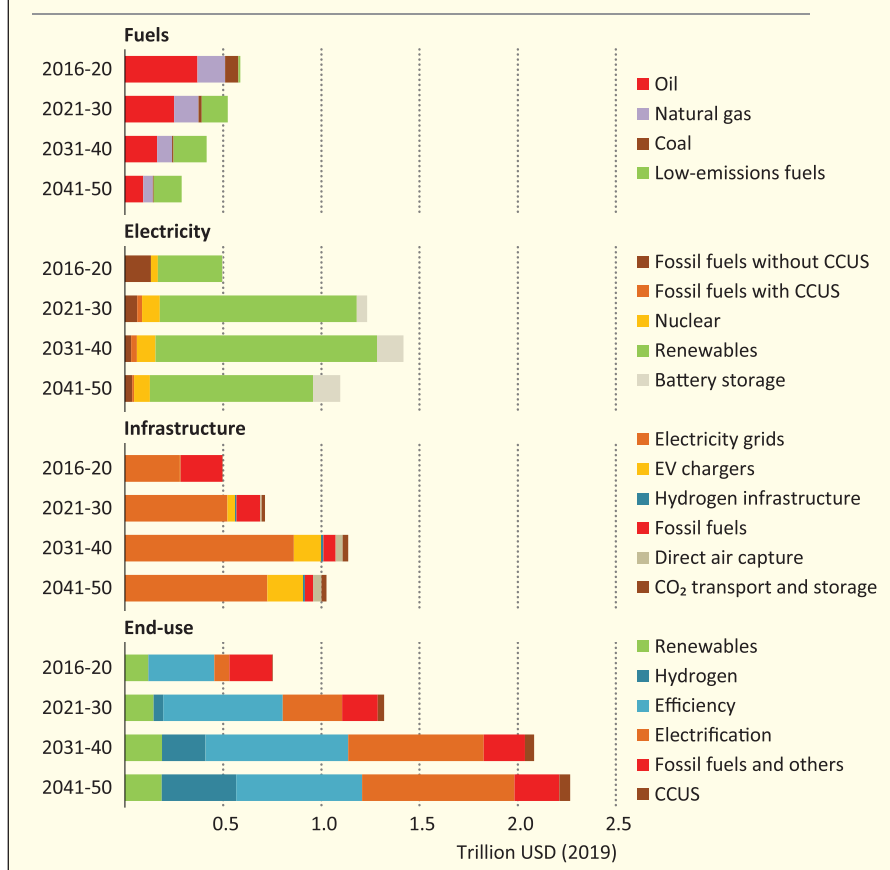
According to the IEA, some of the milestones are required to achieved immediately. There must be major cut down of coal, gas and oil use with immediate effect. IEA strongly suggested for no new coal power plants without carbon capture, and storage must be allowed to construct from 2021 onwards. The report strongly suggested no more gas or oil fields be given approval for development.

The IEA report suggested that by 2050 about 90% electricity should be generated from renewable sources of which 70% should come from solar and wind.

Challenges

Given the present scenario of huge untapped and unutilized coal and gas resources and many countries still relying almost exclusively on fossil fuel, it is highly unlikely that these may be possible. The logical question is that why countries having negligible carbon footprint should be made to re-

Figure 4.2 ▶ Global average annual energy investment needs by sector and technology in the NZE



strict exploration of own petroleum? Can the economy of these countries sustain the financial impacts of imported fuel or can they develop renewable energy so soon?

Huge Investment Would Be Essential

The IEA report stated that huge investments would be essential for electricity, infrastructure and end use sectors to achieve the milestones. Over the next decade, the investment in power generation alone would increase from \$0.5 trillion over the past 5 years to \$1.6 trillion. By then the investment in renewables would reach \$ 1.3 trillion. Of course, investment in fossil fuel would steadily decline.

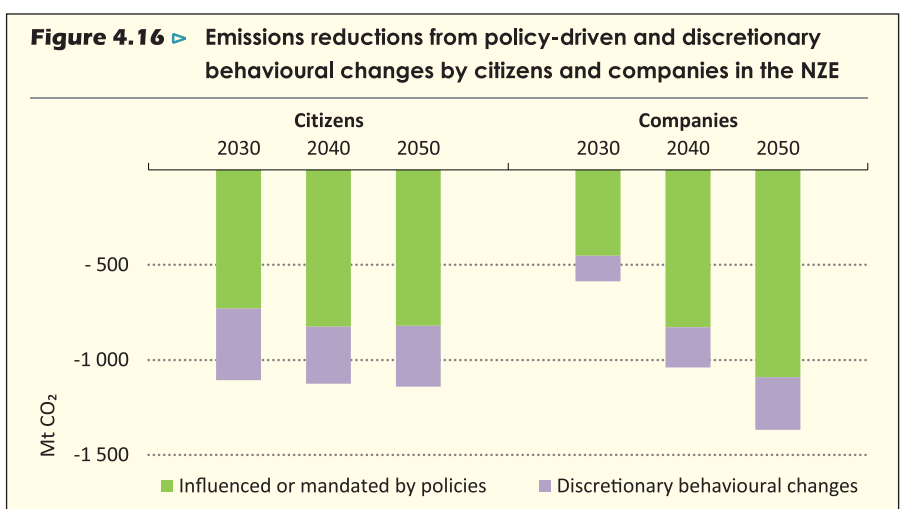
Significant investment would be required in electric vehicles, clean energy infrastructure and in transformation of industrial process to energy efficient use. Investment would also be required in green buildings.

Challenges

How the developing and underdeveloped countries would arrange the huge investment? Developed world has not responded positively to the proposed Green Climate Fund. They will also need extensive training and technology transfer. It should have started in a big way by now. One must not forget that major industrial nations were and still are among the major polluters.

Emission Reduction by Behavior Changes

The IEA report suggested that citizen



must get quickly used to new ways of getting things done. One positive impact of COVID-19 is that people understands the value of mask wearing and working from home. These in a way would greatly assist in approaching positively towards achieving Net Zero by 2050.

IEA pointed out that citizens and companies would definitely need to change behavior, but at the same time would have to invest, change policies, enact new laws as relevant.

The IEA report assessed that about 75% emissions could be reduced by behavioral changes between 2020 -2050. These could be influenced directly by government policy, including measures like phasing out polluting cars, limiting speed on motorways.

Clean Energy Innovation Would As-

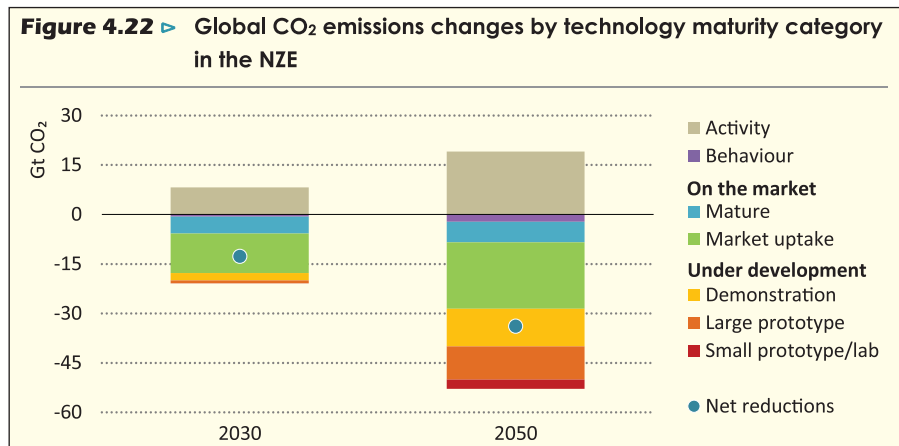
sist in Achieving Net Zero:

The IEA observed that achieving the above milestones may not be enough for ensuring net zero emissions by 2050. This will essentially require major innovations of clean energy. Off the shelf technologies if globally adopted and used would put world on the track in reducing the targeted emissions by 2030. But after that it will require widespread use of evolving technologies now at development phases.

Green hydrogen may emerge as major fuel. Its use along with wind and solar as hybrid renewable, pump hydro, carbon capture, utilization and storage in cement production, ammonia fuels for shipping are among the major evolving technologies.

Conclusion

The IEA report stated about not letting any new coal power plant start construction beyond 2021, which does not use modern technology like CCS. Hence countries having very low carbon foot print can still continue setting up coal fired power plant using supercritical and ultra supercritical technology using low sulfur, low ash coal. The world cannot let still huge untapped superior quality coal buried underground. Of course, there should be strict monitoring and regulations imposed on mining coal, transportation and emissions control technologies in power generation. Till 2050



the world can gradually phase out coal power using gas as interim fuel. Developing countries cannot straight away switch to renewables. Affordability would be a major issue.

We are not sure that the IEA suggestion for not giving permission to exploration and development of untapped petroleum resources so soon would be feasible. Gas and LNG would continue playing role for at least two more decades in the transition phase. However, here again CCS will be an issue to address. Countries having huge buried hydrocarbon resources must explore and exploit, of course, remaining responsible at all segments of the value chain.

Technology transfer and financial support from Green Climate Fund are other areas where major polluters have moral obligations to less fortunate countries. But COVID-19 affecting the economy of most countries

10 Top Polluting Countries

Countries	Carbon Emission
China	9.3 GT
USA	4.8 GT
India	2.2 GT
Russia	1.5 GT
Japan	1.1 GT
Germany	0.7 GT
South Korea	0.6 GT
Iran	0.6 GT
Canada	0.5 GT
Saudi Arabia	0.5 GT

20 top emitters are responsible for 78% of the total global emissions.

has created new challenges. Most of the developing and under developed countries do not have required fund to address carbon emission, achieve energy efficiency and adopt renewable energy. They need generous financial assistance, technology transfer and training for developing skills and capacity to implement ac-

tion plans for transition to renewable energy. Major polluting rich nations must contribute generously to Green Climate Fund (GCF) and assist countries needing support.

Industrially developed richer nations (USA, Russia, Japan, Germany) and leading developing countries (China, India, Korea and Iran) are major polluters. If these countries reduce pollution at higher rates, other countries, which have insignificant carbon footprints, can still rely on High Efficiency Less Emissions (HELE) for few more decades. Of course, in the meantime, technology innovations of renewable energy would make RE affordable and world can transit from fossil fuel to renewables for achieving Net Zero Emissions.

EP

Engr. Khondkar Abdus Saleque;
Contributing Editor, EP

www.rangberang.com.bd

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মোফাজ্জল হোসেন জয় ০১৭১২ ৬৭৭৬০১
E-mail: rangberang2020@gmail.com

বিজ্ঞাপন হার	টাকা
শেষ প্রচ্ছদ (রঙিন)	৫০,০০০.০০
দ্বিতীয় প্রচ্ছদ (রঙিন)	৪০,০০০.০০
তৃতীয় প্রচ্ছদ (রঙিন)	৪০,০০০.০০
ভেতরে পুরো পাতা (রঙিন)	৩০,০০০.০০
ভেতরে অর্ধেক পাতা (রঙিন)	২০,০০০.০০
ভেতরে ১ কলাম (রঙিন)	১০,০০০.০০
ওয়েব সাইট প্যানেল প্রতিমাসে	২০,০০০.০০
ওয়েব সাইট স্পট প্রতিমাসে	১০,০০০.০০

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জিপিও বক্স ৬৭৭, ফোন +৮৮০২৫৮৩১৪৫৩২

Patriot Called Back to Pavilion

Saleque Sufi

Valiant freedom fighter Major (Rtd) Muqtadir Ali left us almost unnoticed.

