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ENERGY & POWER

Overinvestment Makes GTCL Sick

- Our Cities Are Heat Traps
- Irrational Investments Put GTCL at Risk
- Ensure Energy Efficiency to Cut Cost, Stay Competitive

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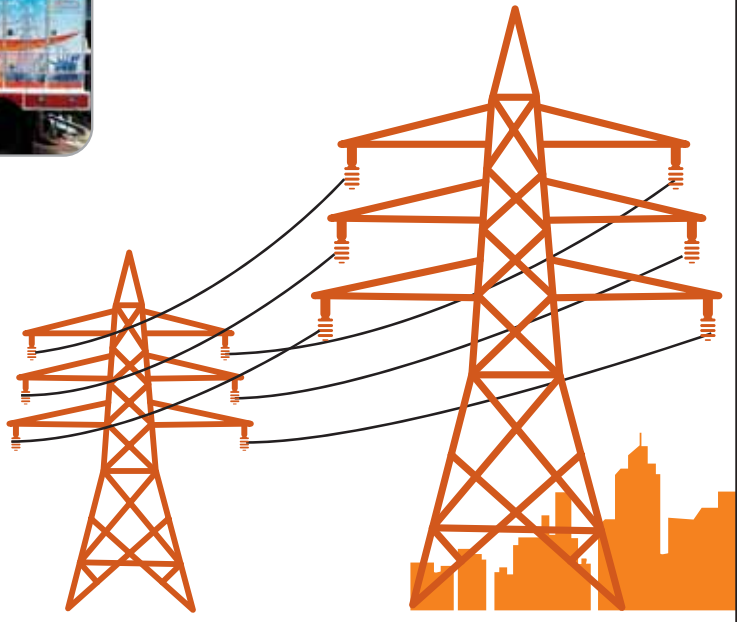

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GTCL has already become sick and would become even more sick. Such situation has been created due to imposing decisions on GTCL from the top without conducting detail network analysis. The construction of 30 inch OD Maheshkhali - Anowara transmission pipeline hurriedly was a huge mistake.
... Md Muqtadir Ali tells EP

Fortnightly Magazine, Vol 18, Issue 24, June 1-15

ENERGY & POWER

EDITORIAL

Being a licensee of Bangladesh Energy Regulatory Commission (BERC), Gas Transmission Company Limited (GTCL) must get necessary approval from the regulator. But in most cases, it has not happened. The bureaucrat-dominated company has to implement transmission pipeline expansion projects based on the government's decisions. The GTCL has already made huge investment, but is not getting expected return due to lack of adequate supply of gas. GTCL is also a commercial organization. It has to stay in business by recovering the investment with return. The company management cannot be blamed for any of the investment.

Instead of GTCL making these project proposals, the EMRD or Petrobangla had dictated the decisions. At the same time, flawed exploration policies by Petrobangla failed to enhance gas production since 2010. LNG imports could not also be increased to a level as planned. As a result, some new transmission pipelines were being operated at much lower capacity. So, the GTCL is not getting the wheeling charge as expected and gradually getting sick.

Any investment in this regard should be made based on well-analyzed forecast about the gas supply situation in the country.

highlights

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The IEA has published a report titled "Net Zero by 2050: A Roadmap for the Global Energy Sector", outlining the essential conditions to reach net-zero CO2 emissions by 2050. It is designed to show what is needed across the main sectors by various actors, and by when, to achieve the goal. ...More in Special Report

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GTCL has invested millions of dollars over the past decade to strengthen its pipeline infrastructure. Petrobangla has failed to supply gas as promised due to production shortfall. LNG import also fell short of the expected level. As a result, some major infrastructure remained idle and the GTCL's financial health is getting vulnerable.

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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.

Govt Encourages Renewable Energy: Nasrul

Power Wastage High in State-Run Industries

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AEC India Former Chairman Srikumar Banerjee Dies

Srikumar Banerjee, former chairman of the Atomic Energy Commission of India, died recently of heart attack at his residence in neighboring Navi Mumbai, officials said.

Banerjee, who was in his 70s, had recovered from COVID-19 last month, they said.

He retired as chairman of the Atomic Energy Commission and secretary of the Department of Atomic Energy in 2012.

Banerjee also served as the director of the Bhabha Atomic Research Centre (BARC) for six years till 2010.

Iraq Says $150bn Stolen Oil Cash Smuggled Out Since 2003

Iraq's president said recently $150 billion from oil had been smuggled out of the country since Saddam Hussein was ousted in 2003, as he introduced a law to fight endemic corruption.

President Barham Saleh presented a draft law to parliament to fight corruption, recover stolen funds and hold perpetrators to account, a statement read.

He called "on parliament to adopt this crucial piece of legislation, in order to curb this pervasive practice that has plagued our great nation".

Transparency International ranks the country 21st from bottom in its Corruption Perceptions Index.

"Of the close to a trillion dollars made from oil since 2003, an estimated $150 billion of stolen money has been smuggled out of Iraq," Saleh added, calling for cooperation with other governments and international bodies to recover the funds.

Endemic corruption was one of the drivers of protests that shook Iraq from October 2019 to June 2020.

Thailand Eyes New FSRU Scheme for LNG Imports

State-run Electricity Generating Authority of Thailand (Egat) and national energy conglomerate PTT are jointly studying a development proposal for a 5 million tonne per year floating storage regasification unit (FSRU) to import liquefied natural gas (LNG).

The planned FSRU is primarily expected to supply a new Egat-operated 1400MW power plant in Surat Thani's Phunphin district, reported the Bangkok Post.

Egat is preparing to start construction of the power plant pending state approval for its environmental impact assessment. The facility, which will require imported gas, is expected to start-up sometime between 2027 and 2029.

The joint study comes after Egat and PTT last May signed a memorandum of understanding around joint business development in the LNG supply chain.

The latest proposal is reportedly more commercially viable than a previous FSRU plan proposed by Egat that would have supplied a power plant south of Bangkok. That plan has since been cancelled.

Alert at Nuclear Power Plant in Spain

The Spanish nuclear safety regulator, Consejo de Seguridad Nuclear (CSN), informed the International Atomic Energy Agency (IAEA) that an alert was declared on 15 May 2021 at Unit 1 of the Trillo Nuclear Power Plant, about 80 kilometers northeast of Madrid, said an IAEA release.

CSN informed the IAEA that the alert was declared after a fire in the main electrical transformer occurred and caused the automatic shutdown of the reactor.

The fire was extinguished after 15 minutes and the alert was ended on 16 May 2021.

According to CSN, no safety systems were affected and the event, rated provisionally at level 0 on the INES scale, had no impact on the workers, the public or the environment.

RNPP Unit 2 Equipment Shipped

ZIO-Podolsk JSC (part of the machine building division of Rosatom - JSC Atomenergomash) has manufactured and shipped separate tank of the moisture separator –reheater (MSR 1200) allotted for the second power unit of Rooppur Nuclear Power Plant (RNPP).

The Separate tank is designed to collect moisture separated in MSR. It is a horizontal cylindrical vessel which consists of a body, a manhole, inlet and discharge pipes inside the device.

Internal partition with shut-off devices ensures the specified level of the separator in different operating modes of the NPP unit. The equipment weighs 41 tons and has a 50-year operating life.

Design documentation was developed by the nuclear plants division's specialists of the Department of Nuclear Engineering Equipment ZIO-Podolsk JSC, they also provide design support for manufacturing.

Previously the plant manufactured and delivered similar devices for new power units of Novovoronezhskaya NPP, Leningradskaya NPP and 2 units of Belorus NPP.

Atomenergomash JSC is a complete supplier of all the equipment for the reactor compartment and produces a significant part of the equipment for the turbine hall at Rooppur NPP with a VVER-1200-type reactor unit.

Schoolboy Electrocuted at Gafargaon

A schoolboy was electrocuted in Gafargaon Upazila of Mymensing district recently.

Deceased Mustakim, 14, was the son of Abdus Salam, a resident of Tan Para Village under Masakhali Union in the upazila. He was an eighth grader at a local school.

Local and the deceased's family sources said Mustakim came in contact with a live electric wire in the morning while collecting mango nearby the house, which left him critically injured.

He was rushed to Gafargaon Upazila Health Complex first and, later, shifted to Sheikh Hasina National Institute of Burn and Plastic Surgery in Dhaka as his condition was deteriorated.

Later, he succumbed to his injuries there while undergoing treatment.

ABM Azad New BPC Chairman

ABM Azad has been appointed as the new chairman of Bangladesh Petroleum Corporation (BPC).

The Ministry of Public Administration issued a circular signed by its Deputy Secretary Muhammad Abdul Latif recently in this regard.

Azad, who had been serving as the divisional commissioner of Chattogram (additional secretary), has been promoted to secretary before being made the chairman of BPC, a state organization responsible for supervising, coordinating and controlling all the activities relating to import, store, marketing and distribution of petroleum products in the country.

He replaces Md Abu Bakr Siddique, who has been transferred to the Bridges Division as its secretary.

Chinese Company to Set Up 400MW Power Plant in Ctg

The Cabinet Committee on Government Purchase (CCGP) on May 19 approved a total of nine proposals including one for setting up a 400MW power plant at Raozan in Chattogram by a Chinese company.

The approval came from the 18th meeting of the CCGP held virtually with Finance Minister AHM Mustafa Kamal in the chair.

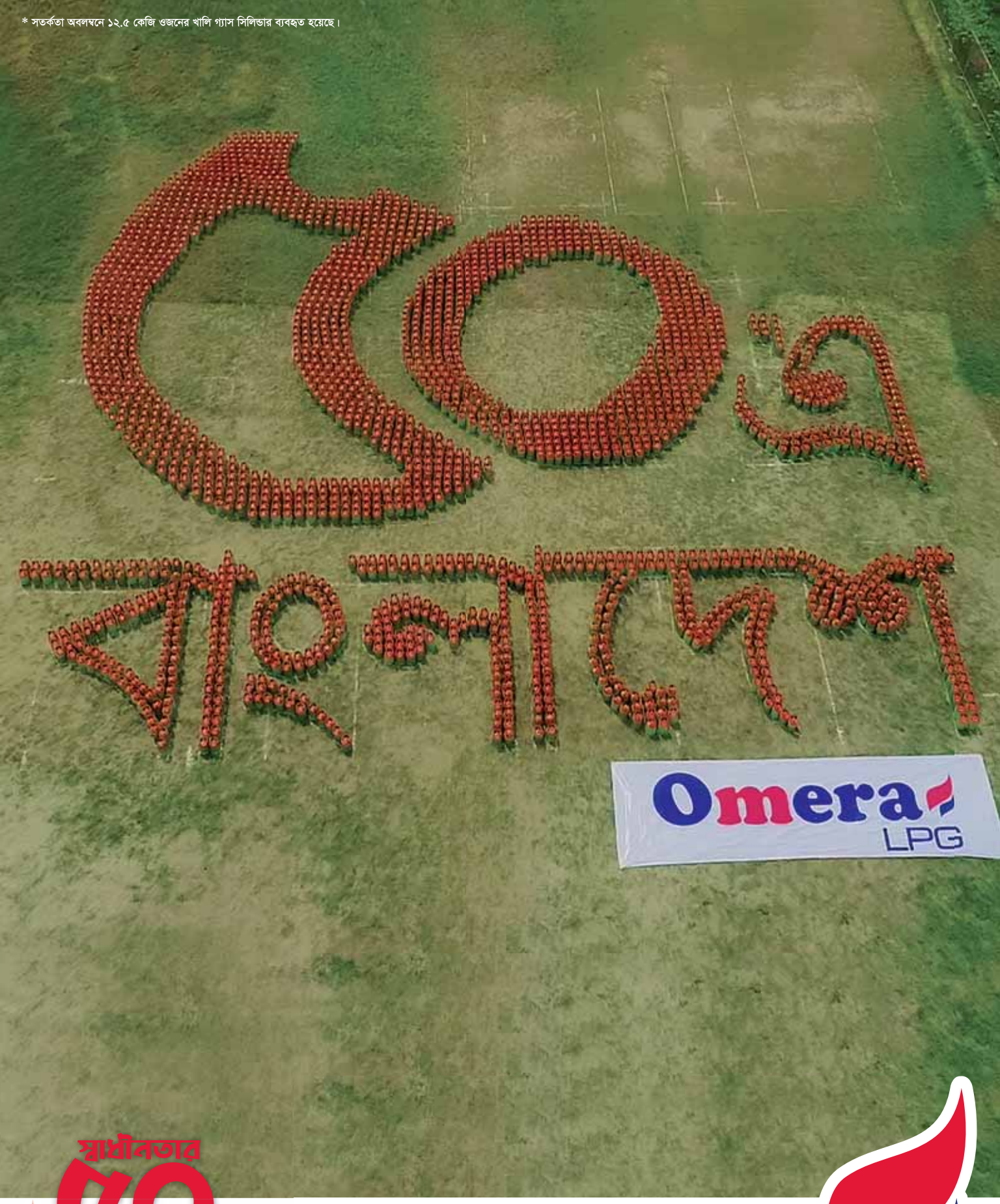
Briefing reporters virtually after the metering, Cabinet Division Additional Secretary Dr Sahida Akhter said that SEPCO-III Electric Power Construction Company Limited, China will set up the power plant at Raozan in Chattogram with around Tk 1,796.72 crore under the Bangladesh Power Development Board (BPDB).

The unit price of per kilowatt hour electricity will be Tk 1.38.

Replying to a question, the Finance Minister said the government would replace the old power plants as cost of operation of those is much higher. He also said that service delivery in this regard would be ensured in an economical way.

Meanwhile, Dr Sahida said in a proposal from the Energy and Mineral Resources Division, Petrobangla would procure some 33.60 lakh MMBtu LNG from AOT Trading AG, Switzerland with a cost of around Taka 340.62 crore where the price of per unit MMBtu would be $10.1997.

* 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।

Upcoming PSMP Must Address Overcapacity Issue: Report

The upcoming power system master plan (PSMP) should address the issues of overcapacity and expensive energy sources to bring financial stability in the power sector, said the US-based Institute for Energy Economics and Financial Analysis (IEEFA) in a report.

The report said the Integrated Energy and Power Master Plan would have to align with the government's Eighth Five Year Plan to drive zero carbon transformation.

The Eighth Five Year Plan acknowledges many of the major issues impacting Bangladesh's fossil fuel-based power system and solutions to fix them.

It says the government now has an increased focus on renewable energy, energy efficiency, and financial sustainability of the power system that has been affected due to reliance on coal and liquefied natural gas (LNG).

Bangladesh Power Development Board (BPDB), however, says the government will decide whether or not it will stop using coal and LNG.

"The government is still considering whether to reject coal projects or not. If it decides to reject coal projects, we must address this in the upcoming master plan," said an official.

The country's total electricity generation capacity is 25,227 megawatts at present while daily demand is hovering around 13,000-13,500 megawatts in this hot summer. Power supply drops to 8,500 megawatts in winter due to low demand.

Titas Snaps 61,000 Illegal Gas Connections

The state-owned Titas Gas Transmission and Distribution Company Limited has disconnected as many as 61,000 illegal household gas connections and more than 100 commercial connections in Narayanganj and Munshiganj in three months.

In their drives, they also removed 93km gas pipelines used for illegal use in commercial and residential areas in the two districts, according to a press release.

Meanwhile, State Minister for Power, Energy and Mineral Resources Nasrul Hamid has directed the officials concerned to remove illegal gas and power connections quickly.

