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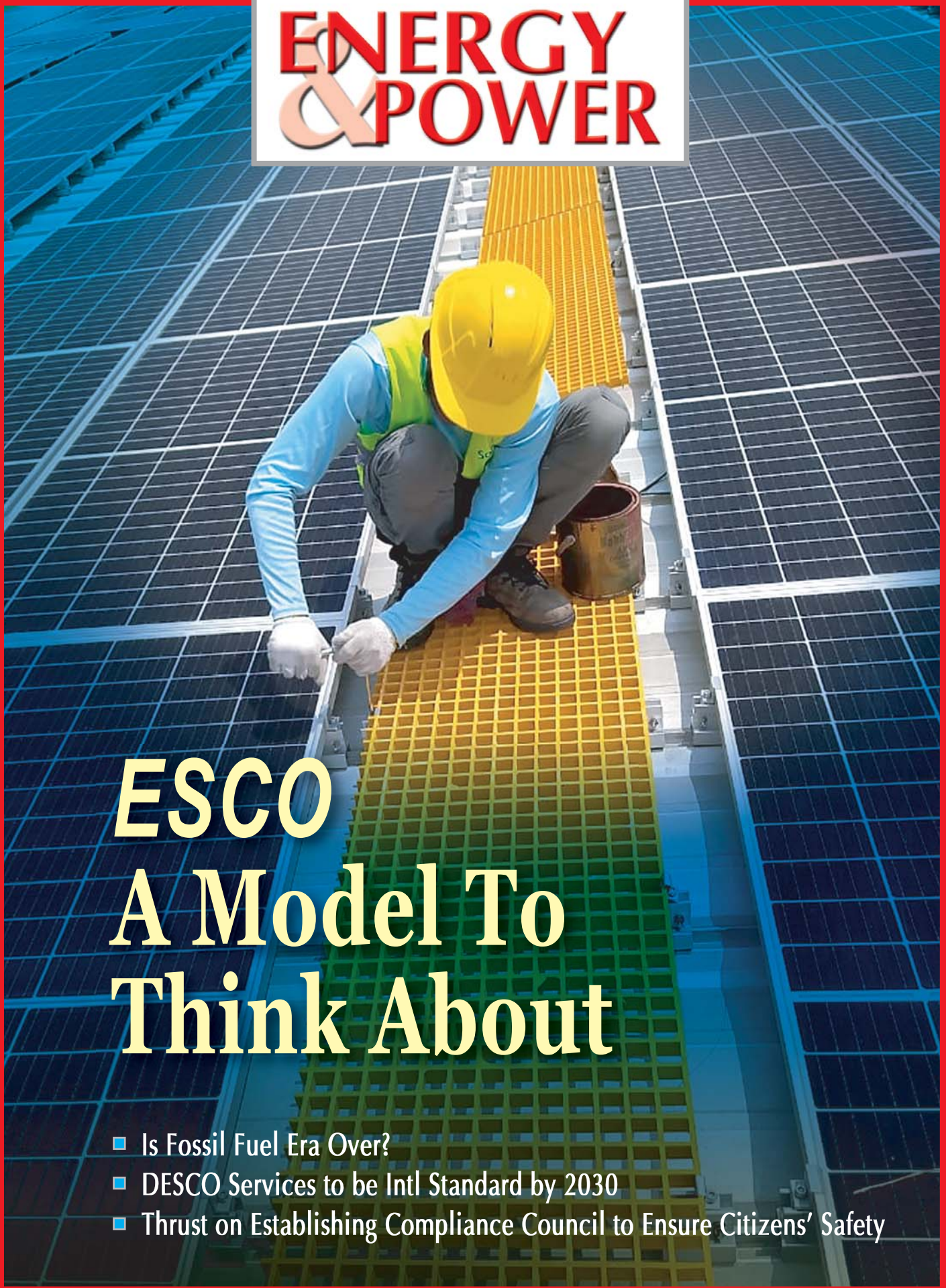
July 16, 2021

ENERGY & POWER



ESCO
A Model To Think About

- Is Fossil Fuel Era Over?
- DESCO Services to be Intl Standard by 2030
- Thrust on Establishing Compliance Council to Ensure Citizens' Safety

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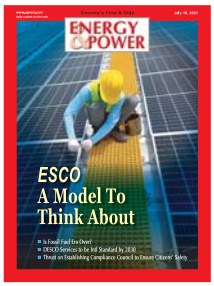
The customer services of DESCO are expected to achieve international standard by 2030. The main objective would be ensuring uninterrupted supply of quality power to all. In some of our franchise areas, we will be ready for providing such services by 2025. We are proceeding towards that end … DESCO MD tells EP

Fortnightly Magazine, Vol 19, Issue 3, July 16-31



ENERGY & POWER

EDITORIAL

It's now a global concern about how the rising temperature could be arrested and kept limited to below 2 degrees Celsius. The global communities have also the possible solutions at hands. Science has already showed the path to cut the greenhouse gas emissions that causes global warming. It suggested, among many other options, going for renewable energy, using it efficiently and conserving it. Many countries have also started following the path with having their respective capacities. Bangladesh is also making its effort to do so, but in a very limited scale. The country is still wondering about how it could better approach with having limited resources, technology and capacity. Experts at a recent webinar, however, suggested Bangladesh to introduce ESCO model which is already working elsewhere in the world. The model is expected to help accelerate implementation of Bangladesh's ongoing efforts in this regard. But again, this model itself requires resources and capacities to be replicated here.

However, Bangladesh needs well-planned approaches or models that would bring both technology and resources to address the issues of greater global concern and contribute to save the planet.

Cover Photo: View of KEPZ Rooptop Solar Installed by Solaric

highlights

COVER

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Experts at a recent webinar suggested establishing a 'Compliance Council' to oversee the responsibilities of utility services and ensure safety of the people and properties. They made the recommendation against the backdrop of the recent fatal incidents like the explosion at Maghbazar in the city. They considered that methane gas caused the explosion and demanded finding out the source of leakage. ... More in Special Report

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Introduction of Energy Services Company (ESCO) in the country is expected to help accelerate implementation of the renewable energy (RE), energy efficiency (EE) and conservation measures, and achieve the country's RE and EE targets. But successful application of this model would require ensuring policy framework development, technical and financial capacity building and a competitive market.

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Green page

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.

Green page

BREB to Install 2,000 Solar Irrigation Pumps

TIB Calls for Increased Investment in RE

Contents

Contents

No Plan to Cut Conventional Energy Business: Chevron

U.S. oil major Chevron Corp has no plan to shrink its oil and gas business for wind and solar energy unlike some rivals, Chief Financial Officer Pierre Breber said recently, amid pressure from shareholders to lower carbon emissions.

Major oil and gas producers are facing pressure from investors to lower greenhouse gas emissions and adapt their business to a lower carbon future.

Chevron's shareholders in May voted in favor of a non-binding resolution calling on the firm to cut emissions generated by the use of its products.

That same day, a Dutch court ordered rival Royal Dutch Shell to deepen its emissions cuts and Exxon Mobil lost three board seats to an activist fund advocating for a strategy that addresses climate change.

Chevron will invest some $3 billion into lowering emissions between now and 2028 – a figure it expected to grow, Breber said at a conference.

Some $2 billion of that will go to address lowering carbon emissions in its own operations, while another $750 million will be allocated for renewable fuels such as renewable natural gas, he added.

Mitsubishi Electric Boss Resigns

The chief of Mitsubishi Electric resigned recently after the Japanese electronics conglomerate admitted to having falsified certain inspection data over more than three decades.

Earlier, the company said it had improperly inspected some of its train-carriage air conditioners and brake compressors.

The earliest of the fabricated inspection documents dated from 1985.

"I deeply apologize to everyone," CEO Takeshi Sugiyama told reporters.

"We reached a conclusion that I should step down from the president post and we need to work hard to regain trust under a new management," he said.

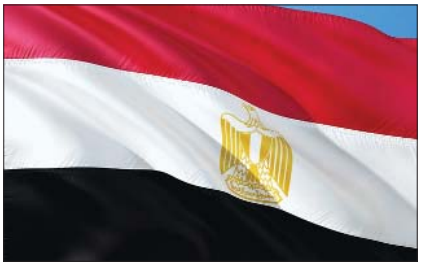
Mitsubishi Electric is one of Japan's largest general electric manufacturers, producing a wide range of products from home appliances to heavy machinery and defense equipment.

Trade and industry minister Hiroshi Kajiyama said the scandal could 'damage trust in Japan's manufacturing considerably', reported public broadcaster NHK.

Mitsubishi Electric said it would conduct further investigations in all sectors, pledging to release a report on the issue in September and to take preventive measures.

But it insisted that the concerned products did not pose any safety risk

NPPA Hands Over Licensing Documentation for El Dabaa NPP Construction to ENRRA



Nuclear Power Plants Authority (NPPA) of Egypt handed over the licensing documentation for Units 1 and 2 of El Dabaa NPP construction to Egyptian Nuclear and Radiological Regulatory Authority (ENRRA).

This marked an important milestone in the implementation of El Dabaa NPP Project in the path forward to issue the construction permit for first two units. Once the permit is obtained Parties will be able to start full-scale construction.

"Since the launch of the Egyptian nuclear project under the auspices of the political leadership, we have spared no effort in implementing the successive commitments related to the project development. The event was preceded by joint extensive work of NPPA and ASE (engineering division of Rosatom) for finalizing the licensing documentation. Today, we are proud of the completion of this work with the highest quality standards, fulfilling local and international requirements", said Dr. Amged El-Wakeel, Board Chairman of NPPA.

India's Coal Production Drops Marginally by 2pc

India's total coal production registered a marginal decline of 2.02 per cent to 716.084 million tonnes during the last fiscal year.

The country had produced 730.874 million tonnes (MT) of coal in FY'20, according provisional statistics of 2020-21 of the coal ministry.

Of the total production of 716.084 MT, 671.297 MT was non-coking coal and the remaining 44.787 MT was coking coal, it said.

Of the total output of the nation, a chunk of 685.951 MT was produced by the public sector, and the remaining production of 30.133 MT was from the private sector.

In FY 2020-21, Chhattisgarh registered highest coal production of 158.409 MT, followed by Odisha 154.150 MT, Madhya Pradesh 132.531 MT, and Jharkhand 119.296 MT.

Like previous years, in FY'21, Jharkhand was the top producer of coking coal with an output of 44.387 MT, which was 99.11 per cent of total coking coal production of 44.787 MT

BD to Import 700 MW Hydropower from Nepal

Bangladesh will import around 700 megawatt (MW) of hydropower from Nepal to meet the country's future electricity needs.

To this end, a power purchase agreement with the Himalayan country will be inked soon, state minister for power, energy and mineral resources Nasrul Hamid revealed recently.

The government is also exploring opportunities to invest in hydropower projects in Nepal and import the electricity through a transmission line over neighboring India, he added.

Briefing newsmen at the conference room of his ministry at the secretariat, Nasrul Hamid said negotiations were underway with both Nepal and Bhutan on setting up hydropower plants there under bipartite or tripartite arrangement.

Bangladesh could also export 'surplus' electricity to Nepal during dry season, he added.

EPGL Handovers JCB 530-70 Telehandlers to Eco Ceramic

Energypac Power Generation Limited's (EPGL) Construction Machineries and Material Handling division has distributed JCB Telescopic Handler 530-70 to Eco Ceramics Industries Limited.

EPGL and Eco Ceramics Industries Limited have recently organized an event to finalize the handover.

EPGL is the sole distributor of JCB in Bangladesh. JCB 530-70 is a multipurpose Telehandler that has been engineered to move any material quickly and safely – enabling bottom line distinction across a host of industries and applications, including RMC, Crusher, Cotton, Ceramic, and many more.

The equipment can pile with 12 feet maximum reach on 7-meter machines and fuel-efficient to lower recurring costs. In addition, the handler offers utmost operator safety, stability, and support without compromising maneuverability. JCB 530-70 Telescopic Handler is the world's formidable and most innovative multipurpose machine.

Md. Arif Hossain, Chief Engineer, Eco Ceramics Industry Limited, has attended the event along with other high officials from the company.

In addition, numerous top officials from Energypac Power Generation Limited's (EPGL) Construction Machineries and Material Handling division also attended the event.

Dr. Nazneen Joins UNDP as Country Economist

Dr. Nazneen Ahmed has joined the United Nations Development Program (UNDP), Dhaka Office as the Country Economist, said a statement.

She will provide policy and strategic advice on various activities of UNDP Bangladesh aimed at sustainable development. She will also collaborate with the Asia-Pacific regional network of country economists.

Renowned economist Dr. Nazneen has joined in her new position under lien from Bangladesh Institute of Development Studies (BIDS), where she has been working as a Senior Research Fellow.

She possesses nearly 24 years of research experience in the field of development economics, focusing on macroeconomic management, inclusive growth, international trade, industry, private sector, SME development, labor rights and gender issues.

Bashundhara LPG Rolls Out VAT Automation System

Bashundhara LPG has rolled out the advanced automation system in value added tax (VAT) management in compliance with the VAT policy of the National Board of Revenue (NBR).

The new system was launched recently, the first day of the 2021-22 fiscal year, while the trial began in April 2021 after the project commenced in December 2019, said a news release.

Bashundhara Group chief information officer Sifat Noor expressed gratitude to Bashundhara Group Vice-Chairman Shafiat Sobhan for his prudence and visionary direction in this regard.

"We also thank chief financial officer Mahbub Alam for his continuous support and guidance throughout the project phase. We want to thank the entire team for their dedication and cooperation," he said.

The system will allow real-time data input instead of backdated posting and none will get product delivery without challan.

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6 of a Family Hurt in Ctg Gas Cylinder Blast

Six members of a family sustained burn injuries in a fire triggered by a cooking gas cylinder blast in their house in Chittagong's Satkania upazila recently, police said.

The injured were identified as Sayed Ahmed, 65, Shahnewaz, 40, Md Helal, 36, Khaleda Begum, 45, Abdus Shukkur, 36, and Delwar Hossain, 50.

Four of the injured have been shifted to the burn unit of Chittagong Medical College and Hospital after their condition worsened.

The accident occurred at Sayed's house behind Montana Club in ward number 6 of the municipal area of Satkania.

Power Gen Hampered at Kaptai Plant

Due to abnormal fall in water level of the Kaptai Lake, production of the power plant is hampered seriously.

Only one generator of the total five is running. If not heavy rainfall immediately, it will also experience production suspension.

According to sources at the Karnaphuli Water Power Plant, at present there is 74 foot MSL (mean sea level) water in the Kaptai Lake. But the water level should be at least 80 foot MSL.

Because of this deficit of 6 foot MSL, an apprehension has created about electricity production. Five generators of the Kaptai Power Plant can produce 240 megawatt electricity. But one active generator is producing only 40 megawatt.

The power generation is maintaining low in the plant due to reduced water level in the lake, said an official.

For the water level downing in the Kaptai Lake, one generator of the total five is continuing power production. The remaining four ones cannot be operated.

According to the sources, Kapitai Lake is depended on rainfall; if there is a rainfall, the water level will go up; besides, if there is rain in Indian border area, water will make rolling towards the lake; but there is no rain in the Indian border: so lake's water level is not swelling.

IDCOL Holds 24th AGM

The twenty-fourth Annual General Meeting (AGM) of Infrastructure Development Company Limited (IDCOL) was held on June 30, 2021 via virtual platform.

Ms. Fatima Yasmin, Chairman, IDCOL and Secretary, Economic Relations Division, presided over the meeting.

During the FY 2020 Company's profit before tax and provision was Tk. 318.17 crore.

The AGM declared the dividends for a total amount of Tk. 46 crore from the profit made by the company during FY 2020.

The dividends are: An amount of Tk. 23 crore to be paid to the government as cash dividend; and an amount of Tk. 23 crore be used for increasing the company's paid-up capital to Tk. 738 crore from the existing Tk. 715 crore by way of issuing bonus shares.

Dr. Ahmad Kaikaus, Shareholder, IDCOL and Principal Secretary to the HPM, Prime Minister's Office, Mr. Abu Hena Md. Rahmatul Muneem, Shareholder, IDCOL and Chairman, National Board of Revenue (NBR), Mr. Abdur Rouf Talukder, Director and Shareholder, IDCOL and Senior Secretary, Finance Division, Mr. M. Tofazzel Hossain Miah, Director and Shareholder, IDCOL and Secretary, Prime Minister's Office, Mr. Md. Habibur Rahman, Director and Shareholder, IDCOL and Secretary, Power Division, Mr. Tapan Kanti Ghosh, Shareholder, IDCOL and Secretary, Ministry of Commerce, Mr. Abdul Baki, Shareholder, IDCOL and Additional Secretary, Economic Relations Division, Ms. Nihad Kabir, Director and Shareholder, IDCOL, Mr. Abdul Haque, Director and Shareholder, IDCOL, Mr. A. K. M. Nurul Fazal Bulbul, Director & Shareholder, IDCOL and Mr. Mahmood Malik, Executive Director and CEO, IDCOL attended the AGM.

Russian Citizen of RNPP Dies of COVID-19

A Russian national Ivan Karpov, 38, died of Covid-19 in Dhaka's Shyamoli recently.

He was working as a construction worker for Nikimot-Atomstro, a Russian contractor for the Rooppur nuclear power plant construction project.