The very committed and dynamic energy sector administrator, a great mate and mentor of many of us breathed his last at Dhaka Combined Military Hospital on 20 August, 2021. It happened at a time when we were planning to contribute further from our respective positions in the just formed Energy Forum.

Not an engineer, yet he had excellent engineering skills. Progressive in vision, he had excellent dynamism in execution, as an understanding colleague and working mate, he was admirable. We were thousands of kilometers apart for almost 16 years, yet we used to get connected – almost regularly sharing our views and opinions about Bangladesh's energy security in the context of global and regional emerging challenges. For me, the sudden demise of Muqtadir Ali is a great loss.

We knew each other from early 1980s when, after his retirement from Bangladesh Army, he joined Titas Gas T&D Company Limited (TGTDCL). I was working in BGSL at that time. But very often during office works in Dhaka used to visit my former colleagues and mates in TGTDCL. I can still remember the very first day I met Mr. Ali. His pleasing personality attracted me. Since then, during my career in gas sector, he was one of my friend, philosopher and guide. We worked in many Petrobangla committees, represented Bangladesh gas sector at home and abroad. He



served BAPEX, TGDTCCL, SGFL as Managing Director and left his footprint everywhere. Remember how we almost finalized WRIP project serving the best interest for Bangladesh. We shared same views about tri-nation gas pipeline from Myanmar across Bangladesh to India.

He was a constant source of inspiration in our struggle for Ashuganj – Bakhrabad pipeline and later Rashidpur - Ashuganj Pipeline. I will never forget how he tried to protect me from evil syndicate as Director of Petrobangla and Director of GTCL.

As Chairman of Petrobangla, he tried to bring some fundamental changes. There was no lack of sincerity in his endeavor for mining own coal and offshore exploration. He also added value to BPC operation as Chairman. He wrote many great articles on energy and power and talked his minds out in every episode of EP Talks he participated. We recently

formed Bangladesh Energy Forum committing ourselves for contributing to the Bangladesh's energy sector.

During his career in energy sector, he was often misunderstood as he was very firm and honest. Even after his retirement, he was actively involved as advisor to a major gas and energy infrastructure development company.

We used to exchange opinion through emails, messengers and sometimes in other digital devices. We used to appear in EP Talks. Only a couple of days before his sudden demise, he called me and in an affectionate tone appreciated our endeavor for connecting NRB resources with Bangladeshi experts for capacity development of Bangladeshis.

Muqtadir Ali would be sadly missing not only by his family and friends but also the Bangladesh energy sector in its endeavor for achieving self reliance.

Our sincere regards and deep respect for a true hero. The good a man does lives after his departure. May Allah rest his soul in eternal peace. Perhaps the almighty called him back to the pavilion a bit early. Muqtadir was a hero. He pledged his life as freedom fighter during our glorious liberation war. Till his last breadth, his vision was serving the nation to the best of his ability. We will remember you at every sunrise and every sunset.

EP

Saleque Sufi;

Contributing Editor, EP

নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড

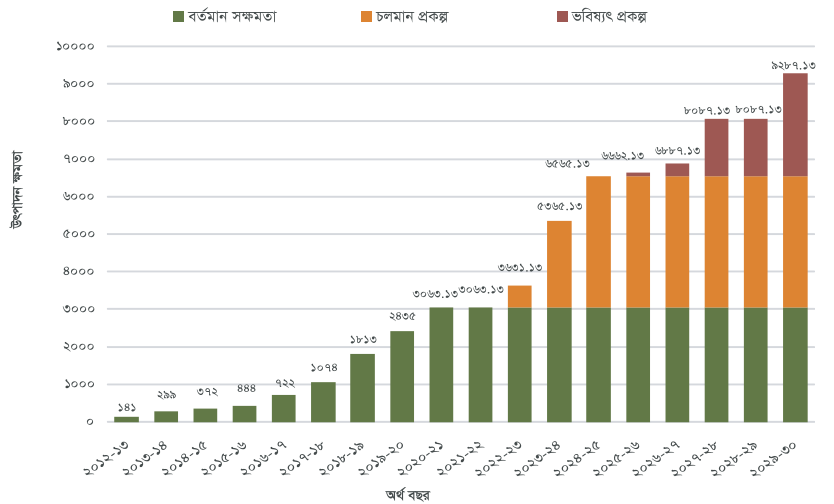
দেশের উন্নয়ন অগ্রযাত্রায় গর্বিত অংশীদার



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বৃদ্ধির স্বীকৃতি স্বরূপ
মাননীয় প্রধানমন্ত্রী
শেখ হাসিনার
হাত থেকে
পুরস্কার
গ্রহণ করছেন
নর্থ - ওয়েস্ট
পাওয়ার জেনারেশন
কোম্পানি লিমিটেড
এর প্রধান নির্বাহী
কর্মকর্তা প্রকৌঃ
এ.এম. খোরশেদুল আলম

এক নজরে কোম্পানির সার্বিক চিত্র

- মোট বিদ্যুৎ কেন্দ্র - ৯ টি
- বিদ্যুৎ উৎপাদন ক্ষমতা - ৩০৬৩.১৩ মেগাওয়াট
- চলমান প্রকল্পের সক্ষমতা - ৩৫০২ মেগাওয়াট
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- ২০৩০ সাল নাগাদ বিদ্যুৎ উৎপাদন লক্ষ্যমাত্রা - ৯০০০ + মেগাওয়াট



নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিঃ

আইএসও ৯০০১:২০১৫, আইএসও ১৪০০১:২০১৫ এবং আইএসও ৪৫০০১:২০১৮ সনদপ্রাপ্ত

(বাংলাদেশ বিদ্যুৎ উন্নয়ন বোর্ডের একটি প্রতিষ্ঠান)

ইউটিসি ভবন (৪র্থ তলা), ৮ পাছপথ, কাওরান বাজার, ঢাকা-১২১৫

ফোন : ৯১৪২০৬২, ফ্যাক্স : ৯১৪৩৭৪৫, Website : www.nwpgcl.gov.bd

Mir Moinul Huq Memorial Lecture Series

Hydrocarbon Prospect at Eastern Fold Belt of Bengal Basin

Mortuza Ahmad Faruque

The eighth episode of 'Mir Moinul Huq Memorial Lecture Series' was held virtually on 31 July 2021. The session was chaired by Mr. Nazmul Hossain, who joined from Houston. The coordinator was Nazim Ahmed from Calgary and the session was moderated by Jasim Uddin in Dhaka. Arif Mohiuddin Sikder, Ph.D., Associate Professor, Center for Environmental Studies, Virginia Commonwealth University of USA was the keynote speaker and presented a paper on "Hydrocarbon Prospect of Eastern Fold Belt of Bengal Basin". About eighty geoscientists of Bangladesh origin from around the globe including Bangladesh, Canada, USA, UK and Norway participated in this webinar.

Dr. Sikder mentioned in his presentation on eastern hilly region of Bangladesh that a part of the Eastern Fold Belt of Bengal Basin, which is one of the largest and least explored fold thrust belts of the world. He gave a brief account on the history of oil and gas exploration in the Chittagong, Chittagong Hill Tracts and Sylhet areas. He explained that the geological structures of the eastern hilly region are complex and reflection seismic is of little use. However, successes from same geological province across the border necessitates a re-evaluation of the prospect for hydrocarbon in that areas. It requires a clear understanding of the petroleum system of the target area-based in-depth geological knowledge.

Dr. Sikder said that after the independence of Bangladesh, very few attempts were made in exploring hydrocarbon in

the hilly areas. In 1984, Petrobangla drilled a well up to 4005m in Sitakund structure with a lot of technical difficulties – the completion of the well took more than 4 years and even couldn't reach the targeted depth. The only other well drilled was at Sitapahar structure by Shell Oil Company in 1986 and the well was also abandoned at the depth of 1650m due to experiencing many difficulties during drilling. In 1989, BAPEX drilled a well in Patharia anticline, but the well was abandoned due to very high deviation and hole problem. Considering perspective of Eastern Fold Belt, Dr. Sikder emphasized on taking exploration program in the different structures which were already identified.

Mr. Anisur Rahman, Senior Secretary at the Ministry of Power, Energy and Mineral Resources, was the Special Guest at the webinar. He appreciated Dr. Sikder for deliberating his nice technical presentation. He gave due emphasis to conduct seismic survey quickly in all the potential areas of Bangladesh by BAPEX and through out-sourcing where seismic survey has not been completed yet. He informed the event about the short-term gas demand, production, supply and shortfall up to 2024 which are as follows:

Mr. Rahman emphasized that BAPEX

should try to replenish the gas shortage through exploration. There are 24 projects of BAPEX already approved by the government for exploration, development, work overs, setting up process plants etc. In order to deal with the ongoing gas crisis, there is an urgent need to explore oil & gas in the Chittagong and Chittagong Hill Tract areas. BAPEX is working on engaging JV partner(s) in the identified structures such as Patiya, Jaldi, Kasalong, Sitapahar, Ulahtong, Matamuhuri, Barkal, Utan Chatra, Gobamura etc. In light of this, instructions were given to BAPEX to call for Expression of Interest for JVA with reputed IOCs. BAPEX is also in the process of re-inviting EOI to engage JV partner for exploration in the Atgram, Patharia, Sitakunda and Kosba structures.

Mr. Rahman expressed his deep appreciation for arranging this kind of technical session for geoscientists on a regular manner in remembrance of Mir Moinul Huq. He appreciated the organizer, geoscientist community of Bangladesh and abroad for remembering him with due respect and honor.

Md. Jasim Uddin, former exploration geologist who served in Petrobangla, BAPEX and IOCs, made a short presentation on "Chittagong Hills Exploration Scenario" as a speaker. He explained technical aspects and perspective of

Figures in MMcfd

Year	Gas Demand	Gas Production	Supply from LNG	Total Supply	Short Fall
2021-22	3461	2295	850	3145	316
2022-23	3650	2111	850	2961	698
2023-24	3715	1997	850	2847	868



Hydrocarbon Prospect of Eastern Fold Belt of Bengal Basin



Guest of Honor

Md. Anisur Rahman
Senior Secretary
Energy & Mineral Resources Division
Ministry of Power, Energy and
Mineral Resources



Session Chair

Naz Husain
Geo-Scientist &
Retd. IT Administrator
of NASA, Houston



Keynote Speaker

Arif Mohiuddin Sikder, Ph.D.,
Associate Professor
Virginia Commonwealth University
USA



Moderator/Speaker

Jasim Uddin
Ex. Geologist,
Petrobangla,
Bapex & IOC

• LIVE

Time:

8pm (Bangladesh Standard Time)

Date:

31st July, 2021 (Saturday)

that area. He informed that at least four types of plays have been developed in Chittagong and Chittagong Hill Tracts region. Two of these are shallow and deep Miocene turbidite targets, a third play is Miocene paleo-structures, and a fourth is Miocene basin floor fan. The latter two plays have significant reserve potential but would also require considerably more seismic data acquisition in order to establish a drillable structure. The turbidite facies contain interbedded thick sandstones and shales which would provide both reservoirs and sealing beds. In addition, the deeper and more down-dip turbidite facies could contain very attractive source rocks. Shale within the Miocene turbidite sequence appear to have better source rock quality than that found in the shales deposited in shelf environments which dominate the samples from wells so far analyzed. He informed that numerous oil and gas seepages found in the different areas and Chara's of Sitakund and Kasalong structure. Apart from experienced oil and gas shows in different wells of Sitakunda, Sitapahar (21m net gas pay logged), gas flowed at Jaldi #2 up to 8.6 MMcf/d at 3200m and indication of oil at Jaldi #3 and found

good gas shows at 3950m in Halda #1. In addition, many gas samples were collected from surface seeps of Kuttal Chari, Rumba Chari, Basant Chari, Paindu Khal etc.