At the secretariat, he also urged the officials to take effective steps for realizing outstanding bills.

Khulna Woman Dies in Gas Cylinder Blast

A 40-year-old woman was killed in Khulna city recently as the gas cylinder in her house exploded.

The deceased, identified as Shraboni Begum, was from the city's Iqbalnagar area, confirmed Mujibur Rahman, official at the Tutpara Fire Service and Civil Defense.

He said that a gas leak from a cylinder erupted in flames when the victim was cooking in the kitchen at around 12pm.

Shraboni, who was alone in the house at that time, got locked inside and could not escape as the fire engulfed the house within a few seconds on the second floor of a building in Iqbalnagar's Karimabad Colony, he added.
Five units of fire service rushed to the spot and it took them 20 minutes to put off the flames.

Shraboni suffered severe burn injuries and her husband Shahidul Islam was not at home at the time of the incident.

The firefighters rescued the woman and rushed her to Khulna Medical College Hospital where she was declared dead upon arrival, Mujibur added.

Overinvestment Makes GTCL Sick

Saleque Sufi

Gas Transmission Company Limited (GTCL), a midstream company of Petrobangla, has invested millions of dollars over the past decade to expand and strengthen of its pipeline infrastructure. It had taken the expansion projects after getting necessary assurance from Petrobangla about gas supply. However, Petrobangla has failed to supply gas as promised due to production shortfall in the country. The country also failed to import liquefied natural gas (LNG) at the expected level. As a result, some of the major new infrastructure are being run well below their designed capacities, and expected rate of return on investment could not be achieved from the projects allegedly due to adopting plans with top-down approach. The GTCL investment could be compensated with appropriate increase of wheeling charge. The over-investment has made the GTCL's financial health vulnerable.

The present state of gas exploration does not indicate that there would be a rational enhancement of production soon. Rather, the own gas production would continue to decline. The LNG import may also not be increased in the next 4-5 years. In such a situation, the GTCL would become sick. The gas transmission system has been extended all the way to Khulna via Khustia and Jessore from Bonpara. But the pipeline remains idle. Expensive Bibiyana-Dhanua pipeline has been constructed in addition to pipeline compressor stations at Muchai, Ashuganj and Elenga. A parallel Ashuganj-Bakhrabad pipeline has also been built. But none of these facilities are being utilized anywhere near the designed capacities. In such a situation, the gas transmission system is being extended to Rangpur from Bogura with no guarantee for additional gas supply, raising eyebrows of experts.

Being a licensee of Bangladesh Energy Regulatory Commission (BERC), GTCL must get necessary approval from the regulator. But in most cases, it has not happen. The bureaucrat-dominated GTCL has to implement the government's decisions. In recent times, the GTCL constructed two pipelines from Moheshkhali to Anowara (30 inches outer diameter and 42 inches outer diameter) to evacuate RLNG. It also constructed 36 inches Faujdarhat-Feni-Bakhrabad pipeline for transmission of RLNG to the load centers. In future, another large diameter pipeline would be essential as additional RLNG would come from Matarbari and gas from deep water prospects, if any.

Unbundling of Vertically Integrated Gas Value Chain

For ensuing smoother operation and ensuring gas system security, it was decided in mid-1990s to unbundle vertically integrated gas value chain. The development partners like the World Bank and Asian Development Bank (ADB) have long been suggesting to go for it. The initial concept was formation of National Gas Transmission Company Limited (NGTCL). It was thought rightly that a separate company would be there as a mid-stream in the gas value chain for evacuating quality gas at high pressure through pipeline from production companies and then deliver to the regional distribution companies at designated custody transfer metering stations. All the gas pipelines would operate above certain pressure and all associated metering and regulating stations were to be part of it. But the leading gas utility companies like Titas Gas Transmission & Distribution Company Limited (TGTDCL) and Bakhrabad Gas Systems Limited (BGSL) have been strongly opposing this initiative all along. Finally as a compromise, it was decided that the high-pressure pipelines and terminal stations as part of the national gas grid would be owned and operated by the new entity.

The GTCL commenced business with the operation of Koilashtila-Ashuganj 24 inches OD North South Gas Pipeline and 6 inches OD Condensate pipeline, Ashuganj Gas Manifold Station (AGMS) and Construction of Ashuganj-Bakhrabad gas transmission pipeline in mid-1990s. Eventually it took over Bakhrabad-Chittagong Pipeline (including Faujdarhat City Gate Station), Bakhrabad-Demra Pipeline (including Demra CGS), Ashuganj-Elenga Pipeline from BGSL and TGDCL. The GTCL also constructed Elenga to Baghabari gas transmission pipeline along the Bangabandhu Jamuna Bridge. The transmission system was eventually extended to Bogura from Hatikomrul and then to Rajshahi.

In early 2000, Petrobangla had planned for development of Bonpara-Ishwardi-Bheramara-Khulna pipeline with ADB finance. Petrobangla had assured GTCL of supplying gas. With the World Bank funding, another 36 inches pipeline was built from Bakhrabad-Siddhirganj to meet the growing demand in Meghnaghat area. GTCL also constructed Ashuganj-Monohardi pipeline and eventually extended it to Elenga. Using Asian Development Bank (ADB) finance, the Dhanua-Savar pipeline was also constructed.

Gas transmission pipeline work in progress File Photo Dipon Group

How Additional Infrastructure Affected GTCL?

Every new critical infrastructure involves significant investment. In approved Development Project Proforma (DPP), every project mentions about Internal Rate of Return (IRR) and Economic Rate of Return (ERR). If one looks

back in retrospect would find that most of the above pipelines built after 2005 achieved the IRR. But the situation got worse from 2010. The GTCL planned to set up three pipeline compressor stations utilizing ADB finance. But EMRD gave in to Chevron pressure by letting Chevron construct one GTCL-mandated compressor station under cost recovery mechanism but without waiting for the GTCL to implement the project. GTCL was also made to construct Bibiyana-Dhanua pipeline and, at the same time, compressor station at Ashuganj and Elenga. Another pipeline from Ashuganj to Bakhrabad was also unnecessarily built. None of these pipelines or stations are being operated anywhere near their respective capacities.

The GTCL management cannot be blamed for any of the projects. Instead of GTCL making these proposals, the EMRD or Petrobangla had dictated the decisions. At the same time, flawed exploration policy by Petrobangla failed to enhance gas production since 2010. The BAPEX-only policy for onshore exploration proved counter productive. Petrobangla has also failed to initiate offshore exploration despite successful resolution of the maritime boundary disputes with India and Myanmar. Even the potential resources of Chittagong Hill Tracts could not be exploited.

One of the major aspects of GTCL for efficient operation of its facilities was compromised. SCADA could not be made fully operational. Supervisory control cannot be done. GTCL cannot operate compressor stations with its own people and has to rely on EPCM contractor. GTCL had to dedicate most of its technical resources in the construction of infrastructure. These in a way have defeated the vision for the creation of a company for efficient operation of gas transmission. It is also alleged that due to lack of oversight functions, corruptions also took place in project implementation and quality compromised in construction.

Gas transmission pipeline work in progress File Photo

Gas Transmission Planning Requires Technical Decision

Gas transmission planning is purely a technical decision. What should be the size and capacity of the pipeline and whether there should be loop line or compressor stations built are to be decided by applying technology. But it has been alleged that GTCL has been dictated in these areas as well in most cases over the past decade. If these were left exclusively on GTCL, some duplicate investment could be avoided and a large section of gas transmission capacity would not remain under-utilized.

What Needs to be Done?

GTCL has already made huge investment without achieving planned rate of return. Expansion of gas transmission network across Bangladesh is a policy decision. But GTCL is also a commercial organization. It has to stay in business by recovering the investment. In TGTDCL franchise, different categories of gas consumers are getting gas supply. But for inadequate gas supply, the government for almost a decade now kept almost all categories of new gas connections suspended in expanded areas of the Northern and Southern regions of Bangladesh. Now the government needs to take a decision again whether new gas connections to certain categories of industrial consumers can be resumed. In the Southern and Western regions, gas connection for industries both for process industries and captive generation (co-generation and tri generation) must come under review. The government must let businesses to grow in the otherwise energy deprived southern and western regions for ensuring balanced economic development of the country.

The Energy and Mineral Resources Division and Implementation Monitoring and Evaluation Division of the Ministry of Planning should also review the DPP of projects implemented by the GTCL over the past decade. They should make sure in future that such projects are not taken up. BERC should also step in as it is also their responsibility to ensure that the licensees make rational investment. It should be provided with an interim additional wheeling charge to recover investment. Petrobangla must go all out for exploration of new gas resources at offshore and onshore so that the GTCL infrastructures can be effectively utilized. In the business as usual case, own production would continue to deplete creating gas crisis. Hope good sense prevails and financial health of a growing dynamic company like GTCL is cured. EP

Our Cities Are Heat Traps

Syed Mansur Hashim

Bangladesh has been identified as being one of the countries that is more vulnerable to climate change. Yet, that does not explain fully the gradual increase in temperatures of the major urban centers in the country. According to World Bank data, "the urban population of the country grew from 22.5 m in 1990 to 60 m in 2019". This increase in population has also resulted in the physical expansion of a city that has come at the cost of forest and agricultural lands. This is a trend that is not only restricted to the capital city, but also affected other major urban centers, and has been subject to a study carried out by researchers from Curtin University, Australia titled "Surface urban heat island intensity in five major cities of Bangladesh: Patterns, drivers and trends" that spanned five large cities, namely Dhaka, Chattogram, Khulna, Rajshahi and Sylhet.

What was found that Dhaka's daytime mean temperature had increased from 2.2 degrees Celsius in 2000 to 3.18 degrees Celsius in 2019; the equivalent time period values for Chittagong are 1.8 degrees Celsius and 2.28 degrees Celsius, indicating an increase of 0.48 degree Celsius during that 20-year period. Dhaka has experienced the greatest increase in daytime surface urban heat island intensity, or, SUHII, (0.98 degree Celsius), whereas Rajshahi has had the least (0.04 degree Celsius). So, what is driving this change? Obviously not simply the demographic shifts from rural to urban, rather the unplanned urbanization of major cities is also playing a major role in this heating up process. . This subject was also covered in Energy & Power Magazine's regular 30 minute

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webinar tiled 'Unplanned Urbanization & Heated Cities" that was aired on May 25.

Mega cities around the world have been termed "heat islands". While cities in more developed countries than ours are planned keeping in mind a few things like social/economic/environmental aspects. The same unfortunately has not been true for Dhaka. It was never designed to be the home for nearly 10% of the country's population, nor could planners foresee massive climatic changes over the last decade that has resulted in some 1.0 million new economic migrants moving to Dhaka each year. We should have had a standard 20% green area – that has over the years come down to 8%. Our failure to follow the building code and the failure of authorities to enforce that code on the real estate sector has meant the demand for housing for one of the highest densely populated cities (around 23,000 people living in 1 square km) has taken precedence of utilization of space, at the cost of environmental and social aspects of city buildings. In the past, roads – both large and small had a greenery footprint, which is not there today, because buildings are literally built wall-to-wall. That has had another adverse effect. As we beautify our city with concrete roads and pavements, rainwater cannot percolate down to replenish the water tables underground. We are in the process of systematically "un-greening" our city of parks, open grounds and water bodies. While Ramna Park remains intact till now, there is talk that a portion of Suhrwardy Park being turned into a parking lot. Area of water bodies needed is now 1/3rd of what is needed (according to the DoE).

As cities heat up, air conditioners (ACs) cool our homes, offices, shopping malls, etc. That comes at a cost. While the interior temperature of our buildings are brought down, we are blowing out exactly the same heat out into the atmosphere. When one computes the hundreds of thousands of air conditioners (ACs) dotting the city working full blast, we people, with our lifestyle choices, are actually a big part of the problem of "heated" cities. With better standards of living we have become soft. Around 30 years ago when electricity was a luxury for Dhaka residents and when blackout in the evening lasted for hours, we lit up candles and used hand fans to cool ourselves. Today, we have diesel generators in residential buildings that go into operation the moment electricity goes off. These generators also generate a lot of heat, emit much pollution that ends up in the atmosphere. It is 2021, and we still don't have a workable public transport system. Consequently, the number of private vehicles in our cities have gone way past what the roads were built for. Traffic has slowed down to a snail's pace (which

according to the World Bank, costs the economy approximately US$2 billion in lost business) and all these hundreds of thousands of vehicles sit for hours on end in endless gridlocks – emitting carbon dioxide and of course the heat from ACs.

Heat trap comes in many forms and guises. As the city goes vertical, i.e. buildings are now shooting up to 12-15 stories, many are adorned with reflective glass panes. Whilst aesthetically speaking it may be pleasing to the eye, these structures are contributing to the "heat trap" process. Some of the heat is absorbed, but a portion of it is reradiated back into the atmosphere, raising the heat level. The cumulative effects of unplanned urbanization, faulty building design, lack of effective enforcement of environment laws and building codes are aiding in raising the temperature of our cities.

The reality is that economic considerations have taken total precedence over everything else. While it is easy to point the finger at unplanned construction and the grabbing of water bodies, how many of us actually think about what we, as residents of this megacity, are doing at a very personal level to the detriment of the temperature outside. If we look at the number of cars having ACs over the decades, things really took off in the mid-1990s. The import of reconditioned vehicles was made easy and taxes were not so high. Over only a few years, the personal vehicle became the dominant mode of transportation on our roads. It also became a social status symbol. As one climbs the social ladder with expanding personal income, one car is not enough anymore and we have multiple cars with ever higher engine displacements, many with not one, but two ACs per unit of vehicle. It would be interesting to have a comparative year-on-year study on emissions by vehicles and the effect of CFCs has on the temperature. Similarly, we have grown so very cozy with ACs at household-level. Whilst the outside temperature may be hitting 30 degrees Celsius, we need our homes to be a pristine 20. This reduction of 10 degrees Celsius inside is emitted outside. Multiply this one single AC's heat emission by hundreds of thousands to get a bigger picture, because we are a city of about 16 million people and we do have that many ACs, if not more.

The skyline of Dhaka city File Photo

The problems are many. But nothing much will change unless there is greater awareness. Changing attitudes remain the hardest thing to do. Because the majority of Dhaka's population are economic migrants. The earnings from Dhaka are to a large extent repatriated to the respective districts (for investment or to support families back home) where these migrants come from. Hence, what does it matter if the city gets heated or not? It is not home. It is simply a place where people come to earn a living. This is best exemplified when we see anywhere between 5 to 10 million people make the pilgrimage back to the "village home" during Eid festivities. Had Dhaka been their home, they wouldn't be leaving it as if it were an exodus. The solution to this problem is greater connectivity. Kolkata, the capital city of West Bengal, also has these economic migrants. But it also has a good railway system running shuttle trains to outlying areas – in and out of the city proper. Hence, hundreds of thousands (if not millions) of workers and office-goers come in to work every day, and then they leave every day for the suburbs – they do not live in Kolkata city.

Our policymakers are great at making excuses for not being assertive in enforcing legislature enacted. Experts may point out the problems, but the advice keeps falling on deaf ears. And while all that is going on, the mercury in the cities keep rising. Why can't we revitalize our railway networks so that people can live in Tongi, Savar and other areas adjoining Dhaka proper? They may commute to-and-fro every day, as do in other cities in other countries of the region. Why can't laws take precedence over profits, so that builders can be handed hefty fines, raising the cost of doing business high enough for them to take heed? Why can't residents be made to pay more taxes if they choose to use more than one vehicle per household? The choices are endless for policymakers, they only have to look at other Asian megacities and learn how those city planners grapple with their heat emissions and educate city residents on taking ownership of the cities they call home.