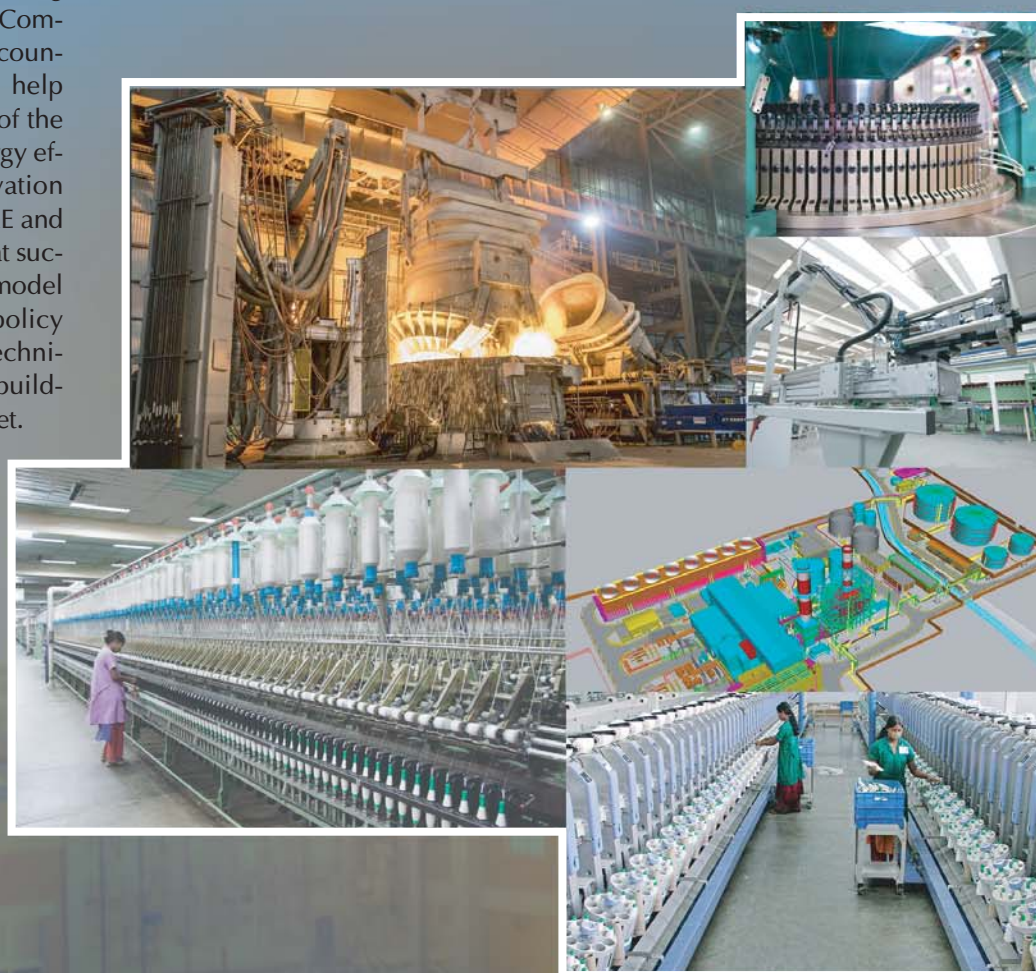
Confirming the news, AKM Mujibur Rahman, manager (administration) of Dhaka Central International Medical College and Hospital, said he tested positive for coronavirus last month.

He was admitted to hospital on June 19. He had breathing difficulty after admission. After a while, his condition deteriorated and was transferred to the ICU and died while undergoing treatment.

ESCO
A Model To Think About

EP Report

Speakers at a recent webinar have suggested introducing the Energy Services Company (ESCO) model in the country, saying that it would help accelerate implementation of the renewable energy (RE), energy efficiency (EE) and conservation measures, and achieve the RE and EE targets. They also said that successful application of this model would require ensuring policy framework development, technical and financial capacity building and a competitive market.



While talking about the scope of adopting the model, the speakers also highlighted the opportunities and challenges in this regard, and recommended taking lessons from the already operational ESCO models and international best practices. They expressed the optimism that the model would be successful in Bangladesh subject to easy access to finance, security of investment and government participation.

Energy & Power magazine in collaboration with GIZ and Sustainable and Renewable Energy Development Authority (SREDA) organized the webinar on "Role of ESCO to Promote Energy Efficiency & Renewable Energy in Bangladesh" on 26 June 2021 as part of a series titled "EP Talks".

Power Division Secretary Md. Habibur Rahman took part in the discussion as chief guest while Additional Secretary and SREDA Chairman Mohammad Alauddin addressed the event as special guest. Editor of Energy & Power Mollah M Amzad Hossain moderated the program.

Mr. Habibur Rahman said that the global energy consumption was going through a transition with more emphasis on renewable energy, energy efficiency and energy conservation. "We are working on expanding the use of renewable energy in Bangladesh. Our target is to reduce carbon emission," he added.

The chief guest said the ESCO is a proven model across countries in the world and Bangladesh should gradually adopt it. He, however, said the net-metering system is playing an important role in this regard. SREDA is trying to take effective measures and, he thought, the organization is the right agency to play a key role here, he added, assuring necessary assistance if needed.

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TO WATCH FULL TALKS

Mr Mohammad Alauddin said there are some capacity issues in both public and private sectors for implementing the model in industries. We should think big and start small. He suggested that if we could develop some effective ESCO in small and medium scale, these would lead us to the development of a super ESCO. He said the country needs to open up the window for the ESCOs. It will help achieve our energy target set for 2030.

Deputy Head (International) of Energy Efficiency Services Ltd (EESL) Poonam Pande made a PowerPoint presentation, describing the functions of EESL and on how it could extend cooperation especially to Bangladesh regarding the ESCO concept.

Ms. Poonam said the company has adopted a number of technologies to popularize as well as commercialize the model. She informed that in the last 5-6 years, their activities have grown almost 40 times. She also informed that there is an opportunity to save 41 billion units of energy in the world through energy efficiency. This will reduce carbon emissions by 32 million tonnes.

Ms. Poonam said 47.6 percent of Bangladesh's total energy is being used in industrial sector. This is why a detailed study was conducted on energy consumption and scope of efficiency. The study found that 15.4 percent energy consumed in garment sector, 14.6 percent in textile sector and 13.2 percent in fertilizer factories.

On the other hand, the energy efficiency, on the basis of available studies, can help save 32 percent energy in garment sector; 41 percent in steel and iron sector; 23 percent in the cement industry; 24 percent in the chemical, fertilizer and paper mills; 25 percent in the ceramics and glass industry and 18 percent in the agro and food sector. She said that if we calculate them in terms of money,


Habibur Rahman


Mohammad Alauddin


Poonam Pande

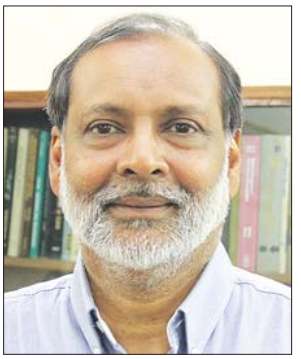
it would save around TK 23 billion a year. In realizing such benefit, carbon finance could play an important role in Bangladesh, she added.

In his keynote presentation, Managing Director of Rahimafrooz Renewable Energy Ltd Munawar Misbah Moin said that if we see the basic energy efficient products, we could start with LED light. There are lots of LED lights available in rural areas of Bangladesh, but the quality of products is an issue that needs to be addressed. He mentioned that rooftop solar in the city areas is a big opportunity for reducing energy consumption. Rooftop solar and integrated net-metering policy of the government is definitely helping in this regard, he added.

Mr. Moin, however, said the initial CapEx is still large from industry perspective because their priority is to invest especially in their core business. So, under these circumstances a lot of us are trying to put the ESCO offer in motion.

Moreover, he mentioned that Bangladesh has over one million electric vehicles carrying 10-12 million passengers every day. Here is a significant opportunity to import and adopt advanced technology. So, it is an amazing sector that needs to be organized and monitored, he added.

He further said that there are ample opportunities in cold storage, milk chiller, rice dryer etc. to use solar energy that can add significant value to the agro-industries. So, ESCO in terms of productive use of renewable energy in the rural areas will get a lot of benefits. So, with the right policy, ESCO model can take a great shape in Bangladesh, he added.


Ijaz Hossain


Alexander Ablaza


Siddique Zobair


Monirul Islam


Clifford Rikhotso


Munawar Misbah Moin


A view of the country's most efficient power plant of NWPGCL at Bheramara, Kushtia

Technical Advisor of Energy Efficiency Investments on South African German Energy Program (SAGEN) Clifford Rikhotso described the present status of ESCO market in his region. He said that the ESCO model in South Africa is still in the development stage and there is a lot of work that needs to be done in terms of capacity building along with developing a competitive and innovative market.

We currently have a national ESCO registry, hosted by the South African National Energy Development Institute (SANEDI), where almost 97 companies have been registered under three differ-

ent tires and they are working in different segments.

However, because of the Coronavirus pandemic, one of our energy efficiency grants have been cut by the finance ministry, affecting a lot of companies and projects that were in the pipeline. So, there were some financial issues where financial organizations and commercial banks were very reluctant to come with financing. Moreover, he said that the capacity issues persist in the South African ESCO market. He revealed that capacity building, mentorship and other training programs are essential to make ESCO market successful. He has also expressed his satisfaction and happiness that GIZ has been working on ESCO market development in his region.

Deputy Chief Executive Officer of Infrastructure Development Company Limited (IDCOL) S. M. Monirul Islam said that for Bangladesh, we need to think about the promotion of ESCO model not only for renewable energy but also for energy efficiency arena.

He informed that the IDCOL is trying to introduce this ESCO model through undertaking some small projects. We have done some rooftop solar projects under the ESCO model. We also have some projects in solar irrigation along with some solar mini grid projects under this model, he added.

A steel mill in Chattogram that runs on furnace oil is now planning to install energy-saving equipment

Mr. Monirul said they have to encourage stakeholders in this regard. They saw that the rooftop owners in the industry level are little bit reluctant to adopt this model. He said that this reluctance still prevails as the technology is new. However, financing is another dimension, he added.

He suggested that ESCO could play a role here. It can do all, starting from delivering technology, installation, operation and maintenance while taking care of the upfront investment – be it from own finance or bank finance. However, there are different models to do that. Obviously, there is a risk factor for the private investors or ESCO's in this regard. This investment has to be safeguarded. So, there is a scope to develop a legal framework, he added.

Senior Energy Adviser of ACML and former member of SERDA Siddique Zobair said the first challenge is that people – industry owners, banks and general peoples – are confused about the savings and economic benefits that are promised for adopting the energy efficient technology.

Securing funds form the financial institutions is another challenge because the ESCO companies don't have required asset to qualify for enough loans for investing in a number of projects. In addition, financial institutions do not have much in-house technical knowledge and capacity to analyze an ESCO energy efficiency project, he added.

If we see in India or EESL, we can assume that they don't have financial issues like us as the EESL is a government supported company. So, the government-owned companies get finance easily. We do not have such kind of government-owned ESCO company here in Bangladesh.

So, we need to have government utility-owned ESCO and the utilities will be responsible for taking back the investment with the interest. This might be a solu-

A view of KAFCO, the most efficient fertilizer factory in Bangladesh

tion for financial issues, he added.

Mr. Zobair informed that almost 50 percent of Bangladesh's primary and secondary energy is consumed by the industries. So, this sector has significant potential for energy efficiency and conservation.

There must be a super ESCO in Bangladesh and it must be owned by the government entity which will facilitate energy efficient products and appliances to sell in a quick manner. This will encourage the industries to produce and use energy-efficient products and technologies, which will make our industries energy efficient.

Energy specialist Khondkar Abdus Saleque said the utility companies in Bangladesh could take up the issue. There is a scope for them playing a good role here. He said the ESCOs could work in the economic zones of Bangladesh. In this case, the Bangladesh Economic Zones Authority (BEZA) could act as a super ESCO.

GIZ Senior Advisor Shafiqul Alam informed that the GIZ had taken an ESCO project to replace the conventional lights with energy saving LED lights in a garment factory. We found similar challenges as mentioned by the speakers.

He opined that the market here is not that liquid - for instance, the ESCO was not getting that much work order to implement many projects and replicate the same concept. Risk mitigation measures are not there for the ESCO business, he added.

In addition, Mr. Alam mentioned that the private ESCOs would find it difficult to have a balance sheet that could encourage the banks to finance the companies for projects in succession. Meanwhile, there is also a lack of capacity on the technical side. We don't have enough certified energy auditors and in-house technical personnel with complete knowledge on implementing technologies and various ESCO models. Co-chair of Asia Pacific ESCO Industry Alliance Alexander Ablaza depicted the current status of global energy efficiency market with future projection. He estimated that the sector would necessitate the mobilization of capital worth USD 24.5 trillion globally during 2017-40 to realize the overall potential the sector has. Off balance sheet financing including that from public private partnership, ESCO, government etc. would be in the order of USD 16.5 trillion.

A worker is seen working at a textile factory which is one of the most energy-efficient ones in Bangladesh. The country's textile industry is gradually adopting energy saving equipment

While providing brief snapshots on different ESCO models, he mentioned that access to finance is a big challenge for the ESCOs in general. In most of the cases, they can't buy a fourth project after taking three projects because of financial challenges. On the other hand, companies don't have certified energy auditors as well.

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He suggested that Bangladesh would need building and strengthening financial and technical capacities to embark on ESCO models. He also suggested considering a robust ESCO policy framework for Bangladesh. The government needs to expand procurement and financial modality, which will expedite the ESCO operation in Bangladesh, he added.

However, Former Dean of Faculty of Engineering at the Bangladesh University of Engineering and Technology (BUET) Professor Dr. Ijaz Hossain said that before starting some kinds of businesses, we have to understand the market first. He informed that in Bangladesh around 53 percent of energy is used in households. So, ESCO can't grow at an industrial level.

He said we have to shift our focus from industries to SMEs. We need to find a model about how ESCO can work with the SME sector in Bangladesh and that will be the model for Bangladesh. Right now, I have not seen a very good model that can reach the SME sector.

It is true that ESCO can play a role in Bangladesh, but we need to figure out how it can play a massive role. I think SREDA can play a big role hare. So, it's quite a difficult challenge for ESCO's to operate in Bangladesh. EP

Is Fossil Fuel Era Over?

Mohammad Mosharraf Hossain

The International Energy Agency (IEA) on May 18, 2021 published a report outlining the essential conditions for the global energy sector to reach net-zero CO2 emissions by 2050. It presented the "most technically feasible, cost-effective and socially acceptable pathway" to show what is needed across the main sectors by various actors, and by when, for the world to achieve net-zero energy-related and industrial process CO2 emissions by 2050. There is a target – 75% reduction in methane emissions from fossil fuel use by 2030. Coal demand to decline by 90% to less than 600 million tonnes of coal equivalent in 2050, oil would decline by 75% to 24 million barrels per day and natural gas may decline by 55% to 1750 billion cubic meters. The Roadmap sets out milestone to guide the global journey to net zero by 2050. These include, from today, no investment in new fossil fuel supply projects, and no further final investment decisions for new unabated coal plants. By 2035, there will be no sales of new internal combustion engine passenger cars, and by 2040, the global electricity sector has already reached net-zero emissions. No new oil and natural gas fields are needed in the net-zero pathway, and supplies become increasingly concentrated in a small number of low-cost producers. This sends a strong message to countries, the fossil fuel industry and investors worldwide that the time to end business as usual is now. The world's seven largest advanced economies agreed to stop international financing of coal projects that emit carbon by the end of this year, and phase out such support for all fossil fuels, to meet globally agreed climate change targets. In a communique, the Group of Seven nations - the United States, Britain, Canada, France, Germany, Italy and Japan - plus the European Union said "international investments in unabated coal must stop now.

A state-of-the-art coal export terminal in Australia

"(We) commit to take concrete steps towards an absolute end to new direct government support for unabated international thermal coal power generation by the end of 2021, including through Official Development Assistance, export finance, investment, and financial and trade promotion support."

Recently, Prime Minister Sheikh Hasina put forward three suggestions before the Partnering for Green Growth and the Global Goals 2030 (P4G), including strengthening campaign about its action-oriented approach by engaging more financiers, innovators, policymakers and creative entrepreneurs in its focus areas. "P4G needs to campaign more about its action-oriented approach, engaging more financiers, innovators, policymakers and creative entrepreneurs in the five P4G focus areas [food, water, energy, cities and circular economy], and share best practices," she said in her recorded statement played in the 2021 P4G Seoul Summit. The second suggestion Sheikh Hasina placed is the need for a whole-of-world attitude in addition to a whole-of-society approach for achieving green growth and global goals 2030. Placing the third suggestion, she said, "We, the participating leaders in the P4G Summit, need to work more closely towards a greener future for our next generation." She said Bangladesh is the first LDC to establish a "Climate Change Trust Fund" from its own resources. "Every year we spend about 5 billion US dollars on climate adaptation and mitigation measures." Bangladesh, a member of the P4G, pursues a low carbon development path. "Our National Solar Energy Action Plan 2021-2041 predicts generation of up to 40 Giga Watt of renew-

able energy by 2041," she added. The second P4G summit is expected to culminate in the adoption of the Seoul Declaration, and will serve as a stepping stone towards the ensuing Glasgow Climate Change Conference (COP 26).

Against the backdrop of the declaration by world leaders and pledge from Bangladesh, it would be necessary to examine the position of energy related activities in the country, Bangladesh`s Finance Minister in his recent budget speech termed the achievement of the power sector in the past 12 years "unprecedented" as electricity generation saw a five-fold rise since then. The total power generation capacity (including captive and renewable energy) now stands at 25,227 MW as of May 2021, with 99% of the country already brought under electricity coverage, he said. "To meet the growing demand for power in Bangladesh, 38 power plants with a capacity of 14,115 MW are under construction, and contracts have been signed for the construction of another 20 power plants with a capacity of 2,961 MW," the minister said. Besides, six power plants, he said, with a capacity of 650 MW are in the process of tender, and construction of 33 power plants with a capacity of 15,019 MW has been approved.

Recently, there has been a dramatic change in the fuel sources for the proposed power plants. The government is set to allow five coal-fired power plants to convert to the LNG-fired ones as it has completed a review of future coal-run power projects. In a press conference State Minister for Power, Energy and Mineral Resources Nasrul Hamid said that the government has dropped 10 coal-fired power plant projects, as it seeks to revise the country's power system master plan (PSMP). The proposed plants are 1320MW plant Patuakhali (660X2), 1200MW thermal plant in North Bengal, 522MW plant in Mawa, 282MW plant in Dhaka, 282MW plant in Chittagong, 565MW plant in Khulna, Bangladesh-Singapore 700MW and CPGCBL-Sumitomo 1200MW power plant and two 1320MW plants in Maheshkhali. "After the adjustments in the plan, finally the national grid will have 13,313MW surplus electricity by 2041. There will be no problem of power supply to meet demands," he said. The state minister also said there will be a special thrust on renewable energy promotion in the future planning of electricity as part of the country's commitment to the Climate Vulnerable Forum (CVF) as Prime Minister Sheikh Hasina is currently chairing the organization. According to him, "We have pledged to the CVF to generate 40% electricity from renewable sources by 2041. We're going to sign a final deal with Nepal to import hydropower from an Indian company's generation plant in Nepal, discussions are going on with both Nepal and Bhutan to set up hydropower plants there under the bipartite or tripartite arrangement. There is also a plan to increase import of LNG to set up more gas-based power plants across the country."


