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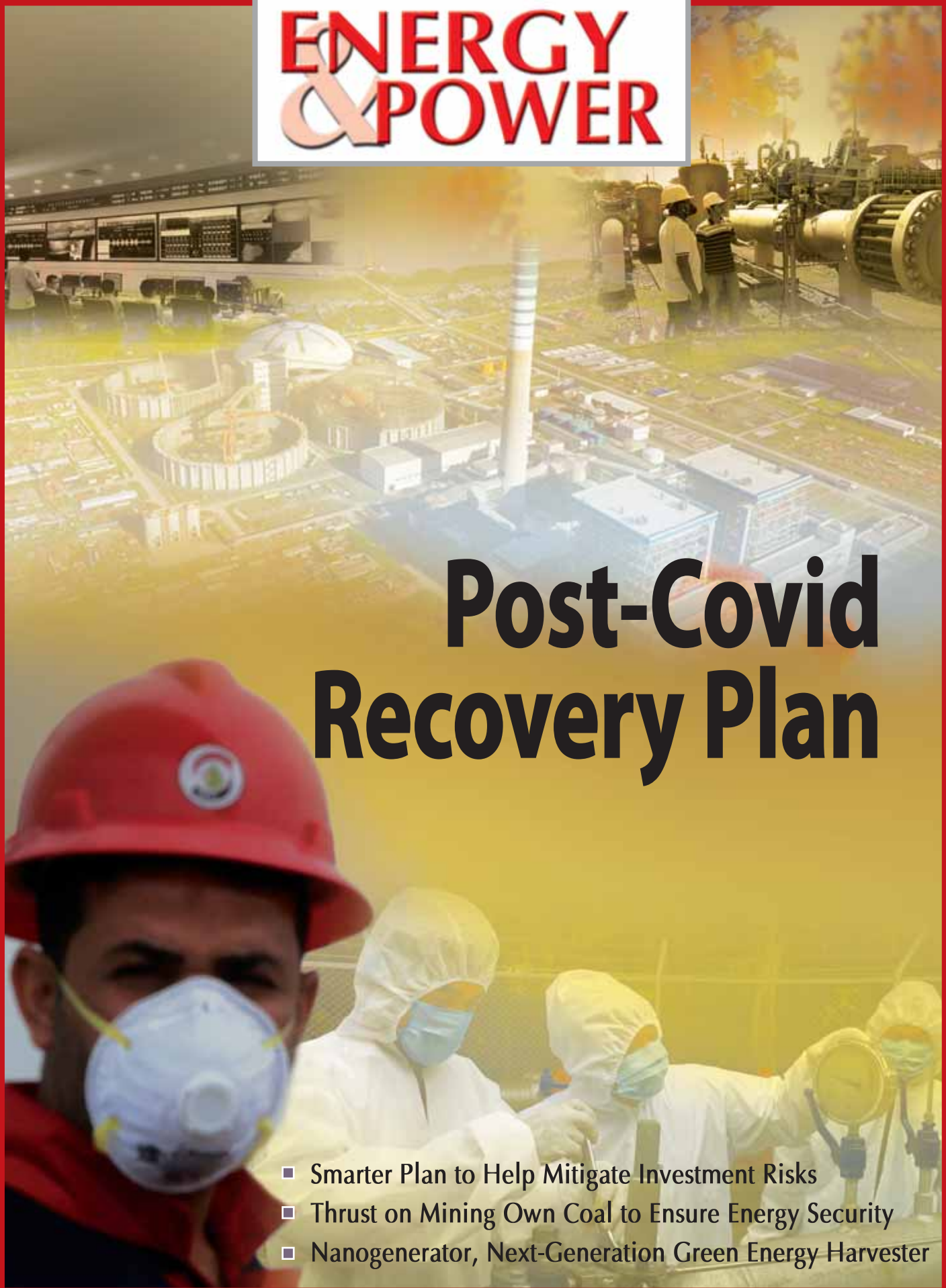
ENERGY & POWER



Post-Covid Recovery Plan

- Smarter Plan to Help Mitigate Investment Risks
- Thrust on Mining Own Coal to Ensure Energy Security
- Nanogenerator, Next-Generation Green Energy Harvester

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The projected demand growth of power could not be achieved and, I think, the post-COVID demand growth is unlikely to be more than 5%. So, the government should be smarter in implementation of the power & energy sector projects – smaller projects of two-year term should be undertaken under the long-term plan. It might create some temporary supply deficit, but would help shield the country from over-capacity investment risks.

Fortnightly Magazine, Vol 18, Issue 6, September 1-15

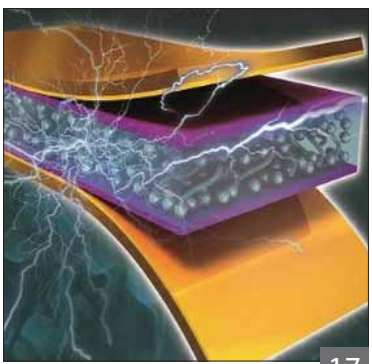
ENERGY & POWER

EDITORIAL

International Energy Agency (IEA) has recently released a report titled 'Sustainable Recovery Plan (SRP) 2021-23', suggesting adoptions by the governments across the world to recover from all round impacts of the global COVID-19 pandemic. The plan comprises of three goals: to maintain and create jobs, boost economic growth, and improve energy sustainability and resilience. The real concerns of COVID-19 are confronting immediate health hazards – saving lives, restoring jobs for livelihood. The IEA estimated a spending requirement of around $1 trillion per year over the next three years. This plan would create nearly 9 million new energy-related jobs over the next three years. This compares with a figure of 6 million jobs at risk from the Covid-19 crisis in energy supply, efficiency and vehicles. But for all these, business must unlock, education must be business as usual. The SRP is not a 'must do' mandatory guideline, but seeks to show what can be done to better manage the recovery initiatives.