M. Farid Uddin, Consultant of BAPEX and former Vice President of UMIC operation in Bangladesh, sharing his observations on exploration in Chittagong Hill Tracts areas where IOCs either through PSC or by doing Joint Venture with BAPEX should be given opportunity. Chittagong Hill Tracts is the only region where there is assured possibility for hydrocarbon discovery in the shortest possible time. Surface oil seepages were detected at Barkal, Sitakunda and other areas. Shell did exploration in 1986 at Sitapahar. But they abandoned their works following Shanti Bahini abducting two officials of Shell. Traces of oil were found during drilling at Patiya #1 in 1953. In addition to oil at Sitaphar and Patiya, there exists stranded gas resource.

UMIC signed PSC with Petrobangla for oil, not gas while Ocean Energy was their associate. In 1999, oil price in the global market dropped below US\$ 6.0 per barrel. If the prospects of Chittagong

Hill Tracts are explored, there is a good possibility of finding oil and gas. Exploration must start at Patiya, Sitapahar, Kasalong, Shishak and Jaldi structures without further delay and may start to find out IOC(s) as joint venture partner of BAPEX. He suggested carrying out exploration in the stranded gas field like Sitapahar, Payiya and Jaldi.

Badrul Imam, Honorary Professor of Dhaka University opined in a follow up discussion that there were 11 gas fields discovery in Tripura where similar geological conditions prevailing like Chittagong and Hill Tract areas. In the south of Chittagong Hill Tracts, a number of large gas fields has already been discovered in the offshore Rakhine Basin of Myanmar. But there is a very little exploration carried out in our hill tracts and a lot of data and information are also available now. However, further studies and analyses are required. He believed that there is a good chance of oil and gas discovery if we do extensive exploration works in the identified structures. Our energy security is now mostly dependent on imported LNG, fuel and electricity. Considering economic point of view, it is necessary to carry out exploration in the hill tracts by BAPEX

along with reputed IOCs as soon as possible.

Dr. Anowar Hossain Bhuyia, Department of Geology, Dhaka University and Consultant Geologist of BAPEX, took part as a discussant and expressed his satisfaction over rendering his consultancy services to BAPEX and working with them. He expressed his optimism regarding capability of BAPEX and their ongoing basin modelling work. He said that only 17 wells have been drilled so far in the Chittagong and Chittagong Hill Tracts area with only one gas discovery at Semutang but experiencing oil and gas shows in the different wells which is very good indication for migration of oil and gas. He also mentioned that earlier mind set was for getting oil discovery while proper attention was not given to find gas. However, BAPEX is in the process of taking exploration program in the hill tracts and to find out good JV partner.

Mohammed Ali, Managing Director of BAPEX, as a discussant informed that

Project Name	District	Line km / Sq km
2D seismic survey over exploration Block # 15 and 22.	Chittagong,, Rangamati, Bandarban, Khagrachari, Feni, Comilla etc.	3000 line km
2D seismic survey over exploration Block # 6B and 10.	Madaripur, Shariatpur, Gopalganj, Barishal, Bhola etc.	3220 line km
2D seismic survey over exploration Block # 7 and 9.	Gazipur, Narsingdi, Pirojpur, Patuakhali etc.	4500 line km
3D seismic survey at Zakiganj & Patharia west structure over Block# 13 & 14.	Sylhet and Mv. Bazar.	580 sq km
3D seismic survey over Block#10 at Subarna Char and Char Fasson area.	Noakhali and Bhola.	1600 sq km

BAPEX has taken extensive seismic program and future planning for conducting 2D and 3D seismic surveys. As part of the program, BAPEX in the process of undertaking different surveys in the upcoming dry season at exploration blocks 15 and 22 by engaging foreign geophysical company which is at its the final stage and survey will start in the upcoming dry season. The details of seismic survey program are as follows;

It is nice to know that all the projects have already been approved by the gov-

ernment under financing from Gas Development Fund. Based on 2D, 3D seismic and geological data, projects will be undertaken for workover of Semutang well # 5 & 6 and drilling of Semutang well # 7. In addition, BAPEX is working on preparing an outline for future exploration woks in the hill tracts and engaging JV partner(s) through tendering process.

EP

Mortuza Ahmad Faruque;
Former Managing Director, BAPEX

আসছে ভিন্ন ধারার ম্যাগাজিন

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বাজারে আসছে

যোগাযোগ

আরিফুল ইসলাম ০১৭২৬ ৫৮৩০৮৫
মোহাম্মদ হোসেন জয় ০১৭১২ ৬৭৭৬০৯

ক্রম ৫০৯, ৫১০, ৫১১ ও ৫১২, ইস্টার্ন ট্রেড সেন্টার, ৫৬ ইনার সার্কুলার রোড, পুরানা পল্টন লাইন, ডিআইপি রোড, ঢাকা-১০০০, জিপিও বক্স ৬৭৭, ফোন +৮৮০২৫৮৩১৪৫৩২



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মানসম্পন্ন বিদ্যুৎ নিরবচ্ছিন্নভাবে দেশের সকল মানুষের নিকট পৌঁছে দেয়াই আমাদের অঙ্গীকার

- * গ্রিড উপকেন্দ্র, গ্রিড লাইন ও টাওয়ার জাতীয় সম্পদ, তা রক্ষা করা সকলের দায়িত্ব।
- * গ্রিড উপকেন্দ্র, সঞ্চালন লাইন ও বৈদ্যুতিক টাওয়ারের গুরুত্বপূর্ণ যন্ত্রাংশ চুরি প্রতিরোধে সহায়তা করুন, বিদ্যুৎ বিপর্যয় থেকে দেশকে বাঁচান।
- * উচ্চ ভোল্টেজের বৈদ্যুতিক টাওয়ার ও লাইন হতে নিরাপদ দূরত্ব বজায় রাখুন।
- * বিদ্যুতের গ্রিড লাইন ও টাওয়ার হতে নিরাপদ দূরত্বে স্থাপনা নির্মাণ করুন।
- * বৃক্ষ রোপনে গ্রিড লাইন ও টাওয়ার হতে নিরাপদ দূরত্বে স্থান নির্বাচন করুন।
- * বিদ্যুৎ ব্যবহারে সাশ্রয়ী হোন। আপনি বিদ্যুৎ সাশ্রয় করলে তা অন্য একজন ব্যবহার করতে পারে। এমনকি সাশ্রয়কৃত বিদ্যুৎ গুরুতর অসুস্থ কারও জীবন বাঁচানোর কাজে লাগতে পারে।
- * বিদ্যুৎ অপচয় রোধে সচেতনভাবে ফ্যান, বাতি ও অন্যান্য বৈদ্যুতিক যন্ত্রপাতি ব্যবহার করুন।
- * বিদ্যুৎ সাশ্রয়ী (LED/CFL/T5) বাল্ব ব্যবহার করুন।
- * যথাসম্ভব দিনের আলো ব্যবহার করুন।
- * বিকাল ৫:০০ টা হতে রাত ১১:০০ টা পর্যন্ত সময়ে বিদ্যুতের চাহিদা বেশী থাকে। এ সময় দোকান, শপিংমল, বাসা-বাড়ীতে আলোকসজ্জা হতে বিরত থাকুন।



Right Time For Utilizing NRB Expertise

EP Report

Abul Kalam Azad, Special Envoy of the Presidency of Climate Vulnerable Forum (CVF), has said that a significant number of qualified, efficient Bangladeshi professionals had left the country following the catastrophic change in August, 1975. The pro-liberation platform was not there for carrying forward the momentum Bangladesh had created. We call it a brain drain. Time has come now for brain gain. We have to keep pace with the constantly evolving technology. We have to utilize the services of Bangladesh origin experts working abroad whom we call NRBs.

Mr. Azad was speaking as chief guest at "EP Talks" on "NRBs and Local Technical Resources Integration for Capacity Development", organized by Energy & Power magazine in collaboration with M2K Technology and Trading.

He said the global economic recession in 2008-09 could hardly affect us. We were not much connected with the global economy at that period. We have achieved the final green signal for graduating from LDC in 2021. Either in 2024 or, if impacted by the coronavirus too much, we would reach developing country status by 2026. We have plans for reaching developed economy by 2041. The per capita income reached US\$ 2000. The generation capacity of electricity has now huge surplus. The enabling environment for investment has been created. But over the past decade, circumstances have changed a lot. Now any global issue is going to affect us for sure. We have to stay with the flow of the tide or we would be

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swept away.

If we have to learn and benefit from the rapidly evolving global technology and

Google and other top organizations.

Panelists took part in the discussion were: Dr. Sultan Ahmed, former Secretary of Power Division and energy and environment specialist, Humayun Rashid, President of International Business Forum Bangladesh and CEO of Energypac, Dr. Habib Siddiqui, Operational Excellence Specialist and USA based academic, Engr. Shafique Bhuiyan Anu, Honorary Consul General of Bangladesh in New Zealand joined from Auckland, Engr. Abu Reza Khan, Managing Director of Summit Technopolis, and Engr. Khondkar Abdus Saleque, International Energy Consult-

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knowledge hub, we have also to create a knowledge hub integrating our NRB resources now working with NASA,



Abul Kalam Azad

ant and Contributing Editor of Energy & Power magazine joined from Melbourne, Engr. Jalil Khan from USA. EP Editor Mollah Amzad Hossain moderate the event.

Mr Azad mentioned that the highly skilled Bangladeshis were performing admirably in many top companies and engaged as academics and researchers in top institutions across the world. Many of them have genuine intentions to contribute to Bangladesh. A summit was held in Dhaka two years ago with a group of such experts. But the outbreak of the coronavirus has impeded the progress of implementing the recommendations of the summit. Recently,

an Energy Forum has been formed with some leading enthusiasts. The ongoing massive development works would get huge impetus if the NRBs and local experts can work together.

He mentioned that a NRB wing has been created at the Economic Relations Division (ERD). There exists enabling environment for working there. Around 100 special economic zones (SEZs) are being established. Opportunities have been created for our different NRB specialists for working there. Moreover, the public sector companies have introduced special pay scales. Private sector companies now have grown in a capacity to hire such experts at attractive remunerations.

We have achieved self-sufficiency in power generation. Now, the pace of development would get further momentum if NRBs can be integrated.

Dr. Sultan Ahmed acknowledged that the NRBs possess specialized skills. They want to return and make contributions. These days, state of the art modern technologies are being used everywhere. We are relying mostly on foreign experts. Maintenance and operation are special areas. In case of any trouble of special machinery, we have to either bring experts or send the machinery abroad for troubleshooting. Huge time and resources can be saved if such works can be done at home.

It is all right that a committee has been created at ERD for the NRBs. But a branch needs to be created. Committees often do not deliver as per requirements. Formation of an institute would be a right approach. Legal aspects are also important. There exist some legal obligations as well. Integration of NRBs would bring qualitative changes too.

In my opinion, the ERD and not the Ministry of Foreign Affairs would be the right authority for developing data base of NRB experts. I would suggest that the Energy & Power magazine in collaboration with ERD, public and private sector companies could prepare a database of NRB experts.