A view of LNG terminal of Santos at Gladstone, Australia

The major issue that revolves around the power system in Bangladesh is the supply of affordable, sustainable and environment friendly fuel for the power stations. So far Bangladesh sailed very comfortably cost wise as well as on the other perimeters with local gas and to a lesser extent local coal. The war against the critical load shedding in the nineties was won by the reform in the power generation process and use of natural gas in all new power stations, resulting high growth of power generation capacity in the country giving tremendous return in terms of magical GDP growth in the following years. But the situation is changing fast with the dwindling gas supply from fast depleting gas fields. Supply of natural gas to the power stations are getting into alarming stage for which the government has arranged import of LNG to make up the deficit in local gas supply and adding coal-based power generation to a higher scale. But the recent decision to change the position of coal in the fuel mix of power stations would definitely trigger alarm bell for the power sector. Imported LNG will be 4 times costlier than the present rate of gas price, pushing the end price of electricity to a staggering height with adverse impact on the competitive edge of the exporters of manufactured goods in Bangladesh thus threatening the export earnings in near future. Again, with the recent global trend to ban fossil fuels by major players would put coal and gas to a position when the scarcity premium would make these products costlier and even more difficult to procure.

From the available information, it could be sensed that the imported fuel will be a cause of concern for power generation in Bangladesh and such problems would continue till countries all over the world could switch over to renewable energy at an affordable cost. The renewables are getting cheaper gradually and it could be expected that it will be within the reach of most countries to replace the present fossil fuels to renewables by 2050. But to remain alive and active on the power stage till that period is a big task. In Bangladesh natural gas and coal are the only sources of fuels for power generation. In this respect the

position of remaining gas is not very promising while the coal deposits are still waiting to be exploited. These coalfields even at a very conservative figure for utilization could carry Bangladesh through 2050 for power generation at ease. The quality of coal is very good as such burning these coals will not be difficult in the super critical technology using power stations taking care of stringent climatic conditions for coal uses. We may thus cross the turbulent days in the journey of switching from fossil fuels to renewable fuels without sacrificing our national interest. Another very important issue is that whether we mine and use our own coal or not, we will be subjected to the climate related problems resulting from the huge coal burning by India till the year 2050, as declared by Indian coal minister, because the weather and climate are not controlled by geopolitical boundary and being a close neighbor to India and China, Bangladesh would be an innocent victim of circumstances, as these are the two top world leaders in coal-based power generations.

Coal accounted for 74 per cent of India's power generation in 2018 and will continue to contribute 50 per cent of the power generated in the country over the next 20 years, Minister for Coal, Mines and Parliamentary Affairs Pralhad Joshi in India said while speaking at the Economic Times Energy Leadership summit where he outlined the necessity of coal in the country's economy. He said India's per capita carbon emissions are one third of the global average and what we need at the moment is growth acceleration and coal is the means to achieve it. "We have one of the largest coal reserves. India's energy transition should be one prioritizing growth and not sacrificing it. Phasing out coal in the next few decades will only cause knee jerk reactions," He added that in 2020, India's primary energy demand was 88 million tonnes of oil equivalent with coal being a major source of energy production at 44 per cent, oil with 25 per cent, natural gas at 6 per cent and renewables at 3 per cent. He further said the replacement of coal-based power with renewables has its own limitations and it will cause a number of issues as far as meeting power requirement is concerned. "India still has a window for using coal reserves and it must ensure maximum production and optimal consumption during this time. Therefore, there is no denying that coal will continue to remain as the major contributor to the energy basket of the nation," Joshi said. Under such a declaration of coal uses in India, position of Bangladesh in coal uses will be peanut. It will have no impact in the regional climatic condition when the pollution by India with coal use is taken into cognizance.

A view of coal-based power plant at Payra, Patuakhali

Our coal could have given a smooth transition to a new age of green energy, if the mines would have been developed earlier. But the policymakers thought it otherwise. Now we have to pay through the nose to survive to keep our power stations alive through importing costliest fuel like LNG. Knowing bleak prospect for new gas fields, decision to change the coal-fired plants to gas ones that too by imported LNG smells bad. Own coal under the changed circumstances would be competitive with imported coal and the decision not to pay attention to coal in the past could be termed as malicious, to say the least. With the closure of oil and gas energy chapter, the supply sources would be limited and scarcity premium has to be paid to import the same.

It is painful to note that we have failed to exploit our coal resources especially due to apathy for it for unknown reasons. But our coal could have given a prolonged life of fossil fuel uses, side by side with our own gas, in Bangladesh. This would have given an added advantage to switch over to green energy in future. But now, limited own fast depleting gas and no coal situation would expose us to embrace total import-oriented fuels for power generation. Coal would have been cheaper option compared to LNG. Now we are heading for the costliest option by choice. It will have a negative impact on the supply of cheap, sustainable and dependable electricity so vital for our livelihood and national economy. It could be summarized that lac of homework, unwilling to follow planning norms, lack of country-specific priorities has contributed to the present wishful fuel change over plan with new business model, which has taken over the entire process of short-and long-term and perspective planning with details feasibility studies by dedicated professional who could forecast the trend of developments in the specialized sectors. Businessman attitude on our energy planning may give short time benefit but its far-reaching effects could only be realized soon under the changed circumstances when no remedial measure would be possible to be taken. The changes in the global energy scenario that would be inevitable due to global attitude to climate change issues would compel us to be on the road of green energy not too distant a future and that period of transition to reach the road could be very costly in terms of energy supply at affordable price.

The future of renewables seems bright;

in fact, if renewables prices continue to tumble at their current rate, we'll see coal, gas and oil priced out of the market by the mid-2030s. In fact, the cost of electricity from photovoltaics has fallen 82% over just the past decade. Similarly, the cost of online and offshore wind had dramatically fallen too, by 39% and 29% respectively. "The world does not need to exploit its entire renewable resource — just 1% is enough to replace all fossil fuel usage. It's also interesting to note the flipside. Between 2012 and 2020, fossil fuel companies have lost £123bn of their value, demonstrating that they are losing their footing as a dominant market force. As for Bangladesh, our worry is for the transition period from the present fossil fuels to the renewables, if we could survive.

Bangladesh has reached a stage of energy supply when the advantages from the cheap local gas is about to be written off. It can never be denied that the progress made in the power generation and distribution have been possible only because of availability of cheap indigenous high-quality natural gas and coal. One would have believed that Bangladesh was floating on gas and accordingly; power sector made a sprint on the turf of natural gas from 1996 to 2015 but then with the dwindling fast depleting gas resources and having no new gas reserves insight, the alarm bell started sounding. But recent decision on the changes of fuel mix prioritizing imported NGL over coal and replacing many coal-based power plants to natural gas feed would call for a situation that could be disastrous if not suicidal for the energy sector. When the power stations will solely depend on natural gas and when the local gas will evaporate like magic and no new gas field would be there, sole dependency on highest cost LNG will not only be ridiculous, it will be rather an unthinkable proposition. But with the recent changes from coal to imported gas, we are probably heading for that situation.

While different forms of renewable sources of energy are being talked about, most of the sources are new for Bangladesh. Prices of the renewables

Illustrated view of Matarbari coal-based power plant

are gradually sliding down globally mainly due to technical innovation and upgrading and also to make the system available to all mainly to combat the climate change. Many of the system, may not be applicable to Bangladesh, However, two options, one to harness power from the rivers through pumped hydro system and the other from using off shore wind energy, could bring dramatic changes in the adoption of renewable energy in the country. Such approach for harnessing energy from river water is more than necessary for Bangladesh. Padma, Jamuna and other rivers and tributaries offer a great prospect for pumped hydroelectricity without any side effects but add another advantage of surface irrigation all over the country as a byproduct of the water uses for power generation. Offshore wind could be another bright choice for Bangladesh. Offshore areas may be designed in blocks and could be awarded to International Wind Companies for power generation, as done in case of oil and gas exploration under PSC in the offshore areas.

We must consider now to develop all the coal fields in the country on priority basis, arrange implementation of all the power projects as of now with coal and gas, keep them running with imported coal, LNG, local coal and local gas as long as these are available. At the same time, start taking up green energy project for the incremental demand of electricity with the green energy through harnessing offshore wind energy, pumped energy from river water, solar and other conceivable and implementable green sources of energy. Develop the institutional facilities to move forward the renewable projects at a faster speed having close liaison with international communities and institutions dealing with renewables and green energy. Serious attention needs to be given to renewable energy in Bangladesh. SREDA may not be the appropriate focal point for the vast activities that need to be undertaken to tackle all the fronts associated with the renewable energy. A separate ministry for renewable energy needs to be created along with setting up a dynamic corporation like Petrobangla to deal with implementation of projects for renewable energy in the public sector also to be associated with the private sector or joint venture and to provide assistance to foreign direct investment in the renewable energy projects in Bangladesh.

EP

Mohammad Mosharraf Hossain;

Former Chairman of Petrobangla and Bangladesh Energy Regulatory Commission (BERC).

HSE Must Get Priority Attention

Saleque Sufi

Health, Safety and Environment (HSE) must get priority attention at all segments of Energy and Power value chain as frequent accidents are causing loss of life and property in Bangladesh from lack of care. In the recent past incidents in Dhaka and other places have led to some major explosions and fire most of which could be avoided if utility providers had defined HSE policy implementations in place, if regulators carried out regular auditing and end users could be made more conscious and responsible in energy use. Experts observed in webinar, seminars and talk shows that cities are sitting on sleeping volcanoes. The gas, energy and power distribution networks have become death traps. There is no denial that Bangladesh for feeding its burgeoning economic growth needs sustainable supply of quality power and energy in addition to providing access to all to clean energy. But the present very unsafe and uncared for supply system has also created huge concerns. Under no circumstances HSE laws, acts, policies and regulations should be overlooked and ignored. At every stages of energy generation, transmission, distribution, supplies and end use where strict monitoring of safety-first policy should be established. BERC as watchdog must carry out regular safety audit. Department of Explosives (DOE) must also be strengthened and effective. Utilities must be held responsible and accountable for every breach of safety provisions in the respective franchise.

Dilapidated Gas Distribution Networks Makes Cities Unsafe

Natural gas made living very comfortable in major city areas (Greater Dhaka, Greater Sylhet, Chottogram, Noakhali, and Other Places of Gas Franchise). But many of the gas pipelines laid in 1970s and 1980s have become dilapidated and are leaking. Moreover, huge unauthorized connections and unauthorized gas pipelines (unholy syndicates of gas sector officials, local political activists) have really made gas distribution system death traps. Absence of accurate as built documentations, mistakes of not having Digital / Automated mapping, irregular leak tests (use of odorant in prescribed dozes) encouraged illegal use of gas. Limited surveys carried out on domestic gas risers have evidenced significant loss of gas. Natural gas methane acts as killer. There have been several incidents where methane trapped in confined spaces created explosive mixtures and created catastrophic explosions getting sparks either from electric short circuit or from any other source of ignition. One of the recent examples is the Narayanganj Mosjhid Killing of 31 devotees. It was clearly a Methane induced explosion sparked from electric spark. The other incident at Maghbazar is under investigation. Incidents are happening almost at regular frequencies. There is some hue and cry in media after every incident. Utilities, Department of Explosives, Fire Service tend to get involved in blame game. Root causes are negligence and lack of care and no coordinated efforts are taken. None talks about permanent cure. System stays with cancer spreading. Is not it a shame that gas system has 10,000 illegal connections, 100s KM unauthorized pipelines? How can this happen when high government officials are appointed as head of board of Directors of Gas Companies and High Government Officials are senior policy makers of Petrobangla?

Government suspended providing pipeline gas connections to domestic and commercial consumers since 2010 in appreciation of rapid depletion of proven gas reserve. But utilities failed to arrest spreading of illegal and unauthorized connections and over the past decade it spread at no less intensity than CORONA Virus. It did not happen beyond the knowledge of gas distribution utilities, Petrobangla and EMRD. Why not appropriate actions on time? Distribution system must have automated mapping, GIS and SCADA monitoring. Deodorant must be injected at prescribed dozes for leakage monitoring. Would also suggest for carrying out leak surveys across the entire gas franchise. Huge gas is being lost through leakages. This can be better utilized if saved.

Uncared LPG Use is another Area of Concern

LPG market has grown huge over the last decade following government letting many private sector operators are importing LPG, bottling it and doing business along side BPC. Government decision of suspending pipeline gas supply to domestic consumers has also led to exponential growth of LPG in Bangladesh. Yet letting over 52 private sector companies in Bangladesh is way

বিশ্বাস আর আস্থায়
ফ্রান্সের টোটাল
এলপি গ্যাস

TOTAL

too much. About 23 of these are in serious business. In a market where private and public sector companies are in business operation. BERC should be the sole regulator, which should act as watchdog. But EMRD letting permission to too many companies without assessing objectively the market growth has let to huge over supply of LPG. Big fishes have made toddlers uncomfortable in LPG fish market. BPC being in business is also acting as one of the regulators. It is a clear case of conflict of interest. 13 authorities, which directly or indirectly control LPG business in Bangladesh, have increased the cost of doing business. Still there is no specific laid down process for Health, Safety and Environment protocol in LPG operation in Bangladesh. No specific organization is monitoring different operation of LPG business. There is little or no control over retailers and distributors. There is no control over use of standard regulators and other accessories of LPG cylinders. Users are not educated about safe use. All these are contributing to frequent accidents. When these happen utilities blame one another and none take responsibility.

We suggest that revised LPG policy addresses all these issues. There must be one point service for LPG business, a well-defined HSE policy across all segments LPG value chain must be formulated and introduced. LPG operators, distributors and retailers must be made accountable. BERC or a specific organization must monitor LPG business operation in a transparent manner. EMRD must not get involved in business.

Research on Fuel Use Related Accidents and Incidents

Methane (CH4) whether used as pipeline gas of liquefied form LNG or Compressed form CNG can cause explosion from careless use. It applies with Propane and Butane as LPG. All these have low flash pints and have auto ignition characteristics.

Natural gas is lighter than air. When leaked it tends to rise and escape to the atmosphere. LPG is heavier than air and when leaked pools in low areas

and drains. Fuel gas having low flashpoints is highly inflammable. But these are not poisonous or toxic.

Bangladesh started using natural gas since late 1950s in Sylhet in NGFF and Chattak Cement factories. But the use started getting momentum after independence. There has been several accidents and incidents during use of natural gas, liquid fuel and LPG.

Every life is valuable. Every citizen in a democratic country has constitutional life right to live safe. State has primary responsibility to ensure physical safety and every stakeholder including users have also responsibilities for safe use of energy and power. Bangladesh has already experienced too many accidents in energy and power industry. There have been too many talks but very little lessons have been learnt. Think of Old Dhaka incident at Churihata, incident at Mosque in Narayanganj, the most recent incident at Maghbazar. Have we not kept our fingers crossed too long? Can you imagine that major cities can turn into Towering Inferno in the event of a Mild to Major Tremor? Have not we got enough wake up calls?

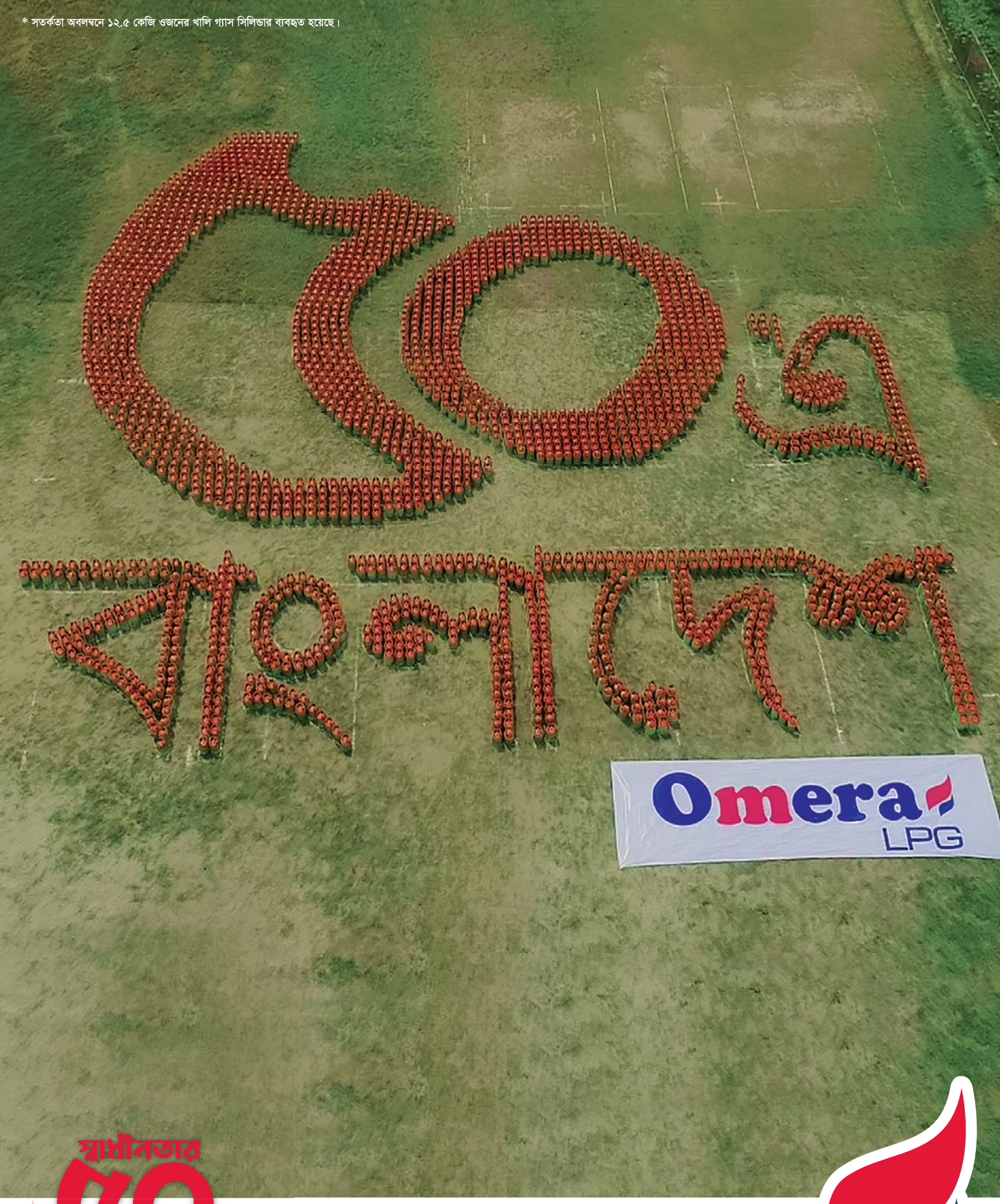
Recommendations

- BERC must develop Energy Auditors for regular and surprise audit of safety and efficiency of utility service providers. They also ensure compliance of all acts, policies, laws and regulations by all stakeholders.
- Citizens Compliance Commission at national level must be set up for policing compliance of HSE for Energy, Power and other utility use, compliance of Building Codes, Waste Management and including disposal and any other aspects related to health, safety and environment.
- In case of LPG and Pipeline gas use, regularly inspect for any corrosion, deterioration and damage of cooking device, cylinders, regulators are necessary.
- Regulators and valves of LPG cylinders must be kept closed after use.
- Kitchen must be kept ventilated so that leaked gas cannot accumulate and form explosive mixture.
- Utilities especially gas companies must set up required numbers of well-equipped Emergency response teams stationed at different city locations for 24/7 services.
- Gas distribution system must introduce Digital /Automated mapping, SCADA and GIS.
- Media (Print and Electronic) must regularly carry out safety reminding programs for mass education on safe use of power and energy.