There cannot be any plan equally applicable to all countries as circumstances differ. However, the IEA considers that whether or not countries follow the measures laid out in the plan would remain the sovereign choice.

highlights



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The Covid-19 pandemic has remarkably impacted all aspects of life, including the world's energy sector. This pandemic has triggered plans for phasing out emitting fossil-fuelled power plants, accelerating the energy domain to a more sustainable, renewable future. Low-carbon energy demand is anticipated to surge due to its low operating costs and favourable access to many power systems. These will also reduce ..

COVER

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International Energy Agency (IEA) has recently released a report titled Sustainable Recovery Plan (SRP) 2021-23, suggesting adoptions by the governments across the world to recover from all round impacts of the global COVID-19 pandemic. The SRP is not a 'must do' mandatory guideline, but it seeks to show the governments what can be done to better manage the recovery initiatives. The IEA considers that whether or not countries follow the measures laid out in the plan would remain the sovereign choice. Its suggested plan is a ...

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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.

ABB Supplies Substation for 100MW Bangladesh Solar

ABB has signed a contract for the installation of a substation and transformers, plus automation and control systems at a 100MW solar photovoltaic plant in Rangpur.

ABB will work with Energon Renewables, a subsidiary of independent power producer Orion, to install the electrical hardware required for grid connection, as well as its distributed system control technology at the Moulbhara solar power plant.

The plant is expected to start generating electricity by end of 2020.

ABB will implement a fully integrated automation and electrical system for control and monitoring of the entire plant, including the weather monitoring station, to increase the plant's efficiency and reliability.

Moulbhara will act as a blueprint to help to define a road map for a further 1000MW worth of solar power projects across the country, ABB said.

ABB power, water and energy industries head Danilo Moresco said: "This project is the first of its kind in Bangladesh.

"Through it, we will enable clean power to be supplied to residents and industry alike, helping the government to meet its global benchmarks of energy through renewable sources."

Orion managing director Salman Obaidul Karim said: "Rapid industrialization in Bangladesh has seen the demand for power sharply increase and this continues to grow daily.

"The total generation capacity of the country is 20,000MW, yet currently only 1180MW is delivered from renewable sources. With this new solar project, we hope to increase this and help the country meet its target of 2000MW generated through renewable sources by 2020."

BP's Green Energy Targets to be Tough to Meet

BP will need to invest tens of billions of dollars over the next decade and may have to accept lower returns than it can get from oil if it is to meet its target of becoming one of the world's largest renewable power generators.

The British oil and gas company wants 50 gigawatts (GW) of renewables such as wind, solar and hydropower in its portfolio by 2030, up from just 2.5 GW now and more than the total renewable capacity in the United Kingdom at the moment.

European oil firms are under pressure from activists, banks, investors and some governments to shift away from fossil fuels and are trying to find business models that offer higher margins than the mere production of renewable energy would generate.

Recently, BP followed Eni in committing to cut its oil production over the coming decade and set a bigger target for reductions than the Italian company.

Analysts say large offshore wind farms probably offer the quickest route for BP to scale up but as they can take years to develop, and have high start-up costs, it may have to turn to acquisitions - and they won't come cheap.

"Getting value for that will be hard because these assets are very attractive and selling at very high prices," said Peter Alkarim, associate at British strategy consultants Stonehaven.

BP already has debt of US$41 billion and as investors increasingly turn away from fossil fuel producers in favor of green energy firms, its shares have halved over the past two years, slashing its market value to under US$80 billion.

Content

Arshad Mansoor Named EPRI President, CEO

Arshad Mansoor

The Electric Power Research Institute (EPRI) Board of Directors has unanimously elected Arshad Mansoor to be the chief executive officer, effective Jan. 1, 2021, after the retirement of current CEO Michael Howard on Dec. 31, 2020.

"Mike has provided outstanding leadership for EPRI while President and CEO," said EPRI Board Chair and President and CEO of Edison International Pedro Pizarro.

"During his 10-year tenure, EPRI achieved financial stability, while broadening its research portfolio, demonstrating its thought leadership, and expanding its global reach. We will certainly miss his leadership at EPRI."

Mansoor will continue in his role as president.

Mansoor joined EPRI in 2006 as vice president for power delivery and has since held numerous leadership positions throughout EPRI. Before becoming president, he served as senior vice president of research and development, overseeing a broad-based EPRI research portfolio.

Mansoor earned a doctoral degree in electrical engineering from the University of Texas in Austin. He also completed the Harvard Advanced Management Program and the MIT Reactor Technology Course.

Chevron Invests in Nuclear Fusion Startup Zap Energy

Oil major Chevron said recently it is investing in Zap Energy, joining Italy's ENI and Norwegian state oil company Equinor who have also backed nuclear fusion startups to reduce their carbon footprint.

Chevron's decision comes as energy companies face increasing pressure from investors to reduce emissions, spend more on low-carbon energy and disclose the impact of their fossil fuel production on climate change.

"Chevron Technology Ventures' investment in fusion is an opportunity to enhance the company's focus on a diverse portfolio of low-carbon energy resources," Chevron said in a statement, without putting a number on the size of its investment.

Hitachi ABB Power Grids to Operate in Seven Balkan Countries

Nina Dusper Sušić

The newly-formed joint venture Hitachi ABB Power Grids has said it will operate in the region under the Balkan Cluster that covers seven countries – Albania, Bosnia and Herzegovina, Croatia, Kosovo*, Montenegro, North Macedonia, and Serbia.