EP

Syed Mansur Hashim;
Deputy Editor

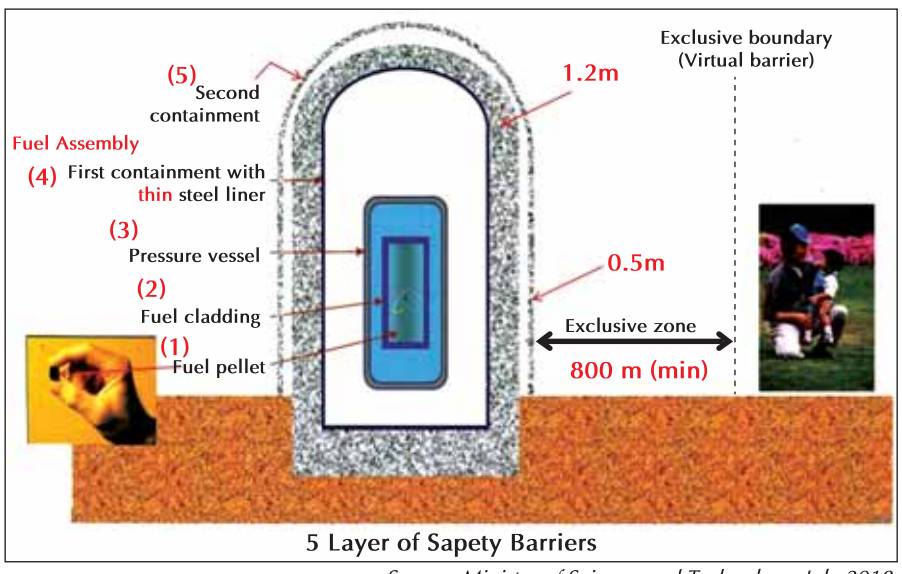
RNPP: The Safety Issues

AKM Monowar Hossain Akhand

The Rooppur Nuclear Power Plant (RNPP) is the largest energy project in Bangladesh. It comprises of two units – each having power generation capacity of 1,200 MW. Prime Minister Sheikh Hasina inaugurated the pouring of the first nuclear safety-related concrete at unit-1 and unit-2 respectively on 30 November 2017 and 14 July 2018. Bangladesh Atomic Energy Commission (BAEC) prepared the safety report of the plant at international standard and the Bangladesh Atomic Energy Regulatory Authority (BAERA) issued the concrete pouring license on the foundation of reactor plate, unit-1 on 18 February 2018, and unit-2 on 08 July 2018 after examining the safety report. The RNPP unit 1 and unit 2 will be producing electricity on experimental basis at the beginning of 2023, and finally in 2023 and 2024 respectively. Presently, the construction works of RNPP for the development of containment walls, outer walls, inner walls, reactor pit walls, core catcher placement foundation and core catcher walls are in progress with due compliances of the design and other regulatory requirements of BAERA.

Over the last several years, Bangladesh has made a significant progress in power sector. The government has undertaken various projects to increase the generation of electricity to support the economic development. Bangladesh has fixed generation targets of 24,000 MW, 40,000 MW and 60,000 MW in the year 2022, 2030 and 2041 respectively. The Power System Master Plan (PSMP) aims to ensure supply of electricity for all citizens and economic sector at affordable costs through a well-balanced generation environment. About 70% of the power generation will be covered by coal and gas and the remaining 30% by nuclear, hydropower, renewable and imports from neighboring countries. The RNPP has taken all necessary safety measures with latest technologies that are expected to cover all possible disasters. The generation of electricity by using nuclear power will make a revolutionary change in the economic sector and improve the people's living standard.

Five Layers of Barriers Against the Radiation Exposure to People and Environment



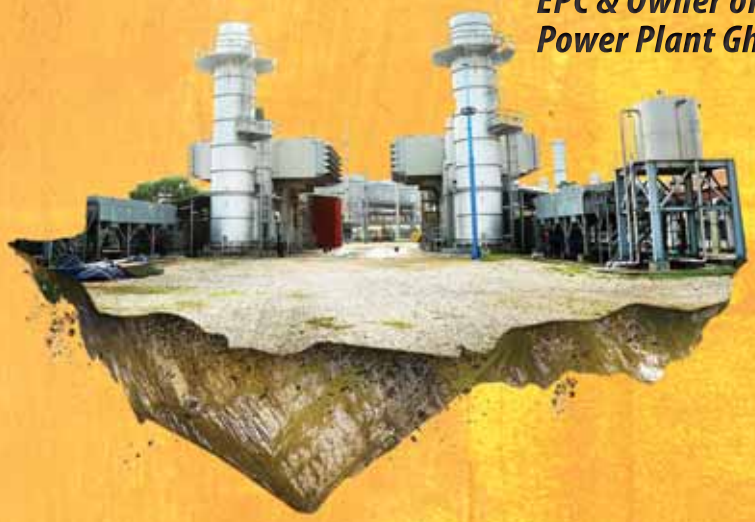
Source: Ministry of Science and Technology, July 2018

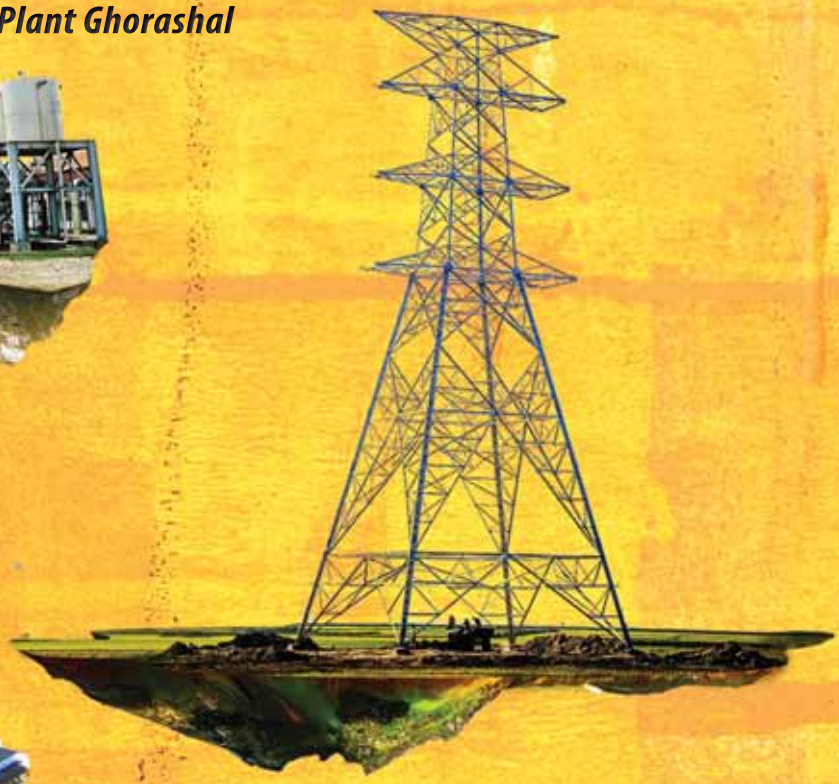
Development of RNPP

The importance of nuclear power plant in Bangladesh is now well recognized. Nuclear power is environmentally friendly and cost effective option. In this process, there is no emission of carbon-di-oxide, a major factor for global warming and climate change, nor produces any harmful chemical that causes disasters like acid rain, or depletion of ozone layer. That is why this plant is safe.

Nuclear power plants involve very low fuel cost compared to fossil fuel plants. The new generation nuclear reactors are more reliable and efficient than the earlier ones. Bangladesh is introducing the new technology in RNPP for ensuring more safety. Generation of electricity from nuclear power is a dependable op-

EPC & Owner of 78.5 MW
Power Plant Ghorashal

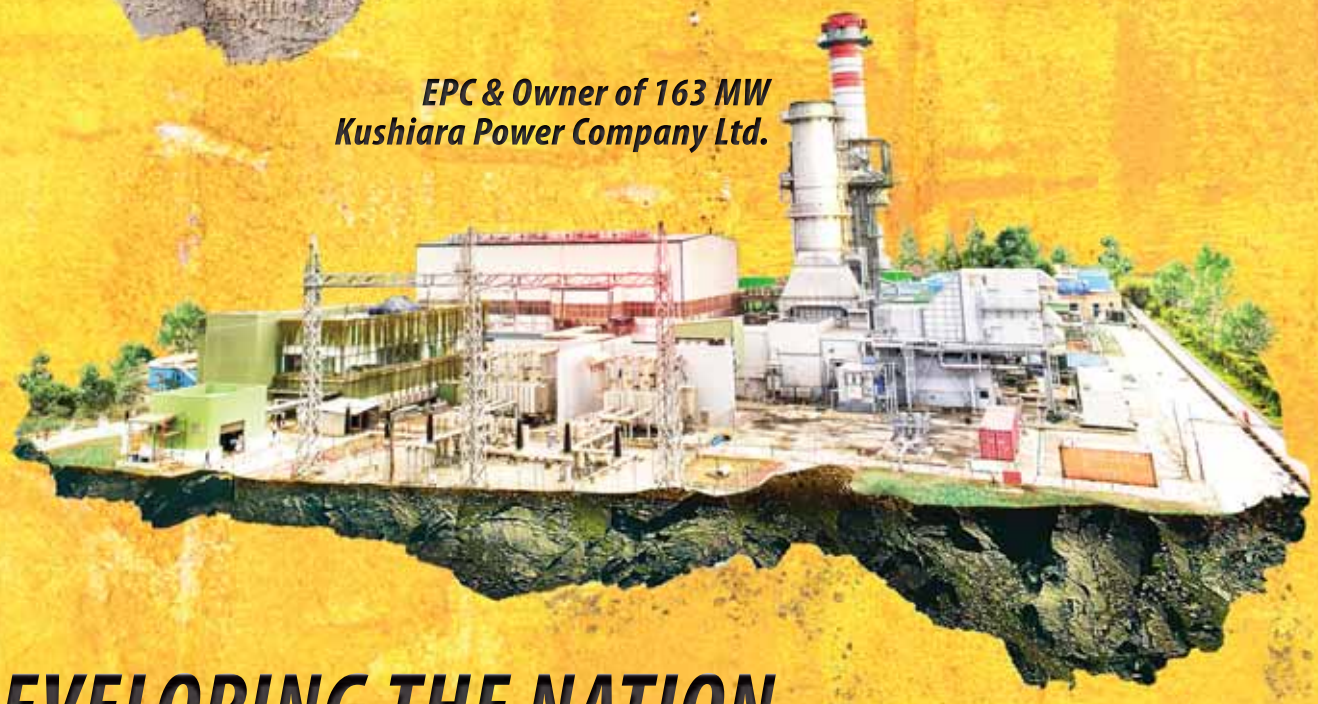




EPC of Sreepur
163.2 MW Power Plant

Aminbazar to Gopalganj 400 KV
73.5 km Transmission Line

EPC & Owner of 163 MW
Kushiara Power Company Ltd.



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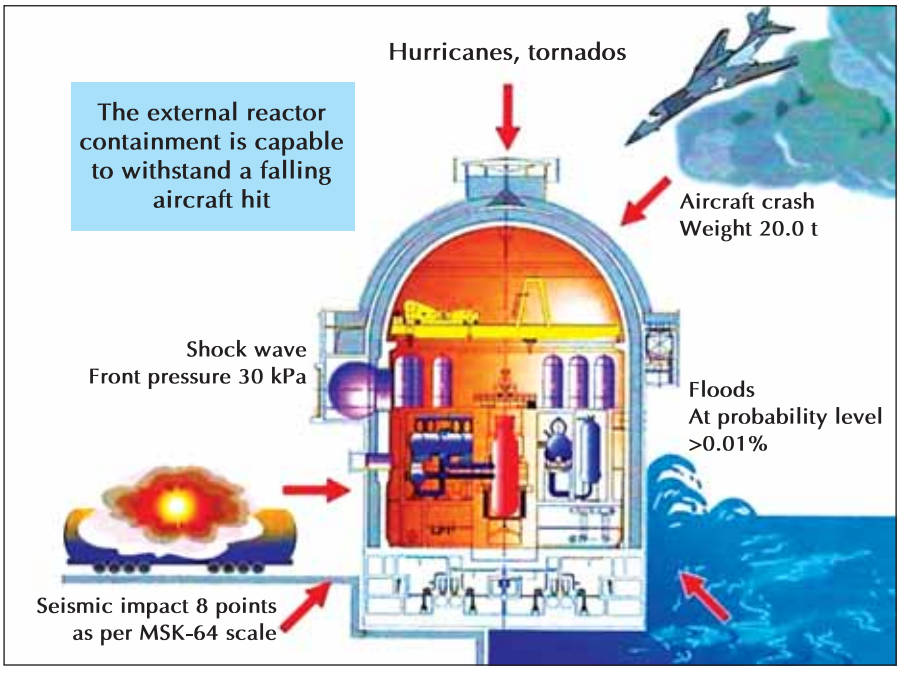
tion. In this process, a stable and easily changeable fuel Uranium (135U) is used. The amount of free energy contained in nuclear fuel is million times higher than that of the chemical fuel like gasoline. With nuclear power plant, it is possible to generate more than 2000 kWh electricity by using only one gram of Uranium. Whereas, several tonnes of coal is required for the same. Moreover, the cost of electricity generation in this process is much lower than other conventional options.

Bangladesh has created the legislative framework through a comprehensive nuclear law "Bangladesh Atomic Energy Regulatory Authority Act 2015" that empowers the authority with the power, independence and resources it needs to carry out its function and responsibilities. The authority, BAERA, is developing the licensing process, performing regulatory supervision of project activities at different phases, and ensuring the highest standards of safety and security measures. The RNPP has started developing for its necessary manpower through the cooperation of international partners and contract signing country by education and training programs abroad to make available trained manpower during the commissioning and operation phases.

Bangladesh signed an intergovernmental agreement (IGA) with the Russian Federation for cooperation concerning the construction of two VVER-type reactor power units at Rooppur on November 02, 2011. The scope of the IGA included design, construction, installation, start up, commissioning and warranty operation, and also financing, fuel supply during the entire operational period, take-back of spent fuel to Russian, education and training of RNPP personnel, cooperation for operation and maintenance of the plant, management of radioactive waste and decommissioning of the plant and other services as required. Under the provision of the IGA, the governments of Bangladesh and Russian Federation signed an intergovernmental credit agreement (IGCA) of US$ 500 million state export credit on 15 January, 2013 for financing the preparatory stage construction activities. Bangladesh also signed another IGCA amounting $11.385 billion on 26 July 2016 for financing the construction of the plant.

Design parameters of Rooppur NPP for Natural and Man-made Impacts



Safety Features

The RNPP is one of the latest addition to the Russian VVER (Water-cooled Water-moderated Power Reactor) reactor plant of AES-2006 (VVER-1200, V-392M) technology by adopting the site specific safety features. The design of unit 1 and unit 2 reactor is developed based on VVER-1200 reactor plant with elaboration of designing, equipment manufacturing, construction and commissioning experience of Novo Voronezh NPP-II and experiences in operation of the most recent VVER reactors in Russia and abroad. The high quality of engineering solution and design documentation has been developed based on application of modern Russian rules, regulations and standards, recommendations of international agencies, domestic regulatory requirements, and site-specific seismic and climatic conditions.