EP

Saleque Sufi;
Contributing Editor

* সতর্কতা অবলম্বনে ১২.৫ কেজি ওজনের খালি গ্যাস সিলিন্ডার ব্যবহৃত হয়েছে।



স্বাধীনতার ৫০ বছর পূর্তিতে

দেশের মাটিতে প্রথমবারের মতো **২৩১০টি** ওমেরা গ্যাস সিলিন্ডার দিয়ে আমরা এঁকেছি প্রিয় বাংলাদেশের মানচিত্র।

Thrust on Establishing Compliance Council to Ensure Citizens' Safety

EP Report

Methane gas is considered to have spewed out from somewhere and caused the recent explosion at Maghbazar in the city. While discussing the issue at a recent webinar, experts have reached a consensus about the cause of the explosion and strongly demanded finding out the source of the gas leakage whatever it may be. They raised the demand as the authorities concerned were consistently failing to ensure safety of the citizens. The authorities included city corporations, utility service providers and businesses. Against the backdrop, the experts suggested establishing a 'Compliance Council' to oversee the responsibilities of all the stakeholders concerned.

Taking part in the discussion, an expert observed that the readymade garment sector has achieved a certain level of safety compliance due to pressure by the buyers. why then a Compliance Council cannot be set up and launched if the citizens demand for it? Another speaker suggested for setting up a fund by BERC for paying compensations to the victims of accidents, especially those of gas-induced ones.

Energy & Power magazine in collaboration with M2k Technology and Trading organized the virtual discussion on "Maghbazar Explosion: Citizens' Safety and Role of Utilities" on 3 July 2021 as part of a series titled "EP Talks".

Engr. Khondkar Saleque Sufi, Contributing Editor of EP, made the keynote presentation at the event, moderated by EP Editor Mollah Amzad Hossain.

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Participating in the discussion as chief guest, Muqtadir Ali, former Chairman of Petrobangla and BPC, mentioned that it was earlier possible for the emergency response team of Titas Gas to reach the spot of gas-related accidents in its franchise within 30-40 minutes. Now it takes at least an hour. It even takes 2-3 hours given the traffic situation. The emergency response teams are working as business as usual that they used to do since 1970s. It could not adopt modern technologies. Yet, Titas is doing its level best. There is no reason to undermine its efforts. The distribution companies have responsibilities up to the risers. Consumers are engaging the company-authorized contractors to construct their supply lines up to their burners. Now the users have to be conscious about using specified, quality construction materials. Titas cannot respond to every call spontaneously due to having very limited number of teams and facilities. "I myself once called the team for attending gas emergency in my apartment building. The team informed that all the teams are engaged and first available team would reach there at the earliest. I had to call the Managing Director again to get the team coming. I could reach the MD, but most cannot do it."

He said that most of the pipelines in Dhaka city area are age old and dilapidated. It is overdue to replace these. Alongside, the emergency response teams must adopt modern technologies and the team members must be trained for their skills enhancement. Titas needs restructuring its organogram making it time-befitting. It will not be possible to completely eliminate accidents. But the loss of life and property can be minimized. Company management must be given required autonomy to act without undue interferences.

Brig General (Rtd) Ali Ahmed Khan, former Director General at Fire Service and Civil Defense, informed that in over 6 years of my time as DG, there were 30-40 such accidents. In most cases, unfortunately, we do not follow the Building

Code during construction. There is no coordination among various utility services and other agencies working in Dhaka. I do not want to talk much about Moghbazar accident as the matter is under investigation. But there has been accumulation of methane gas there. It might have come from leakages of pipeline or might have other source of originating it. Titas Gas immediately disowns the responsibility after each accident. The distribution lines are old and have leaks. Monitoring systems are grossly inadequate. Emergency responses are often poor even after reporting. Consumers and citizens also have lack of consciousness. Immediately after the Moghbazar incident, there was a talk about bomb explosion. Such incidents may continue happening. There must be third party monitoring in place. That third party would ensure accountability of all the stakeholders.


Muqtadir Ali


Ali Ahmed Khan


Architect Iqbal Habib


Mushfiqur Rahman


Easir Arafat Khan


Jakaria Jalal


Nurul Islam


Khondkar Abdus Saleque

There is no provision for punishment in the gas act and there is no instance of punishing anyone in the past due to defaults and negligence. In every case, the defaulters must get exemplary punishment. Citizen's awareness is also a must. New residential areas must be developed in planned manners. Commercial buildings must not be there in the residential areas. The unsafe manner in which gas and electricity supply lines are spreading in Dhaka, any mild tremor would cause severe secondary destructions. Water pipelines and sewerage lines might merge. People surviving in the earthquake may not find pure drinking water. Auto shutting devices of gas and power system must be installed.

Former BUET Professor and energy expert Dr. Nurul Islam mentioned that the explosion limit of methane is 5-17% and that of propane and butane is 2-8%. If the explosive mixture gets spark, the velocity of explosion can be as high as 5,443 thousand kilometers per hour. It can blow and smash everything around. He suggested that the BERC should organize a fund for paying compensation for the victims of such accidents. In case of any death, the affected family should get Tk 10 lakhs and in case if injured ones, an amount should be fixed. He also suggested that BUET in collaboration with gas companies and LPG operators may carry out research on all gas-related accidents took place so far.

Firemen at work at the Maghbazar gas explosion spot in the city

Dr. Islam mentioned about the methane leakage-induced accident at Urea Fertilizer Factory at Ghorashal (UFFG) in 1974. In our investigation, we found a major design fault that had led to the accident of the Amonia Control Room. Gas pipeline was connected with air supply system. Initially, a Japanese company raised objection about the finding, but later they recognized their mistake. Methane can really create havoc by forming explosive mixture with air. When Methane does not find oxygen, it gradually breaks into carbon and hydrogen. In 2000, when I visited a spot of gas accident near BNP office in Dhaka City, I found a gas pipeline built over sewerage line.

City Planner and Civil Society Activist Architect Iqbal Habib mentioned that

nobody seems to know where exactly in the city areas the gas pipelines remained buried. It is also extremely difficult guessing the exact condition of power lines. If we do not consider the minor accidents as the wake up calls, we think major disasters are looming. From 2006-2016, about 95,000 new major buildings have been constructed as per Rajuk records. Of these, only 4,570 or about 5% were approved. In a city where 95% buildings are unauthorized, we can easily imagine what a mess it is. In a year or even in a decade, Dhaka city cannot be brought back into order. There are talks about building new city suburbs. But that must not mean that we would abandon old city areas. We must modernize old city. We were devastated from Rana Plaza collapse. The entire world got aware of the terrible state of rescue acts. We know how long it took. Compliance came under pressure created by the buyers. Now 90-92% of the RMG factories are Accord compliant. Bangladesh now leads the world as having most of green factories among the top ten. If we can develop compliance under buyers' pressure, why we cannot set up Compliance Council for protecting life and properties of citizens. But for that the required pressure from citizens must be consolidated. Every single person has constitutional right to live safe.

Mr. Habib suggested forming a Compliance Council. Under the leadership of the City Council, water, power and gas utilities should form such council. Living in city can be made more comfortable by checking and updating the services every year. Every house, every installation must have fire fighting equipment. The essential fire drill must be carried out at regular intervals. The Compliance Council would monitor all these. Certificates must be renewed every year. In case of accidents, there must be ways to find out how to eliminate reoccurrence of similar incidents in the future. People would not grow conscious unless the provisions of law are applied. It is sad that no one now takes the responsibility of the unfortunate victims of accidents. They are poor and helpless. If this happened in posh areas of Gulshan or Baridhara, you would have seen how all agencies react. People's awareness does not grow spontaneously. Defaulters must get punished and legal provisions must be applied. We do not want incidents like Chalkbazar and Maghbazar anymore.

A view of devastation by the gas explosion at Maghbazar in the capital

Dr. Mushfiqur Rahman, mining and environment expert, pointed out that until any fatal accident affects us, we care less. Pedestrians got killed in Maghbazar accident; busses plying through the flyover got affected. These have created panic. This accident is being told as methane-induced explosion. One kilogram of methane gas explosion lets off 13,313 Kcal heat while one KG gun powder can create about 580 Kcal. Methane creates three times more destruction. It is not essential that methane needs filling the entire room.

I have seen report that 12% methane presence has been traced in the spot after accident. There must not have been any methane concentration after the explosion. The dead body of a missing security guard could be recovered after 44 hours of the incident. Those who went there for rescue had no clue. The body could be recovered following media report only. Rescuers said nobody mentioned it to them. I mentioned this, as in our culture, no one takes the responsibility. Unfortunately, blaming others is our culture. How could so many activities under one roof get permissions from different agencies?

Engr. Jakaria Jalal, Head of Sales, LPG Division of Basundhara Group, categorically said that the incident at Maghbazar did not happen from LPG. Methane has been detected there. LPG does not contain Methane. Unfortunately for any gas related accidents these days, LPG is blamed instantly.

There must be a single standing committee for probing each accident instead of setting up too many committees. TGT-DCL formed a committee following the accident where none from LPG operators were involved. Titas would obviously not shoulder the responsibility. Please do not blame LPG without any valid and credible evidence.

Dr. Md. Easir Arafat Khan, Associate Professor at the Department of Chemical Engineering, BUET, said that if methane escapes in open air it can cause fire but not explosion. But it can explode in contact with sparks it accumulates in a confined space forming explosive mixture. Methane concentration of even 1-3% can cause explosion in contact with spark. For methane, 5% concentration and for LPG 2% concentration can cause fire. We have not heard about cylinder explosion at Maghbazar. It usually does not happen. There can LPG-related fire or incidents due to failures of regulators or hose pipes. Nobody cares to look into recommendations of investigation committees formed after every incident. Questions can also be raised whether appropriate

unbiased recommendations are made at all. It was told immediately after the incident that presence of 12% methane could be measured. But no mention was made about the source of methane. Building owners are penalized after accident but those who give permission for the construction of the building or the utilities used there are not taken into account.

Presenting his keynote paper, International Energy Consultant and former Director (Operation) GTCL Engr. Khondkar Saleque Sufi observed that he would not consider the incidents of Maghbazar and Narayanganj as accidents. In his opinion, these were murders from gross negligence of utility providers and users. In recent times, the frequencies of fatal incidents have increased. These incidents are happening from pipeline gas leakage, LPG and CNG supply chain. Such incidents and accidents must be given top priority attentions.

A broken LPG cylinder is seen at the Maghbazar gas explosion site

Saleque reminded that pipeline gas is methane. LPG is propane or butane or a mix of both. Methane being lighter than air can cause only fire while seeping into the atmosphere. But when leaked in confined space accumulates in the room, 2-7% mix of methane and air form explosive mixture. This explosive mixture can create havoc like bombs getting any spark from any source. He mentioned about few incidents happening UFFG Ghorashal in 1974, gas distribution networks in Chattogram and old Dhaka, the Narayanganj mosque incident is an ample testimony of methane leakage-induced accident. LPG being heavier than air accumulates in drains or lower areas. It displaces Oxygen from a confined space causing nausea, dizziness and asphyxiation. Chances of gas-induced exploration are far less with LPG than methane. From early indications of Maghbazar incident, it appears that methane accumulation might have triggered the explosion. Gas value chain, LPG and CNG supply chain must be vigorously monitored for eliminating possibilities of accidents.

Mr. Saleque observed that neither the utilities nor any regulator have established standard protocol for intensive monitoring for safe supply and use of fuel, energy and power. LPG and CNG cylinders are not regularly inspected. No standard is followed in the use of LPG regulators and hosepipes. Very little accountability is there in storage, transportation and use of LPG. There is no initiative for educating users or creating consciousness and accountability of users.

Mr. Saleque questioned as to whether leakage surveys of gas distribution networks are regularly carried out through injecting odorant in prescribed dozes. Bangladesh has gas act, gas policy, electricity act. Some conditions are laid out for compliance prior to providing connections. But there is none to check and monitor whether these are observed. Investigation committees provide reports with recommendations after every incident. But these are never taken into consideration.

There are standard norms and procedures on how to regularly leakage of gas connections to kitchens, burners, LPG cylinders, accessories, CNG supply chain. Gas distribution networks also must come under GIS, digital/automated mapping, SCADA and Telemetry. Gas burners and connections to kitchen should also be frequently tested for leakages using soap water. When a leakage is found, the utility services must be unformed and only certified fitters be used for repair. As soon as smell of gas is felt, all appliances must be immediately switched off. Doors and windows must be open so that methane cannot form explosive mixtures. Before purchasing any gas gadgets, standard certificates must be checked.

All check lists of LPG Cylinders, regulators and accessories must also be checked. Third party regulator must be there to ensure compliance through safety audits. LPG market is growing exponentially. Unless intensive monitoring protocol is established, frequent accidents may continue to happen.

Mr. Saleque warned that Dhaka and other major gas franchise are sleeping on active volcanoes. Any mild tremors may turn these into towering infernos, he said, suggesting that all the stakeholders must work hand in hand now to prevent such dangers.

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Cross-Border Energy Trade
Prospects and Challenges

AKM Monowar Hossain Akhand

Introduction

Bangladesh is now a mid-sized power system (23 GW), and highly dependent on gas. Electricity is the major source of energy for industrial and agriculture sectors, which contribute 50% to the GDP. The country is still facing a shortage of electricity. According to the power system master plan, Bangladesh has fixed a target to produce 24,000 MW of electricity in 2021, 40,000 MW in 2030 and 60,000 MW in 2041, and aims to ensure supply of electricity to all citizens and economic sectors at affordable costs through a well-balanced power generation environment.

The cross-border energy trade (CBET) creates cost effective electricity transmission of surpluses through efficient generation pool. The large scale regional and trans-regional cross-border transmission inter-connection has emerged from the vision announced by India in October 2018: "One Sun, One World, and One Grid". With this concept, the Sun never sets globally, at any given point of time, building a global ecosystem of inter-connected energy sources, shared for mutual benefits. There are already examples of regional cooperation of CBET among Bangladesh, India, Nepal, Bhutan, Sri Lanka, Pakistan, and Myanmar.

Bangladesh took a decade of efforts, and has gotten the opportunities for successful CBET, already experienced importing 1160 MW power from India and another 500 MW in the process to meet the domestic emergency power demand, and exporting 1000 MT LPG per month from the surpluses to north eastern states of India. This brings economic benefits of CBET, and part of the regional cooperation outcomes. There are further scopes of LPG trading among the other neighboring countries, i.e. Nepal, Bhutan, to meet their LPG deficiency and for win-win benefits.

Benefits of CBET

- Grid stability;
- Regional stability;
- Improvement of renewable balance;
- Lower energy prices;
- ncreased friendships between trading countries;
- Solution of bilateral or trilateral issues;
- Revenue income;
- Creation of more employment opportunities;
- Economic growth;
- Improvement of social lives;
- Improvement of industrial and agricultural sectors;
- Improvement of commercial activities;
- Improvement of infrastructure.

Cheaper Cost of Electricity under CBET

The power imported from neighboring countries is cheaper.

Challenges of CBET

- Political pressure;
- Social misconception of over dependency and national sovereignty;
- Sudden changes and disruption in frequency lines;
- Lack of clear guidelines of CBET in Bangladesh Electricity Act 2010 (amended in 2015);
- Lack of rules, regulations, policy framework, and PPA;
- Lack of clear rules, regulations on dispute resolution and arbitration mechanism.

Possible Solutions of CBET Challenges

The following initiatives may be taken to overcome the challenges:

- Social awareness programs for the benefits of CBET and public interests;
- Efficient institutional entities;
- Private sector participations;
- Reform of favorable rules, regulations, policy framework and PPA;
- Development of new rules, regulations on dispute resolution and arbitration mechanism;
- Standardization of equipment to avoid blackouts, changes-disruption in frequency lines;
- Transmission system of each country has to be efficient;
- Overcoming the social misconception of over dependency and national sovereignty.