Mr. Humayun Rashid observed that the



Sultan Ahmed



Humayun Rashid



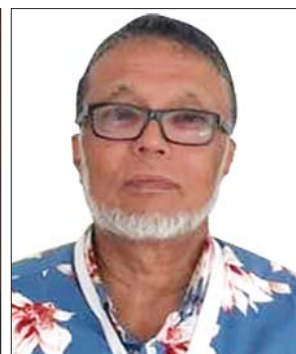
Habib Siddiqui



Shafiqur Rahman Bhuiyan (Anu)



Abu Reza Khan



Khondkar Abdus Saleque

country would advance faster if the NRB skills and expertise can be effectively utilized. A bridge needs to be developed between the businesses and NRBs. The huge manpower of Bangladesh needs to be integrated into work stream. Education system needs to be made pro-development, trendy. Students are not getting work-focused education. The system is creating educated but unemployed masses. Vocational certificates of Bangladesh are not accepted abroad for jobs. An X-ray quality G3 category welder gets Tk 1.5 lakh per month while a graduate engineer gets BDT 35,000.

We could not develop our jute and leather sectors as expected. We cannot export finished products. Foreign buyers do not prefer our goods as the industries are not environment friendly. We can produce specialized products in RMG. Our products are all general stuff.

Value addition could not be created for our burgeoning electricity generation capacity. NRBs can play a role here. They can contribute in IT and AI segments. More and more robust infrastructure need to be developed for making

the development sustainable, Mr. Rashid mentioned.

Dr. Habib Siddiqui mentioned that all NRBs are successful in their own profession. It is essential now that Bangladesh creates environment for utilizing their expertise. Inefficiency dampens development efforts. The works that could be done in a day take five days. That is why, the progress is constrained.

The efforts for utilizing the NRB expertise are not much visible. Some initiatives have been taken over the past few years. We, who are working in major industries and institutions of the world, are keen to contribute for development efforts of Bangladesh. But we are not getting required opportunities. Special initiatives are required to be taken. Enabling environment needs to be created. It would benefit both Bangladesh as well as the NRBs.

Engr. Shafique Bhuiyan Anu stressed that Bangladeshi experts, if not better, are equally competent as foreign experts. During selection, we need a combination of honesty, patriotism and skill. Then would come merit and practical experience. It

would be useful if we can prepare a database combining all these.

Engr. Bhuiyan stressed on recognizing the skilled professionals and their integration in the policymaking process. Some NRBs have skills for value addition to mega projects like Padma Bridge and Metro Rail. But their opinion and observations are not taken on board. Many NRBs are performing admirably in their workstations abroad. Their talents and skills must be harnessed and utilized in Bangladesh.

Engr. Abu Reza Khan mentioned that he is aware of a few NRB platforms. NRBs must have a common united platform for integration with local experts. There exist NRB bank but some have different opinions about its utility. There has been brain drain before, now we have to reverse the tide.

If a reliable database of NRB experts can be prepared, different ministries can utilize relevant NRB experts for specific works. A specific forum is essential for

integration of NRBs with local experts. It can be a public-private joint venture.

Engr. Khondkar Saleque Sufi reminded that Bangabandhu laid the foundation for national development following the liberation over the short period of time. He wanted that own skilled manpower of Bangladesh would construct the Golden Bengal. He advised BUET students to grow as 'Golden Son' of the country and contribute with honesty and dedication. But unfortunately following his unfortunate demise, there has been massive brain drain of talented Bangladeshis.

Massive development is happening all around. The stage is set for reversing the process. Bangladesh has to embrace state of the art modern technologies. This is the right time for utilizing meaningfully the NRB expertise. Exclusive reliance on foreign experts and consultants would

not ensure sustainable development. In his opinion, the Ministry of Foreign Affairs through its Embassies and High Commissions in different countries should source and prepare database of NRB experts – academics, professionals, and researchers. This database would have the list of experts having expertise in different specific areas. NRB experts can assist at every sphere from project formulation, feasibility studies, risk assessment, contract negotiation, contract management, health safety and environment (HSE) management. NRB expertise can be utilized in artificial intelligence, cyber security, GIS, automation of utility and infrastructure operations. But all these would require positive mindset of the policymakers. He suggested carrying out man hunting after creating database.

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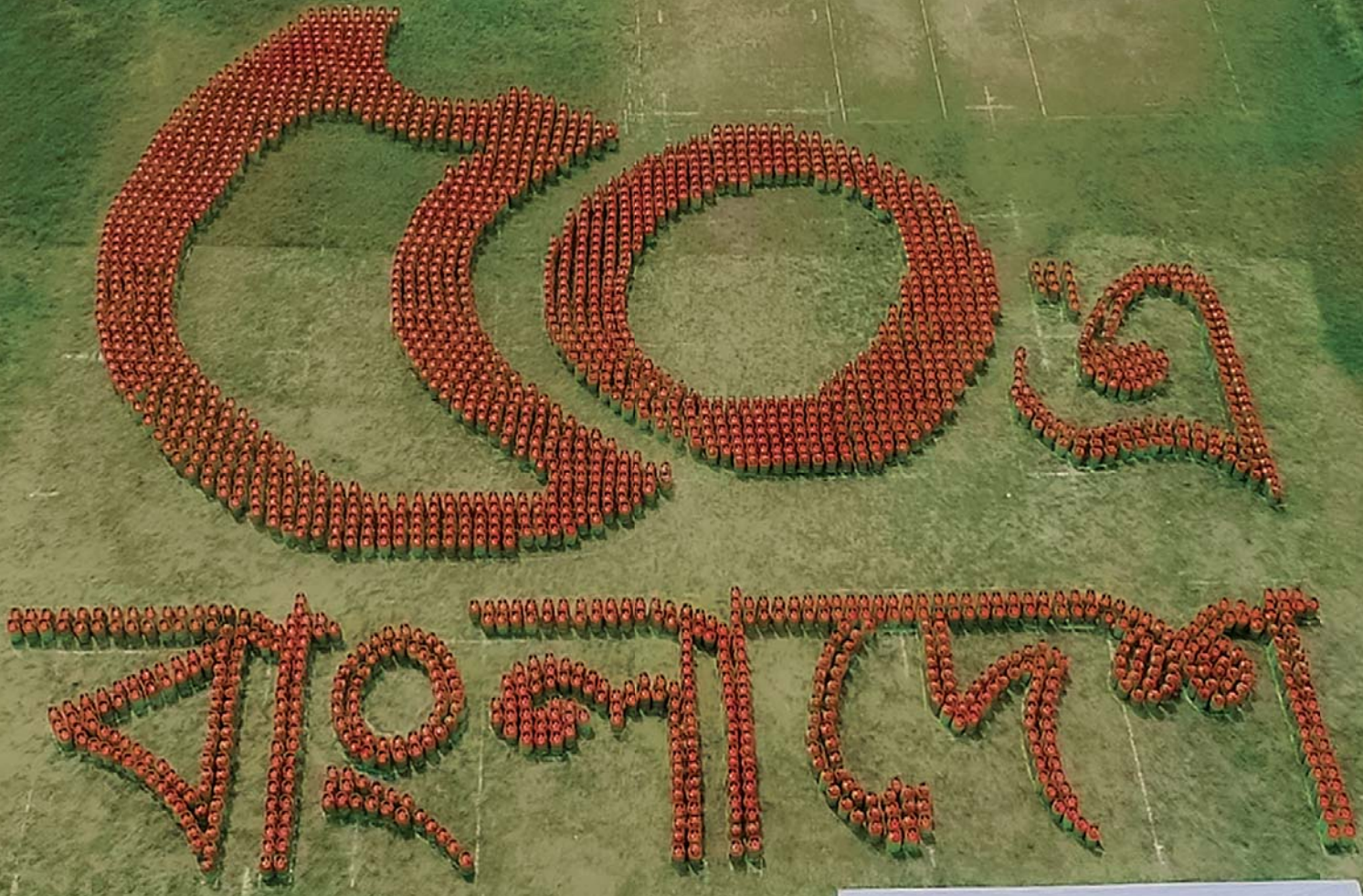
Contact

Ariful Islam 01725 583085
Mufazzal Hossain Joy 01712 677601

Room No. 507, 509 & 512, Eastern Trade Center, 56, Inner Circular Road (VIP Road), Dhaka-1000, Bangladesh
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স্বাধীনতার
৫০
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পূর্তিতে

দেশের মাটিতে প্রথমবারের মতো **২৬১০টি** ওমেরা গ্যাস
সিলিন্ডার দিয়ে আমরা এঁকেছি প্রিয় বাংলাদেশের নাম।



Move to Strengthen Power Grid

Power Grid Company of Bangladesh (PGCB) is going to strengthen the grid capacity by spending nearly Tk 7.75 billion to meet the growing demand for power and ensure quality and reliable electricity supply.

The state-run company will do the job through enhancing capacity of existing grid substations and replacing conductors of transmission lines and second circuit stringing.

In this regard, power, energy and mineral resources ministry has put forward a project proposal for increasing capacity of PGCB's existing substations and transmission lines.

The project has been undertaken to increase capacity of transmission lines under PGCB across the country, Planning Minister MA Manan has said recently.

"High capacity transmission line and enhancing capacity of existing substations are essential to meeting growing demand for power as well as ensuring reliable and seamless supply of produced electricity to people," he said.

PGCB has moved to raise capacity of 10 substations, set up capacitor banks at 17 substations apart from carrying out reconductoring at eight 132kV transmission lines, construction of two new lines and stringing existing one under the proposed scheme, planning commission sources said.

In line with its Power System Master Plan 2016, the government eyes to raise its power generation capacity to 40,000MW by 2023 with turning the under-construction power plants into power generation hubs. **EP**

BPDB Restores Power Supply to RSRM Factory After 8 Months

Bangladesh Power Development Board (BPDB) has restored power supply connections to Chattogram based RSRM (Ratanpur Steel Re-Rolling Mills Ltd) factory after eight months.

Since January 2021, the two manufacturing plants of the RSRM have been shuttered as they have had their power supply cut off due to nonpayment of outstanding electricity bills amounting to Tk 40 crore.

Badhan Basak, general manager (Commercial) at BPDB, said, "By this time, the company has paid around Tk10 crore in instalments and then the board authorities have re-

stored the power supply in full."

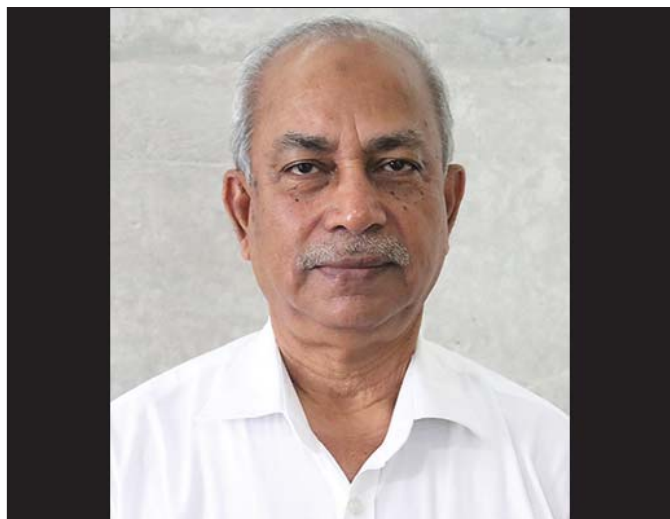
Now the company can go into production.