The company's top officials have also said that "world-class power grid solutions" will help it play an active role in the global decarbonization of energy systems.

Hitachi Ltd. and ABB Ltd. have announced the completion of all required procedures and the formation of Hitachi ABB Power Grids Ltd., in which Hitachi will have an 80.1% stake.

The combined entity, which will be headquartered in Zurich, Switzerland, has annual revenues of about USD 10 billion and employs 36,000 people in 90 countries, according to a press release.

Hitachi ABB's Balkan Cluster will be headed by Nina Dusper Sušić, the former head of protection and control system and financial controller.

ROSATOM Moves to United Brand

ROSATOM has switched to using a united brand. While preserving their names and unique identity, organizations of the Russian nuclear industry will get unified logos based on the trademark of the State Atomic Energy Corporation Rosatom - the Mobius strip.

Such approach to corporate branding is called "umbrella branding," and many top-class global corporations are using it.

The use of the umbrella brand in the nuclear industry will allow a unified positioning of ROSATOM organizations in the domestic and foreign markets, which, in turn, will lead to higher recognition of Russian nuclear industry enterprises and their projects among partners and customers.

The rebranding campaign is being carried out as a part of the new ROSATOM strategy, approved in April, which is based on the principle of "United ROSATOM".

The introduction of a unified branding system is a logical step in consolidating the efforts of the industry in promoting products and services on Russian and foreign markets.

REB Cuts Off Power Supply in Flood-Hit Areas

The Rural Electrification Board (REB) has cut off power supply to 10,950 clients in flood-affected Khulna and Satkhira districts to prevent any accident.

According to an REB press statement issued recently, it has temporarily shut down electricity in flood-hit areas for safety reason as rising floodwater level may cause accident any time.

Power supply will be restored soon after the floodwater starts receding, it added.

Presently, the REB provides electricity for 29 million people in rural areas.

Civil Society Groups Oppose TEPCO as Consultant of PSMP

A group of 50 civil society organizations and climate movement platforms across the world has demanded not to consider Tokyo Electric Power Company (TEPCO) Ltd as the consultant for reviewing the Power System Master Plan (PSMP).

The demand letter, signed by the respective organizations, was sent to the planning minister MA Mannan, finance minister AHM Mustafa Kamal, state minister for power and energy Nasrul Hamid, and the chair of the parliamentary standing committee on environment, forest and climate change Saber Hossain Chowdhury recently through email.

Japanese foreign affairs minister Motegi Toshimitsu, Japan International Cooperation Agency (JICA) President Shinichi Kitaoka, and TEPCO president Tomoaki Kobayakawa were also among the recipients of the letter.

The signatories of the letter argued that TEPCO has a serious conflict of interest over the power and energy sector in Bangladesh, hence, is not qualified to be a consultant of the next PSMP.

They also demanded to cancel all the future coal projects in the pipeline and set up the target of 100 percent renewables by 2050 in the next PSMP.

Bangladesh Poribesh Andolon (BAPA), Bangladesh Environmental Lawyers Association (BELA), Campaign for Good Governance (SUPRO), Campaign for Sustainable Rural Livelihoods (CSRL), Land and Nature Safeguard Platform (LNSP), Nagorik Sanghati are among the signatories from Bangladesh.

Bangabandhu was Pragmatic in Power Sector: Tawfiq-E-Elahi

Bangabandhu Sheikh Mujibur Rahman had always taken pragmatic steps in power and energy sector, Prime Minister's Energy Adviser Dr Tawfiq-e-Elahi Chowdhury said recently.

"The Father of the Nation Bangabandhu Sheikh Mujibur Rahman always had pragmatic approach towards the power and energy sector instead of being idealistic," he said.

He came up with the view in an online seminar styled: "Bangabandhu and the energy sector" organized by Power Division marking the National Mourning Day commemorating the 45th death anniversary of Bangabandhu.

"Bangabandhu was an invincible force. I was not a political person, then I was a sub-divisional commissioner. I went to hear the historic 7th March speech of Bangabandhu," Tawfiq Elahi said.

"I am still astonished after thinking the power of a speech. Bangabandhu gave every direction for our Independence in a 15-minute speech," he added.

State Minister for Power, Energy and Mineral Resources Nasrul Hamid addressed the event special guest.

"The people and the environment are the first priority of the Prime Minister. She never said no to us whenever we asked for something for the development of country," Nasrul Hamid said.

"Bangabandhu had shown the world that if the whole nation comes together, no military force is able to fight against them," said Prime Minister's Principal Secretary Dr Ahmad Kaikaus.

বিশ্বাস আর আস্থায়
ফ্রান্সের টোটাল
এলপি গ্যাস

TOTAL

Legal Notice to Stop Inflated Electricity Bills

The Consumer Association of Bangladesh (CAB) has sent a legal notice to the government to stop inflated electricity bills and take appropriate action against those involved in the matter.

Supreme Court lawyer Jyotirmoy Barua sent the notice on behalf of CAB recently.

The notice was sent to the secretary of the Power Division, chairman of the Bangladesh Energy Regulatory Commission, chairman, Bangladesh Rural Electrification Board, managing director of Dhaka Power Distribution Company Ltd (DPDC), managing director of Dhaka Electric Supply Company Ltd (DESCO) and 8 others.

The lawyer would file a writ petition in the High Court if they do not take appropriate action within three days. The power division marked 290 people for the inflated electricity bills.

A task force formed by the Power Division also instructed the companies to form a committee to investigate the matter separately. But no one has been punished so far except some lower level officials of the companies.