Regional Cooperation

Regional cooperation is a major driver for CBET which could be one solution to long-term energy provisions for the region, especially for Bangladesh and neighboring countries: for vis-à-vis benefits. Regional cooperation can complement national programs to enhance economic growth. The benefits of regional energy cooperation can play an important role in connecting the country-level initiatives to provide a platform for securing affordable, sustainable and

নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড

দেশের উন্নয়ন অগ্রযাত্রায় গর্বিত অংশীদার

দ্রুত বিদ্যুৎ উৎপাদন বৃদ্ধির স্বীকৃতি স্বরূপ মাননীয় প্রধানমন্ত্রী শেখ হাসিনা'র 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

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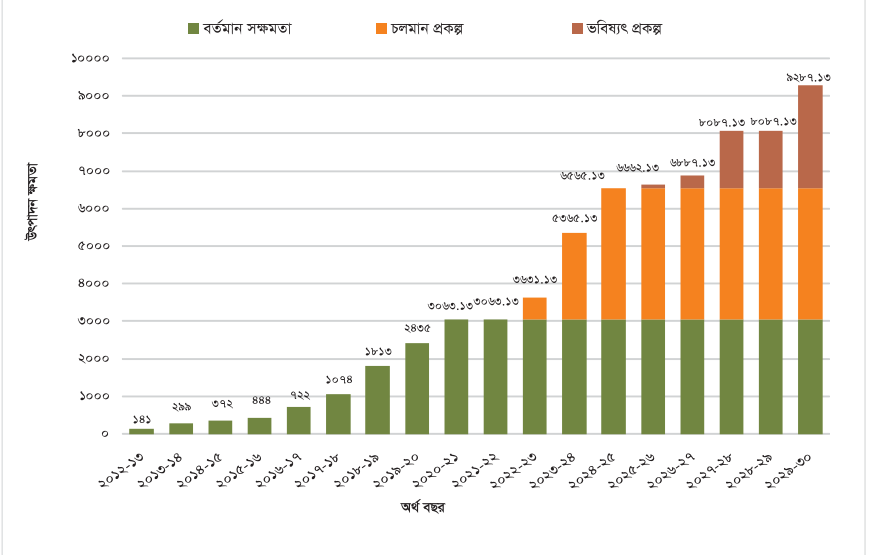
- বিদ্যুৎ উৎপাদন ক্ষমতা - ৩০৬৩.১৩ মেঃওঃ
- চলমান প্রকল্পের সক্ষমতা - ৩৫০২ মেঃওঃ
- ভবিষ্যৎ প্রকল্পের সক্ষমতা - ২৭২২ মেঃওঃ
- ২০৩০ সাল নাগাদ বিদ্যুৎ উৎপাদন লক্ষ্যমাত্রা - ৯০০০ + মেঃওঃ



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(বাংলাদেশ বিদ্যুৎ উন্নয়ন বোর্ডের একটি প্রতিষ্ঠান)

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reliable supply of energy by integrating the energy resources vis-à-vis socio-economic development of the region. The 'regional energy trade market' would bring in substantial mutual benefits, and energy balancing in each member country, especially benefits for Bangladesh. The market option would also promote trading in surpluses of energy.

The regional and bilateral cooperation has the advantage of technology transfer – the best example is Rooppur Nuclear Power Plant, which is under construction in Bangladesh. The plant is using similar technology to Kudankulam Nuclear Power Plant in India, which is a comfort theme for Bangladesh.

The bilateral trading arrangements provide an ideal environment for a regional energy market, and turn to multilateral trade arrangement. It is expected that the installation of more energy plants would meet the domestic demand, and more are surpluses. With the surplus energy, there has been an increased opportunity for CBET to neighboring countries. In India, around 90% of cooking energy needs in rural areas are met through traditional sources of energy. Bhutan and Nepal also meet about 85% through traditional fuels. Bangladesh has thus a greater prospect of cross-border LPG export to India, Bhutan, and Nepal. This connectivity would facilitate the BBIN regional energy trading in future.

Regional Energy Trade Market

Bangladesh may take initiatives for development of efficient regional energy market system, and can join the market. The initiatives include establishment of BBIN (Bangladesh, Bhutan, India, Nepal) power trade corridor through inter-connected power transmission line to improve the regional cooperation. The trade market option would also reduce electricity shortages and promote trading of surplus (e.g. import-electricity, export-LPG). The bilateral trading arrangements provide an ideal environment for a regional energy market, and turn to multilateral trading arrangement.

Costing of Power Import:

Source	Cost (US Cents Per kWh)
Bangladesh average power purchase cost 2019	7.00
NVVN (NTPC Vidyut Vyapar Nigam Ltd), India to Bangladesh. December 2019	6.08
PTC, India Ltd to Bangladesh, December 2019	5.62
Nepal average power purchase cost 2019	6.52
NVVN, India to Nepal, December 2019	6.08

Source: SARI/EI, 2020

India has already focused on the power generation both for domestic purposes and exporting the surplus power through cross-border interconnection pipeline, LNG-based power plant, and vis-à-vis transmission line. In addition to hydropower and coal-based power sources, regional LNG terminal, and inter-connected plants could be set up for development of a bulk regional energy trade.

Bangladesh has already set up an offshore FSRU (floating storage and regasification unit) LNG terminal at Moheskhali, and another two onshore land terminals are in the process. These terminals targeted to meet the gas demand of the country as well as increase its surplus capacity. With this opportunity, Bangladesh has the option for both LNG and LPG subsectors with large scale storage and take advantage to export to neighboring countries (e.g. India, Nepal, Bhutan). Bangladesh may encourage for a favorable environment for joining the efficient regional energy markets.

The following issues may be considered for Regional Energy Trade Market System:

Political Issues:

- Regional outlook;
- Political consensuses;
- Inter-governmental agreements;
- Implementation mechanism;
- Power market policy reform.

Regulatory Issues:

- Acceptability of open access to use intermediary transmission network;
- Rules for identification of transmission capabilities and overcrowding;
- Rules for measurement of imbalance and settlement;
- Conductive and friendly ecosystem for investors.

Technical and Commercial Issues:

- Harmonization of grid codes, standards, and grid connectivity;
- Transmission pricing and transit charge;
- Coordinated regional transmission of grid planning;
- Payment mechanism;
- Dispute resolution and arbitration mechanism.

Institutional Issues:

- Institutional arrangements;
- Regional coordination forums;
- Adaptation for long term sustainability.

CBET: The Regulatory Issues

Strategic expansion of CBET would involve coordination of several policy areas. Some of these policies might require regulations, and many would involve implementation and oversight by national regulatory agencies. Bangladesh's ability to participate in CBET of any type is bounded by its national policies on foreign/cross-border trade. Therefore, a review of national laws and executive orders on foreign trade could be an important step in ensuring CBET outcomes are in Bangladesh's public interest. Such a review could identify potential conflicts in legislative intent, complementary policies, and clarifications of regulatory authority. Key areas include rules gov-

erning foreign ownership of assets, trade tariffs, and financial requirements governing the use of foreign currencies.

The Indian Ministry of Power provided new guidelines on CBET in 2018 that provide a framework for tripartite power trading, wheeling power over India's grid between Bangladesh and Nepal. Such deals need not involve an Indian company, but they must secure political approval from a designated authority appointed by the Indian Ministry of Power.

India has a plan for a regional power corridor connecting its western region to its isolated northeastern region, along with Bangladesh and Bhutan. The plan, which includes a major transmission line across northern Bangladesh, would require regulatory consent from Bangladesh. To date, this proposal has had little consensus on who would operate the regional transmission lines. India has offered to manage the system, while Bangladesh has insisted on playing a role. How to divide regulatory responsibilities will likely to require further negotiations between Bangladesh and India.

Similarly, the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) includes a plan for a South Asian transcontinental electricity gridline covering India, Bangladesh, Myanmar, Thailand, Nepal, Bhutan, and Sri Lanka. The interconnection is included in a memorandum of understanding on electricity trade across the region. But there are several technical, economic, and governance barriers still remained unresolved.

Regulatory Actions

The first step is to identify Bangladesh regulations that would be applied to the CBET and resolve potential overlaps in jurisdiction. Relevant entities, include the Bangladesh Energy Regulatory Commission, which oversees tariffs for power purchases by distribution utilities and might be tasked with approving power supply contracts involving CBET. In addition, the Power Grid Company of Bangladesh serves as the system operator for the national grid, managing congestion and charging distribution companies wheeling fees approved by the Ministry of Power through executive orders. The BPDB procures additional generation on behalf of the government from power supply contracts or through the development of self-owned projects.

The regulatory actions are of two different types: (i). participation in Regional Power Market, and (ii) the Bilateral Agreements. The participation of RPM includes: registration, stakeholders and demand response; and the bilateral agreements includes: switching of services from the utility of another provider/country and competitive price.

Conclusions

The prospects of the energy cooperation included scaling-up of CBET, regional cooperation and knowledge sharing among the neighboring countries to help each other in building climate-friendly environment in the region. The system requires a high level political commitment, policy package options for large investment in energy sector. The present cross-border trading experiences of power import and LPG export may be shared to other neighboring countries. To achieve energy goals, a simplified policy framework, efficient institutional and regulatory entities may have effective and expedite the CBET option in Bangladesh.

To enhance CBET in the region, there is also a need to have common set of regulations, policies, and legal frameworks, which will facilitate the comfortable cross-border interconnection, for example open access transport, transmission network, licensing, integrated operation system, and dispute resolution.

Bangladesh needs to construct appropriate infrastructures, install new plants with gas pipeline using modern technologies for the comfortable energy trading to neighboring countries. Bangladesh also needs a long-term strategic energy master plan for the country as well as for exporting option.

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Import Parity Pricing for LPG in Bangladesh

An External Perspective on the Way Forward

David Appleton

The Bangladesh government's move to regulate LPG prices as announced in April is aligned with regulations that have surfaced around the world in past years. Price regulation on domestic LPG markets is not a new idea, with some kind of structure in place in many countries from Latin America to Africa and Asia-Pacific. In Europe, there are still two countries – Spain and Belgium – that impose some kind of formula-based pricing that is directly linked to the value consumers pay for their LPG cylinders.

But the approach varies from country to country. Some countries, such as India and Indonesia, let the state take on the pricing burden and the consumer pays only a small part of the true cost of the LPG, with a subsidy mechanism covering the rest. More commonly, the price paid by the consumer is regulated through a direct linkage to the international price of the product plus a build-up of logistics cost. This seems to be in essence the approach that Bangladesh is looking to apply.

These formula-based pricing strategies are complex as recent experience from South Africa shows. Until this year, South Africa had applied a refinery gate calculation for residential sales of LPG, which priced LPG as a proportion of the local diesel price. This formula had been applied for some decades, since a time when most of South Africa's LPG was produced domestically. With increasing imports and a growing market, the government recently decided to move to an import parity formula, which directly connects the local price of LPG to the international price, and adds the relevant logistics costs to arrive at a delivered price to South African ports.

But the South African government does not have experience in the supply and transportation of LPG, and consequently needed to think very carefully about how to come up with such a formula. This is where Argus came in. After comprehensive discussions with the South African government, local importers and suppliers on the real-world cost factors, Argus came up with the logistics element to the South Africa formula, which is now applied to the retail price of LPG cylinders in the country. Argus publishes this price each month, updating the formula for the relevant department of the South African government, while publishing it in its daily Argus International LPG. On top of the delivered costs, South Africa then applies an internal logistics formula based on the location of sale within the country.

This approach has been successful. Importers and suppliers have clarity on the price, which moves in line with actual costs, and consumers are assured that the LPG purchased locally is costing them an amount which genuinely reflects its value. This "import parity" strategy is crucial for the development of LPG markets as it balances the needs and concerns of the consumers, while offering market participants some certainty on the validity of their investments

A lighter price strategy can then be applied once markets become more mature. In Thailand, which consumes more than 5mn t/yr of LPG, the government has moved from regulated prices to a free market but closely monitors both the international and local retail prices, retaining the right to step in to regulate in instances of price gouging.

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Mir Moinul Huq Memorial Lecture Series

Petroleum Exploration & Promotion Through PSC

Mortuza Ahmad Faruque

In remembrance of Mir Moinul Huq, an eminent geologist of Bangladesh, the Lecture-7 was arranged virtually on June 26, 2021 as part of a 'Mir Moinul Huq Memorial Lecture Series'. Naz Husain, who joined from Houston, chaired the session which was moderated by Jasim Uddin from Dhaka. In the session, the discussants emphasized on expediting hydrocarbon exploration in the offshore and onshore Bangladesh by IOCs under PSC, and through BAPEX.

Md. Muqtadir Ali, guest of honor, appraised the session of the government's recent decision to discard 10 coal-based power plants which would be replaced by gas/LNG. He emphasized on creating a special fund by the government for providing exploration support to BAPEX. At present, the government is not allocating any direct fund for oil and gas exploration. A fund is needed to be created for exploration, which may not generate immediate return due to the very nature of the business. However, he said one has to keep in mind that if we make any hydrocarbon discovery, all the investment will be paid back in due course. He suggested that offshore PSC may be carried out with the available data. He expressed his dissatisfaction over being unable to take proper decision at right time. It is also necessary to formulate attractive package and incentives for IOCs to carry out exploration.

M. Farid Uddin, a hydrocarbon consultant of BAPEX and former Vice President, UMIC Bangladesh was the keynote speaker and delivered presentation on "Petroleum Exploration & Promotion Through PSC". Around 50 geoscientists of Bangladeshi origin participated the webinar from different countries including Bangladesh, Canada, USA, UK and Norway.

Mr. Farid presented a brief history of petroleum exploration carried out under PSC. He shed light on the offshore PSC which was initiated by Bangabandhu in 1974 and engaged six reputed IOCs just after independence of Bangladesh. Unfortunately, after his tragic death, all the companies relinquished their blocks and left Bangladesh. He opined that the most successful PSC bidding round for onshore and offshore was held in 1993. Through the negotiating process, Occidental, UMIC and Cairn Energy signed contracts for onshore Blocks # 12,13,14, 15 and 22 and offshore Block-16. Bibiyana, one of the largest gas fields, in the country was discovered by Occidental/Unocal in 1998. Apart from that Moulavibazar Gas Field was also discovered by them. An offshore gas field Sangu was also discovered by Cairn in 1996. With a view to the 4th offshore bid round, multi-client seismic survey is planned to be conducted through outsourcing. This survey is designed to be carried out all over offshore areas excluding the blocks where data is already available. Contract has been signed with TGS- Schlumberger and expecting that work to be completed by 2023.

Mr. Farid also discussed about approved Model PSC-2019, in which restoring provision for gas export and keeping the first right of refusal by Petrobangla has been spelled out. The gas price has also been marginally increased, mandatory provision for drilling of one exploratory well within five years from the signing of PSC has been withdrawn. Few other additional fiscal and financial incentives have also been introduced to attract IOCs for minimizing their investment risks in the unexplored offshore areas. Petrobangla reserved the right for buying entire volume of petroleum produced at an agreed price. The question of export or sale to third party would only arise when Petrobangla cannot buy. Gas price has been increased in addition to updating some other provisions in the model PSC for exploration in shallow and deep-water blocks. Even after all these, whether the IOCs would be encouraged to invest in Bangladesh or not remains to be seen.

Mr. Farid opined that we must bear in mind that foreign companies would not come to Bangladesh for charity. They will not take the risk to invest without finding a commercially profitable business prospect. He emphasized on expediting offshore drilling operation and suggested that the government should consider unsolicited invitation to the reputed IOCs where data are already available, such as, shallow offshore block-11, deep offshore blocks-10,11 and 12. He mentioned that due to fall of oil price, most of the major IOCs are not showing their interest in expensive offshore operation particularly in the deep sea. Besides, the IOCs as well as the government is more interested to import LNG and develop LNG terminals.

Special emphasis should be given on exploration in the Chittagong Hill Tracts

which is relatively underexplored. Most of the drillable structures are already identified. We need to invite reputed IOCs under PSC/ JV with BAPEX and special fiscal package and favorable exploration terms can be offered.

Mortuza Ahmad Faruque, one of the speaker of this session, made a presentation titled "Overview of Hydrocarbon Exploration & Gas Reserves in Bangladesh". He mentioned that only 88 exploration wells have been drilled so far under PSC, by IOCs and NOCs (OGDC, Petrobangla and BAPEX) over a period of 120 years. This resulted in the discovery of 28 gas fields, including one oil field, having very good success ratio. Out of which, 35 wells drilled under PSC, 24 wells by IOCs and 29 wells by NOCs. Estimated gas reserve (proven+probable) is around 28.0 Tcf. The fields already produced 18.6 Tcf and remaining gas reserve stands at 9.4 Tcf only. Apart from this, 14.8 Tcf of gas has been produced from the available reserve during last 20 years and only 1.24 Tcf new gas reserve added in that period. He mentioned that onshore PSC bidding round was not conducted since last 20 years and keeping all the responsibilities on the shoulder of BAPEX for onshore exploration. The CHT remains underexplored for last 33 years. Only one well was drilled during this period at Semutang South in 2018 and found dry. A total of 17 wells were drilled by Petrobangla and OGDC during the period of 1965 to 1990 with the discovery of 8 gas fields. The estimated total gas reserve is 1.95 Tcf against 8 fields. Whereas BAPEX drilled 12 wells during the period of 1990 to 2020 with the discovery of 7 gas fields. The estimated total gas reserve is 1.94 Tcf against 7 fields.

Mr. Mortuza commented that carrying out oil and gas exploration in the Chittagong region is quite challenging. The structures are mostly elongated and narrow width having highly folded, faulted and fractured. There are huge technical, financial and drilling risk due to difficult terrains, complex geological structures having high pressure zone etc. Drilling in the high-pressure zone is very difficult specially handling with very high specific gravity of drilling fluid. Multi-client seismic survey couldn`t be carried out yet in the offshore due to delay in the approval process by the government. Petrobangla raised this issue and sent proposal to the government several times since 2003. But unfortunately, it was being delayed, sending a negative message to the IOCs.