Safety Layer

The design of RNPP meets the high level of safety standard. The lessons learnt from the major nuclear accidents of Chernobyl, and Fukushima were incorporated in the design by defense in-depth principle. Reliable five layers of barriers prevent the radiation exposure to people and environment even in the worst-case scenario, as shown in Figure.1.

The safety system of RNPP is based on active safety systems with both normal and emergency power supply. To prevent severe accidents, or to mitigate their consequences, passive safety systems are foreseen which function without the involvement of NPP personnel, and do not require any power supply. In case of a severe accident with extreme power loss due to grid failure (like Fukushima NPP accident), the RNPP will remain safely automated shut-down for 72 hours without the involvement of external assistance and off-site power supply. The active and passive safety systems with 2-4 times effectiveness and diversity will make this plant a really safe one. The active safety systems includes emergency and planned cool down protection, high pressure emergency injection, emergency boron injection, emergency feed water system, emergency gas removal, primary and secondary circuit overpressure protection, spray system, containment isolation, intermediate circuit and service

water supply, ventilation and essential power supply system. The passive safety system includes quick boron injection, emergency core cooling, hydro-accumulators, passive containment heat removal, passive steam generator heat removal, hydrogen concentration monitoring and hydrogen passive recombination, inside containment, molten corium trap and cool down system. There will also be emergency power supply and standby diesel power system.

Safety Systems from Natural and Manmade Disasters

The RNPP has specific safety features with detailed design that are safe from natural and manmade disasters, and any other disastrous situation. A systematic safety measures have been taken in RNPP according to the plant site safety design, i.e. seismic design parameters, and other parameters relating to natural disasters: cyclone, tornado, floods, temperatures, winds, any meteorological constraints and manmade hazards.

A systematic engineering-geological study completed at the project site. Necessary equipment are installed and the aero-meteorological model, the engineering-hydro-meteorological model, and the seismic-geotectonic models have been developed. The design of seismic hazard measures provided the seismic design parameters: average safe shutdown earthquake intensity 8 points on MSK-64 scale (peak acceleration 0,33g) and average design basis earthquake intensity 7 points on MSK-64 scale (peak acceleration 0.17g).

Based on comprehensive hydrological, hydraulic and morphological studies of the site, the scenario of the maximum probable flood formation has been determined. In prediction of the MPF scenario, the combination of all possible hydrological events were taken into consideration with probability of 0.01% (with frequency once per 10,000 years): (1) simultaneous flood peak occurrence including precipitation on all major river basins, (2) Bay of Bengal water fluctuation impact, (3) additional precipitation and sea level rises due to global climate change impacts, and (4) a failure of the Farakka dam located higher up the river Ganges (Padma).

RNPP construction work in progress Photo: Rosatom

The engineering protection against all possible flooding is provided by the design. In addition, the catch drains are designed for removal of surface and overflow waters from the lower relief areas to ensure normal operation of the plant related to I-III safety categories. The RNPP site protection design is also developed from the possible river erosion of Padma.

The project site is located in tropical climate zone. The detailed engineering and climatic survey on extreme winds including a tornado and extreme temperatures were performed. The observed air temperature: max: +44°C and min: +3.5°C. Based on the study of the climatic conditions, the design parameters of the ventilation systems, plant cooling capacity, fluid coolant consumption parameter, supply pipelines diameters, air conditioning systems, architectural and planning concepts of the rooms have been designed. With due consideration of the quality and physio-chemical properties of the water of the Padma River with water level, the chemically demineralized water preparation system, structure of the cooling system (two cooling towers per unit), and auxiliary power supply system have been designed.

The feasibility evaluation, site engineering survey and environmental impact assessment have justified the techno-economic feasibility of the project and corroborate the site for nuclear power plant construction. The outcomes of these studies also refer for the site location, safety infrastructures, and its protection from any adverse natural or manmade effects.

Conclusions

The construction of this power plant is going to enhance the development of social, economic, scientific and technological potential of the country and promoting Bangladesh to become a member of the nuclear power producing countries. The plant is using similar technology to Kudankulam NPP in India. The RNPP is expected to provide not only low cost electricity but also provide clean, reliable electricity 24X7 basis so that people can meet their daily basic needs.

The plant will play an important role in providing a stable baseload and ensure energy security in Bangladesh. The Rooppur Nuclear Power Plant is a milestone in the national development program.

EP

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Ensure Energy Efficiency to Cut Cost, Stay Competitive

Experts suggest apparel, textile industries

EP Report

Experts at a recent webinar have stressed on ensuring energy efficiency in the country's apparel industry to make the highest export earning sector competitive in the global market. They also warned of losing market to countries that have already reduced costs through ensuring energy efficiency in their production facilities, and would be able to supply apparel items at a price lower than that of Bangladesh. The experts suggested the local industry to spearhead the energy efficiency measures in the readymade garment and textile industries by now to minimize energy cost as well as the production cost.

Energy & Power magazine with support from SREDA and GIZ organized the webinar titled "Working Group Concept to Promote Energy Efficiency in Garment and Textile Industries" on 22 May 2021. EP editor Mollah Amzad Hossain moderated the webinar.

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Taking part in the discussion, Habibur Rahman, Secretary of Power Division, emphasized on conducting a study to assess the position of Bangladesh in the context of energy and power usage in the garment and textile sector. He said that such study would help determine what Bangladesh would need to do in achieving the energy efficiency.

He also mentioned that the garment and textile industries contribute 85% to our export earnings. Many factories of the sector are already working on energy efficiency and many others are yet to start working. However, all industries should harness the low-hanging fruits sooner rather than later. To ensure the sector's competitive advantage in the international arena, there is no alternative to that approach. He stressed on the need for free flow of data and information in this regard. As an MOU has been signed between SREDA and BGMEA for broader collaboration on sustainable energy, i.e. energy efficiency and renewable energy, targeting the garment industries, the foundation for optimization of energy use is set. The Power Division could also act as a facilitator for the sector on its journey towards energy efficiency.

SREDA
Sustainable and Renewable Energy Development Authority

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Md Habibur Rahman

Faruque Hassan

In his keynote presentation, Shafiqul Alam, Senior Advisor of REEEP II, GIZ, said the garment and textile industries are integral parts of national development as they contribute more than 10% to the Gross Domestic Product (GDP) of Bangladesh. On energy front, garments and textile industries together consume 3,740 KTOE of primary energy per annum which is almost one-third

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of the total primary energy use in the country's industries. Technical studies substantiate that the garment and textile industries combined can save 1,159 KTOE of primary energy from the business-as-usual scenario if energy efficiency and conservation measures are applied.


Ijaz Hossain


Mohammad Alauddin


Shafiqul Alam


Markus Bissel


Mohammed Zahidullah


Mohammadi Rehan Idrisee


Nurul Islam


Khondkar Abdus Saleque

However, there are numerous challenges to realize the benefits of energy efficiency, including technical capacity gap of industry personnel and lack of communication between different departments of an industry etc. To address these challenges, Small Energy Efficiency Working Group (SEEWG) has been formed taking officials from technical, planning, procurement and finance departments, and have been piloted in three industries during August-November period of 2020. Each SEEWG has 5-6 members and is being coordinated by one of the members in conducting energy audit and economic analysis, preparing action plan and presenting results to the top management. The concept is easy to implement within a short span of time. This initiative was part of GIZ's regional energy efficiency program under its internal sector network called TUEWAS and implemented in Bangladesh, India, Nepal and Vietnam in 2020. The Bangladesh part has been implemented by the Renewable Energy and Energy Efficiency Program (REEEP II) of GIZ Bangladesh and supported by BGMEA and SREDA.

The results of the three industries, namely Tusuka Group, Mohammadi Group and DBL Group, are quite encouraging. SEEWG of DBL Group has identified annual natural gas saving potential of 1.9 million cubic meter. Similarly, Tasuka Group can save 88,110 Kwh power and 81,000 cubic meter of gas annually. On the other hand, Mohammadi Group can save 34,602 Kwh power and 5,471 cubic meter of gas per annum. Excluding one big investment, average payback period of the energy efficiency opportunities is three years. Remarkably, the industries have already saved around 5% of their annual energy consumption attributable to implementation of some of the measures recommended under the SEEWG program. Another 10-12% energy saving is possible once they undertake and implement the remaining measures for energy efficiency and conservation. Managements of the industries are interested to implement the remaining measures, noted Shafiqul Alam.

Faruque Hassan, President of Bangladesh Garment Manufacturers and Exporters Association (BGMEA), said that climate change is an important aspect in energy use. The readymade garment sector is endeavoring to address all relevant aspects. We are committed to reduce carbon emission. In many areas, we have already achieved mentionable successes. Bangladesh proudly possesses 39 of the 100 LEED factories of the world. Eight of the 10 top green companies are now in Bangladesh. Three of those companies have worked in the Small Working Group. We believe, we can expand this jointly. BGMEA has concluded MOU with SREDA. We believe, more good work can be done through this initiative.

Energy expert Prof Dr. Ijaz Hossain mentioned that the keynote presentation has used old data from 2016. Does this mean we are not aware of the present situation? Absence of updated data is a genuine problem in Bangladesh. Data are not supplied when asked. The mentality for data generation has not developed in Bangladesh. My expectation was to get updated data from this program. Garments industry is a major sector. SEEWG is a good concept, but in small garments, the implementation could require structural

changes, for instance, having qualified engineers and other personnel.

Mohammad Alauddin, Chairman of SREDA (Sustainable and Renewable Energy Development Authority), said the small working group is not only a mere concept, it is proven through this pilot initiative. As we know, team approach is always better, SEEWG is also like that. SREDA would be happy to further support the dissemination of this concept, which has the potential to deliver great results in the sector. SREDA is working on setting limits of energy efficiency, devising regulations. SREDA is also working on renewable energy development. The introduction of net-metering policy has started yielding the outcome as the rooftop solar in garments industries is expanding now.

Sharing his experience from Vietnam, Mr. Markus Bissel, Head of Component Energy Efficiency, Renewable Energy and Energy Efficiency (4E) Project, GIZ Vietnam, mentioned that Vietnam now ranks 5th in RMG trading. Around 3.5 million people is working in the industry. Even during the Covid-19 pandemic, it achieved 7.5% growth. But the energy cost is 1.5% to 1.7% higher than Thailand and China. They have taken up some energy-saving projects. The target is to achieve energy efficiency. The government has adopted some projects for EE as well. The plan for Small Working Group Concept has been finalized for 30 energy intensive industries.

Engr. Khondkar Saleque Sufi, International Energy Consultant, observed that Bangladesh Energy Regulatory Commission (BERC) must audit and monitor energy efficiency of industries. It must set parameters and advise industries for generating compliance reports. Without energy efficiency, Bangladesh cannot achieve sustainable energy security. The government must work for developing competent technical resources for achieving this. He further added that, SEEWG is a viable concept for Bangladesh's industries that want to enhance business competitiveness.

Dr. Nurul Islam, energy expert, observed that the decision must be taken on publishing energy data annually and it must be made accessible to all. Otherwise, it will remain confined to a selected group and greater public would remain in the dark. It would be much easier to work together if all are on the same page about energy use.

Mohammadi Rehan Idrisee, head of operation of Mohammadi Group, described the experience about working in Small Working Group and mentioned that 15% power savings has been achieved from each fan by using sensor-based fan housing. New technology using boiler has also saved energy. The plan is to harness up to 55% electricity from rooftop solar for which the cost is expected to be about Tk 3.00 per unit.

Mohammed Zahidullah, Chief Sustainability officer of DBL Group, said GIZ has given a great concept. Expertise of four or five personnel can be developed at the same time. Even if one leaves the institutional memory. We included two from factory and two from project planning of the corporate office in the group. They are now working as per the roadmap given to them. The benefit and knowledge gained is being transferred to a model. We have decided to engage an energy manager in each factory.

He said black water was not being used in wastewater treatment plant. Now that is being reused. We are now reusing 10,187 cubic meter water. The Tk 600,000 we invested for that intervention would return in 10 months. Six pumps were in use earlier. After automation, however, we sometimes use two pumps and in cases we use three. On very rare occasions, six pumps are in operation. This saves lot of energy. EP

Hydrocarbon Exploration in Stratigraphic Traps

A New Approach for Bangladesh

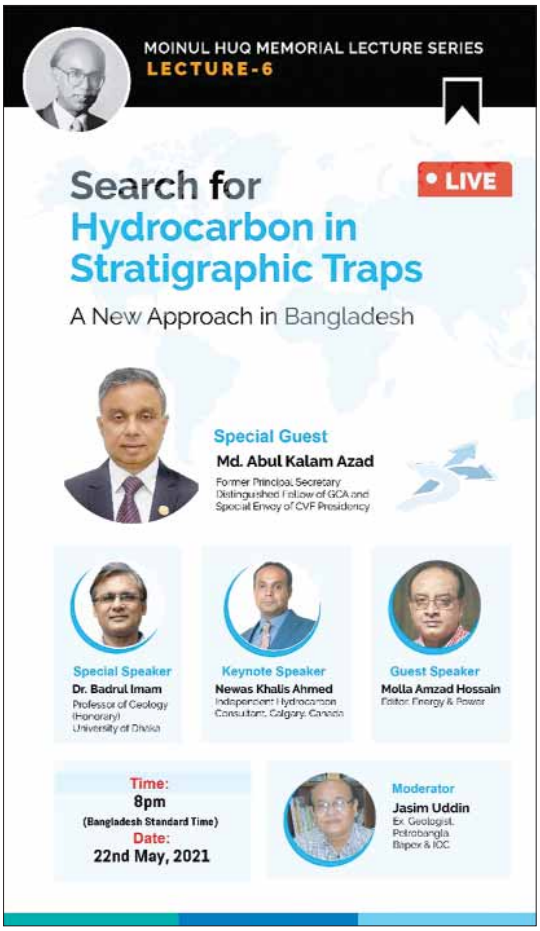
Mir Moinul Huq Memorial Lecture Series

Mortuza Ahmad Faruque

Geoscientists from home and abroad believe that the country has possibility of significant hydrocarbon resources within the stratigraphic traps in the south-western region of the country. It is appropriate time to search for hydrocarbon by initiating an aggressive exploration campaign that would include identification and mapping of prospects and followed by drilling. The program may be undertaken by BAPEX or jointly with reputed IOCs under JV. It is also necessary to carry out further acquisition and evaluation of seismic data and generate geological model by using sequence stratigraphic technique to pinpoint the drilling location for exploration in the mentioned areas.

In the remembrance of Mir Moinul Huq, an eminent geologist of Bangladesh, the Lecture-6 was arranged under 'Mir Moinul Huq Memorial Lecture Series' held on May 22, 2021 on a webinar. The chairperson of the session was Mr. Nazmul Hossain who joined from Houston, USA. The coordinator was Nazim Ahmed from Calgary, Canada, and the session was moderated by Jasim Uddin from Dhaka, Bangladesh. Mr. Newas Khalis Ahmed, a hydrocarbon consultant from Canada was the keynote speaker and presented on "Search for Hydrocarbon in Stratigraphic Traps: A New Approach in Bangladesh". About 80 geoscientists of Bangladeshi origin around the globe including Bangladesh, Canada, USA, UK, Norway and Dubai have participated in this webinar.