Govt Plans to Import 3000 mmcfd LNG By 2041

The government is contemplating to import 3000 million cubic feet of LNG per day (MMCFD) by 2041 with the view to fulfilling the local demand.

Former Director of Petrobangla Md Quamruzzaman shared it at a virtual seminar on the occasion of National Energy Security Day'20 recently.

At present the government is importing 650mmcfd LNG through FSRU, and 1500 MMCFD LNG will be imported by 2025, said Quamruzzaman while presenting the keynote paper.

"The government is looking forward to importing 2000 MMSCFD LNG by 2030," he added.

Speaking at the occasion, Energy and Mineral Resources Division Senior Secretary Md Anisur Rahman said, "Currently, we are producing 2500mmcfd-2550mmcfd natural gas in local gas fields whereas the demand is more or less 3250 mmcfd," said Anisur Rahman,

The rest of the demand will be met through LNG import, according to him.

"We are importing LNG under two separate spot contracts. Of them, we are planning to bring seven cargos by December and another 14 cargos within June, 2021," he added.

Barapukuria Graft Case: Hearing on Charge Framing Against Khaleda Sept 17

A Dhaka court recently set September 17 for the hearing on charge framing against BNP Chairperson Khaleda Zia and seven others in Barapukuria coalmine graft case.

Begum Khaleda Zia

Judge ASM Ruhul Imran of the Special Judge's Court-2 of Dhaka passed the order.

On February 26, 2008, ACC filed the case with Shahbagh Police Station, accusing 16 people including Khaleda and 10 of her former cabinet colleagues of taking Tk 159 crore in kickbacks on the Barapukuria coalmine deal awarded to the highest bidder.

On October 5, 2008, ACC pressed charges against Khaleda and 15 others in the case.

Earlier, six accused including former ministers M Saifur Rahman and Abdul Mannan Bhuiyan died during the trial, while Jamaat leaders Ali Ahsan Mohammad Mojahid and Motiur Rahman Nizami were executed on charges of committing crimes against humanity during the Liberation War. Therefore, names of the eight were dropped from the trial.

BPDB Holds Discussion on Bangabandhu

Bangladesh Power Development Board (BPDB) organized a virtual discussion on 'life of Bangabandhu and the mourning day' recently marking the 45th martyrdom anniversary of Father of the Nation Bangabandhu Sheikh Mujibur Rahman.

Chairman of BPDB engineer Md Belayat Hossain attended the meeting as the chief guest while member of BPDB (finance) Selim Abed, member (planning and development) Mustaq Muhammad, member (production) Md Jakir Hossain, member (company affairs) Nurun Nahar Begum and member (distribution) ABM Abdullah joined the meeting as the special guests. BPDB member (administration) Md Jaharul Hoq presided over the program.

Post-Covid Recovery Plan

Saleque Sufi

International Energy Agency (IEA) has just released a report titled Sustainable Recovery Plan (SRP) 2021-23, suggesting adoptions by the governments across the world to recover from all round impacts of the global COVID-19 pandemic. The SRP is not a must do mandatory guideline, but It seeks to show the governments what can be done to better manage the recovery initiatives. IEA considers that whether or not countries follow the measures laid out in the plan would remain the sovereign choice.

The IEA suggested plan is a combination of policy actions and targeted investments. It offers an encouraging scenario how the world can achieve quickest possible recovery confronting the monumental challenges triggered by the pandemic. This write up is an in depth review of the recovery plan.

Payra power plant control room

The world community is now at a war with the worst ever health pandemic since 1930. The pandemic has triggered colossal economic damage and as consequential impacts dealt severe blows on employment and investment. The pandemic has impacted on every aspects of the economy, including energy. It is well understood that the governments cannot wait with fingers crossed and continue with the widespread shutdown or lockdown. They had to unlock activities to decelerate the spiral domino effects on the economy. Hence, planning recovery is of prime importance at this moment. This recovery plan needs to contain pandemic staying alongside with it for a while and make economy resilient enough to confront similar pandemics in the future.

IEA started taking stock of the situation since the outbreak of the pandemic and urged upon the governments for making the recovery plans as sustainable and resilient as possible. The reasons behind such call of IEA were addressing the core issues of global recession and growing unemployment. IEA also stressed upon developing cleaner and more secure energy system.

IEA suggested the policymakers designing economic recovery plans and taking economical consequential decisions in a very short span of time. The decisions are for planning and implementing economic and energy infrastructure sustainable over decades with an end in view that these meet the long term energy and climate goals. IEA claimed that its suggested recovery plan would provide opportunity for boosting economic growth, creating millions of new jobs and at the same time structurally decline green house gas emissions.

IEA has announced its plan for a Clean Energy Summit on 9 July 2020 for providing to government policy makers, industry, and investment community with the strongest possible data, analysis and options. All relevant stakeholders can choose the best option for recovery from few suggested.

IEA has identified and assessed various impacts of the pandemic as under:

Macroeconomic Impact

Even in end June 2020, none knows for sure how long this pandemic is going to last or whether there would a second wave of attack. None also know for sure what would the pandemic and related containment measures would impact global trade fundamentals, businesses, consumer behavior and investors confidence. IEA observed that by mid-April 2020, full or partial lock downs were imposed in countries representing 60% of the global economy. By Mid–May almost one third of the global population were under lockdown.

IEA report referred to OECD (Organization for Economic Co-operation and Development) report that stated about 6% contraction of the world economy in 2020 provided that a second wave of COVID can be avoided over the second half of 2020. IMF also made similar projection. GDP of all countries would also shrink significantly. The ILO report 2020 stated about 300 million fulltime job cuts and about 450 million industries reportedly encountering disruptions.