Mortuza suggested taking initiative for new round of PSC bidding for onshore and offshore exploration through negotiation and by incorporating additional incentives in the Model PSC which is necessary to attract IOCs. To minimize gas crisis and LNG import, there is no option but to expedite exploration both in the onshore and offshore by BAPEX and IOCs as early as possible despite the prevailing Covid situation. BAPEX should try to find out competent JV partner(s) for further exploration of the identified structures of CHT, deeper & ultra-deep prospects, greater Mymensingh areas (Blocks 8 & 11) and south-western region of Bangladesh.

Mollah Amzad Hossain, Guest Speaker, expressed his concern over lack of proper policy planning and not giving proper attention to explore own natural resources viz. coal and gas. The government has allocated only Tk 2,800 crore for energy sector in the recent budget and out of which Tk 1,300 crore for construction of different pipelines. Whereas, there is an acute shortage of gas in the country. The government is giving more attention to import LNG and coal instead of exploiting own coal and gas. During the period from 2009 to 2020, the government has also given more importance on construction of fuel and coal-based power plants. Presently, there is a shortfall of gas for generating electricity of 2,500 MW to 3000 MW. If we do not increase our gas production and supply, fuel import requirement for power generation would reach 90% by 2030. The construction of land-based LNG terminal will take 5-6 years and there is an apprehension that the gas production may drop by quite a substantial amount due to depletion of the gas reserves from certain fields within 2-3 years. Considering the Covid situation, the IOCs may be engaged through the negotiation process for shallow offshore and onshore areas along with BAPEX under PSC. Apart from that, the PSC bidding round may be organized for deep offshore blocks and western part of the country but we need to wait at least two years.

Prof. Badrul Imam pointed out some weak areas of PSC agreement, specially cost recovery by IOCs, which is not transparent and usually they are showing inflated cost. Whereas, there is no cost recovery provision in the Revenue Sharing Contract (RSC) and this system is used by India since 2016 and some other countries also. He informed that the PSC is now being shifted and changed to RSC model. He suggested thinking about it and introducing the RSC in the future bidding round instead of PSC.

Some of the participants took part in the open discussion session namely Farhana Shaon, Nazim Ahmed, Abdus Samad, Abu Yousuf, Ohidul Islam, Merazul Alam, Abid Lodhi, Ataul Huq and Manowar Ahmed.

Recommendations

- To create a special fund by the government for providing exploration support to BAPEX;
- To expedite offshore drilling operation under PSC, and government may consider unsolicited invitation to the reputed IOCs where data are already available;
- IOCs may be engaged through the negotiation process for shallow offshore and onshore areas along with BAPEX under JV and PSC; and
- BAPEX should try to find out competent JV partner(s) for exploring the identified structures of CHT, deeper & ultra-deep prospects, greater Mymensingh areas and south-western region of Bangladesh.

EP

Mortuza Ahmad Faruque;
Energy Specialist and Former Managing Director, BAPEX

Climate Vulnerability, Covid and Implementation of SDG

Md. Abul Kalam Azad

Series 18: Power

The World Energy Council (WEC) while discussing energy issues relating to demand, supply, price, fuel-mix etc. mentioned about right balance between Jazz and Symphony. It needs focus on energy equity, individual access and affordability as it addresses in Jazz. The Jazz is strong but flexible rhythmic structure with solo and assemble improvisation on basic tunes and chord patterns. It is led by one and followed by others. On the other hand, symphonies a complex orchestra of 80 or more members having specific individual role as energy needs to look into Symphony characteristics; focus on environmental sustainability through internally coordinated policy and practice. All predictions by WEC are done in Jazz or Symphony as we do higher and lower case.

Population of the world is predicted to be 8.7-9.4 billion from present 7.8 billion; the increase is predicted to be 26-36% by 2050. During this time, the GDP will increase by about 100-153%, car use will be increased by 57-98% from the present level. The WEC also mentioned that it is a time of unprecedented uncertainty for the energy sector. The energy demand will continue to increase the pressure and challenges to develop and transform the energy system. They told this specially against the backdrop of the COVID-19 pandemic. The WEC also identified energy trilemma balance between environment sustainability, energy security and energy equity. Very recently, issues of energy poverty and energy justice are identified as prime area for discussing at the global energy arena. They also identified 10 key messages targeting energy of 2050 for the energy sector people: complexity will increase by 2050, energy-mix will continue to be mainly fossil based by 2050 (59-77%, in 2010 it was 79%), Carbon pricing is very important, challenging renewable energy, balancing the trilemma, carbon capture and underground carbon storage, regional integration etc.

In 2009, we had only 47% of electricity coverage in Bangladesh having about 5,000 megawatt generation capacity, about 24% less supply than the demand, system loss was 14.33%, load shedding was widespread – on average six to eight hours – under frequency of electricity was very common which caused frequent electronic gadget disorder, voltage level and moreover distribution was very unsatisfactory, which made an ultimate outburst of mass movement all over the country, including Kansat power movement in Chapai Nowabgonj district that resulted in 13 death of farmers those who came with the demand for electricity supply. Against the backdrop of huge shortage of electricity, the government of Sheikh Hasina came into power in 2009 and from the day one, started war against the load shedding and took up huge number of activities for combating the power crisis. During this period from 2009 to 2020 about 134 new power plant having about 17,000-megawatt generation capacity were established, along with them there was more 13 rental power plants which has been retired very recently. It shows that on an average one new power plant were set up in each month. Every year on an average 1600-megawatt electricity were added in the generation capacity and now, the generation capacity is 24,421 megawatt. In 2008-09, total energy generation was 26,533ghw which stands at 71,419ghw last year. At present per unit generation cost is about Tk 5.94. In 2007 on 17th September, the highest generation was 4296 megawatt and this year on 3 April it was more than triple which is 13,018 megawatt.

Bangladesh had a transmission line of about 8000 circuit kilometer (ckm) in 2008. It increased to 12,494 circuit kilometers in 2020 having a total 184 transmission sub-stations with 48,000mva supply capacity which was less than 1/3 that is 15,870mva in 2008. In 2008, per capita consumption of electricity was only 220 kilowatt hour which is more than double at 512 kilowatt hour in 2021. In 2009, distribution line was 260,000 kilometer having a capacity of 10,800mva. After a huge reform in power sector in 2021, the length of distribution line became more than double which is 601,700 kilometers with a capacity of 26,700 MVA and within this span of time, the number of consumers quadrupled from 10.1 million to 39.5 million and now cover almost 100% of our population.

Another important area of power sector is fuel mix. In 2021, Bangladesh generates electricity on an average 51% from gas, 34% from HFO and diesel, 8% from coal and 5.6% import from India. In 2009, there was a very weak fuel mix which is about 84% from gas with very minor participation of liquid fuel, coal and hydro. For the better energy mix, a balance on different modes of energy is essential. Bangladesh has a commitment of 10% generation from renewables by 2020 which is very difficult to achieve for the land-shortage country. In our country, hydro potential is no more, possibility of wind so far very minimum, no geothermal, there is scope for solar energy but it needs huge land area; one hector (about 2.5 acre) per megawatt of electricity. Energy efficiency is crucial in dealing with

energy pricing. Energy use per unit of GDP will decrease by 50% in 2050, half of the primary energy will be required in 2050 to produce same electricity.

To ensure energy security in Bangladesh, a bilateral relationship developed with India, now giving a scope of importing 1160 megawatt of electricity and in a very near future Indian company Adani will produce about 1500 megawatt in Jharkhand and export the whole electricity directly to Bangladesh. The government is working on developing a generation plan on hydro-electricity with Nepal and Bhutan; two trilateral relationship Bangladesh-India-Nepal and Bangladesh-India -Bhutan is under process.

SDG 7 calls for 'affordable, reliable, sustainable and modern energy for all' by 2030; three core targets are: Ensure universal access to affordable, reliable and modern energy services. Fulfilling 1.5 degree of pre-industrial level of temperature rise mostly depend on fuel for electricity, carbon emission from fossil fuel specially coal and liquid fuel may worsen the situation. Bangladesh in its Power Sector Master Plan (PSMP) 2010 planned to have 50% power from coal by 2030 and later on in PSMP 2016 it reduced coal participation to 35% and now also planning to lower further. As it covered all its people with energy access, now we need to ensure the quality and reliability.

We all know that electricity generation is a capital intensive and technology-dependent sector and globally from 2010-2050 it is predicted that 19-26 trillion US dollar will be required in this sector; out of this amount 46-70% would be spent for renewable energy. The COVID pandemic brought investment shock, which is very prominent in power sector. Though we know the world economy was recovering by the end 2020, China predicts 8% growth this year and hopefully in spite of COVID, financing in power sector would draw the attention of the global players. During Covid in May 2021, China achieved 27.9% export growth.

This is one of the strengths of Bangladesh that from 2009 till date the Prime Minister is the power minister. She was also power minister during her 1996-2001 tenure when she initiated participation of private sector in power generation and this gives immense strength to succeed in this sector. Now participation of private sector in power generation is about 43%.

Very recently, we have seen the innovative idea of "Alor feriwala"; an initiative of Bangladesh Rural Electrification Board, started this initiative moving door to door and providing electricity connection on the spot. Earlier, there was a time-consuming system of getting electricity connection, created scope for corruption and it withered away by introducing the "Alor feriwala". So many good practices have been done in power sector.

The annual performance agreement which is being implemented now in the whole of the government was started in power sector in 2010-11 also performance-based incentive. Training for the Human Resource Development and working in team got high importance in power sector. The primary energy supply is a big challenge along with the changing technology, financing, local coal extraction, import of coal and other primary energy, cyber security, transportation of fuel and heavy equipment, adjustment with nuclear power, subsidy, land for renewable energy, underground cable with changes of power scenario, seasonal variation, energy auditing, and Hydrogen technology as fuel all these are upcoming challenge for the power sector.

The future of power is green-only energy. So, executing model of human and economic development, climate neutral, circular economy, safe and regenerative with all these the globe will require more energy at least in the medium term. In the coming days economic trend, cyber security risk, carbon abatement, energy supply situation, investment, environment all these issues are very crucial for the energy managers. Also support mechanism, affordability, renewables, energy efficiency and demographic pattern are very important for the efficient energy supply all over the globe. More international cooperation, internationally harmonized policy and trust in market mechanism is essential to address the trilemma; the trilemma of environmental sustainability, energy security and energy equity. From 1990 to 2010 primary energy demand increased by approximately 45%. Considering increased demand and 50% energy efficiency, it is estimated that from 2010 to 2050 the demand for primary energy in power sector will further increase by 27-61%. It is predicted that towards 2050 South, Central and East Asia particularly China, India and also Bangladesh will be the center of future growth.

In 2050, primary energy mix will continue to be fossil fuel dominated, but may reduce the share of fossil fuels from 79% in 2010 to 59 -77% in 2050. Asia showed better preparedness to combat Coronavirus as a result of its experience in handling other pandemics. Economic trend, carbon abatement, digitization, new market mechanism, cyber security, energy storages innovation, energy supply, innovative transportation, big data, renewable energy, energy efficiency all these important issues need to be addressed. Hydrogen as a fuel is becoming a reality and the rich countries are conducting research on this to reduce carbon intensity though the developing country showing less interest here. Bangladesh should not be left behind in the journey of using hydrogen as fuel in power sector.

The difficult questions are: will there be investment boom after covid as it happened after economic recession in 2007-08? Against the backdrop of rejoining of USA with Paris Agreement on climate change, will there be a major shift of fuel mix, more dependence on renewables all over the globe specially the developed countries? Will there be a return to mass transportation? What's about the aviation travel? Almost all the meetings are being done in digital platform. What's about electric vehicle? How about working from home? What will be the scenario of the future cities? All these important issues are coming up and we believe post pandemic recovery will help energy transition for a more inclusive energy future.

EP

Md. Abul Kalam Azad;
Former Principal Secretary and Former Principal Coordinator (SDG)

Scrapping 10 Coal Plants Won't Affect Power Supply: Nasrul

State Minister for Power, Energy and Mineral Resources Nasrul Hamid recently assured that the electricity supply will remain unaffected after closure of the 10 coal-based power plants.

"Electricity supply to Dhaka, Mymensingh and Rangpur will not be affected after closure of 10 coal-based power plants as there is a surplus power generation now," he said while briefing reporters at his ministry conference room.

The state minister said authorities will coordinate the supply power to Dhaka, Mymensingh and Rangpur regions from the national grid as their respective the demands and deficits.

He said the government has canceled the approval of 10 coal-fired power plants as the construction progresses of those power plants were not satisfactory.

BAPA

Bangladesh Poribesh Andolon (BAPA), an organization working for protecting the environment, has hailed the government's decision to scrap coal-based power projects.

It formally expressed its reaction recently after a report headlined 'Bangladesh scraps 10 coal power projects' was published.

BAPA termed the decision a timely step on the government's part to protect the environment, according to a press release signed by BAPA President Sultana Kamal and General Secretary Sharif Jamil.

350.org

350.org hailed the government's decision to scrap coal-based power projects.

As part of the overhaul to the national power supply grid, the country will instead generate 40% of electricity from renewable sources by 2041 and set up more gas-based power plants within Bangladesh.

350.org South Asia organizer Shibayan commended the move but cautioned that a Green New Deal for Bangladesh must exclude gas.

He said Bangladesh has taken the first step in moving away from the dirty coal energy that fuels the climate crisis. "They need to cancel the Matabari Phase 1 and 2 Coal Plants and commit to not building any new coal plants."

Sohanur Rahman, Founder of YouthNet for Climate Justice in Bangladesh appreciated the move but expressed disappointment that this doesn't include the Rampal coal plant in the Sundarbans UNESCO Heritage Site.

EP

First Fuel Load for RNPP Unit-1 in Feb 2023

Bangladesh will load maiden nuclear fuel into first 1,200-megawatt (MW) unit of Rooppur 2,400MW nuclear power plant in February 2023 to start its operations.

Fuel loading into another 1,200MW unit of the Rooppur Nuclear Power Plant (RNPP) project would be done six months later, according to a project source.

A tripartite agreement among stakeholders like fuel supplier, Russian contractor and Bangladesh Atomic Energy Commission, the implementing authority of the RNPP, would be required, he said.

He added that the work on the country's first nuclear power plant is ongoing in full swing to ensure its timely implementation.

All physical and mechanical equipment of the first unit would be installed by December 2021, he said.

EP

Summit Proposes New RLNG Terminal at Payra

Local energy giant Summit has proposed to set up another storage and regasified liquefied natural gas (RLNG) terminal having combined capacity to supply 500 mmcfd natural gas to the grid at Payra of Patuakhali.

The proposal comes as the government is showing increased dependency on imported LNG to meet the country's energy demand.

Summit also urged the government to allow setting up a transshipment storage terminal at Kutubdia Island in Cox's Bazar having capacity between 1.38 lakh and 1.70 lakh cubic meters daily.

The company has already installed a RLNG at Moheskhali island of the district, which has the capacity to supply 500 mmcfd daily.

According to a fresh proposal, it said the 500 mmcfd capacity of the new RLNG at Payra will have fixed jetty and hybrid LNG storage and regasification terminal. EP

Eastern Refinery Reaches Full Capacity

Eastern Refinery Limited (ERL), the country's only state owned fuel refinery, has achieved 100% capacity in refining crude oil since the refinery began operating 54 years ago.

The company refined a maximum of 15 lakh tonnes of crude oil in financial year 2020-21, said a recent press release of Eastern Refinery Limited.

Eastern has played an important role in ensuring the country's energy security, continuously producing quality fuel oil for more than five decades. However, producing at maximum capacity was elusive in its 54 years long journey.

The lone state run fuel oil refinery was commissioned in 1968 with an annual refining capacity of 15 lakh tons. EP

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Training on Physical Protection of Nuclear Facilities for Army

Experts of the Global Nuclear Safety and Security Institute (GNSSI) of the Technical Academy of Rosatom conducted a two-week training course on "Physical Protection of Nuclear Facilities" for representatives of the Bangladesh Army.

During the course, officers led by Brigadier General of the Bangladesh Army Abdullah Al Yusuf received the information on the developing and implementation of the physical protection system of nuclear facilities, raised awareness on the main international documents.

Since 2020, the Bangladesh Army is responsible for developing a physical protection system for the first nuclear power plant in the country, engaging as a contractor the Russian company JSC FCS&HT " SNPO "Eleron".

This training course was opened by welcome remarks from the Head of the Division for Support of Overseas Projects of the Department for Ensuring the Security of the Facilities built by the Rosatom State Corporation outside of Russia Ms Ruslana Kurdyumova.

She emphasized that at present the cooperation between the Russian Federation and the People's Republic of Bangladesh has reached a brand new level, and partnership in the field of personnel training is a logical continuation of the overall work on the construction of the Rooppur NPP. EP

NTPC to Reduce Net Energy Intensity by 10%

India's largest power generation utility NTPC Ltd recently announced its target of 10% reduction in net energy intensity and installing 60 gigawatt (GW) of renewable energy capacity by 2032, as part of its energy compact goals.

"NTPC Ltd, India's largest power generating company has become first energy company in energy domain in India to declare its energy compact goals as part of UN High-level Dialogue on Energy (HLDE)," the state-run firm said in a statement.

The Union government is working on a raft of measures including ethanol blending with fossil fuels, green mobility, battery storage and green hydrogen to help reduce pollution and facilitate commitments made at COP-21, the UN Climate Change Conference held in France in 2015.

"NTPC is among the few organizations globally to declare its energy compact goals," the statement said, adding, "Further, NTPC has declared that it will form at least two international alliances/groups to facilitate clean energy research and promote sustainability in energy value chain by 2025."

The NTPC group has an installed power generation capacity of 65.81 GW through 70 power projects and has 18 GW under construction. EP

BPC Seeks 47 Acres Land at Matarbari for LPG Terminal

The State-owned Bangladesh Petroleum Corporation (BPC) has applied to the Cox's Bazar district administration for acquisition of 47 acres of land for its LPG terminal in Matarbari Deep Sea Port area under Moheshkhali offshore Island.

BPC sources said they submitted the application for this purpose in April last.

The Cox's Bazar administration Land Acquisition Department sources said the process for acquisition of those lands was now underway.

The Development Project Proposal (DPP) would be finalized after conducting a feasibility study, they said.