Mr. Abul Kalam Azad, Special Envoy of Climate Vulnerable Forum and the former Principal Secretary to the Prime Minister, was the Special Guest at the webinar. Mr. Azad, in his remarks, expressed appreciation for creating such a unique forum of geoscientists worldwide and arranging the lecture series in the remembrance of Mir Moinul Huq. He appreciated Khalis Ahmed for making his technical presentation simple and interesting to geologists and non-geoscientists alike. Conforming with the view of geoscientists that 'Bangladesh is neither floating on gas, nor completely exhausted of further discovery'. He agreed with the discussants that significant gas reserve may still be found if exploration takes speed. He emphasized on need of consorted, intense and aggressive efforts to add new gas reserve. Bangladesh is importing coal, LNG, electricity and other forms of energy costing more than Tk8,000 crore each year, which is quite a fortune and needs to be addressed by tapping internal resources including replenishment of produced gas. Contribution from experts' home and abroad is demand of the day. He requested to the organizer of the lecture series for updating him time to time.



Mr. Azad underscored need to upgrade BAPEX and encourage their work successes. He emphasized on capacity building of BAPEX, revision of their compensation packages and government's eagerness to make agency at per with national oil companies worldwide. He made it a point that governmental agencies responsible for gas exploration may be in touch with the experts at national and international level for facilitating gas exploration in the country. He showed his interest to convey the views depicted by the presentation and participating geoscientists to concerned government levels.

Mr. Khalis Ahmed appraised in his presentation that most of the hydrocarbon reserves discovered in Bangladesh are within the structural anticlinal traps. Generally, oil and gas generate from sedimentary source rocks, which migrate, accumulate, and eventually may get trapped to form a reserve. Many producers around the world produce hydrocarbon from stratigraphic traps. Basin analysis and depositional environment interpretation are the keys to explore stratigraphic traps.

Sea-level change over millions of years highly influences the depositional environment of the stratigraphic formations. Sequence stratigraphic techniques is a useful tool to track the relative position of sedimentary bed-sets in the stratigra-

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এলপি গ্যাস

TOTAL

phy and to understand the relative sea-level change during their deposition. Data obtained by this technique is a modern practice to identify stratigraphic traps.

Mr. Khalis also explained how modern and upscale sequence stratigraphic technique may be used to identify stratigraphic traps and its types. He focused on his evaluation in greater Faridpur district and adjacent areas where number of stratigraphic traps are observed. These traps are lying at a depth ranging from 4.0 km to 6.0 km beneath the surface. Many potential sets of layers are identified, some of those are found to be probable traps for hydrocarbon resource. If these sets of layers found to be coincided with other requirements, may store considerable amount of recoverable hydrocarbon in place.

Drilling of three exploratory wells were suggested by Mr. Khalis over the center of these traps. He expected to conduct further research and data interpretation focusing on those areas in Rajbari, Faridpur and Madaripur by BAPEX. He recommended that further sequence stratigraphic evaluation of these areas may be carried out to determine optimum exploratory well locations. Drilling of exploratory wells in the proposed areas may open an opportunity to find out gas discovery in that area.

Prof. Badrul Imam of Dhaka University, in a follow up discussion as a Special Speaker said that Bangladesh still remains an under explored country and exploration confined within the first stage of finding easier targets like anticlinal structure. Bangladesh has so far been mostly exploring the easy to find structural traps/reservoirs and have so far been successful. Bangladesh has to step into the second stage of exploration meaning moving into more subtle and concealed petroleum traps/reservoirs. It is essential that an extensive exploration program be launched in the south-western region of Bangladesh.

Prof. Badrul praised BAPEX for discovering nine gas fields including a few in more complex stratigraphic traps. He stressed the need to explore the offshore including the deep offshore and opined that Bangladesh gas resources is being exhausted has no scientific basis. On the contrary, substantial reserve of hydrocarbon may be discovered if serious exploration is launched. To strengthen BAPEX and to facilitate further successes, BAPEX should be encouraged to do more exploration drillings. In particular, after the successes of BAPEX in discovering two gas fields in Bhola island, the entire Bhola island and surroundings should be put under BAPEX exploration and development plan. BAPEX should be encouraged to interact with upscale western technologies to further strengthen its technical capabilities. Bringing foreign experts of Bangladeshi origin who has interest to help out BAPEX would bring a win win situation.

Mollah Amzad Hossain, Editor, Energy & Power participated in the lecture series as a Guest Speaker. He pointed out that It is very difficult for BAPEX alone to carry out exploration drilling in the difficult structures, drilling in the western part of the country and deep drilling following government rules and regulation. BAPEX should proceed forward along with reputed international oil and gas company by doing JV. He suggested that Sylhet Gas Fields Limited (SGFL) may merge with BAPEX and Bangladesh Gas Fields Company Limited (BGFCL) also need to be merged with BAPEX in the long run for strengthening of BAPEX as a national company. He also opined that Bhola Gas Field should be developed by BAPEX and Gazprom may be engaged in the virgin area, difficult structures and deep drilling.

Lt. General (Retd.) Mahfuzur Rahman, former Principal Staff Officer to PM who was an honorable guest participant, who emphasizes on national securities during exploration activity. He opined that hydrocarbon resources are 'either fortune or curse'. He cautioned that we learn from the example of Nigeria and Venezuela. He also stated that the offshore area is politically protected, and we should secure our on-land resources with proper infrastructure and knowledge base.

Dr. Nasser Ejazul Huq, Retired Professor, Department of Geological Sciences, Jahangir Nagar University, now living in UK, emphasizes on formation of an action plan by this forum to take this new endeavor to the higher level of the government.

Mortuza Ahmad Faruque, former Managing Director of BAPEX informed that BAPEX already conducted 2D seismic survey during 2017-18 over the areas of Rajbari, Faridpur, Madaripur, Shariatpur, Gopalganj, Magura, Jhalokathi, Khulna, Bagerhat etc. They already interpreted data and identified some leads and prospects in that area which are mostly stratigraphic traps. BAPEX has planned to drill a well at Shariatpur and will proceed forward to drill more wells depending on the success of Shariatpur.

Apart from above, recently BAPEX conducted 3D seismic survey at Mubarakpur structure which is stratigraphic trap. Meanwhile, drilled a well at Mubarakpur, Pabna district and found presence of gas. They have planned to drill another well at Mubarakpur. However, BAPEX already achieved success and discovered a gas field in Bhola during 2017 which was identified as combination of stratigraphic and structural trap.

Mr. Mortuza suggested that BAPEX may carry out drilling at some of the identified stratigraphic traps in the south western region by themselves and doing JV with reputed IOCs to avoid dry hole risk as well as financial risk by BAPEX and considering difficulties to drill in high pressure zone. BAPEX may think to engage an international expert having proven experience of analyzing sequence stratigraphy, identifying strata, layers and stratigraphic traps for selecting drilling location.

Recommendations

- Necessary to carry out further sequence stratigraphic evaluation of seismic data and use of sequence stratigraphic technique to identify leads and prospects and to pinpoint the drilling location in the south-western part of the country.
- Consorted, intense and aggressive exploration efforts is necessary to add new gas reserve in the country.
- BAPEX may carry out drilling in some of the identified stratigraphic traps in the south western region by themselves and doing JV with reputed IOCs.
- Requesting to the concerned government agencies to make available financial and policy support to BAPEX for carrying out exploration drilling in the stratigraphic traps considering dry hole risk, financial risk and difficulties to drill in high pressure zone.

EP

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

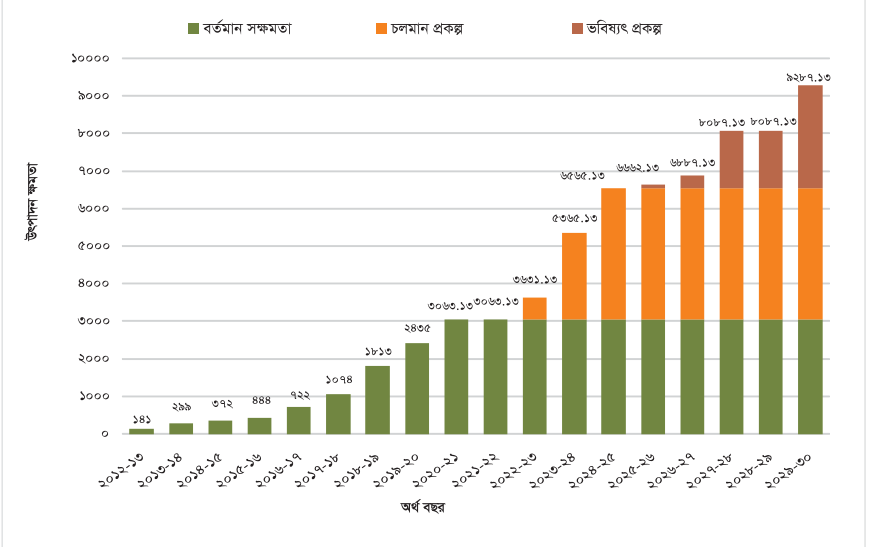
নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড

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

- মোট বিদ্যুৎ কেন্দ্র - ৯ টি
- 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)

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

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

IEA Energy Roadmap to Net Zero by 2050

EP Report

The International Energy Agency (IEA) on May 18 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" for achieving the goal.

Nuclear energy, the IEA said, will make "a significant contribution" in the net zero emission scenario and will "provide an essential foundation for transitions" to a net-zero emissions energy system.

"The number of countries that have pledged to reach net-zero emissions by mid-century or soon after continues to grow, but so do global greenhouse gas emissions," IEA Executive Director Fatih Birol said, launching the report.

"This gap between rhetoric and action needs to close if we are to have a fighting chance of reaching net zero by 2050 and limiting the rise in global temperatures to 1.5°C. Doing so requires nothing short of a total transformation of the energy systems that underpin our economies."

The report titled "Net Zero by 2050: A Roadmap for the Global Energy Sector" presented a net-zero emissions by 2050 scenario (NZE) designed 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.

It also aimed to minimize methane emissions from the energy sector. In recent years, the energy sector was responsible for around three-quarters of global greenhouse gas (GHG) emissions.

In parallel with action on reducing all other sources of GHG emissions, achieving net-zero CO2 emissions from the energy sector by 2050 is consistent with around a 50% chance of limiting the long-term average global temperature rise to 1.5°C without a temperature overshoot, said the IEA.

"By 2050, the energy world looks completely different," the report says. "Global energy demand is around 8% smaller than today, but it serves an economy more than twice as big and a population with 2 billion more people. Almost 90% of electricity generation comes from renewable sources, with wind and solar PV together accounting for almost 70%. Most of the remainder comes from nuclear power."

Reduction in Fossil Fuel Use

In the NZE scenario, global energy-related and industrial process CO2 emissions to fall by nearly 40% between 2020 and 2030 and to net zero in 2050. Universal access to sustainable energy is achieved by 2030, the IEA said.

There is a target - 75% reduction in methane emissions from fossil fuel use by 2030. Total energy supply to decline by 7% between 2020 and 2030 in the NZE and remain at around this level to 2050.

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 metres.

The fossil fuels that would remain in 2050 to be used in the production of non-energy goods where the carbon is embodied in the product (like plastics), in plants with carbon capture, utilization and storage (CCUS), and in sectors where low-emissions technology options are scarce.

Annual energy sector investment, which averaged USD2.3 trillion globally in recent years, would rise to USD5.0 trillion by 2030. As a share of global GDP, average annual energy investment to 2050 in the NZE would be around 1% higher than in recent years.

The Roadmap sets out more than 400 milestones 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.

The contraction of oil and natural gas production will have far-reaching implications for all the countries and companies that produce these fuels, according to the report.

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.

OPEC's share of a much-reduced global oil supply to grow from around 37% in recent years to 52% in 2050, a level higher than at any point in the history of oil markets.

In the near term, the report describes a net-zero pathway that requires the immediate and massive deployment of all available clean and efficient energy technologies, combined with a major global push to accelerate innovation.

The pathway requires annual additions of solar PV to reach 630 GWe by 2030, and those of wind power to reach 390 GWe. Together, this is four times the record level set in 2020.

Most of the global reductions in CO2 emissions between now and 2030 in the net-zero pathway come from technologies readily available today, the IEA said.

However, under the NZE scenario, in 2050 almost half the reductions come from technologies that are currently only at the demonstration or prototype phase.

Decisions Needed on Nuclear

"Nuclear power makes a significant contribution in the NZE, its output rising steadily by 40% to 2030 and doubling by 2050, though its overall share of generation is below 10% in 2050," the report said.

Under the NZE scenario, nuclear electricity generation increases from 2698 TWh in 2020 to 3777 TWh in 2030 and to 5497 TWh in 2050. Its share of generation decreases from 10% in 2020 to 8% in 2050.

However, the IEA said, there are three important sets of decisions to be made concerning nuclear power: lifetime extensions; the pace of new construction; and, advances in nuclear power technology.

The large fleet of ageing nuclear reactors in advanced economies means their decommissioning increases, despite many reactor lifetime extensions.

In the NZE, annual average nuclear retirements globally are 60% higher over the next 30 years than in the last decade. Without further lifetime extensions and new projects beyond those already under construction, nuclear power output in advanced economies will decline by two-thirds over the next two decades.

In emerging markets and developing economies, there are decisions to be made about the pace of new nuclear power construction. From 2011 to 2020, an average of 6 GWe of new nuclear capacity came online each year. By 2030, the rate of new construction increases to 24 GWe per year in the NZE.

The IEA said the governments must decide the extent of their support for advanced nuclear technologies, particularly those related to small modular reactors and high-temperature gas reactors, both of which can expand markets for nuclear power beyond electricity.

"Failing to take timely decisions on nuclear power ... would raise the costs of a net-zero emissions pathway and add to the risk of not meeting the goal by placing an additional burden on wind and solar to scale up even more quickly than in the NZE," the report warned.

Time to Face Greatest Challenge

"Our Roadmap shows the priority actions that are needed today to ensure the opportunity of net-zero emissions by 2050 - narrow but still achievable - is not lost," said Birol. "The scale and speed of the efforts demanded by this critical and formidable goal - our best chance of tackling climate change and limiting global warming to 1.5°C - make this perhaps the greatest challenge humankind has ever faced."

While the pathway to net zero presented in the new report "is global in scope", Birol said it is up to each country to determine how it will design its own strategy, taking into account its own specific circumstances. He said advanced economies are expected to reach net zero before developing economies.

The IEA said the report is designed to inform the high-level negotiations that will take place at the 26th Conference of the Parties (COP26) in Glasgow in November.

Climate Action Network (CAN) in a statement issued immediately after publishing the report welcomed this report's recognition and confirmation of the feasibility of the 1.5 C degrees Paris Agreement temperature goal.

"It is hugely significant that the most influential energy agency recognized the urgency and the need for immediate actions in this critical decade in order to stay below 1.5C degrees," said CAN´s Executive Director Tasneem Essop.

"This sends a strong message to countries, the fossil fuel industry and investors worldwide that the time to end business as usual is now; that the radical transformation of all economies in a fair and just manner through centering equity and the rights of affected communities and to benefit from the renewable energy transition requires bold and courageous leadership as of today."

Welcoming the IEA report´s emphasis on large growth of particularly clean renewables like solar and wind to about two third of all energy use by mid-century, CAN expressed concern that it falls short of going much further.

In particular, CAN is critical of the IEA scenario's reliance on doubling nuclear power, growing carbon capture, use and storage (CCUS) to about 15% of all CO2 emissions reduction efforts and significantly increasing the use of bioenergy by mid-century.