The pandemic created volatility in global energy market. Price of crude oil and natural gas dropped to the lowest ever level in early March 2020. Oil and gas revenue constitutes the backbone of the most producing and exporting countries. IEA projected that income from oil and gas export may by 80% of countries like Iraq, Nigeria, Oman and Angola in 2020. These nations would be in considerable crisis in managing the social and health infrastructure. The challenges are much greater in depth and diversity than the previous oil

shock in 2014. Such reductions, according to IEA, reinforce the importance of economic diversification.

The challenges of low income countries are a bit different. Their ability to manage and mitigate immediate health risks are often compromised by lack of access to sanitation and public health infrastructure. Their high household occupancy rates and significant number of low income, often informal jobs not possible carrying out remotely, making these hard to practice social distancing. According to IEA, in 27 sub-Saharan African countries, close to 60% of health center facilities are without access to reliable electricity and over 860 million people worldwide lack access to electricity, severely limiting their ability to store medicines and food, charge phones, access digital information, maintain access to education remotely or light their homes effectively.

REB line maintenance work during COVID-19 pandemic period

Many developing economies also have less capacity than advanced economies to boost spending on health measures, provide emergency assistance to workers, households and businesses, and regenerate their economies. The developing economies often face high levels of debt service: many countries in sub-Saharan Africa spend more on interest repayments than healthcare. The World Bank predicted that remittance flows, a significant source of revenue for many economies, could also fall by around a fifth in 2020 due to job losses in wealthier countries. International cooperation, assistance and aid will be critical to ensure that developing economies do not suffer disproportionately from the fallout of the crisis.

Impact on Energy Sector

Reviewing four months' data up to end April 2020, the IEA predicted for a 6% contraction of demand of primary energy in 2020 in major region. This, according to IEA, is seven times larger than that occurred during the 2008-09 financial crisis.

IEA predicted that demand of oil to drop around 8% in 2020. Demand in April 2020 dropped by 25% due to transports demand dropping sharply. Since then due to gradual reopening of business in limited way, the demand bounced back a bit. But we must not expect getting back to business as usual soon.

IEA expected natural gas demand falling by around 4% in 2020. This would constitute one of the largest contractions since natural gas became a major industry. With the reduction of demand, the world market is now over supplied with LNG. This coupled with significant reduction of gas price would cause bouncing back of gas demand back to business as usual. Learning lessons of positive impacts on environment from reduced polluting fuel use many countries would prefer natural gas as transition fuel from coal to renewables for power generation.

IEA predicted that Coal demand would drop by 8% in 2020. This would be the largest contraction since World War II. Declines in electricity demand are the principal cause of lower coal use.

IEA also predicted that Nuclear power is set to fall by 2.5% from 2019 levels due to lower demand and delays both in re-fueling existing projects and in operations at new plants.

IEA observed that electricity demand reduced by 20% during the complete lockdown period of several countries. But with economic activities resuming slowly, the reduction may fall by 5% globally in 2020 and 10% in some region. Generation from renewables is expected to increase because of low operating costs, its preferential access in many power systems, and recent growth in capacity with new projects coming online in 2020. As a result, electricity generation from renewables is expected to rise by nearly 5% in 2020.

According to IEA, the demand of Bio Fuels would decline due to reduced transport activity and a loss of price competitiveness with oil.

Impact on Environment Due to Less Use of Fossil Fuels

IEA put emphasis on the significant

reduction of air pollution of major cities due to reduced use of fossil fuel as energy demand dropped. According to IEA, the global CO_2 emissions in 2020 are expected to fall by around 2.5 gigatonnes (Gt) to just under 31 Gt, around 8% lower than in 2019. This would be the lowest level since 2010. Almost entire decline is due to reductions in economic activity rather than structural changes in the way the world produces and consumes energy. IEA observed that unless there is immediate action to bring about such structural changes, emissions are very likely to rebound as economies recover.

Gas pressure checking at a power plant of NWPGCL

Impact on Energy Sector Investment

The IEA report 2020 evidences that volatile commodity prices and suppressed energy demand aversely impacted investment in the energy sector in 2020 causing the largest decline on record with a reduction of one-fifth – almost $400 billion – in capital spending compared with 2019. The oil and gas sector has experienced the largest reduction in investment of any energy sector as a result of diminished revenues that reflect less demand and lower prices, and uncertainties about future prospects.

The share of investment in low-carbon technologies (such as renewables, efficiency, nuclear, carbon capture, utilization and storage [CCUS] has held at around one-third of total energy sector investment in recent years. It is likely to jump towards 40% in 2020, but only because investment in fossil fuels is set to drop sharply. In absolute terms, it remains far below the levels that would be required to accelerate clean energy transitions. The IEA's Sustainable Development Scenario sees annual investment in electricity networks in the 2025-30 period that is around 50% above the level seen in 2019, and annual investment in power from renewables that is around 90% higher.

Rationale of Sustainable Recovery Plan for Power & Energy Sector

A very robust and highly efficient energy and power sector would be essential for seamless recovery of all aspects of economy during the post-COVID period.

Investment in energy can sustain and boost employment while helping to deliver affordable and reliable energy and to improve the resilience of energy systems. This in turn helps to support higher employment and activity levels in all parts of the economy. Investment in energy is needed if there is to be a structural reorientation of the global energy sector that enables countries to meet their long-term goals on climate change, energy access and sustainability.

Evaluation of Possible Recovery Measures

IEA report evaluated as many as 30 energy related possible recovery measures of key sectors. Now it is up to the governments to review and adopt the best alternative that suits their case.