Founded in 1984, Ratanpur Group has established itself as one of the leading steel companies based in Chattogram. The industrial group has an annual turnover of around Tk700 crore.

The company's electricity bills were in arrears for quite a long time. Because of this, its electricity connections had been severed earlier.

But the company twice managed to obtain orders from the High Court to pay the unpaid bills in instalments. **EP**

Former Chairman of Petrobangla, BPC Muqtadir Ali Passes Away



Major (retd) Muqtadir Ali, a valiant freedom fighter and former chairman of Petrobangla and BPC, died recently at the Combined Military Hospital in Dhaka. Retired Armed Forces Officers Welfare Association posted on its website. He was 69.

His namaz-e-janaza was held at the Banani Military Graveyard, according to family members.

Mr. Muqtadir served Dipon Group as an advisor.

He also served as Chairman of Petrobangla and BPC and Managing Director of Titas Gas T&D Company, Bapex and Sylhet Gas Field Company. Earlier, he joined BPC in 1980 as company secretary and Titas Gas in 1984 as company secretary with the rank of general manager.

He was a student of East Pakistan University of Engineering and Technology (now BUET) when the Liberation War started. To join the war, he crossed the bor-

der and began intelligence training, being attached to an Indian army brigade.

After initial training, he was sent to various places in Bangladesh to gather intelligence about Pakistani troops deployment.

Later on, he was sent for training at Loharband, Silchar jungle area in Assam.

After the training was over, he joined Baropunji sub-sector 4 under Sector 4. There, he started regular patrolling, conducting operations in tea gardens and destroying bridges.

Soon afterwards, he was selected for 2nd Bangladesh War Course/SS-2 and landed in Murtee for officer's training in November 1971.

After being commissioned, he joined Minor Tigers (3 E Bengal).

He has served in 2IC of Dashing Tigers (36 E Bengal), 10 E Bengal and as adjutant of Mirzapur Cadet College. **EP**

Matarbari Port Faces Land Acquisition Hiccup



The Matarbari Port Development project, a Japan International Cooperation Agency (Jica) funded fast-track project of the government inaugurated in 2020, is now caught in land acquisition delay as Cox's Bazar district administration is yet to hand over the land to the implementing agency, Chatogram Port Authority.

The port authority in June paid Tk 75.11 crore cheque to the district administration, and subsequently reached out to Cox's Bazar deputy

commissioner multiple times. But the district administration neither replied to the letters from the port authority nor handed over the land in the last two and a half months.

"By sending letters and making verbal requests, we have repeatedly asked the district administration to hand over the acquired land to us. But it has not been responding," said a project official.

He noted that the land accusation problem could delay the overall implementation time of the project. **EP**

20 Titas Officials Summoned Over Graft Allegations

Twenty officials and employees of Titas Gas Transmission and Distribution Company Limited have been summoned to record their statement on graft allegations.

The Anti-Corruption Commission (ACC) recently asked the employees to be present at its Segunbagicha head office on 5-8 September.

These twenty people are among thirty employees and officials of Titas gas who are currently being investigated by the anti-graft commission over the allegation of amassing illegal wealth.

Earlier, 10 of them recorded their statement with the ACC.

They were General Manager (planning and development) Md Abdul Wahab, General Manager (general service division) Md Moinul Islam, Retd Welder Kazimuddin,

Senior Sales Assistant Syed Oyez Uddin Ahmed, Senior Office Assistant Md Yusuf Ali Miaji, Senior Developer Khondakar Md Yusuf Ali, Pro-worker Golam Mawla Sardar, Office Assistant Jakir Hossain, and Senior Sales Assistant Md Saidur Rahman. Senior supervisor Harun Al Rashid, Senior sales assistant Foyez Ahmed Liton, Vice-president Jakir Hossain, Senior sales assistant Faruque Ahmed, Assistant officer MD Delower Morshed, Deputy Manager Anisuzzaman, Deputy Manager MD Abdul Mannan, Manager Hasibur Rahman, Company Secretary Mahmudur Rob, Manager Abu Bokor Siddique Rahman, Mohrom Ali, Former director Khan Mainul Mostaq, Director (Planning) MD Aiyub Khan Chowdhury, computer operator (zone-9) Md Mizanur Rahman, Md Jakir Hossain, Md Abu Sayeed, MD Mofiz and Md Manik Miya. **EP**

BD to Invest in Hydro-Power Projects Jointly with Nepal

Bangladesh wants to invest in the hydro-power projects jointly with Nepal to open power import business in near future.

For making the investment, a meeting of the Joint Steering Committee co-led by the energy secretaries of Nepal and Bangladesh and the Joint Working Group co-led by the joint secretaries will be held virtually on September 13-14, Power Division sources said.

"Bangladesh is working on a project to import 500 MW of electricity from Nepal via India. India has executed a MoU with GMR Upper Karnali Hydropower Ltd (GUKHL), said an official.

Earlier, Bangladesh requested



Nepal to share its views and comments regarding examining the feasibility for joint participation and development of Sunkoshi-3 (approx. 536MW) and Sunkoshi-2 (approx. 1110 MW) hydro-power project in Nepal.

For importing power Bangladesh has to use Indian corridor that is why both countries may consider tri-party MoU for joint development hydro power project in Nepal, he added. **EP**

Gazprom to Drill Three Wells in Bhola



Tabgi-01, Bhola North-02 and Ill-isha-01-at a total cost of \$77.18 million (Tk 6.48 billion).

A couple of years ago, the BAPEX discovered Bhola gas

field where all the three onshore wells are located.

Sources said the average drilling cost of these wells is around 56 per cent higher than that of the previous drilling by Gazprom by \$16.48 million in Bangladesh.

Earlier in May, the cabinet committee on public purchase approved a proposal to award the job of drilling these three gas wells. **EP**

Russian energy giant Gazprom has obtained a notification of award (NoA) to carry out the drilling of three more onshore gas wells at Bhola island.

"We issued an NoA to Gazprom last month and a final deal is expected soon," said an official at Bangladesh Petroleum Exploration and Production Company Ltd (BAPEX).

Gazprom obtained the contract to drill three wells-

India Launches Ujjwala 2.0 for Providing Free LPG



Prim Minister Narendra Modi recently launched Ujjwala 2.0 -- the second phase of the Pradhan Mantri Ujjwala Yojana (PMUY) -- by handing over LPG connections in Mahoba in Uttar Pradesh, and said his government's aim is to ensure that benefit of the country's resources reach all.

"As we will be celebrating 75th year of Independence this year and look at the progress in the past seven-and-a-half decades, we feel that some situation and conditions should have changed decades ago," the prime minister said in his address after the launch.

"For many fundamental needs such as road, power, hospital, cooking gas, school, water, home, people of the country had to wait for decades. This is unfortunate and women suffered the most due to this," he said.

"How could the country become self-reliant without self-confidence," he added.

After the formal launch, the prime minister distributed free gas connections to 10 women virtually.

Uttar Pradesh Chief Minister Adityanath handed over the documents to the women on behalf of the PM.

EP

SPM for Fuel Supply to Save Tk 800cr Yearly

With installation of the Single Point Mooring (SPM) having double pipeline facility to supply imported fuel at Mo-heshkhali island, the government will save at least Tk 800 cr per annum.

"Bangladesh Petroleum Corporation (BPC) initiated the SPM project to carry fuel through pipelines from mother vessels quickly,

which would also save Taka 800 crore per annum," State Minister for Power Energy and Mineral Resources said recently.

He hoped the SPM construction works will complete next year, adding, "Once the project is implemented, it would reduce oil pilferage and time for fuel oil supply across the country."

Gas is Less Affected by Environmental Policies Than Coal: Study

Growth in natural gas capacity is 'substantially' less affected by environmental policies, such as carbon pricing, than coal, concludes a new University of Oxford study published recently in iScience.

The findings are cause for concern because, although gas can play a useful role in balancing grids which use intermittent renewable energy sources, an expansion in gas capacity increases the risk of carbon lock-in (a state of inertia in which fossil fuels continue to be used long into the future).

It also exposes companies to the risk of stranded assets - resources which cease to have value because of changes in policy or technology.

The study employed a machine learning model -- the

first of its kind to be used within energy transition research, examining 10 factors affecting technology investment patterns by utility and independent power producer sectors across 33 OECD and emerging economies over 20 years.

It uncovers the impact of electricity market characteristics like competitiveness, and environmental policy instruments, including renewable energy subsidies and carbon pricing policies.

The results suggest that power markets with a smaller utility sector's market share tend to reduce growth in utilities' coal portfolios, but not in gas. This signals that utilities in more liberalized markets might be shifting their portfolios from coal to gas.

EP



"The Awami League government led by Prime Minister Sheikh Haisna has instructed to install SPM to unload imported crude oil from deep sea in a more efficient and time-saving manner. The SPM will also ensure energy

security in the country," Nasrul Hamid added.

According to the project details, the overall progress of the SPM installation rose to 63.13 percent and the financial progress reached 53.54 percent so far.

EP

Wärtsilä Power Plant to Support Export Growth, Job Creation in EPZ



The technology group Wärtsilä will supply a 40 MW power plant to provide a reliable and efficient electricity supply to an Export Processing Zone (EPZ) in Bangladesh.

The plant is expected to encourage industrial investments in the zone, which in turn will create employment and future growth for the area.

The plant has been ordered by Sigma Powertech, and will be located in Adamjee EPZ, close to Dhaka, the capital of Bangladesh. The contract with Wärtsilä comprises orders placed in Q1 and Q2, 2021.

"This is an important project for the region and for the continued economic growth of Bangladesh through export enhancement as per Government's initiative. Growth throughout the industrial sector is very much dependent on having a reliable power supply, and the new power plant will provide this. Wärtsilä has

an excellent reputation in this country with a strong presence to provide the support needed," commented Mohammad Moyeen, Chairman, Sigma Powertech Ltd.

"Projects like the Adamjee EPZ project represent a new kind of industrial development concept for Bangladesh and we expect more of those to come. Typically, these developments require the power generation to be flexible, efficient and reliable, and our technology fits these needs perfectly," said Henri Boxtel, Energy Business Director, South Asia, Wärtsilä.

The plant will operate with four Wärtsilä 34SG engines operating on natural gas fuel. Delivery of the engines is being made on a fast-track basis with all equipment scheduled to be delivered before the end of 2021.

EP

Geo Energy Revenue Grows 37pc on Higher Coal Prices

Indonesian coal producer Geo Energy Resources reported a record revenue of US\$220.3 million for the first six months of this year, due to an increase in sales volume and a higher average selling price.

Its first-half revenue increased 37 per cent from US\$160.6 million in H1 2020, the mainboard-listed firm said in a filing recently.

The average Indonesian Coal Index price for 4,200 GAR (Gross As Received) coal had surged to US\$47.78 per tonne in the first half of 2021, from US\$30.61 per tonne the year before.

Geo Energy said: "Coal prices have remained strong as the demand for power continues or has even increased during challenging economic times, sparking a surge in prices in



China and East Asia. Soaring hot weather in North Asia added to the strong demand due to the industrial recovery from the pandemic."

Indonesian miners also continued to enjoy additional export demand for coal from China, amid Beijing's continuing ban on Australian coal, the company added.

Geo Energy ran up record sales at two of its mines, SDJ and TBR, in Indonesia's south Kalimantan province, from buyers in China and East Asia.

EP

Russia Can Contribute to Energy Security of Bangladesh: Envoy



and Mineral Resources Nasrul Hamid at his secretariat office in Dhaka.