Despite its shortcomings, CAN strongly encouraged the IEA to make the roadmap and milestones its central scenario from now on for the coming years to assess governments´ energy and climate policy implementation in this decade while continuing to address the weaknesses.

CAN offered to work with the IEA to improve this scenario towards a fully sustainable pathway for all.

EP

Education for Life and Skill

Climate Vulnerability, Covid and Implementation of SDG

Md. Abul Kalam Azad

Series 15

Education contributes to reducing inequalities and achieving gender equality. All boys and girls need to complete primary and secondary education by 2030. Important areas of work are affordability, quality of Education, eliminate gender discrimination and putting proper importance on vocational education.

In terms of 'Education for life' How many university graduates have competency for suitable profession? How many of them are technically sound? How many of the graduates are employable? Do they have courage to be an entrepreneur? Is he ready to face the global challenges? All these are important questions for the young. Commonly, we tell that our youth need to be global citizens with high competency making them highly employable; but what is the reality?

Commonly private sector managers used to say that they don't get employable youth. Many organizations used to give the same argument, that they lack efficient officials. At the same time, efficient youth move from one to another organization, going to a higher position frequently. On the other hand, number of job seekers is unbelievably high. One study says higher education produces more unemployment then technical education. Since long we have been talking about technical education, education which is needed by industry both private and public sector, education for life. In all the Education Commission Reports, including Qudrat-e-Khuda Education Commission Report 1974 and Kabir Chowdhury Education Commission Report in 2009, necessity of technical education is mentioned with high importance.

What are the challenges in the way to quality technical education? Stigma on technical education, infrastructure in terms of number and quality, curriculum, capacity building of teachers and participation of private sector are the important areas to be addressed on the way to quality technical education. A polytechnic student after his education is employed as a Diploma Engineer which, in course of time, has become a stigma though system is developed for the Polytechnic students to have graduation and be a Degree Engineer.

In our country in the last decade a huge number of technical universities have been set up; also, a good number of technical and vocational schools. In 2008 in Bangladesh only 3% were technically educated people. Now, it stands at 18% and we have a target to reach 30% by 2030. It is commonly said that most of the private Technical and Vocational schools or institutions lack proper facilities like laboratory, workshop and practical classes. This is a good part of our education system that we could encourage organizers to set up technical education institutions and encourage students to get admission. But so many things need to be done. If we look into the technical institutions in Singapore, the Nanyang Polytechnic, they provide high standard of Education. Vis-à-vis in our country, we need to investigate these issues very carefully. I find an extraordinary concept there that supply will create demand for technical people. So, not looking towards the local and present needs only, but needs of the world and futuristic action may open up wide doors of opportunity for our skilled youth.

As the number of Polytechnic Institute are being increased and also technical education and vocational institutions are being set up in increased number. In the mean time in our country, a huge number of technical universities has been set up where different technical subjects including 4IR, Internet of Things (IoT), block chain, machine learning(ML) etc. are taught along with how


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to practice these in the field of agriculture, livestock, health, education and in all sectors of life. Nowadays, in different countries, Skills University are being popularized. So, the students those who have the technical education in schools and college get much more opportunity for their skill development. And normally, the university education system is whenever he gathers experience and get time take the opportunity to study in the university. So, giving opportunity to be university student, in a different way, these help in removing the stigma on technical education. From our college and university, we get very few employable youth. Very recently, Ministry of Education decided to have a compulsory technical subject for all the Secondary School students; this may act to popularize the technical education, removing the stigma of technical education and encourage students to come up with the employable qualifications. In the meantime, government of Bangladesh is trying to support the vocational and Technical schools and institutions to be equipped more for providing hands on training to their students to be employable.

Government decided to have 100 Economic Zones and more than 28 High-tech Parks. These investment areas need huge number of skilled manpower in different technical area. Government needs to look into how best we can prepare our people for working in these economic zones and High-Tech Parks. In the meantime, concerned authorities decided to have some technical institutions and skill development activities in the economic zones and high-tech Park area. Infrastructure in technical education needs to facilitated further from the Government. So many big projects for infrastructure and capacity building for Technical and Vocational has been undertaken. In the meantime, government started working on this and very soon the education sector will see the changes of developed infrastructure with good laboratory.

The third area to be addressed is curriculum and standards of education. Considering some of our back dated course curricula with the changing scenario of the globe, and also specially with the COVID where much more technical people are needed we need to set up the permanent technical curriculum expert team to look into the needs of the economy and act accordingly. We know, in the meantime the Industrial skill Councils develop a huge number of standards of training. I believe these have been started slowly but as and when we'll be able to scale these up may serve the purpose of the present and future needs.

Capacity building of the teachers is most critical. In the changing society, every day, we should look into it, the width and depth of technical area, putting our efforts for capacity building of the teachers. Good quality with commitment of the teachers can bring better output in the technical education and make it much more meaningful and helpful. A few years back, huge number of teachers are trained, long training in Nanyang and in China for adapting their course curricula, standards and methods. We need to work hard for implementing those.

Private Sector participation is much more important as the present government always tells that private sector is the key driving force of development. So, we need to engage private sector for developing education, skill and intrapreneurship. Bangladesh Investment Development Authority (BIDA) started stimulus Entrepreneur development program in 2019 which created huge number of local level entrepreneurs. Very recently, UNICEF started patronizing globally and locally in Bangladesh naming Generation Unlimited (GenU) in the area of education, skill development, developing entrepreneur and youth engagement with a target to reach at least 17 million youth in five-year time those are out of education and job. We need to encourage the private sector much more specially, the big business houses and also the organizations of the Private Sector investors like FBCCI, DCCI, MCCI, BGMEA, BKMEA and other big Chambers and Association. Professional bodies like Engineers Institute, Institute of Diploma Engineers Bangladesh (IDEB) and others have come forward to extend their hands to develop the technical education and more needs to do. Government may encourage private sector to contribute in developing the infrastructure of the technical institutions.

For encouraging the skills for the private sector Skill Development Authority is established under Prime Minister's Office, which in the meantime could organize thirteen Industrial skill development council (ISC) with the participation of the private sector. In terms of higher education, our Universities need to include mandatory apprenticeship provision for the students providing skill and experience to face the reality of private sector performance. Teachers training for having better knowledge and changed attitude may help the process of transforming our education system from a traditional to Technical and technological. We need to work hard for preparing the youth fit for facing the Fourth Industrial Revolution. Artificial intelligence, Internet of things, block chain, cloud computing all these necessary for the coming days profession. Covid 19 proved our normal education system to be more equipped with Technologies, technological soundness, more efficiency both in hardware and software.

We find that ICT played a vital role in combating Corona and to face the economic crisis to come out of Corona. Many people lost their job, but at the same time huge number of new professions has come up where knowledge and skill of ICT is pertinent. So, we need to investigate the necessity of the globe, prepare ourselves to cope up with the situation.

EP

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

শেখ হাসিনার উদ্যোগ ঘরে ঘরে বিদ্যুৎ

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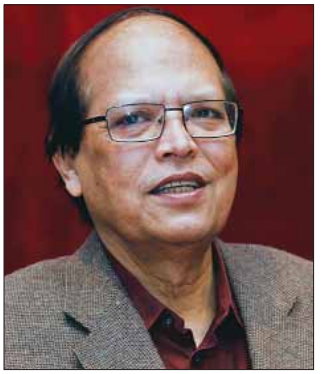
মানসম্পন্ন বিদ্যুৎ নিরবচ্ছিন্নভাবে দেশের সকল মানুষের নিকট পৌঁছে দেয়াই আমাদের অঙ্গীকার

- 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।

Improved Electricity Access Leads to 'Digital Bangladesh'



Enhanced access to electricity has driven the country towards a developing nation in the line with government's Digital Bangladesh vision, eminent economist Dr Atiur Rahman has said.

Addressing a webinar as chief guest recently, former Bangladesh Bank governor Dr Atiur mentioned that the country has witnessed a surge in electricity production over the last decade.
And this has fueled success in mechanizing agriculture, growth of non-farm sector in rural areas, digitization of government services, proliferation of digital financial services, digital innovations in education and above all-industrial growth.

Bangladesh Power Management Institute (BPMI) organized the virtual meeting titled 'Bangladesh at 50: Amazing Journey of Inclusive Development'.

Power Division Secretary Habibur Rahman also connected to the meeting as special guest while BPMI Rector Mahbub-Ul-Alam presided over the session. In the keynote, Prof Atiur said ensuring access to electricity has been pivotal for macroeconomic success of Bangladesh.

EP

PDB Opposes REB's Power Supply to Industries

If electricity is supplied to large industrial units from Rural Electrification Board's 132KV distribution lines, subsidy may need to be increased in power sector, leading to further losses, said Bangladesh Power Development Board (BPDB).

"If the government allows supplying of electricity to large industrial units from the REB's 132KV lines, the power sector's subsidy may increase," said Engineer Belayet Hossain, Chairman to Bangladesh Power Development Board (BPDB).

Now, BPDB is currently supplying electricity to the REB at Tk 4.32 per unit against the production cost of Tk 6.30 per unit, he informed.

Saiful Islam Azad, secretary to BPDB in a letter sent recently to the Power Division feared that a further increase of subsidy in the sector will pose new challenges in its financial management.

However, the REB opposed the BPDB's observations, saying that the electrification board has already invested billions of Taka to improve the distribution lines for electricity supply to industries.

EP

Kaptai Hydel Plant on Brink of Closure

Power generation in all five units of the lone hydel power station of the country at Kaptai Lake will have to be suspended, if the drought continues for a week.

Presently only one unit is running at the lowest water level in the lake.

Officials said the water level of Kaptai Lake was 74 MSL (Mean Sea Level) recently but it was supposed to remain at 78 MSL.

The water level of the lake is dropping alarmingly due to drought in the area. He said the generation of other four units had been suspended due to drop in water level.

The unit number one will run till 70 MSL, he said. If drought continues for a week, the water level will decline to 70 MSL forcing the operation of the unit-1 to be suspended.

EP

Japan's JERA Aims to Use 20% Ammonia at Coal Power Plant

Japan's biggest power generator JERA said recently it will begin a demonstration project to develop technology to co-fire ammonia and coal at a 1 gigawatt (GW) commercial coal-fired power plant as it strives to cut CO2 emissions by using cleaner fuels.

The company aims to achieve an ammonia co-firing rate of 20 per cent at the 1 GW No.4 unit of its Hekinan thermal power station in Aichi, central Japan, in the 2024 financial year to March 2025.

It will be the world's first demonstration project in which a large amount of ammonia will be co-fired in a commercial coal-fired power plant, JERA said.

The event will engage the leaders to help shape the global, regional and local agenda in the energy sector including Power, Energy Transition, Oil & Gas, Renewables, Coal, Digital Transformation among others.

The company did not disclose the cost, including spending to build a storage tank and vaporizer and to replace burners, but a company spokesman said the government, which is keen to create a global supply chain of ammonia for fuel, will pay half.

The project, which is designed to evaluate boiler heat absorption and environmental impact characteristics such as exhaust gases, will run for about four years from next month.

Ammonia is used for fertilizer and industrial materials, but is also seen as an effective future energy source, along with hydrogen. It does not emit carbon dioxide when burned, but its production produces emissions if it is made with fossil fuel.

The Japanese government aims to grow the nation's annual ammonia fuel demand to three million tonnes by 2030 from zero now.

EP

Energy Transition Represents $14tr Uncertainty for Upstream Oil and Gas

The energy transition represents $14 trillion worth of uncertainty for upstream oil and gas, according to a new report by Wood Mackenzie.

Oil and gas is a risky business. Over the years, those risks have been tempered by a single tenet—that that demand would continue to rise indefinitely. As the energy transition gathers momentum, that belief has all but evaporated, the report noted.

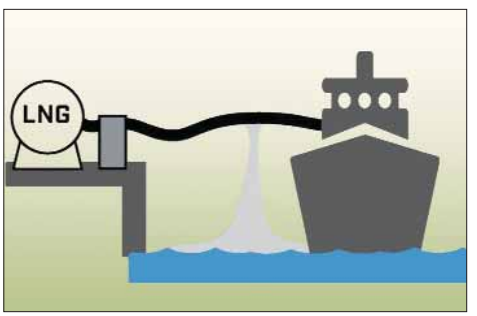
Oil demand may continue to grow for another decade or more, the report said.

On the other hand, if the world acts decisively to limit global warming to 2°C by 2050-the AET-2 scenario-oil demand and prices would fall rapidly later this decade. Gas demand and price, however, would be more resilient.

While this range of outcomes has major implications for the oil and gas industry, in either scenario there is still a large amount of upstream value.

Using its global Lens asset-by-asset modelling, WoodMac estimates the range of pre-tax future valuations for upstream is $14 trillion—from $9-23 trillion. On a post-tax basis, operators' share of this economic rent ranges from $3 trillion to $9 trillion. EP

Global LNG Dealers Keen to Supply Fuel to Bangladesh



A number of global LNG (liquefied natural gas) suppliers are keen to supply the fuel to Bangladesh from the spot market, seeing the country's consistent purchase of LNG over the past several months.

They are trying to get listed along with 14 short-listed LNG suppliers who are now being able to take part in bidding for supplying LNG from the spot market, a senior energy ministry official said.

The official, however, did not disclose the names of the firms that are lobbying to secure a space to supply LNG to Bangladesh from the spot market.

State-run Rupantarita Prakritik Gas Company Ltd (RPGCL) received some half a dozen applications from such suppliers recently, said the official.

As per Investopedia, the spot market is where financial instruments, such as commodities, currencies, and securities, are traded for immediate delivery. Delivery is the exchange of cash for the financial instrument. EP

Rising Overhead Costs Eat Into Desco Profit

The Dhaka Electric Supply Company (Desco) – a listed power distributor – has suffered a severe blow amid the Covid-19 pandemic as its net profit fell by around 69% during the July-March period, compared to the same period in FY2019-20.

Desco officials have cited a myriad of reasons behind the dip, but pointed out the decline in revenue from industrial and commercial customers as the primary cause, along with the jump in administrative and other expenses, and bulk electricity price hike.

The distributor's profit stood at Tk 17 crore in the nine-month period, a sharp drop from Tk 54 crore during the same period last fiscal year – when the pandemic was yet to spread across Bangladesh, reveals the company's financial statement disclosed recently.

Desco registered higher revenue from the domestic level customers as consumption and users in this category increased gradually during this time, but it was nearly not enough to offset the waning profits caused by other factors.

The distributor's overall energy sales have dropped due to the pandemic. Desco's total electricity sales were 3,891MKH during the July-March period in FY2020-21, which was 3,915KMH in the same period last year. EP

Industries Outside EZs Won't Get New Gas Connections

The government has stopped receiving applications for natural gas connections to industries outside the country's designated economic zones (EZs) from April 1.

State-run gas marketing and distribution companies have already been asked not to provide new gas connections to industries outside the EZs to ensure the country's smooth industrial growth without hampering croplands.

The industries outside the EZs which had applied for new gas connections or their extensions before March 31 are only getting connections after proper scrutiny, said an official recently.

The decision not to provide new gas connections to industries outside the EZs after March was taken several months back in line with the instructions from Prime Minister Sheikh Hasina to discourage unplanned industrialization across the country, he said. EP

BERC Cuts Retail LPG Price

Bangladesh Energy Regulatory Commission (BERC) has revises down the retail price of LPG (liquefied petroleum gas) for the month of June.