Electricity: IEA report suggested several alternative measures to support the expansion and modernization of electricity grids; accelerate new wind and solar installations and repower existing ones; maintain the role of hydro and nuclear power, mainly by preserving existing facilities; and manage gas- and coal-fired generation. Each option has the potential to create 1-14 jobs per million dollars invested, and would have very different impacts on energy resilience and sustainability.

Buildings: Measures to improve the efficiency of buildings and appliances could be implemented quickly, in some cases have very short payback periods and would create 10-15 jobs per million dollars invested. In low-income countries, over 2.5 billion people still lack access to clean cooking. Low LPG prices make providing access attractive, with payback periods of just one year, plus substantial job creation potential.

Industry: One-in-four jobs are in industry, and the Covid-19 pandemic has disproportionately hit small and medium industrial enterprises. Investing in energy efficiency, notably motors and agricultural pumps, and recycling would create around 10 and 18 million jobs per million dollars invested respectively.

Paschimanchal Gas Company Limited's gas pipeline checking in progress

Fuels: Investment to reduce methane emissions could mitigate some job losses in the oil and gas sector while cost effectively reducing GHG emissions. The current period of low oil and gas prices provides fertile ground for renewed efforts to phase out fossil fuel subsidies. Supporting growth in sustainable biofuels could create around 15-30 jobs per million dollars invested.

Innovation: Technology innovation plays a crucial role in improving future energy systems, and innovation in hydrogen, batteries, small modular nuclear reactors and carbon capture, utilization and storage could bring enormous long-term sustainability and resilience benefits while creating 3-8 new jobs per million dollars invested.

IEA Suggested Policy Approaches

IEA suggested for government's direct and active involvement in policy design and overview of the implementation process. The government must support in the following areas:

Supporting affordability of clean cooking options through direct incentives for equipment acquisition and fuel consumption for the poorest households. Options include subsidies, tax or duty exemptions and pre-financing of upfront costs.

Establishing price mechanisms for ensuring energy affordability for low-income households so as to increase household confidence in clean cooking solutions and reduce fuel stacking.

Developing markets for stoves and fuels, encouraging industry participation and private equity investment. This includes enforcement of laws and regulations, financial incentives and protocols to certify efficiency, emissions, and safety (e.g. safe cylinder recirculation model).

Supporting the development of modern fuel infrastructure. This includes investment in the production or import of modern fuels, distribution of cooking equipment and transport infrastructure. Supporting government and non-government organization develop renewable based renewable based electric cooking solutions, and innovative business models such as pay-as-you-cook using LPG, and to support increased use of non-fossil cooking fuels such as bio-LPG, bioethanol and other upgraded biomass fuels.

Improve Energy Efficiency & Electrification

According to IEA, investment in energy efficiency would create on average around 10 jobs per million dollars spent. Investment in more energy efficient industrial electric motors, heat pumps for low-temperature process heat and agricultural irrigation pumps typically have attractive payback periods: they could quickly generate savings that would allow industry to increase expenditure on core business operations. Options for governments to promote such investment include: tax deductions, guaranteed lending, rebates, cash-for-replacement schemes incentives for energy management systems and training and hiring energy managers.

Expand Waste & Material Recycling

IEA recognized that recycling has gained momentum in recent years, but is facing challenges from concerns about the re-use of plastics and from low prices for virgin material as a result of Covid-19. Waste collection and sorting could be ramped up quickly to provide support for jobs, with around 15-40 jobs created for every million dollars of spending.

Sustainable Recovery Plan for Energy Sector

The IEA suggested following sustainable recovery plan for the energy sector:

IEA designed global sustainable recovery plan for the energy sector with three goals: to maintain and create jobs, boost economic growth, and improve energy sustainability and resilience. This plan is specific, detailed and time-limited, was developed using the quantitative assessments of potential energy sector measures It takes account of the circumstances of individual countries, as well as existing energy project pipelines and current market conditions.

IEA estimated the overall spending need for the plan as around $1 trillion per year over the next three years. This represents about 0.7% of global GDP, and includes both public spending and private finance that would be mobilized by public policies. The public spending required would be equivalent to less than 10% of fiscal expenditure in recovery plans announced; after the 2008-09 financial crisis, green measures accounted for around 16% of total stimulus measures.

GTCL workers doing regular maintenance work at a City Gate Station

IEA model indicated that this plan would create nearly 9 million new energy- related jobs in construction and manufacturing over the next three years. This compares with a figure of 6 million jobs at risk from the Covid-19 crisis in energy supply, efficiency and vehicles. There would also be more than 0.5 million permanent jobs associated with operating and maintaining the assets constructed by the sustainable recovery plan.

Analysis done by IEA jointly with the International Monetary Fund indicates that this plan would also increase global GDP by 1.1% in each of the next three years, and would lead to global GDP being 3.5% higher in 2023 that it would have been without a spending stimulus.

IEA observed that a wide range of policies would be required to support the deployment of this plan with the aim of delivering shovel-ready clean energy projects that boost resilience; developing a strong pipeline of new projects; tailoring support for distressed industries; mobilizing large levels of private finance; and strengthening international co-operation.

Energy systems would become more sustainable as a result of the plan. Globally, annual energy-related CO_2 emissions would be nearly 3.5 Gt lower than they would have been otherwise, and methane emissions would be cut by 0.8 Gt CO_2-eq.

Air pollutant emissions would be around 5% lower. In addition, around 420 million people would gain access to clean cooking solutions in low-income countries, and nearly 270 million people would gain access to electricity.