After acquisition of the required areas of land for the project, the feasibility study will begin.

BPC authority hoped that the acquisition of land might be completed within the current year. EP

Algeria Leads GECF R&D Arm

A Founding Member of the GECF, Algeria's footprint in the 18-member association is deeply embedded in the history and current direction of the organization.

The pillar Member Country has recently assumed renewed importance as it took the lead of the Forum's research and development arm with a candidate nominated by Algeria appointed as the director of the Forum's newly-established Gas Research Institute (GRI).

Following the 22nd GECF Ministerial Meeting, successfully delivered under the Algerian Presidency in 2020, this year the Republic is shouldering the responsibility of the GECF Executive Board Chair, strategizing activities of this governing body of the Forum.

In 2023, Algeria will host the 7th GECF Summit of Heads of State and Government, as announced at the 5th GECF Summit in 2019 in Malabo, Equatorial Guinea.

"We are required to strengthen our cooperation on Digital Technologies, Artificial Intelligence, the Internet of Things and Advanced Analytics in the industry," said HE Sentyurin at the recently-held 8th GECF GRI Scientific Committee meeting on 29-30 June 2021.

"I'm confident that Mr Adjeb's academic background and 31-year managerial experience in upstream, downstream, transportation and project management will enable the GRI project to reach its goals and objectives in favor of the GECF Members," he added. EP

Natural Gas Demand Set to Rebound in 2021: IEA

Natural gas demand is set to rebound strongly in 2021 but expected to slow down in the following years, said a new report by the International Energy Agency (IEA).

"Global gas demand is expected to rise by 3.6 percent in 2021 before easing to an average growth rate of 1.7 percent over the following three years," said IEA's latest quarterly Gas Market Report.

By 2024, demand is forecast to be up 7 percent from 2019's pre-COVID levels.

However, the demand will keep rising if the governments do not implement strong policies to move the world onto a path towards net-zero emissions by mid-century.

Natural gas demand growth in 2021 mostly reflects economic recovery from the COVID-19 crisis, the report said. EP

Higher LNG Cargoes from Spot Market Targeted

Bangladesh is importing significantly higher LNG (liquefied natural gas) cargoes from 'volatile' spot market this year to meet its mounting gas demand.

Petrobangla will import 18 LNG cargoes from spot market in 2021 against only one cargo in 2020.

It will import 64 cargoes in 2021 from term suppliers, two cargoes or 3.0 per cent short of the previous year's tally.

The state entity will import 40 cargoes from Qatargas and 24 from Oman Trading International (OTI).

It imported 43 cargoes from Qatargas in 2019 and 40 in 2020 while 20 cargoes from OTI in 2019 and 26 in 2020.

Petrobangla bought one LNG cargo at $13.42 per million British thermal unit (MMBTU) for 138,000 cubic metres of LNG for late July 2021 delivery from spot market.

LNG price under term deals is around $9.0 per MMBTU, according to a senior Petrobangla official. EP

Bangladesh to Buy 3.36m MMBtu LNG from USA

The government will buy some 3.36 million MMBtu LNG from M/S Excelerate Energy LP, United States with around Tk 448.17 crore to meet the growing demand.

The approval came from the 23rd meeting of the Cabinet Committee on Government Purchase held recently, with Finance Minister AHM Mustafa Kamal in the chair.

Briefing reporters after the virtual meeting, Cabinet Division Additional Secretary Md Shamsul Arefin said that Petrobangla would procure the LNG where the unit price for per MMBtu LNG would total $13.42. EP

Cyber Security is a Demand of Time: Nasrul

State Minister for Power, Energy and Mineral Resources Nasrul Hamid recently said that strengthening cyber security is a demand of time, as digital activities in the power division increased in the country.

"Activities of making the services easier should be continued. And the use of security gazette should be mandatory while working using digital means," he said while inaugurating virtually a training course as the chief guest.

Nasrul Hamid said all activities should be done digitally in the country. It is essential to implement ERP (Enterprise Resource Planning) as an initiative of ensuring paperless office.

"The power division and its subordinate departments initially implemented four modules and all possible works will gradually come under ERP," he added. EP

Japanese Firm Raises Question About Power Quality in N'ganj EZ

Japanese consultancy firm JV of NIPPON KOEI has raised questions over the standard of national grid electricity at under-construction Araihazar Economic Zone in Narayanganj.

Grid frequency is a critical aspect of power supply with global standards requiring that grid frequency be kept close to 50 hertz (Hz). Fluctuations in the frequency affect mechanical equipment, their functions and the supply systems as well.

The Japanese firm has raised questions over the frequency of 230KV grid run by state-owned Power Grid Company of Bangladesh (PGCB).

In Japan frequency fluctuation ranges from 49.8Hz to 50.2Hz whereas Bangladesh's range is 49.5Hz to 50.5Hz.

NIPPON KOEI said as per the International Electrotechnical Commission (IEC), the grid power is not of standard quality for high-tech industries to be set up at Araihazar in Narayanganj.

Power Division said the government will need at least three years to stabilize the power grid frequency.

After the concern was raised, Power Division informed the Prime Minister's Office (PMO) about the power transmission system to supply electricity to the Japanese Economic Zone.

The firm has proposed for establishing a separate power plant having the capacity to generate 35MW of electricity to ensure a stable supply of power to the Japanese Economic Zone. EP

Rampal Power Project to be Commissioned in December

The first unit of 1320MW Maitree Power project in Rampal will be commissioned in December next, coinciding with the Golden Jubilee celebration of Bangladesh's Victory Day.

The second unit of the project is expected to be commissioned matching with the implementation of the associated transmission system.

The project is an environmentally friendly supercritical technology-based thermal power plant, said the Press Information Bureau of India recently.

Secretary (Power), government of India, met Secretary (Power), Bangladesh through videoconferencing to discuss the issues related to 1320MW Maitree Power project.

This meeting was convened shortly after the 8th high-level monitoring committee meeting held on June 17 during which certain critical issues were identified that required to be addressed for the timely commissioning of unit number 1 in December next. EP

80pc of Planned Coal Plants in India, Four Asian Nations

Asian countries are responsible for 80 per cent of the world's planned new coal-fired power plants, with India being the second-largest coal power producer with around 250 gigawatt (GW) of operating capacity and 60 GW in the pipeline.

This was revealed in the latest report 'Do Not Revive Coal' released by the financial think-tank Carbon Tracker recently.

According to the report, China, India, Indonesia, Japan and Vietnam plan to build more than 600 new units with a combined capacity of over 300GW, ignoring calls from United Nations secretary general Antonio Guterres for all new coal plants to be cancelled.

Out of these planned units, 92 per cent of them will be uneconomic, even under normal business, and up to $150 billion could be wasted, the report stated.

The report stated that in India, new renewables can already generate energy at lower cost than 84 per cent of operating coal and will outcompete everywhere by 2024.

"It has a target of 450 GW of renewables by 2030 – more than five times its 2020 capacity which would meet 60 per cent of energy demand," the report stated. EP

LPG Cylinders Get Costlier in India

Prices of Liquefied Petroleum Gas (LPG) cylinders in India was hiked by Rs 25.50 with effect from July 01.

Following the hike, a non-subsidized 14.2 kilogram (kg) LPG cylinder will cost Rs 834.50 in Delhi and Mumbai. The earlier price was Rs 809 per 14.2 kg.

In Chennai, the price will now be Rs 850.50. It will be Rs 835.50 in Kolkata.

The latest increase took the price of a non-subsidized cylinder up by Rs 140 in the past six months, price data from state-owned oil marketing companies showed.

The hike is applicable across all categories, including subsidized and non-subsidized cylinders. EP

$4b Chevron-Run Project Advances

A $4 billion (AU$6 billion) project to ensure long-term gas supply from the Gorgon Project to customers in Australia and Asia will proceed, Chevron (NYSE: CVX) reported recently.

Operated by Chevron Australia Pty Ltd., the newly approved Jansz-Io Compression (J-IC) project will supply gas to the Gorgon complex on Barrow Island off northwestern Western Australia, Chevron noted in a written statement emailed to Rigzone.

"Using world-leading subsea compression technology, J-IC is positioned to maintain gas supply from the Janz-Io field to the three existing LNG trains and domestic gas plant on Barrow Island," remarked Nigel Hearne, president of Chevron Eurasia Pacific Exploration and Production. EP

Hydropower Capacity to Increase 17pc in 2030: IEA

Global hydropower capacity is expected to increase by 17 percent in next 10 years - led by China, India, Turkey and Ethiopia – according to the latest report on hydropower market.

The International Energy Agency (IEA) recently released the report titled "Hydropower Special Market Report." The report is a part of the IEA's "Renewables" market report series.

The projected growth for the 2020s is nearly 25 percent slower than hydropower's expansion in the previous decade, it said.

The growth of hydropower plants worldwide is set to slow significantly this decade, putting at risk the ambitions of countries across the globe to reach net-zero emissions while ensuring reliable and affordable energy supplies for their citizens, the report said.

Many hydropower plants can ramp their electricity generation up and down very rapidly compared with other power plants such as nuclear, coal and natural gas. EP

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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।

Green page

BREB to Install 2,000 Solar Irrigation Pumps

The use of solar power to run irrigation pumps is not new in the country. But a latest move offers something new and different to the farmers: sell your off-season idle electricity to the national grid and earn an income too.

Bangladesh Rural Electrification Board (BREB) plans to install 2,000 solar irrigation pumps under the project allowing farmers to sell their unconsumed electricity to the national grid when irrigation is no longer required.

The solar power-run pumps will replace the existing conventional diesel-run machines in 21 districts under a pilot project, said officials at the BREB.

They said the BREB's move comes as part of the government's long-term aim to gradually replace the existing 1.34 million diesel-run irrigation pumps with solar across the country.

In the first phase of the project, the Cabinet Committee on Public Purchase has recently approved four separate tender proposals of the BREB to install 1,295 solar irrigation pumps at a cost of about Tk 157 crore.

"These pumps will be installed in the districts of Noagaon, Dinajpur, Thakurgaon, Gopalganj, Faridpur, Madaripur, Kumilla and Feni under different rural electricity cooperatives known as Palli Biduyt Samiti (PBS)", according to a BREB document.

BREB officials claimed that under the new system, solar electricity will have a better utilization by transmitting the off-irrigation power to the national grid.

"We have calculated that farmers normally use pumps for 115-120 days of a year for irrigation, while the rest of the year the pumps remain off when solar electricity has no use," said an official.

"So, BREB will purchase this electricity from the farmers at bulk rate to ensure a better use of the unconsumed electricity," he said.

BREB officials informed that though they will install the solar irrigation pumps at BREB's own cost under a hire-purchase arrangement, the farmers will finally be their owners by repaying in instalments over a 10-year period.

They said the BREB will bear 90 per cent of the cost and the farmers will only make 10 per cent down payment to own the solar irrigation pumps.

"BREB will provide 65 per cent as grants and remaining 35 per cent as loan," said another BREB official, adding that the distribution entity will build the required power transmission lines at its own cost to facilitate farmers' sale of the electricity to the national grid. EP

TIB Calls for Increased Investment in RE

Transparency International Bangladesh (TIB) recently urged the government to take specific measures to increase investment in the renewable energy sector to attain the target to generate 100% electricity through renewable energy sources by 2050.

The Bangladesh chapter of the Berlin-based Transparency International welcomed the government's decision to scrap 10 coal-fired power plants.

At the same time, the anti-graft civil society organization, however, expressed concerns over the government's plan to implement the abandoned projects with Liquefied Natural Gas (LNG) as an alternative to coal.

In a statement, TIB Executive Director Dr Iftekharuzzaman said, "Scarping 10 coal-based projects that were taken despite constant protest from environmentalists and the local people can be considered a wise decision of the government. We want to believe that the government will make a clear announcement to move away from coal-fired power plants in the revised power master plan." EP

Rahimafrooz Renewable Energy Wins Bangabandhu Award

Rahimafrooz Renewable Energy Limited, a leading company in the sector, has been selected for the Bangabandhu Sheikh Mujib Industrial Award 2020, said a press release of the company.

It is among a total of 23 industries which have been selected for the prestigious award being given for the first time in the country.

The press release said Rahimafrooz Renewable Energy Limited has been leading the country's renewable energy sector by illuminating millions of homes in the country through Solar home system (SHS).

This has brought unprecedented improvement in the livelihoods of the people.

Rahimafrooz has been playing a key role in installing solar irrigation pumps to facilitate crops production while it has a vital role in setting up of mini-grids in the country's remote and off-grid areas and installation of solar systems on rooftops, industrial plants across the country.

EP

Beximco, ICB Sign Trust Deed for Green Sukuk al-Istisna'a

Bangladesh Export Import Company Limited (Beximco) and Investment Corporation of Bangladesh (ICB) have signed a Trust Deed in relation to the issuance of Bangladesh's first ever Corporate Sukuk, i.e. Beximco Green-Sukuk al-Istisna'a.

Through this deed, ICB will act as the Trustee to the Tk 3,000 crore Green-Sukuk, which has recently got approval from Bangladesh Securities & Exchange Commission.

A Signing Ceremony was held in this regard at Beximco Limited's Corporate Office in Dhanmondi, Dhaka.

Managing Director of Beximco Limited, Mr. O K Chowdhury and Managing Director of ICB Mr. Md. Abul Hossain signed the contract for their respective sides.

Mr. M Rafiqul Islam, Managing Director of Beximco's solar business, Mr. Mostafa Zamanul Bahar, Executive Director of Beximco Limited and Mr. Ershad Hossain, Managing Director of City Bank Capital Resources Limited (the Issue Manager), were among the high officials present from both the organizations and Issue Manager at the ceremony.

This deed will pave the way for successful issuance of Beximco Green Sukuk al-Istisna'a. It will bring a new dawn of long-term financing for the private sector in Bangladesh.

Both the organizations agreed to work in close collaboration to make this Sukuk issuance successful.

EP

Green page

Tata Power Secures 84 MW Rooftop Solar Contract

Tata Power has won an INR400 crore (US$53.5 million) contract from utility Kerala State Electricity Board Limited to develop 84 MW of rooftop solar projects for domestic consumers in the state.

The allotted capacity includes 64 MW for individual households – with project sizes of 3-10 kW – and 20 MW for housing societies, with generation capacities of 11-100 kW.

The developer secured the contract from a tender announced by the electric company in February under Kerala's 'Soura Subsidy Scheme in [the] Domestic Sector,' which itself is in line with the Phase II subsidy program overseen by India's Ministry of New & Renewable Energy.

Tata must commission the rooftop projects within three months of receipt of orders from residential customers and, upon completion of the contract, the 84 MW of generation capacity is expected to generate 120 GWh of electricity annually, helping offset around 100,000 metric tons of CO2 per year.

The contract win was Tata's second from the Kerala utility this year, with the Mumbai-based developer securing 110 MW of solar capacity from the electric company in January. That project capacity is expected to generate around 274 GWh of electricity per year.

EP

Renewables to Create 122m Jobs by 2050

The energy transitions of 1.5°C pathway foresees the creation of up to 122 million energy-related jobs in 2050, more than double today's 58 million, a new analysis from the International Renewable Energy Agency (IRENA) shows.

"Renewable energy alone will account for more than a third of all energy jobs employing 43 million people globally, supporting the post-COVID recovery and long-term economic growth," the IRENA said recently.

Accelerating energy transitions on a path to climate safety can grow the world's economy by 2.4 per cent over the expected growth of current plans within the next decade.

IRENA's World Energy Transitions Outlook sees renewables-based energy systems instigating profound changes that will reverberate across economies and societies.

"This Outlook represents a concrete, practical toolbox to total reorientation of the global energy system and writes a new and positive energy narrative as the sector undergoes a dynamic transition," said Francesco La Camera, IRENA's Director-General. EP

Customers to Pay More for Green Gas

US natural gas producers hope climate-conscious electric utilities and gas exporters will pay a premium for what they say is "greener gas" that has been certified as coming from low-emission operations or from renewable sources such as landfills.

EQT Corp, Chesapeake Energy and liquefied natural gas firms Cheniere Energy and NextDecade Corp are among the companies considering low-carbon certifications from groups such as Denver-based Project Canary.

Gas certified as "responsibly produced" and contributing less emissions could get up to 5 per cent above market prices, or up to 15-cents per thousand cubic feet (mcf), proponents say.

So far, not many customers have been willing to pay the premium -- a problem for firms trying to sell lower-carbon versions of fossil fuels. EP

Facing Realities of Carbon Constrained World

While countries around the world are laying down their targets for achieving net zero emissions, Australia is still yet to commit to a net zero timeline.

But pressure is mounting, and according to Benjamin Heard and Jonathan Armstrong, we need to face the reality that nuclear energy should be part of the transition to net zero in Australia.

The expression net zero has swiftly become a global rallying cry that has taken a firm hold at the highest levels of policy.

It is an elegant, scientifically-robust concept, focused on an outcome – emit no more greenhouse gas than we can remove.

Given global emissions of carbon dioxide alone from combustion of coal, oil and gas are around 33 billion metric tonnes per year, the emphasis must be on the "zero".

We cannot plausibly remove or store emissions on that scale – we must in fact halt emissions on that scale.

This requires technologies, processes and systems of social organization with zero climate impact that enable people to continue to live in health, safety, security and reasonable prosperity. EP

Green page

World Future Energy Summit Confirms Exhibitors Driving Clean Energy in ME

World Future Energy Summit, the world's leading business event for clean energy and sustainability, part of Abu Dhabi Sustainability Week, has signed key stakeholder agreements with the Ministry of Energy and Infrastructure, Bee'ah and EDF Renewables.

The event, which provides the perfect platform to showcase clean energy and sustainable projects, initiatives and developments for the Middle East, returns to Abu Dhabi's National Exhibition Centre (ADNEC) as part of Abu Dhabi Sustainability Week, hosted by Masdar, from 17-19 January 2022.

By bringing together the world's most innovative technology leaders with the most powerful investors and deal makers from the Middle East and Africa, the 2022 World Future Energy Summit is an ideal and timely launchpad to accelerate sustainable development.

It is also the first opportunity since the 2020 event for the clean energy and sustainability community to meet in person to do business, network and share knowledge.