It re-fixed the price at Tk 842 a 12kg cylinder provided by the private operators which was Tk 906 in May.

"The new price will be effective from June 1," BERC Chairman Md Abdul Jalil told a virtual press briefing on May 31.

He said the price was adjusted based on the Saudi Aramco contract price (CP) of May 2021, fluctuations of foreign exchange rate and change in the value added tax (VAT).

The price of auto gas has been fixed at Tk 41.74 per liter, down from Tk 44.70 per liter in May.

Among others, BERC Secretary Rubina Ferdousi, members and officials joined the virtual briefing. EP

Asian Spot LNG Prices Rise

Asian spot prices for liquefied natural gas (LNG) rose recently as China, Japan and South Korea sought supply in an early move to stock up for winter, industry sources said.

The average LNG price for June delivery into Northeast Asia was estimated at about $7.60 per million British thermal units (mmBtu), traders said. Cargoes for May delivery were about $7.30 per mmBtu.

"Companies are stocking up earlier for the next winter, after all the supply disruptions from the past months," a London-based trader said.

The event will engage the leaders to help shape the global, regional and local agenda in the energy sector including Power, Energy Transition, Oil & Gas, Renewables, Coal, Digital Transformation among others.

A colder than average winter in the northern hemisphere and a ship congestion at the Suez canal, the fastest route between Asia and Europe, have boosted prices since December.

Japan Petroleum Exploration Co Ltd was seeking a cargo for delivery between May 22 and June 13 to the Soma terminal. EP

G7 Countries Agree to Stop Intl Funding for Coal Power

The Group of Seven (G7) rich countries have agreed to stop international funding for the construction of coal-fired power stations that emit carbon, a document summarizing a G7 environment ministers' meeting showed recently.

"We stress that international investments in unabated coal must stop now and 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," said the document.

Coal is considered unabated when it is burned for power or heat without using technology to capture the resulting emissions, a system not yet widely used in power generation.

The event will engage the leaders to help shape the global, regional and local agenda in the energy sector including Power, Energy Transition, Oil & Gas, Renewables, Coal, Digital Transformation among others. EP

Cairn Sues Air India to Enforce $1.2b Award

Cairn Energy has sued India's flagship carrier Air India to enforce a $1.2 billion arbitration award that it won in a tax dispute against India, according to a US District Court filing.

The move ratchets up pressure on India's government to pay the sum of $1.2 billion plus interest and costs that the British firm Cairn was awarded by an arbitration tribunal in December.

The body ruled India breached an investment treaty with Britain and said New Delhi was liable to pay.

Cairn filed the lawsuit recently in the US District Court for the Southern District of New York, seeking to make Air India liable for the judgment that was awarded to Cairn.

The lawsuit argued that the carrier as a state-owned company, is "legally indistinct from the state itself".

"The nominal distinction between India and Air India is illusory and serves only to aid India in improperly shielding its assets from creditors like (Cairn)," the filing said. EP

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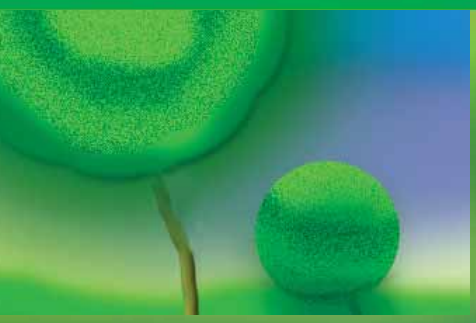


Green page

Govt Encourages Renewable Energy: Nasrul

State Minister for Power, Energy and Mineral Resources Nasrul Hamid recently said the government has been encouraging power generation from renewable sources.

"It is necessary to innovate such a technology that would occupy less land to generate solar power," he said, while witnessing a Memorandum of Understanding (MoU) signing as the chief guest at a virtual platform form for 100-MW solar power plant at Sonagazi, Feni.

The state minister said it is necessary to introduce mixed fuel in power generation, adding, "Developed countries have been working with hydrogen for transforming as energy. It's time to rethink ocean energy, wind power and rooftop solar."

Nasrul said necessary finance will be arranged for research works to this end.

Secretary of EGCB Kazi Nazrul Islam and General Manager of Marubeni, Japan, Hiroki Goto signed the MoU on behalf of their respective sides.

EP

Power Wastage High in State-Run Industries

Energy use in state-run industrial units is much higher than the usual requirement due to the use of old machinery and absence of energy efficiency mechanisms, officials said.

The lack of technical knowledge about energy efficiency and conservation is also a reason behind the higher use of power, they added.

The Sustainable and Renewable Energy Development Authority (SREDA) recently conducted an energy audit on four industrial units under the Ministry of Industries and found evidence of the excessive energy use.

SREDA officials said that the authority had conducted the energy audit on 12 public buildings.

"By this way we could assume where energy is being wasted and scopes are there to improve the situation," said an official.

The audit report would be published soon which could create awareness among the officials of other industrial units about the power wastage.

SREDA wanted to create awareness among the officials to stop wastage of energy.

EP

EPC Contract for 50MW Solar Plant in Feni Next Month

Engineering Procurement Construction (EPC) contract for setting up a 50-megawatt (MW) state-owned solar power plant at Sonagazi in Feni district is expected to be inked in the next month since all the procedures to this end has already been completed.

The Electricity Generation Company of Bangladesh (EGCB) is setting up the plant, the largest so far in the public sector, with a cost of US$ 89.17 million. Out of the amount, around $74.15 million is being come from the World Bank as project assistance.

Mohammad Anwar Hossain, Project Director of the Sonagazi 50MW Solar Power Plant Construction Project, Feni, said fifteen EPC companies submitted bids for getting work and from the companies, the tender evaluation committee has already selected the eligible company for the work.

The companies, mainly from China, were either submitted bids by their own or through joint-venture to secure the jobs of design, supply, installation, testing and commissioning, he added. EP

Deepto Installs Solar Home Systems in CHT

Deepto has installed solar home systems in the off-grid areas of the Chattogram Hill Tracts on the occasion of the International Day of Light recently.

The solar home systems were provided free of cost to these marginalized communities, who experienced electricity in their lives for the very first time, said a press release.

A total of 2591 solar home systems were installed across 25 villages of Bandarban, Khagrachhari and Rangamati districts.

The initiative generated numerous benefits including the empowerment of women through several income generating activities at night such as sewing clothes, making handicrafts, knitting, processing turmeric etc.

After the installation of the Deepto units, students were relieved of studying using meager kerosene lamps which often caused harm to their eyes. EP

Thailand's Largest Private Microgrid Announced

Thai energy company Impact Solar has announced that it is developing the country's largest private-owned microgrid in Sriracha.

The 214MW microgrid will comprise gas turbines, rooftop solar and floating solar systems as power generation resources, and a battery storage and control system that will be provided by Hitachi ABB Power Grids.

The battery will be controlled in real-time to optimize power output to meet the demand of the entire industrial park during times when energy generation is low and demand is high.

The industrial park comprises data centers and other business offices.

YepMin Teo, senior vice president, Asia Pacific, Hitachi ABB Power Grids, Grid Automation, said: "The model balances generation from various distributed energy sources, builds in redundancy for future data center demand, and lays the foundation for a peer-to-peer digital energy exchange platform among the industrial park's customers."

As Thailand moves to decarbonize its energy sector, the role of microgrids and other distributed energy resources is expected to play an increasingly important role. EP

Green page

Adani Green to Acquire SB Energy's India Green Portfolio

SB Energy India is a joint venture between Japan-based SoftBank Group Corp. (80%) and Bharti Group (20%) and houses 4,954 MW of renewable assets in India.

Adani Green Energy on Wednesday announced that it will acquire SB Energy's 5 GW India renewable power portfolio for a fully completed EV of $3.5 billion.

"Adani Green (AGEL) has signed definitive agreements for 100% acquisition of SB Energy Holdings Limited. SB Energy India is a joint venture between Japan-based SoftBank Group Corp (80%) and Bharti Group (20%) and houses 4,954 MW of renewable assets in India," the company said in an exchange filing.

The letter from IPG comes few weeks after the ICPA, the union of the erstwhile Indian Airlines pilots and pilots of narrow body aircraft of the airline, informed the management that they would stop working if the company failed to set up vaccination camps across the country for its flying crew.

The transaction marks the largest acquisition in the renewable energy sector in India. The transaction values SB Energy India at an enterprise valuation of approximately $3.5 billion.

With this acquisition, AGEL will achieve total renewable capacity of 24.3 GW (1) and operating renewable capacity of 4.9 GW.

This acquisition demonstrates AGEL's intent to be the leader in sustainable energy transition globally and makes it one of the largest renewable energy platforms in the world.

The closing of the transaction is subject to customary approvals and conditions, the company added.

Gautam Adani, Chairman, Adani Group, said: "This acquisition is another step towards the vision we stated in January 2020, wherein we laid out our plans to become the world's largest solar player by 2025 and thereafter the world's largest renewable company by 2030." EP

Manikganj 35MW Solar Power Plant Begins Operation

Manikganj 35MW solar based power plant (PP) has started commercial operation for supplying electricity into the national grid.

"We are supplying electricity to the national grid after achievement of commercial operation in March, 2021," said an official at Sungrow Power Supply Company Ltd, which worked for the project as engineering, procurement, and construction (EPC) contractor.

He said this is one of the major project of the EPC contractor that was started operation in 2019.

"We have installed capacity of 45.5MW of solar power and operated 60 countries," he said.

The Manikganj Power Plant performance ratio was 85 percent in commercial operation date, he claimed.

Spectra Solar Park Ltd, (SSPL), a joint venture of Bangladeshi Spectra Group and Chinese Shunfeng Investments Limited (SIL), established the plant at Shibalaya Upazila in Manikganj with $15 million financial support from the Asian Development Bank (ADB).

The state-owned Bangladesh Power Development Board (BPDB) will purchase electricity from this independent power producer (IPP) project at a rate of TK 11.12/kWh ($0.13) under a 20-year power purchase agreement (PPA).

EP

Renewables Stronger Than Ever: IEA

Renewable electricity expanded at fastest pace in two decades, with huge additions of solar and wind becoming the 'new normal' going forward.

According to the IEA's latest market update, the amount of renewable electricity capacity added in 2020 rose by 45 percent to 280 gigawatts (GW), the largest year-on-year increase since 1999.

That extra power is equal to the total installed capacity of ASEAN, a grouping of 10 dynamic South-East Asian economies.

The increase is set to become the "new normal" in 2020, with about 270 GW of renewable capacity on course to be added in 2021 and almost 280 GW in 2022, despite a slowdown in China after an exceptional level of additions last year.

Those forecasts have been revised upwards by more than 25 percent from the IEA's previous estimates in November as governments around the world have auctioned record levels of renewable capacity and companies have signed record-level power purchase agreements, even as the pandemic spread macroeconomic uncertainties and suppressed demand.

Renewable sources of electricity such as wind and solar grew at their fastest rate in two decades in 2020 and are set to expand in coming years at a much faster pace than prior to the pandemic, according to a new report by the International Energy Agency released recently.

EP

Green page

Warsaw Transit Operator Orders 30 Addl Solaris CNG Buses

In August 2020, Miejskie Zakłady Autobusowe (MZA) in Warsaw signed a contract for 70 natural gas buses; that order consisted of 40 Solaris Urbino 12 CNG and 30 articulated Solaris Urbino 18 CNG buses.

The first vehicles under that contract are currently being handed over to the customer, according to Solaris.

Now the operator has decided take advantage of the contractual option and to commission another 30 articulated buses running on natural gas. The newly ordered NGVs are to be delivered at the beginning of 2022.

The 18-meter buses can carry up to 135 people at a time. They feature a high-standard equipment.

Of all the components enhancing passengers' comfort offered by Solaris the carrier has chosen among others air conditioning for the whole vehicle, USB ports that make it possible to recharge mobile devices, a comprehensive passenger information system and a video surveillance system with cameras monitoring both the passenger compartment and the driver's cabin as well as the area in front of the vehicle.

Another component increasing the safety of passengers in public transport is a so-called alcolock, i.e. a breath alcohol ignition interlock. It requires the driver to undergo a breathalyzer test. If the test result turns out positive, the system will disable the ignition.

EP

PM for Commonwealth's Role to Solve Climate Vulnerabilities

Prime Minister Sheikh Hasina has said the Commonwealth can play a leading role in pursuing a sustainable and nature-based solution to prosperous future, calling for a collective fight to save the planet from the climate vulnerabilities.

"I strongly believe that Commonwealth can play a pivotal role towards sustainable and nature-based solutions for prosperous future," she said.

The Prime Minister recently joined virtually a roundtable of the Asia Regional Commonwealth Heads of Government convened by the Prince of Wales, Charles Philip Arthur George, from her official Ganabhaban residence in the capital.

At the roundtable, she however placed a three-point proposal that included promotion of sustainable economic growth globally, emphasizing carbon neutral technologies and supporting climate vulnerable countries financially for climate adaptation measures.

As a member of Commonwealth and CVF (Climate Vulnerable Forum) Chair, Sheikh Hasina suggested a few measures ahead of COP 26 to fight the vulnerabilities effectively.

The prime minister advocated for promotion of green and sustainable economic growth worldwide and investing in circular economy for building back better.

She also urged the international community to put stress on carbon neutral technologies with provision of knowledge and technology transfer among the members of Commonwealth with particular attention to the vulnerable countries.

The premier also suggested supporting to the climate vulnerable countries to get access to climate finance for adaptation measures. EP

COP26 Last Chance to Limit Global Warming

The United Nations COP26 climate action summit scheduled in Glasgow in November is the last chance for the world to limit global warming and stay on track to keep global temperature rises well below 2 degrees, Alok Sharma, the British Indian minister in charge of the meet said recently.

The Agra-born president designate of the summit delivered a major speech during a wind farm visit near the city of Glasgow and urged that it was time to move away from coal power towards more renewable sources of power.

Sharma outlined the UK's presidency of the summit across four key areas of limiting global warming to 1.5 degrees, enabling communities and natural habitats to adapt to the impacts of climate change, mobilizing climate finance, and working together to deliver action.

The event will engage the leaders to help shape the global, regional and local agenda in the energy sector including Power, Energy Transition, Oil & Gas, Renewables, Coal, Digital Transformation among others.

"Having been born in India, a proud British citizen, and having spent time as Secretary of State for International Development, I am committed that this COP will deliver for the communities most vulnerable to climate change," said Sharma, who holds a Cabinet Office ministerial post. EP

Natural Gas Vital Element in Mission Net Zero: GECF

The Gas Exporting Countries Forum (GECF), as an intergovernmental coalition of 19 of the world's leading gas producers together representing 70% of the proven natural gas reserves, 52% of gas pipeline, and 51% of LNG exports, echoes the International Energy Agency (IEA)'s recent report 'Net Zero by 2050'.

The GECF is convinced that natural gas, as an abundant, affordable and clean hydrocarbon source, has a central role to play in the energy transition while simultaneously supporting progress on several sustainable development dimensions including the guardianship of ecosystems, human health, and the economy.

In fact, our member countries are already demonstrating their manifold commitment to environmental stewardship by reducing emissions from their own operations and wherever they hold equity to accelerate decarbonization.

EP

Climate Change Affects Increasing Urbanization: Study

Air density of Dhaka's two of the most marginalized low-income slums is four to five times higher above the permission limit of Bangladesh for 24 hours.

As a result, residents suffer with air pollution induced diseases like laryngeal problems, asthma and bronchial problems.