IEA observed that energy systems would become more resilient as a result of the plan. Investment in better electricity grids and improved efficiency would improve electricity security by lessening the risks of outages, boosting flexibility, reducing losses and helping to integrate larger shares of variable renewables. Energy consumer bills would also be lower across all regions, freeing resources for spending in other sectors.

Conclusion

We must remember that IEA has proposed various options in its recovery plan, reviewing extensive data and information about COVID-19 impacts on various aspects of economics, energy and environment. The real concerns are confronting immediate health hazards – saving lives, restore jobs for livelihood. But for all these business must unlock, education must be business as usual. There is no guarantee yet how long human civilization would have lived alongside the corona pandemic. But all these sustainable supply of quality power and energy would be essential. IEA suggested recovery plan, among others, how sustainable energy security can be approached in the changed circumstances. There cannot be any plan equally applicable to all countries as circumstances differ. But one thing for sure transition to greener and cleaner energy has to happen quicker than before and natural gas would become the preferred interim fuel. GHG emissions and CO_2 must be drastically reduced at any costs for preserving and protecting mother nature.

EP

Saleque Sufi;
Contributing Editor, EP

শেখ হাসিনার উদ্যোগ ঘরে ঘরে বিদ্যুৎ

মুজিব শতবর্ষ MUJIB 100

দেশের উন্নয়ন অগ্রযাত্রার গর্বিত অংশীদার-

নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড (এনডব্লিউপিজিসিএল)

গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের মাননীয় প্রধানমন্ত্রী শেখ হাসিনার দূরদর্শী পদক্ষেপে সরকারের বিদ্যুৎ উৎপাদন লক্ষ্যমাত্রা পূরণে এনডব্লিউপিজিসিএল-এর প্রধান নির্বাহী কর্মকর্তা প্রকৌঃ এ. এম. খোরশেদুল আলম- এর সুযোগ্য ও গতিশীল নেতৃত্বে বিদ্যুৎ কেন্দ্র নির্মাণ প্রকল্প গ্রহণ ও বাস্তবায়নে এবং বিদ্যুৎ কেন্দ্র পরিচালন ও সংরক্ষণে অত্র কোম্পানি অনবদ্য ভূমিকা পালন করে আসছে। ফলশ্রুতিতে, **'বিদ্যুৎ ও জ্বালানি সপ্তাহ ২০১৮'**-এর উদ্বোধনী অনুষ্ঠানে দ্রুত বিদ্যুৎ উৎপাদন বৃদ্ধির স্বীকৃতি স্বরূপ মাননীয় প্রধানমন্ত্রী এনডব্লিউপিজিসিএল-কে পুরস্কৃত করেন।

নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিঃ দ্রুততম সময়ে শক্তিশালী ব্রান্ড ইমেজসহ দেশের নেতৃত্বশীল বিদ্যুৎ উৎপাদনকারী সংস্থা হিসেবে ইতোমধ্যে পরিচিতি লাভ করেছে।

দ্রুত বিদ্যুৎ উৎপাদন বৃদ্ধির স্বীকৃতি স্বরূপ মাননীয় প্রধানমন্ত্রী শেখ হাসিনার হাত থেকে পুরস্কার গ্রহণ করছেন কোম্পানির প্রধান নির্বাহী কর্মকর্তা

এক নজরে নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড

কোম্পানি গঠন ঃ আগস্ট ২৮, ২০০৭

বিদ্যুৎ উৎপাদন শুরু ঃ নভেম্বর ০৩, ২০১২

চলমান বিদ্যুৎ কেন্দ্র সমূহঃ

- সিরাজগঞ্জ ২২৫ মেঃওঃ কম্বাইন্ড সাইকেল পাওয়ার প্লান্ট (১ম ইউনিট)
- খুলনা ২২৫ মেঃওঃ কম্বাইন্ড সাইকেল পাওয়ার প্লান্ট
- ভেড়ামারা ৪১০ মেঃওঃ কম্বাইন্ড সাইকেল বিদ্যুৎ কেন্দ্র
- সিরাজগঞ্জ ২২৫ মেঃওঃ কম্বাইন্ড সাইকেল পাওয়ার প্লান্ট (২য় ইউনিট)
- সিরাজগঞ্জ ২২৫ মেঃওঃ কম্বাইন্ড সাইকেল বিদ্যুৎ কেন্দ্র (৩য় ইউনিট)
- সিরাজগঞ্জ ৪১৪ মেঃওঃ কম্বাইন্ড সাইকেল বিদ্যুৎ কেন্দ্র (৪র্থ ইউনিট) (যৌথ মালিকানা)
- মধুমতি ১০০ মেঃওঃ এইচএফও চালিত বিদ্যুৎ কেন্দ্র
- পায়রা ১৩২০ মেঃওঃ তাপ বিদ্যুৎ কেন্দ্র, ১ম ইউনিট (১ম পর্যায়)

মোট বিদ্যুৎ উৎপাদন ক্ষমতাঃ ২৪৭৩ মেঃওঃ

চলমান উন্নয়ন প্রকল্পসমূহঃ

- পায়রা ১৩২০ মেঃওঃ তাপ বিদ্যুৎ কেন্দ্র, ২য় ইউনিট (১ম পর্যায়) (যৌথ মালিকানা)
- রূপসা ৮০০ মেঃওঃ কম্বাইন্ড সাইকেল বিদ্যুৎ কেন্দ্র নির্মাণ প্রকল্প
- সিরাজগঞ্জ ৭.৬ মেঃওঃ গ্রিড কানেক্টেড ফটোভোল্টায়িক সোলার বিদ্যুৎ কেন্দ্র প্রকল্প
- পায়রা ১৩২০ (২ X ৬৬০) মেঃওঃ তাপ বিদ্যুৎ কেন্দ্র (২য় পর্যায়) (যৌথ মালিকানা)
- পাবনা ৬০ মেঃওঃ গ্রীড কানেক্টেড ফটোভোল্টায়িক সোলার বিদ্যুৎ কেন্দ্র প্রকল্প
- পায়রা ৩৬০০ মেঃওঃ এলএনজি টু পাওয়ার প্রকল্প (যৌথ মালিকানা)