"Russia is very much keen to enhance cooperation in energy sector of Bangladesh," the envoy said.

Terming Russia as a tested friend,

Hamid said Russia can help to impart training to Bangladeshi engineers. "We can exploit Russia's experience in exploring on-shore oil and gas. Bangladesh will welcome public and private sector investment of Russia," he added.

EP

Ambassador of Russian Federation Alexander Vi Kentyevich Mantyskiy recently said Russia can contribute to energy security and deep sea exploration program of Bangladesh.

He showed the interest as he made a courtesy call on State Minister for Power, Energy



Greenpage

National Solar Help Desk Kicks Off at SREDA



The inauguration ceremony of the National Solar Help Desk (NSHD) took place on 19 August 2021, in the premise of Sustainable and Renewable Energy Development Authority (SREDA).

The help desk has been established in cooperation with GIZ Bangladesh.

SREDA is committed in its efforts to achieve the national target of renewable energy development.

To realize this goal, SREDA has taken a number of initiatives including issuing a guideline for development of rooftop solar under net metering.

The Net Metering guide-

lines enacted in 2018 has laid the foundation for implementing rooftop solar projects at industrial, commercial and residential facilities with 3 phase connection and thereby, allowing consumers to transport surplus electricity, after self-consumption, to the national grid.

The National Solar Help Desk will serve as a common platform to support the successful implementation of rooftop solar projects under net metering.

Any interested person can access pertinent information on eligibility criteria, application process, financing options, and implementa-

tion process, and technical specifications of rooftop solar system, among others.

All the information will be available in a structured manner in the NSHD web portal – shd.sreda.gov.bd.

There will also be options for obtaining service through virtual meetings or a physical visit at the Help Desk at the SREDA office, located in IEB Building, Ramna.

State Minister of the Ministry of Power, Energy and Mineral Resources (MPEMR), Nasrul Hamid MP attended the event virtually as the Chief Guest.

EP

Public Buildings Can Save 15m kWh Power: Study

About 11 to 15 million kWh of electricity could be saved if the energy saving potential is extrapolated for more than 250 public buildings in Dhaka region, a study says.

The saving potential is equivalent to the electricity used by one thousand homes in a year, it also said.

The findings were revealed at a workshop on the study on "Energy Efficiency in Public Buildings in Bangladesh" (EEPB) project on the occasion of the National Energy Security Day on 9 August.

The workshop presented the study



findings related to the huge potential of saving energy if public buildings use rooftop solar.

More than 1 million kWh of energy could be saved in these buildings with a nominal investment of 1 million dollars and payback period of 5 to 12 years with better insulation, retrofitting, replacement of inefficient appliances and introducing rooftop solar systems, according to the study findings.

EP

Nasrul for Integrated Approach for Rapid Expansion of RE



State Minister for Power, Energy and Mineral Resources Nasrul Hamid recently underscored the need for a single integrated approach for research and development in the rapid expansion of renewable energy.

"A single integrated approach is needed for research and development in the rapid expansion of renewable energy. In a densely populated country like Bangladesh, land, power plant installation costs, affordable storage systems and

technical constraints are some of the obstacles to generating electricity from renewable energy. Despite such obstacles, Bangladesh is generating 766.68 megawatts (MW) of electricity from renewable energy," he said.

He was addressing virtually the 3rd meeting of the Regional Committee for the Asia and Pacific Region of the International Solar Alliance at the International Solar Alliance's Asia and Pacific Regional Committee, a press release said.

With Director-general of the International Solar Alliance Dr Ajay Mathur in the chair, the online meeting was attended, among others, by Australian Minister for Energy and Emissions Reduction Angus Taylor, Cambodian Minister of Mines and Energy Suy Sem, Minister of Power and New and Renewable Energy R K Singh, Minister of Environment of Maldives Dr Hussain Rasheed Hassan and Oman's Minister of Environment and Climate Affairs Mohammed Bin Salem bin said Al-Tobi. **EP**

Greenpage

Country's Biggest 100 MW Solar Plant Gets Clearance

The Executive Committee of the National Economic Council (ECNEC) recently gave its nod to the proposed 100 MW "Solar Park, Madarganj, Jamalpur," the country's ever biggest solar power plant worth about TK 319 crore and 40 lakh.

According to the proposal, a joint venture company of CREC International Renewable Energy Co Ltd (CIRE) and BPDB-RPCL Powergen Ltd, Bangladesh will implement the project.

"The project will be implemented with the fund of Indian line of Credit," Planning Minister Abdul Mannan told the media following the ECNEC meeting held at the NEC Conference Room at Sher-e-Bangla Nagar in Dhaka.

Prime Minister Sheikh Hasina presided over the meeting virtually from her official Ganabhaban residence.

According to the Power Division proposal the government will purchase electricity from the company at a rate of Tk 8.84 per kWh. However, the rate was reviewed and it is now close to TK 10 per kWh.

Meanwhile, following the ECNEC meeting, Sharifa Khan, Member Planning Commission told the reporters that a huge amount of land is needed to establish a solar power plant.

"We are set to install the park on non-farming and khas land areas. We allocated 300 acre of land for the purpose," she said. **EP**

AFD to Provide \$50m Loan for Energy Sector



SATTE, AFD Country Director for Bangladesh, signed the agreement on behalf of their respective sides, said a press release.

The project will contribute to the process of the economic transition of Bangladesh towards a greener economy.

It aims to increase the volume of investments in energy efficiency and renewable energy production in Bangladesh and the dissemination of such investments in those areas within the private sectors.

The loan will help promote female entrepreneurship as well, the release said. **EP**

A loan agreement was signed under which the French Development Agency (AFD), France would provide \$50 million in soft loans to Bangladesh for the 'Energy efficiency, renewable energy, and Women Entrepreneurship' linked projects.

Fatima Yasmin, secretary of Economic Relations Division, and Benoit CHAS-

CHT Areas to Have 40,000 SHS, 2,500 Solar Community System



Minister Sheikh Hasina to provide electricity coverage to all.

"If these solar home systems are set up there, then it will be possible to ensure power coverage even in the remote areas of CHT and it's our belief," he added.

Kamal said the CCEA meeting also decided to cancel the implementation of Matarbari-Banshkhali-Madunaghat 400kv Transmission Line project under Public Private Partnership (PPP) method.

"The project will not be implemented under PPP method as there is no such need for this right at the moment."

The project was supposed to ensure power evacuation for the SS Power Ltd I Power Plant at Banshkhali in Chattogram.

Joining the briefing virtually, Cabinet Division Additional Secretary Md Shamsul Arefin said that the project could not be implemented within the stipulated time-frame under PPP method.

"But, it will be possible to provide electricity there through another transmission line." **EP**

The government has approved a proposal in principle to procure some 40,000 solar home system (SHS) having capacity of 100 watt peak and some 2,500 solar community system having capacity of 320 watt peak from an experienced firm under Direct Procurement Method (DPM) for the three districts of Chattogram Hill Tracts (CHT).

The approval came from the 24th meeting of Cabinet Committee on Economic Affairs (CCEA) this year held virtually with Finance Minister AHM Mustafa Kamal in the chair.

Briefing reporters after the recent meeting, the Finance Minister said that this proposal has been given approval as part of the pledge given earlier by Prime

EV Boom Pay-Dirt for Machinery Makers

The investment surge by both new and established automakers in the electric vehicle market is a bonanza for factory equipment manufacturers that supply the highly automated picks and shovels for the prospectors in the EV gold rush.

The good times for the makers of robots and other factory equipment reflect the broader recovery in US manufacturing.

After falling post-Covid to \$361.8 million in April 2020, new orders surged to almost \$506 million in June, according to the US Census Bureau.

New electric vehicle factories, funded by investors who have snapped up newly public shares in companies such

as EV start-up Lucid Group Inc are boosting demand.

"I'm not sure it's reached its climax yet. There's still more to go,"

Andrew Lloyd, electromobility segment leader at Stellantis-owned supplier Comau, said in an interview.

"Over the next 18 to 24 months, there's going to be a significant demand coming our way."

Growth in the EV sector, propelled by the success of Tesla Inc, comes on top of the normal work manufacturing equipment makers do to support production of gasoline-powered vehicles.

Automakers will invest over \$37 billion in North American plants from 2019 to 2025, with 15 of 17 new plants in the United States, according to LMC Automotive. Over 77% of that spending will be directed at SUV or EV projects. **EP**

Greenpage

Gautam Solar Installs 1500 Pumps in Haryana

Gautam Solar, one of India's leading solar manufacturers, has installed solar pumps of 7.5 and 10 HP capacity at 1500 different locations in Haryana under the Pradhan Mantri Kusun Yojana.

The government has set a target of installing 22,000 standalone solar pumps in Haryana within the first year of the scheme.

The scheme was launched by the Ministry of New and Renewable Energy (MNRE) in 2019.

It seeks to provide subsidies on solar pumps to the farmers of our country.

Under this scheme, the farmers only have to bear 40% of the pump's cost, while the central and state governments subsidize the remaining 60% for solar pumps that have a capacity of up to 10 HP.

However, in states like Haryana and Madhya Pradesh, the state governments have provided additional top-up on the subsidies, which has reduced the farmer's share to 10%.

This step has made the scheme more attractive for farmers and could contribute massively to the success of the project.

In May 1000 solar pumps were installed in different locations of Haryana.

The farmers who installed the solar pumps were satisfied with how the product performed as it convenient and lessens their dependability on unclean energy. **EP**



CONTRACT SIGNING BETWEEN MINISTRY OF FOOD &
CONFIDENCE INFRASTRUCTURE & GSI, USA JV
CONSTRUCTION OF STEEL SILO AT BARISAL



Children in Bangladesh, 3 Other Countries Extremely Vulnerable to Climate Change



Children in Bangladesh, Pakistan, Afghanistan, and India are among those most at risk of the impacts of climate change, threatening their health, education, and protection, according to a new Unicef report launched recently.

Bangladesh ranked second among South Asian countries and 15th globally in Unicef's index "The Climate Crisis is a Child Rights Crisis: Introducing the Children's Climate Risk Index."

The index, first of its kind,

ranked countries based on children's exposure to climate and environmental shocks, such as cyclones and heatwaves, as well as their vulnerability to those shocks based on their access to essential services.

Pakistan, Bangladesh, Afghanistan, and India are among four South Asian countries where children are at extremely high risk of the impacts of the climate crisis, with global rankings of 14, 15, 15, and 26.

Nepal is ranked 51 while Sri Lanka is at 61st place. Bhutan is ranked 111, with children at relatively lower risk.

South Asian countries are among the most vulnerable globally to the impacts of climate change. **EP**

Greta Thunberg Drops Boycott of COP26 Meet

Swedish climate campaigner Greta Thunberg said recently she hoped to go to the COP26 climate summit in November, months after threatening to skip the event because of unfair vaccine rollouts.

"I've heard from people that all the delegates will be offered a vaccine," Thunberg told a media. "If that's considered safe, then I will hopefully attend."

The 18-year-old said in April that by November richer countries would be vaccinating young healthy people

"very often at the expense of people in risk groups in other parts of the world".

She said at the time that the conference in Glasgow should be postponed if everyone could not attend on the same terms.

The conference has already been postponed once from its original date of November 2020. **EP**



TAQA Arabia Signs MoU with MAN Energy Solutions for Egyptian Hydrogen Project

MAN Energy Solutions has signed a memorandum of understanding (MoU) with TAQA Power, TAQA Arabia's Power Subsidiary – based in Cairo, Egypt – regarding a pilot project for the local production of green hydrogen to fuel domestic tourist busses.