A study report published recently titled "Urban Localized Pollution in the Context of Climate Change" revealed such information during its virtual launching and discussion event.

According to the study report, the major source of indoor air pollution in both the marginalized areas are earthen stoves used in cooking and biomass used as fuel. Women are the most severely affected by air pollution as they are exposed to smoke for long stretches of time during cooking.

The study was carried out in two large slums of Dhaka South City Corporation (DSCC) – Dholpur Citypolli slum and Dhaka Match Colony, Shyampur.

It focused on four issues- water supply, sanitation, indoor air pollution, and solid waste management.

These low-income settlements are surrounded by many air polluting industries like steel mills, plastic factory, melamine factory, and brick kiln among others.

EP

World's First Test with Natural Gas/Hydrogen Blend in Steel Forging

The world's first test of a 30% natural gas/hydrogen blend in the forging processes used in industrial steelmaking was held in Rho (province of Milan), at the Forgiatura A. Vienna plant.

The trial involved the use of the hydrogen/gas mix to heat the furnaces of the Forgiatura A. Vienna plant and was successfully carried out on site after a series of studies and laboratory tests lasting about a year.

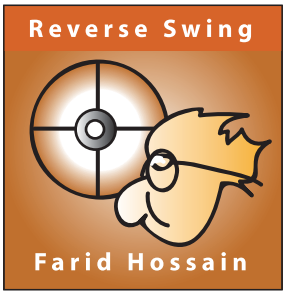
The companies involved in the initiative were: Snam, one of the world's leading energy infrastructure companies and developer and promoter of the project; RINA, a multinational inspection, certification and engineering consultancy, which handled the engineering analyses and laboratory phase; and GIVA Group, a global leader in steelmaking, which made Forgiatura Vienna available for the field test.

The blend of methane and hydrogen was supplied by Sapio, an Italian company specializing in the production and marketing of industrial and medical gases.

Marco Alverà CEO of Snam commented: "In the medium to long term, hydrogen is in a position to become the solution for decarbonising steelmaking as well as all hard-to-abate industrial sectors that have a fundamental role in our economy."

This trial is a preparatory step to the gradual introduction of zero-emission hydrogen, initially blended with natural gas and then in pure form, in certain steelmaking production processes.

EP



EFFICIENT ENERGY CAN MAKE GARMENT SECTOR MORE COMPETITIVE

Saving energy means saving money. This is true both for domestic and industrial users. An efficient use of energy reduces cost. Apart from the financial benefits this also helps reduce pollution and thus keep the environment clean.

Few will disagree that we should all consume energy in a cost-effective way to keep our wallets healthy. When we practice efficient use of energy we pay less in our utility bills. It can even create jobs and stabilise electricity prices and volatility.

A Google search on the efficiency of energy use says, ……"it may not be obvious, ……there's a direct connection between your energy use and the environment. When you consume less power, you reduce the amount of toxic fumes released by power plants, conserve the earth's natural resources and protect ecosystems from destruction. By taking steps to reduce your energy intake, you'll contribute to a healthier and happier world."

This is exactly what has been underlined in a recent webinar on the efficient of power in the country's RMG and textile sector.

RMG and textile sector, the country's top foreign exchange earner, is a major consumer of energy. The garment sector consumes about one-third of the country industrial energy. So, it should be very pertinent and appropriate if measures are taken to save energy use in the sector making it more energy-efficient and thus reducing cost.

It is known to all that even though our garment business is booming, it also faces stiff nternational competition. When a factory makes a good use of energy, it contributes to reducing the cost of production enabling it to sell its products at prices lower than its competitor.

The garment industry, employing 4.4 million workers, most of them women, is the country's top industry. It accounts for over 80 percent of the country's foreign exchange earnings and 10 percent to the GDP. Bangladesh is currently the world's second largest garment manufacturer and exporter after China. Countries like Vietnam, known for efficient use of energy, are catching up.

So, the importance of reducing energy cost in the garment sector is important as this has become an integral part of the country's economic growth.

Good news is that GIZ Bangladesh, a German organization, has come forward in collaborating with the garment industry to help improve its energy efficiency. Bangladesh has been on the path of fast power generation with its installed capacity crossing over 20,000 MW. This is good, but this should prevent us from ignoring the need for saving the valuable energy and make the economic growth sustainable. At a time when the world is re-engaged with the issue of tackling climate change and reduce the greenhouse gas emissions Bangladesh, being the leader of most vulnerable climate nations, has the responsibility in making the use of energy efficient and sustainable.

It is known to all that even though our garment business is booming, it also faces stiff international competition. When a factory makes a good use of energy, it contributes to reducing the cost of production enabling it to sell its products at prices lower than its competitor.

The message from the webinar, organized by the Energy and Power magazine has been clear: The factories can improve on their energy efficiency if they form a small working groups comprising relevant officials, technicians, planners, finance and procurement staffs and get special mentoring on how to save the energy and monitor it regularly. In that way they can make their companies competitive in international market. EP

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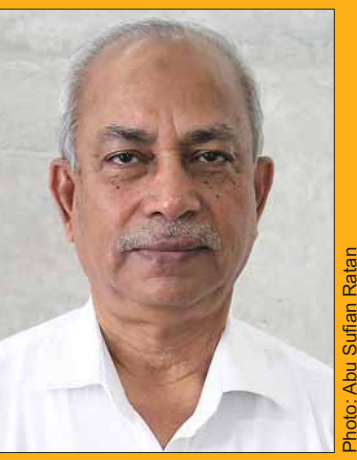

Photo: Abu Sufian Ratan

Md Muqtadir Ali

I think Bangladesh has lost an opportunity by not renegotiating the PSC with two oil giants – Total and ConocoPhillips. They had proposed for revising the gas price. They thought the resources identified could not be profitably exploited at the price included in the PSC. But their proposals were not accepted. Their asking price was less than what Bangladesh is now paying for LNG.

The Gas Transmission Company Limited (GTCL) has been compelled to make significant investment to expand its transmission pipeline without conducting proper network analysis, putting the state-owned company at high risk of getting insolvent. It has extended the national gas grid to Khulna but the supply could not be started even in 8 years of making the infrastructure ready. Some other pipelines are also being operated at well below their respective designed capacities. The situation created due to much delayed implementation of LNG import and failure in increasing own gas production through exploration.

Md. Muqtadir Ali, former Chairman of Petrobangla and BPC, made the observation in an exclusive interview with Energy & Power Editor ***Mollah Amzad Hossain.***

What is your evaluation about the present state of Bangladesh gas sector?

Around 1,600 MMCFD out of the 2,750 MMCFD gas is now being supplied by the International Oil Companies (IOCs). The remaining 1,150 MMCFD is coming from Petrobangla companies operated by the National Oil Companies (NOCs). The production is depleting from all the gas fields. It is now being apprehended that within the next 2-3 years, the total production capacity may come down below 2,200 MMCFD. On the other hand, the gas demand may exceed 4,000 MMCFD by then. From the present scenario and preparedness, it appears that import of additional 2,000 MMCFD of LNG would not be possible. Required initiatives for increasing own production through expediting exploration campaign are also missing. Consequently, a chaotic situation is being apprehended.

It is being often told that there is a lack of coordination among gas production, transmission and distribution entities. How would you react if it is mentioned that the gas sector is going through troubled waters without a captain?

I would not disagree. There is no alternative according to the availability of gas resource and its optimum use. Some examples can be cited here as reference. GTCL has been asked to expand the transmission infrastructure for Khulna region in 2009 and it was completed by 2012. But till now gas could not be supplied and it is uncertain when it would start. But GTCL is paying the DSL as the project was implemented with a loan from Asian Development Bank. In such a dismal scenario, GTCL is working to expand the grid to Saidpur through Rangpur from Bogura. It also remains uncertain from where the additional gas would be made available for the customers of these regions. It appears that there is no coordinated action plan of Petrobangla for meeting these challenges. There is no other alternative to piloting the gas sector along the right route without positive action plan of Petrobangla.

It is being alleged that a huge investment has been made in expanding gas transmission infrastructure without detailed techno economic feasibility studies. Consequently, gas supply could not start in some areas and some other infrastructure are being operated at well below the designed capacities. These have put GTCL financial condition under huge stress. What are your views?

Yes, GTCL has already become sick and would become even more sick. Such situation has been created due to imposing decisions on GTCL from the top without conducting detail network analysis. The construction of 30 inch OD Maheshkhali - Anowara transmission pipeline hurriedly was a huge mistake. Within a year or two, another 42 inch OD pipeline was constructed. If the 42-inch OD pipeline was constructed at the first instance, it could have transported 1,500-1,600 MMCFD

of gas and it was good enough to serve 10-12 years and thereafter a second pipeline could have been installed once the demand exceeded 1500 MMCFD. Now both the pipelines are remaining underutilized, resulting in financial stress on GTCL.

Moreover, without arranging gas for supplying to Kushtia, Jessore and Khulna region, the transmission pipeline is being built from Bogura to Saidpur through Rangpur. The result would be that all these pipelines would remain underutilized or not supplied with gas and this would throw GTCL into greater financial difficulties in future. In addition, the very purpose of extension of gas pipeline facilities would be frustrated.

The distribution companies have disconnected about 100,000 delinquent domestic consumers over the past few months. It is being told that around 300,000 more such illegal customers are still using gas. Experts blame that flawed policy and lack of supervision and monitoring let this to happen. Around 100-150 MMCFD of gas is being pilfered from the system. What is the remedy?

I strongly support the government's decision not to give any new gas connection for domestic use as there is alternative to piped gas. Apart from continuing with the decision, even gas supply to all legal domestic users should have been stopped by giving a certain deadline. LPG should be the cooking fuel all over Bangladesh. People lean towards taking illegal gas connections in gas franchise area due to the present higher price of LPG. The price of pipeline gas should be increased in phases especially considering the higher import price of LNG as well as equivalent price of LPG and subsidy be given to the LPG users to match the piped gas and LPG prices.

Political and local muscle power participates in the illegal gas connection process. Titas Gas and other distribution companies can no longer completely eliminate this nuisance. Legal actions must be considered. Without exemplary punishment, such acts cannot be done away with. For such illegal acts, entire community around leaking gas distribution system are at greater risks of accidents apart from loss of revenues.

Do you think that failure in taking appropriate decision for oil and gas exploration hastened the LNG import?

We have to focus on three aspects here. Initiative for LNG import was taken in 2009 and in 2010, the Prime Minister had directed the Energy and Mineral Resources Division to explore import of LNG from Qatar. Initially it was planned that LNG import would be made effective through installation of FSRUs and at the same time land-based LNG facilities would be installed. But unfortunately, the actual import through FSRUs could be made in 2018. Such a long delay is completely unacceptable. It should have been started as early as 2012. Though the gas production could be increased from the already discovered reserve, not enough initiatives were taken to explore and discover new reserves. No initiative was taken to exploit coal reserve to relieve pressure on the gas. Rather very inappropriate and unacceptable action was taken for setting up of imported coal-fired power plants. The cost of coal import in Bangladesh is relatively higher due to shallow draft in the coast.

Works on setting up of land-based LNG infrastructure could not also be advanced at required pace for meeting the future needs.

There is hardly any option now but importing LNG to meet the deficit. Is Bangladesh proceeding with appropriate preparation?

Please note that imposed decisions always cause delays in project implementation. The reasons as to why implementation of the first FSRU took 9-year time should be identified. This will pave the way for timely implementation of the future projects. In the past, senior bureaucrats used to take opinion from the technical experts. But now the projects are imposed on the executing agencies without taking their opinion. That is why such projects are always getting delayed and sometimes it is failing to achieve the desired goals. Failure in drilling 108 wells is one such project.

We have already fallen behind setting up of required infrastructure for LNG import. The situation for LNG import using planned land-based LNG terminal at Matarbari by 2024 is not at all encouraging. The government could encounter serious gas crisis if it is delayed like the FSRU.

Two FSRUs are in operation at Maheshkhali, Cox's Bazar. Works for selecting an EPC contractor for a land-based LNG terminal at Matarbari has started. In the meantime, NWPGCL has formed a joint venture company with Excelerate Energy. They are working on the prospect of LNG import for using in a 3,600 MW capacity power plant at Payra, Patuakhali. It is being said that Petrobangla would be able to supply gas to Khulna and Barisal region after purchasing RLNG. What are your views?

Look, interested expatriate business houses consider Bangladesh as a test case. You may remember that an idea was floated to import LNG through setting up small FSRUs at CUFL and KAFCO jetty. Lot of time and energy were wasted on technically unacceptable proposition. Such a project has been implemented successfully in Hong Kong as they have the advantages of draft. But at Payra, the coastal area has such a low draft that this initiative is highly likely to fail.

The initiative of importing RLNG through pipeline from India for Khulna has also not been successful till now. The initiative for constructing some pipelines in Khulna and Jessore regions has been taken. The proposal of Excelarate for importing LNG at Payra through setting up LNG infrastructure at deep sea may be exorbitantly expensive. Nothing can be concluded before conducting detail feasibility study. But we must guard against any efforts for making Bangladesh a Guinea Pig.

Two oil giants – Total France and ConocoPhillips USA – after finding

prospects for oil and gas in the deep water of the Bay of Bengal proposed for higher gas price through renegotiating the PSC. But they relinquished their blocks when their proposal was not accepted. Some observers thought that Bangladesh lost an opportunity there. What are your views?

Yes, I think Bangladesh has lost the opportunity by not renegotiating the PSC with the two oil giants. Total and ConocoPhillips had proposed for revising the gas price. After thorough studies, they thought the resources identified could not be profitably exploited at the gas price included in the PSC. But their proposals were not accepted. Their proposed price was less than what Bangladesh is now paying for LNG. Even in the latest version of the updated Model PSC for deep water, higher gas price has been included. If their proposals were accepted at that time, may be by this time success would have been achieved and other IOCs would have been encouraged for risking investment in Bangladesh offshore.

It may be mentioned here that Chevron had proposed to amend the existing PSC for going into deeper zone and sought an additional fund of US$ 2.00 million from Petrobangla for exploring the deeper horizon at Bibiyana Gas Fields. But rejecting that proposal, Petrobangla insisted that they would carry out exploration activities at the deeper zone, and did not approve Chevron's proposal. Had it agreed to Chevron's proposal, a new era could have been ushered in specially whether hydrocarbon is available or not in the deeper zones.

What should Bangladesh do now for expediting exploration at onshore and offshore? Should it be done through negotiation with IOCs or trying to attract IOCs through open bidding?

Please note that oil and gas exploration is a risky venture. There is no option but to offer enough data package for attracting the IOCs. Bangladesh does not have enough data which can attract the IOCs or even a joint venture partner. We have to acquire data and it should be reliable quality data. BAPEX should be provided with minimum required finance for developing rich data bank through conducting 2D and 3D seismic surveys in the onshore areas. BAPEX can be a proud possessor of such data especially for Rajbari, Shariatpur, Madaripur and Faridpur districts. IOCs would also become interested if such reliable data can be made available.

Oil price in global market is still in the lower range. It will be extremely difficult to attract major IOCs for making risk investments in Bangladesh at this moment through PSC bidding. The decision making process in Bangladesh is complex and protracted. Efforts for engaging IOCs may be made through establishing contacts with IOCs and diplomatic maneuvering.

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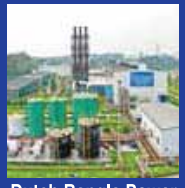

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