In the previous edition, the World Future Energy Summit hosted 34,000 attendees from 125 countries – including 10 heads of state – and featured an incredible 840 exhibiting companies and brands.

In 2022, World Future Energy Summit will host exhibitions and forums across clean energy and sustainability: Energy, Water, Solar, EcoWASTE, Smart Cities and Climate & Environment. It will also host Climate Innovations Exchange (CLIX) which connects global start-ups to investors, and a dedicated Sustainability Business Connect programme to help connect exhibitors to qualified buyers from the Middle East and North Africa looking for technology and services for their projects. EP

World Should Consider Additional Funding to Tackle Impacts of Climate Change: PM

Prime Minister Sheikh Hasina recently said the world community should recognize people's vulnerability, common aspirations, need for technology transfer and additional funding to tackle the impacts of climate change and the Covid-19 pandemic.

"The international community and the developed countries should play their historical responsibilities and, their moral and legal obligations," she said.

The Premier made this remark while opening the First Climate Vulnerable Finance Summit, joining virtually from her official residence Ganabhaban as she is the President of Climate Vulnerable Forum (CVF).

Bangladesh hosted this Summit organized by Finance Ministers of the Vulnerable Twenty–the V20 with Finance Minister AHM Mustafa Kamal in the chair.

The Prime Minister said 48 countries under CVF-V20 account for only five percent of the total global emission, but they are the worst victims of the man-made crisis.

In addition, the ongoing COVID-19 pandemic has added new miseries claiming lives and affecting livelihoods of millions, she said.

She continued "At this critical juncture of human history, we must forge unity and extend cooperation to face the ongoing and future crises."

In the Summit, the Prime Minister put forward five-point proposals, where she firstly pointed out that every country must pursue an ambitious target to curb greenhouse gas emissions to keep global temperature-rise below 1.5ºC.

In the second proposal, she said the developed nations should facilitate the green recovery of the CVF-V20 countries and, dedicated support is also required for reducing the cost of capital and encouraging private sector participation.

Thirdly, flow of funds must be predictable, balanced, innovative and incremental, she said, adding development partners and international financial institutions should adopt a user-friendly process of fund allocation and disbursement, and there must be synergies amongst various climate funds.

Fourth, rich nations must help the CVF-V20 countries by closing the existing financial gaps in protecting climate-induced disasters, mentioned Sheikh Hasina in her fourth proposal, adding, financial support is needed to introduce smart insurance premium subsidies and capitalization of insurance products for CVF countries.

Finally, she said, every vulnerable country may actively consider adopting a "climate prosperity plan" like our "Mujib Climate Prosperity Plan".

"I request the international community to provide all out support to realize our plans," she said. EP

Mujib Climate Prosperity Plan to Attain Prosperity

Environment, Forest and Climate Change Minister Md Shahab Uddin recently said Mujib Climate Prosperity Plan (MCPP), formulated and named after the Father of the Nation Bangabandhu Sheikh Mujibur Rahman commemorating his birth centenary, will enable to attain prosperity through resilience and green development.

He said this while presenting "the Mujib Climate Prosperity Plan" in the planetary recovery and prosperity session of the V20 Ministerial Dialogue VII in the 1st Climate Vulnerables Finance Summit inaugurated by Prime Minister and CVF Chair Sheikh Hasina.

Finance ministers of the V20, ministers and representatives from the G7 and G20 countries, heads of international financial institutions, multilateral development banks and partners were present on the occasion, a ministry press release said. EP

Alstom Showcases Hydrogen Passenger Train

The Coradia iLint, world's first hydrogen fuel cell passenger train, manufactured by Alstom, has made its debut on the Railway Research Institute's test track in Żmigród, near Wrocław in Poland.

Over two days, Alstom teams presented the train to a variety of local stakeholders, including regional operators, transport authorities, government decision-makers and leading media, in order to highlight the potential of the Coradia iLint for sustainable transport in Poland.

The showcase comes in the wake of the announcement of Poland's National Recovery Plan, which includes provisions for the introduction of 30 low-emission trains for Polish regional operators by 2026.

Alstom Coradia iLint is the world's first and only operational passenger train powered by hydrogen fuel cells.

"The Coradia iLint trains represent a huge opportunity for Poland to reduce CO2 emissions and even decarbonize rail transport. Thanks to hydrogen-powered public transport, regional operators can be beacons of modern mobility, as experienced recently in Germany, The Netherlands and Austria – that have tested and are implementing or planning to implement hydrogen trains. If Poland builds refueling stations and announces tenders for hydrogen trains, Alstom Konstal site will have all the tools necessary to manufacture such a fleet," said Sławomir Nalewajka, Managing Director of Alstom in Poland, Ukraine and Baltics. EP

Dhaka for Establishing Fund for Climate Migrants by V20

Foreign Minister Dr AK Abdul Momen has proposed to establish a fund by the V20 (Vulnerable Twenty) for rehabilitation and reintegration of climate migrants.

"The V20 may think of establishing a fund for their rehabilitation and reintegration to societies, otherwise they could be a security risk," he said.

Each year, Dr Momen said, thousands of people are uprooted from their homes and traditional jobs due to global warming, inundation and river erosion.

"These displaced people, whom we call climate migrants, need to be rehabilitated," he said while addressing the Climate Vulnerables Finance Summit recently.

The first V20 Climate Vulnerables Finance Summit was opened by Bangladesh Prime Minister Sheikh Hasina who declared 'Mujib Climate Prosperity Plan - Decade 2030' in honor of the birth centenary of the Father of the nation on that occasion.

The V20 Group of Finance Ministers released a communiqué that called for leadership by industrialized nations and cooperation to urgently transform and align the global economic system with the goals of the Paris Climate Agreement for a more robust, greener and equitable society.

Bangladesh is one of the most vulnerable countries to climate change.

Despite this, Dr Momen said, Bangladesh has emerged as a global leader in climate change adaptation. EP

Electric Car Sales Surge in Europe

One in every nine new cars sold in Europe last year was an electric or plug-in hybrid vehicle, with low-emission car sales surging even as the COVID-19 pandemic knocked overall vehicle sales, the European Environment Agency said recently.

The uptick in electric car sales caused a 12% drop in average CO2 emissions of new cars sold in Europe last year, compared with in 2019, reversing a trend that had seen such emissions increase for three consecutive years.

It was the biggest annual drop in such emissions since the EU introduced its car CO2 standards in 2010.

Of the 11.6 million new cars registered in the EU, Iceland, Norway and Britain last year, 11% were fully electric or plug-in hybrid electric vehicles, according to the provisional data. Those vehicles tripled their share of new car sales, from 3.5% in 2019. EP

20 Yrs of Innovation, Growth and Continuity for RE

Germany is the global trailblazer in the field of renewable energies and the WELTEC group is one of the pioneers in this industry.

Since the founding date on July 1, 2001, WELTEC BIOPOWER has focused and continued to develop from an AD plant manufacturer to an all-round specialist along the entire biogas value chain.

To this day, the group has been in the hands of a small group of powerful shareholders and has refrained from involving investors to this day.

Not least on the basis of this stable ownership structure, the WELTEC Group has become one of the world's leading providers for the construction and operation of biogas and biomethane/RNG plants.

The results and projects of the last two decades around the globe speak for themselves: To date, the company, which currently employs around 120 people, has planned and installed more than 350 stainless steel energy systems on 5 continents in 25 countries. EP

15m in Asia's Cities to be Affected by Sea-Level Rise

As many as 15 million people and 1,829 square kilometers land in seven Asian cities could be affected by extreme sea-level rise and coastal flooding by 2030, a recent report by Greenpeace East Asia flagged.

The report, titled The Projected Economic Impact of Extreme Sea-Level Rise in Seven Asian Cities in 2030, analyzed cities that are economic centers and are located on or close to the coast.

The seven cities are: Bangkok, Hong Kong, Tokyo, Jakarta, Seoul, Taipei and Manila.

An estimated $724 billion in gross domestic product (GDP) could be impacted due to extreme sea-level rise and coastal flooding by 2030, according to the report. The estimated GDP impact accounted ranged from 0.4 per cent to 96 per cent of each city's entire GDP.

Globally, sea levels are estimated to rise 1.1 meter by 2100, if countries are not able to restrict emissions, according to a report by the Intergovernmental Panel on Climate Change (IPCC) on September 25, 2019.

In Asia, coastal cities are at high risk from rising sea levels and intensifying storms. Approximate 600 million people, mostly live in low-lying coastal regions in Asia, are at risk of flooding due to sea level rise.

The researchers used gridded data on extreme sea-level rise, population and GDP to calculate the potential impact of sea-level rise in seven Asian cities.

Three datasets: Flooded area by extreme sea-level rise and coastal flooding caused by storm surges and high tides, population density and GDP were used in this analysis. EP

DESCO Services to be Intl Standard by 2030

Photo: Abu Sufian Ratan

Engr. Kawsar Amir Ali

Any incident of interruption would be instantaneously identified and assessed, and actions to be taken accordingly. The period of interruptions would then be greatly minimized. The feeder swapping would be automated soon. Distribution system would be progressively buried underground. Before 2030, DESCO would be able to provide customer services as efficiently as any other international power distribution standard.

The customer services and distribution system of Dhaka Electric Supply Company Limited (DESCO) are expected to achieve international standard by 2030. The main objective would be ensuring uninterrupted supply of quality power to all. In some regions of DSECO franchise, we will be ready for providing such services by 2025. We are proceeding towards that end.

Engr. Kawsar Amir Ali, Managing Director of DESCO, expressed the hope in an exclusive interview with Energy & Power Editor ***Mollah Amzad Hossain.***

Bangladesh like other parts of the world is passing through a very special circumstance over the past 15 months due to the COVID pandemic. What kind of challenges DESCO as a power distribution utility experienced over this period? What types of special initiatives are in place to encounter the challenges?

We have three areas of challenges – customer services, system operation and keeping the development projects going. We could achieve 100 percent implementation of development projects even during the pandemic. During this period, especially during the lockdown, we could ensure quality customer services to all through undertaking special arrangements. We provided services digitally and our customers now feel comfortable with on line services. Taking meter-reading was a great challenge. It was extremely difficult at the early stage. But now it has become possible to take 100 percent meter-reading for preparing bills. Excepting three Eid days it would now be possible taking meter-reading on all other days.

The major problem was uninterrupted system operation. We achieved success in that as well. Our efforts are now yielding results and the situation is improving day by day. Initiatives have been taken to increase awareness of the customers to avoid interruptions in the supply system due to throwing of clothes on power cables from high-rise buildings. Initiatives have also been taken for encouraging users to purchase dropout cutout materials from DESCO stores as use of poor quality materials are among reasons for power interruptions. Special action programs have also been launched for quality maintenance. Actions have been taken for eliminating Jumper failures. Power interruption incidents are now manually monitored. For getting more accurate information, initiative has been taken for automated monitoring.

Has there been any adverse impact of COVID-19 on revenue earnings?

The pandemic has reduced the power use in the industrial and commercial sectors. But it increased in domestic sector. The average tariff fixed for DESCO by Bangladesh Energy Regulatory Commission (BERC) is TK 8.07/unit. But DESCO gets TK 8.05/unit. During the COVID, we are actually losing TK 0.02 /unit from power sales.

Account receivables increased since the early stage of the COVID outbreak. BGMEA has requested for realizing their bills in installments. Many hospitals could not pay their bills on time. But on humanitarian grounds, we had to keep the supply going. Now all bill payments are up to date.

A recent analysis of Consumers Association of Bangladesh (CAB) evidenced that the bulk power price increased by 111 % and retail by 90% over the past 11 years. But the customer services did not improve in consistent with that.

What is DESCO's observation?

I think, there is no scope for bringing such allegations. The customer service is improving consistently. It is far better now than any time in the past. There is no loadshedding now. There are also bare minimum issues in power supply. Any consumer can access required information at any time. Providing services through apps have also started. In the near future, the consumers can also know about their bills and accounts of 12 months using apps. It is not fair blaming that the customer services did not improve along side power tariff increase.

How long DESCO would take to ensure quality power supply on uninterruptible basis like all industrially developed countries? What actions DESCO is taking to ensure that?

We are taking two-dimensional approach to address the issue. Within the present system, we have introduced dual-source supply of electricity from all 33/11 KV sub stations. But it takes about 15-20 minutes to swap switches as the system is still being operated manually. We are going for automation soon. That will make the system more reliable.

We could bring the number of overloaded distribution substations to minimum by now. By increasing their capacities, we should soon get completely out of this problem. DESCO has engaged consultants for conducting surveys in its franchise area to take distribution system underground. On priority basis, Purbachol 21 feeders of Gulshan-Banani-Baridhara and power distribution line from Hazrat Shahjalal International Airport to Mohakhali are being buried underground. These would take 5-7 years. It would be possible to inform how long it would require to take the entire system underground after we get the report of the consultant. But the reasonable target is 2030.

Tongi is the lone industrial zone under DESCO franchise area. But the power supply is not yet uninterrupted and reliable there. Some projects were under implementation there prior to the outbreak of the COVID pandemic. How long will it take for ensuring quality, uninterrupted power supply at Tongi industrial area?

The 133/32/11 KV and 33/11 KV substations have already been installed there for achieving the objective. For extracting desired benefits from these, there are some outstanding connectivity. We have sought road cutting permissions from the city corporation. As soon as we get the permission, it would be possible to complete the outstanding works within 2-3 months.

The distribution utilities have no legal obligations for ensuring efficient use of power. But DESCO also has some moral obligations for assisting government's vision of achieving energy efficiency. Is DESCO taking any special initiative for this?

Till now, DESCO has not taken any such initiative particularly for this. But in our website, we are encouraging the consumers to use power efficient. But like UJALA program of India, we are contemplating to introduce measures like supplying LED lights and other power-efficient appliances. The company would make investment and coordinate with the consumers.

Our planned initiative for creating awareness of school children about efficient use of electricity could not be launched for COVID outbreak. Books are ready for this and the program would start as soon as schools resume business as usual.

Industrial and Commercial users have started setting up rooftop solar plants taking advantage of the government introduced net-metering system. Has there been any such work in your franchise area? What are your plans to encourage the entrepreneurs?

Around 70 customers of DESCO have already installed rooftop solar taking advantage of the net-metering system. We are encouraging all our industrial consumers to go for such option.

What is your opinion about letting out power supply retail services to private companies?

When I was working in BPDB power supply retail services under two feeders in Chittagong was given to private sector under KfW project. It proved successful. The system loss came down to below 4%. The customer services also improved than that of the BPDB. In my opinion, for creating better environment of competition, such model can be replicated in the franchise areas of other distribution utilities.

Where does DESCO envisions to reach in matters of customer services and other areas by 2030? What are you doing to achieve those?

The GIS mapping of DESCO command area has been completed. It would be connected to the SCADA system as soon as it becomes operational. Any incident of interruption would be instantaneously identified and assessed, and actions to be taken accordingly. The period of interruptions would then be greatly minimized. We have already mentioned that the feeder swapping would be automated soon. Distribution system would be progressively buried underground. Before 2030, DESCO would be able to provide customer services as efficiently as any other international power distribution standard. In some areas, it would be possible to do that in only 2-3 years of time. EP

BE EFFICIENT AND SAVE THE ENERGY TO HELP CUT CARBON EMISSION

A recent webinar has made a strong case for establishment of the model for an Energy Services Company (ESCO) to achieve three goals: renewable energy, energy efficiency and conservation. What is to be done for a successful application of this model? The answers came from the experts who took part in the webinar, organized by Energy and Power magazine in collaboration with GIZ and Sustainable and Renewable Energy Development Authority (SREDA). The theme was aptly chosen "Role of ESCO to Promote RE & EE." They rightly highlighted the steps to be taken for making such a model a success in Bangladesh. This will require development of a policy framework development, technical and financial capacity building and a competitive market. Of course, there are challenges. So, it will be essential to learn from the models which are working in different countries and follow the international practices.

There are experienced organizations which are ready to extend cooperation to Bangladesh in developing the ESCO model.

The webinar has heard such assurance of cooperation companies like Energy Efficiency Services Ltd (EESL). Its Deputy Head (International) Poonam Pande said the company has adopted a number of technologies to popularize as well as commercialize the model. She informed that in the last 5-6 years, their activities have grown almost 40 times. That's reassuring. But she said next was really significant. The world, that of course includes Bangladesh, can save 41 billion units of energy through energy efficiency. This will reduce carbon emissions by 32 million tonnes.

The power point presentation by Ms. Poonam has revealed some important and use data about the use of energy in Bangladesh. Here are the stats: 47.6 percent of Bangladesh's total energy is being used in industrial sector. A study has found that 15.4 percent energy consumed in garment sector, 14.6 percent in textile sector and 13.2 percent in fertilizer factories.

Interestingly, an efficient use of energy can help save 32 percent energy in garment sector; 41 percent in steel and iron sector; 23 percent in the cement industry; 24 percent in the chemical, fertilizer and paper mills; 25 percent in the ceramics and glass industry and 18 percent in the agro and food sector. In terms of money the savings would be around TK 23 billion a year.

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If this is the reality then there should be any delay in adopting the ESCO concept in Bangladesh. Bangladesh, as we know, has been under pressure to take to renewable and clean energy making a shift from fossil fuel-based energy generation.

Power Division Secretary Md. Habibur Rahman focused well on this aspect of global energy situation. He rightly pointed out the global energy consumption was going through a transition with more emphasis on renewable energy, energy efficiency and energy conservation. "We are working on expanding the use of renewable energy in Bangladesh. Our target is to reduce carbon emission," he added. Rahman agreed that the ESCO is a proven model across the world and Bangladesh should adopt in phases.

The bottom line should be clear. In the context of more global emphasis on moving towards renewable energy in order to protect the mother earth from further pollution Bangladesh, being a climate change champion, has the responsibility in acting on this and in the right direction. There should be holistic approach to tackle this issue instead of making piecemeal efforts. Let us become more pro-active rather than reactive. We must have self confidence in our capacity. Improving the efficient use of energy can be a starting point. The concept of ESCO should thus be seen in the context of broader perspective of climate change issue.

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