The MoU sets the stage for MAN Energy Solutions to provide technical information to TAQA Power on employing electrolysis for a hydrogen-plant solution, due to run until autumn 2022.

The announcement of the MoU comes in the wake of Egypt's president, Abdel-Fattah El-Sisi, urging the establishment of an integrated strategy for the production of green hydrogen in the north African state in light of the growing international interest

in the alternative fuel. The aim is to empower Egypt to generate and use hydrogen through renewable energy instead of fossil fuels.

Ghassan Saab, Head of MAN Energy Solutions's energy business in the region, said: "This is an exciting venture with a valuable partner in a country that has recognised what an incredibly important role green hydrogen will play on the path to a climate-neutral, global economy. It is also a great opportunity for MAN Energy Solutions to display its expertise in all processing steps of the hydrogen economy. We look forward to working closely with TAQA Power in finding the optimal solution that will position them strongly in what will be one of the most important markets of the future." **EP**

COP15 Biodiversity Summit Postponed to April 2022

The face-to-face portion of a critical UN biodiversity summit originally slated for last year will be delayed until April 2022, UN officials said recently, citing the Covid pandemic.

An "official" virtual opening of the meeting hosted by China will take place in mid-October this year, followed by face-to-face negotiations in southern China's Kunming from April 25 to May 8, 2022.

Earlier this month, the UN unveiled a draft agreement

for the summit calling for the preservation of at least 30 percent of land and oceans, along with other biodiversity targets.

The fruit of months of online discussions, the draft mapped out the route for humanity to be "living in harmony with nature" by 2050.

Campaigners have for years called for an effective global agreement on halting biodiversity loss, similar to what the Paris Agreement lays out for climate change. **EP**

None will be Allowed to Pollute Environment: Shahab Uddin



Planning", organized by the Ministry of Environment, Forest and Climate Change.

Speaking as the chief guest, Shahab Uddin said an inter-ministerial

Environment, Forest and Climate Change Minister Md Shahab Uddin recently said all necessary activities for the development of the country's environment will be implemented as per the instructions of Prime Minister Sheikh Hasina.

"None will be allowed to do things that pollute the environment and accelerate climate change," he said while speaking virtually at a workshop titled "Improving Bilateral Relations on Environment: Context and

meeting would be convened to formulate action plan for the development of the overall environment to prevent all kinds of pollution, including water, air and noise pollution in the country.

Giving specific instructions to the concerned including the officials of the ministry for the development of environment, the minister said the industries, which have not set up Effluent Treatment Plant (ETP), must take necessary steps to set up ETPs. **EP**

China Cranks Up Carbon-Intensive Projects

China announced scores of new carbon-intensive coal and steel projects in the first half of 2021, research showed recently just days after a key UN report urged immediate global action to curb use of fossil fuels and prevent runaway climate change.

The push comes as climate experts exhort governments around the world to take drastic action amid increasingly widespread extreme weather events, like deadly wildfires, drought and even central China's highest rainfall in 1,000 years events that

experts say are directly linked to human impact on the environment via carbon emissions.

"The rest of the world is getting the message that it's time to move away from coal, but coal interests in China are dragging their feet, and the central government is not reining them in," said Christine Shearer, coal programme director at Global Energy Monitor (GEM), the US think-tank that jointly authored the report on China's first-half carbon projects with the Helsinki-based Centre for Research on Energy and Clean Air (CREA). **EP**

British-Indian Climate Minister Sharma in India Before COP26

A British-Indian Cabinet minister in charge of the UK's presidency of the COP26 climate summit in November will hold discussions with senior Indian ministers and leaders from industry and civil society ahead of the summit in Scotland, during which India is seen as critical to world leaders agreeing climate action targets.

Agra-born Alok Sharma arrived in New Delhi on a three-day visit recently.

It is expected that Prime Minister Narendra Modi will attend the flagship event, scheduled between November 1 and 12.

"India has a vital role to play as the world comes together in Glasgow to demonstrate renewed action under the Paris Agreement," said Sharma.

"India's leadership - including through the International Solar Alliance and Coalition for Disaster Resilient Infra-



structure - is hugely important as we look to build global resilience ahead of COP26 and beyond. All countries - including the UK and India - have a historic opportunity to build back greener from the COVID pandemic," the 53-year-old minister said.

"Providing climate resilient jobs that also promote economic growth will lead to a green industrial revolution that also makes financial sense," he added. **EP**

OCP to Support Aquatic Food Production, Trade in Bangladesh

Projects to tackle climate change and protect the world's oceans have been given a major boost with the first £16.2 million of funding from the UK's £500 million Blue Planet Fund.

In Bangladesh, the Ocean Country Partnership Programme (OCP) will support aquatic food production and trade, said the British High Commission in Dhaka.

It put in place the systems and ability to reduce the harmful impacts of aquatic food production, control

common diseases of fish and seafood, and increase production.

This in turn will also support progress towards several UN Sustainable Development Goals on poverty alleviation, zero hunger and good health and well-being, said the High Commission.

The new programme builds on an existing strong cooperation between the UK's Centre for Environment, Fisheries and Aquaculture Science, WorldFish, and the Bangladesh Government's Department of Fisheries. **EP**

Former Danish Minister of Energy Enters Blue World Technologies' Board



will support the company's journey towards providing a strong green alternative to combustion engines and diesel generators for industries around the world.

Former Danish Minister of Energy enters Blue World Technologies' Board of Blue World Technologies is strengthening its Board of Directors by welcoming former Danish Minister of Energy, Lykke Friis, to the table.

At an extraordinary general assembly, the former Danish Minister of Climate, Energy, and Gender Equality, Lykke Friis, has been elected for the Blue World Technologies' Board of Directors where she

"We are very pleased to announce that Lykke Friis has entered our Board of Directors. We have for some time now been in contact with her, as we see her profile as the perfect match for a board position at Blue World Technologies, and we are very much looking forward to our collaboration," says Co-founder and Chief Executive Officer of Blue World Technologies, Anders Korsgaard. **EP**

10,000 MW Large-Scale Battery Power Capacity to be Added to Grid from 2021-23, Says EIA

The U.S. could add 10,000 MW of large-scale battery power capacity from 2021-23 – 10 times the total in 2019 – according to a new report by the U.S. Energy Information Administration.



EIA expects most of the new storage capacity to come from systems co-located or connected to solar projects. By the end of 2020, most large-scale battery storage systems were built as stand-alone facilities.

Based on planned projects by utilities over the next two years, U.S. battery storage that is co-located with generation is expected to increase

from 30% to 60%.

"Growth in U.S. battery systems is critical as the United States faces new hurdles to reliable electricity delivery," said EIA Acting Administrator Steve Nalley.

"Energy stored in batteries can react to second-to-second fluctuations in the electric grid, protecting grid power quality and improving the grid's efficiency." **EP**

World's First Zero-Emission Hydrogen Double-Deckers Arrive in Birmingham

Birmingham City Council has unveiled the first of its 20 new hydrogen buses, which will be in operation later this year.

The vehicles have been purchased as part of the Council's Clean Air Hydrogen Bus Pilot, which looks to 'kick-start' the hydrogen market as a viable zero-emission fuel and to tackle the city's poor air quality.

The buses, which are made by Wrightbus and are the world's first zero-emission hydrogen fuel-cell double-deckers, will be operated in Birmingham by National Express – the first in England (outside of London).

"Fuel cell buses offer a practical solution for cities to decarbonize public transport and immediately improve air qual-

ity," said Birmingham City Council's Cabinet Member for Transport and Environment, Councillor Waseem Zaffar.

"The delivery of the first bus is great news for our city and the rest of the region. It means that we can now work with our partners at National Express to start testing the buses, training drivers and adding livery design before rolling the buses out for the public in autumn this year."

The initiative has been funded through OLEV (Office for Low Emission Vehicles), GBSLEP (Greater Birmingham & Solihull Local Enterprise Partnership), Birmingham City Council and JIVE project funding from the FCH JU (European Funding from the Fuel Cell Hydrogen Joint Undertaking). **EP**

IPCC Assessment of Climate Change Science Finds Many Changes are Irreversible

The Intergovernmental Panel on Climate Change's first Working Group has adopted its contribution to the IPCC's Sixth Assessment Report.

The WG I report assesses the science underpinning climate change and finds many changes are irreversible. The findings are presented in the Working Group's Summary for Policymakers, which was approved following eleven days of line-by-line negotiations.

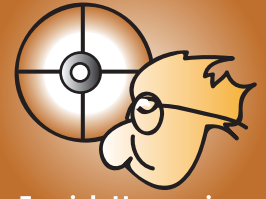
About 300 delegates engaged in the approval process leading to the adoption of the WG I SPM. Due to the global pandemic, the 54th session of the IPCC (IPCC-54), and the 14th session of WG I, took place vir-

tually from 26 July-6 August 2021.

The Earth Negotiations Bulletin summary of the meeting calls attention to the SPM warning that, "Global surface temperature will continue to increase until at least 2050 and many of the changes due to past and future greenhouse gas (GHG) emissions are irreversible for centuries to millennia, especially changes in the ocean, ice sheets, and global sea level. From a physical science perspective, limiting human-induced global warming to a specific level requires reaching at least net-zero carbon dioxide (CO₂) emissions and strong reductions in other GHG emissions." **EP**

A LONG ROAD AHEAD WITH MANY CHALLENGES TO OVERCOME

Reverse Swing



Farid Hossain

That Bangladesh is a land of opportunities is not merely a cliché. A country that was ridiculed as a basket case at its birth 50 years ago has now emerged as a nation of development that is producing enough food grains to feed its over 160 million people. True, a good percentage of the population still live below the poverty line (their daily earning is less than \$2). But no one in Bangladesh is starving now. True, we see many ragged people, mostly women holding rickety toddlers on their hand on Dhaka streets. But that is just a deviation from the main stream of the nation. True, the income disparity is quite wide. But again the gap has started closing up as the nation marches on the highway of development with a sizeable percentage of the population looking towards a better life and better living. The number of people having access to electricity, pure drinking water, sanitary toilets, basic medical care and a modest housing is on the rise. Bangladesh has earned global attention and in

many cases appreciation for its treatment of women, providing them education and jobs. Though a Muslim-majority and still to an extent a conservative nation, Bangladesh stands apart from many other Muslim-dominated countries in empowering its women overcoming many hurdles coming both from families and a section of the society. The economy had been growing by an average of 6 percent plus over the years before Covid-19 pandemic struck the country hugely disrupting normal life and the economy. Still, Bangladesh outpaced Asian giants like China and India in economic growth during the coronavirus period. So, Bangladesh has a lot to celebrate in the golden jubilee year of its independence.

Bangladesh today has reached a stage from where it can't go back. This is also a stage when we need to take an extra guard against the feeling of complacency. The only way to keep our progress rolling ahead is to continue our resilience and the determination to turn our country into a

Sonar Bangla, the dream of Bangabandhu Sheikh Mujibur Rahman.

As we have achieved a certain degree of prosperity what is worrying for many of us is about the system our political leadership has allowed to be developed at the cost of the huge loss to the national exchequer and through that deprivation of the citizens whose tax money keeps the government running. This system, often buoyed by political patronage, has allowed unscrupulous politicians, businessmen and even bureaucrats to launder crores of takas abroad and live their happily far away from the long hand of the country's law. The system has allowed mushrooming of fraudulent business practices in the name of e-commerce that virtually robs gullible customers of their hard earned money by not delivering the products for which the payment has been made well in advance. Taking advantage of this system, a few of the society has grown rich and then richer by simply through looting and plundering. This section may be just a few in number but they have proved themselves to be wielding greater power in influencing the governance and the running of the government. Thus the system tends to allow the growth of crony capitalism.

We urgently need to fix this system if not entirely eliminating it before it is too late. Bangladesh has a golden future ahead. It's marching ahead with its head held high and keeping pace with the developed nations and in some cases such as social development forging ahead of them. Yet we have a long way to go. Our journey ahead will be fruitful if we can take our citizens all along with it. This is the challenge our current political leadership faces and needs to overcome.

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Exploration Should Get Priority If We Want to Limit Fuel Import

It would not augur well for the Bangladesh economy if subsidies to the power and energy sectors keep rising due to growing dependence on imported primary fuel. Considering the disadvantage, planned actions have been launched to increase the contribution of own gas to the fuel mix within 3-4 years. However, exploitation of own coal reserve has not been totally abandoned although it is not under consideration now. On the other hand, the COVID-19 pandemic has impeded the planned offshore exploration for petroleum resources.

Senior Secretary of Energy & Mineral Resources Division (EMRD) Md Anisur Rahman made the observation in an exclusive interview with Energy & Power Editor **Mollah Amzad Hossain**.

How would be the coal and gas supply situation in Bangladesh over the next 3-4 years? The dependency on imported primary fuel is steadily increasing. What are you doing for supplying primary fuel to power sector and industries at competitive price?

The supply deficit of primary energy as compared to the ever-increasing demand is the most critical problem of Bangladesh now. Such situation has emerged due to the demand growth in power and industrial sectors beyond the projections by the Gas System Master Plan. Works on updating the master plan has started with the assistance of a Japanese organization. Reliance on

imported gas is increasing due to progressive depletion of own gas production. Coal import is being done for all coal based power plants excepting the Barapukuria mine mouth plants. Keeping the price at affordable level would be a major challenge if reliance on imported fuel cannot be kept limited. For that very reason, initiatives have been launched under the stewardship of BAPEX for the exploration of Petroleum in the onshore areas.

Like others, you are aware that Bangabandhu's Energy Vision was to supply energy to all at affordable price through maximizing use of own fuel – coal and gas – for power generation and industrial development. But contrary to it, Bangladesh has moved towards imported primary fuel. How would you react to that?

Bangabandhu laid the foundation of power and energy sector development. Ensuring the rights of the citizens on the natural resources of Bangladesh through article 143 of Bangladesh Constitution was his brainchild. He also envisioned the constitutional right of accessing to power of all. Now in the birth centenary year of the founding father, that vision has been achieved. It is also true that necessary attention for petroleum exploration was not given over the past 20 years. On the other hand, demand for natural gas has increased exponentially for commendable economic development. The plan



Md Anisur Rahman

True, it would be extremely difficult containing the present and emerging deficit through LNG import if industries, specially power generation, becomes exclusively reliant on gas. Hence all fuels including diesel, furnace oil would be continued as options. The economy would get a huge shock if emerging fuel demand cannot be met. We have to act thinking deep on how the 6000 MMCFD gas demand projected in 2041 would be met.

for around 100 Special Economic Zones (SEZ) is under implementation. The demand of gas for power generation is ever increasing. Hence there is no alternative now to import of Liquefied Natural Gas (LNG) alongside expediting exploration for own petroleum resources.

We have discovered coalfields. But mining is taking place only in Barapukuria. Presently, the government has no plan to develop other fields. However, there is no decision yet that these will not be developed at all. We are following the directives of the Honorable

Prime Minister going for low carbon development. Plans for implementation of 10 coal power plants have been shelved. Consequently, gas is now the preferred fuel option once again. Within next November, four new wells (including two exploration wells) would be drilled. Expression of Interest (EOI) has been invited for exploration at deeper prospects and for Chittagong Hill Tracts region. We are optimistic about increasing the supply from own source in the next 3-4 years.

But we believe that the rising demand cannot be met supplying from the own sources alone.

The successful resolution of the maritime boundary disputes with neighbors Myanmar and India were milestone achievements of Bangladesh. But at the same time, Bangladesh could not achieve any success from the prospects of maritime resources till now. At this stage, it is still uncertain when exploration campaign can be launched. What are your strategies now for this?

There is no denial that prolonged delays have been made. Our endeavor for launching deep-water exploration campaign got a big blow by the unexpected outbreak of COVID 19 pandemic. After finalizing the Model PSC, we were all set to launch the campaign. March 22, 2020 was set as the day for officially announcing the fresh PSC bidding round. We could have concluded the agreement for multi-client survey(s) before that with Schulmberger. They were ready for starting the work but could not start it. That work would start as soon as the situation gets conducive yet again.

Now for the changed global circumstances, major IOCs have diverted their attention towards LNG. We are not very hopeful about encouraging responses now. But we are contemplating to invite intending IOCs for investment through making proposals and negotiating PSCs with us. *The future of mining from Bara-*

pukuria has entered the zone of uncertainty. There is no decision yet for mining at Phulbari, Dighipara and Khalashpir. Does it mean that Bangladesh has decided for leaving coal underground forever?

I have already mentioned that mining would continue at Barapukuria. But the government has no plan till now for mining other discovered fields.

Works for a land-based terminal at Matarbari is in progress now. Initially, it would have a capacity of 1000 MMCFD with a scope for expansion to 2000 MMCFD. It may take up to 2025 to bring the first unit into operation. Some 12 companies had responded to the EOI and after evaluation, 8 companies have been short-listed. Tokyo Gas would finalize the EPC tender document by September 2021. After review the tenders would be invited from the short-listed companies.

There exist multi-dimensional debates about mining methods; mine water management and rehabilitation of farmlands. But no such decision has been taken for not mining ever. Only future would say what would happen to coal resources of Bangladesh.

There are talks about finding new gas resources in Chittagong Hill Tracts and deeper horizons of on-shore deeper prospects. But ex-

perts are cautioning against BAPEX-alone policy for these highly risky explorations. They suggested finding Joint Venture partners for BAPEX or entering into PSCs with IOCs. What are your views?

We have significant amount of information about some structures of Chittagong Hill Tracts. After validating these, we need to go for further exploration. Yes, it would be risky going there relying on BAPEX-alone policy. Considering these, we have invited Expression of Interest (EOI) for selecting JV partner(s) for BAPEX. The documents have been dispatched to various Bangladeshi missions abroad. We are expecting competent JV partners for BAPEX for blocks 22A and 22B.

Another EOI has been invited for exploration at 4500-7000 meters of depth. It is expected that by the end of 2022, exploration would start after concluding Joint Venture Agreement with successful bidders. Apart from above, five EOIs for deep drilling have been invited for Srikail 1, Mobarakpur, Titas 1, Bakhrabad 1 and Rashidpur 1.

On top of that, Petrobangla data center has been opened for all interested exploration companies.

What is the perspective plan of government for BAPEX, especially in the onshore areas? Is there any plan for PSC bidding for the on-shore?

I am personally conservative about keeping onshore exploration preserved for BAPEX. But any proposal for joint venture works with BAPEX would be appreciated.

We understand that LNG import is now the priority to make up the gas deficit. Eccelerate Energy has expressed its interest to supply 26% more LNG from its FSRU at Maheshkhali. What are your views? NWPGL under a JV has also given a proposal for 1000

MMCFD LNG supply through setting up a Customized FSRU in deep water and constructing a pipeline to Khulna. Summit Group has also submitted a proposal for LNG import. What is the state of these proposals?

Please note that in the present and emerging scenario, there is no option but growing big in LNG import. The capacity of the two under-operation FSRUs at Moheshkhali is 1000MMCFD. We have taken a maximum of 850MMCFD from there. Both the FSRUs have standby regasification unit. Eccelerate has submitted proposals for 26% increase in supply. Subject to availability of LNG, we have no issues. But from September there is a decision for not importing any LNG from spot market for the time being. Spot market is extremely volatile now. LNG to Bangladesh would come from Qatar and Oman under long-term contracts. Contracts for shorter 2-3 years of term are the stages of finalization. We are hopeful about concluding these by end 2021. Not the tendering, but going to the source is our priority now.

Eastern region of Bangladesh is the focal point now for gas supply and LNG import. But for power generation and industrialization, we have to take into consideration of Western region as well for additional gas supply and LNG. Two Indian companies have signed MOUs with Petrobangla for LNG supply. Both have proposed for supplying LNG through pipelines to Bangladesh after importing LNG to terminals in India. Not much development has been achieved yet.

Two proposals for LNG import using Payra port remained pending with EMRD. Previous study rejected the possibility of land-based LNG terminal at Payra Port region for shallow draft. NWPGCL under JV with Siemens, CMC and BP intends for setting up 3600 MW ca-

capacity LNG-based power plants. After exit of BP from LNG supply plan, Eccelerate joined the JV. The JV, after carrying out a feasibility study, has submitted a proposal to the EMRD. Not at Payra, but about 60-70km away into the deep water from Kuakata shore, they intend to set up a FSRU of 1000 MMCFD LNG supplying capacity. Subsea pipeline would transport RLNG for using at the power plants and they proposed to supply the spare gas to the Khulna region. They proposed to construct the pipeline with own investment. A committee is now reviewing their proposal especially the eventual price of gas to ascertain whether the price would remain within the affordable limit.

Summit Group has also submitted a similar proposal. There is an additional alternate proposal too. This would be setting up FSRU at Kutubdia Island and transporting LNG either using smaller LNG carriers or through pipeline to Payra.

The EMRD cannot state with confidence whether such apparently expensive proposals involving complex infrastructures would lead to supplying energy at affordable price. Up to Tk 3200-3300 crore investments would be required for constructing 190km pipeline to Khulna.

When are you expecting the land-based LNG terminal to come into operation? When the field construction would start?

Works for a land-based terminal at Matarbari is in progress now. Initially, it would have a capacity of 1000 MMCFD with a scope for expansion to 2000 MMCFD. It may take up to 2025 to bring the first unit into operation. Some 12 companies had responded to the EOI and after evaluation, 8 companies have been short-listed. Tokyo Gas would finalize the EPC tender doc-

ument by September 2021. After review the tenders would be invited from the short-listed companies.

On a single channel at Matarbari, the Coal Port, Coal Transfer Terminal, LNG Terminal, LPG Terminal and Container Terminal are in vision. Can it contain such huge traffic?

Chattogram Port Authority owns the port though the investments for the terminals are supposed to be made by our ministry. They are the right contact point to answer your question. We are not sure whether they have done any feasibility study for this.

The present deficit of gas is 500 MMCFD and it is growing. Own production is progressively depleting. Can imported LNG cover this growing deficit?

True, it would be extremely difficult containing the present and emerging deficit through LNG import if industries specially power generation becomes exclusively reliant on gas. Hence all fuels including diesel, furnace oil would be continued as options. The economy would get a huge shock if emerging fuel demand cannot be met. We have to act thinking deep on how the 6000 MMCFD gas demand projected in 2041 would be met. Relying on imported energy alone would create huge challenge at that time.

Decision for developing a comprehensive master plan for Power and Energy has been taken with Japanese assistance. What are your views?

A perfect and time-befitting decision. A comprehensive and implantable master plan is essential for power generation and required fuel supply. There is no alternative to this.

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