চলমান উন্নয়ন প্রকল্পের মোট সক্ষমতাঃ ৬৪১৩.৬ মেঃওঃ

ভবিষ্যৎ প্রকল্পসমূহঃ

- সিরাজগঞ্জ ১০০ মেঃওঃ গ্রীড কানেক্টেড ফটোভোল্টাইক সোলার বিদ্যুৎ কেন্দ্র প্রকল্প (যৌথ মালিকানা)
- পায়রা ৫০ মেঃওঃ বায়ু বিদ্যুৎ কেন্দ্র প্রকল্প (যৌথ মালিকানা)
- যমুনা ১২৫ মেঃওঃ গ্রীড কানেক্টেড ফটোভোল্টাইক সোলার পাওয়ার প্লান্ট প্রকল্প (যৌথ মালিকানা)
- দীঘিপারা ১০০০ মেঃওঃ আল্ট্রা সুপার ক্রিটিকাল তাপ বিদ্যুৎকেন্দ্র প্রকল্প (যৌথ মালিকানা)

ভবিষ্যৎ প্রকল্পের মোট সক্ষমতাঃ ১২৭৫ মেঃওঃ

এনডব্লিউপিজিসিএল-এর যৌথমালিকানাধীন কোম্পানিসমূহঃ

ক্র. নং	যৌথ মালিকানাধীন কোম্পানির নাম	অংশীদারী প্রতিষ্ঠান	এনডব্লিউপিজিসিএল-এর মালিকানা/শেয়ার
১.	বাংলাদেশ-চায়না পাওয়ার কোম্পানি লিঃ	চায়না ন্যাশনাল মেশিনারি ইমপোর্ট এন্ড এক্সপোর্ট কর্পোরেশন (সিএমসি), চায়না	৫০%
২.	সেমকর্প নর্থ-ওয়েস্ট পাওয়ার কোম্পানি লিঃ	সেমকর্প ইউটিলিটিজ (প্রাঃ) লিঃ, সিঙ্গাপুর	২৯%
৩.	বাংলাদেশ-চায়না রিনিউএবল এনার্জি কোম্পানি লিমিটেড	চায়না ন্যাশনাল মেশিনারি ইমপোর্ট এন্ড এক্সপোর্ট কর্পোরেশন (সিএমসি), চায়না	৫০%

২০২৫ সাল নাগাদ এনডব্লিউপিজিসিএল-এর বিদ্যুৎ উৎপাদন লক্ষ্যমাত্রাঃ ১০,০০০ মেঃওঃ প্রায়

NORTH-WEST POWER GENERATION COMPANY LIMITED

নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিঃ

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

(বাংলাদেশ বিদ্যুৎ উন্নয়ন বোর্ডের একটি প্রতিষ্ঠান)

Nanogenerator, Next-Generation Green Energy Harvester

Dr. Nitu Syed

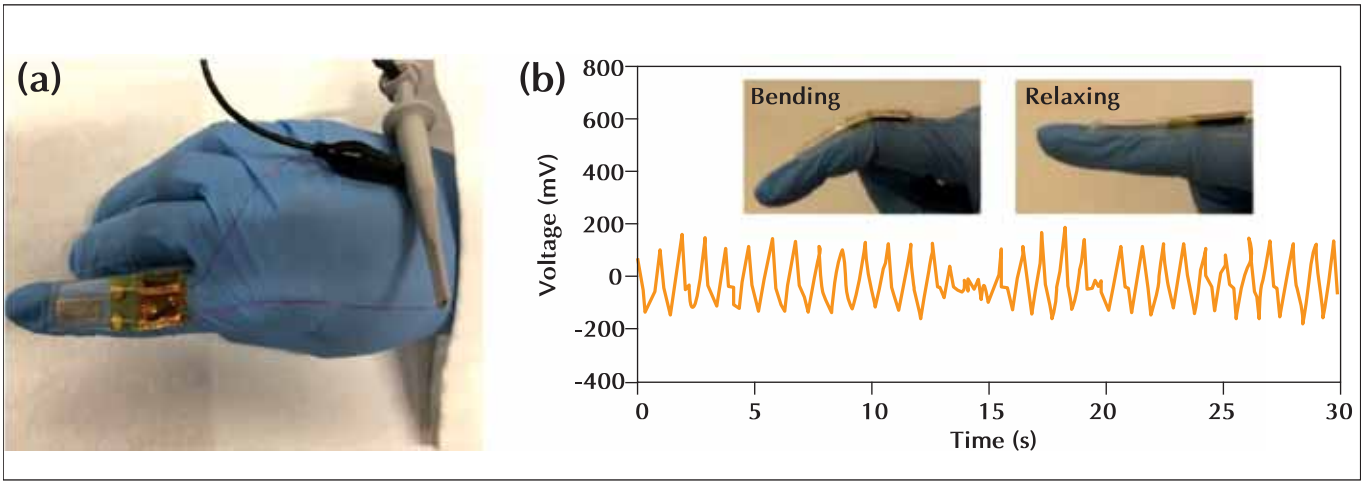
The Covid-19 pandemic has remarkably impacted all aspects of life, including the world's energy sector. This pandemic has triggered plans for phasing out emitting fossil-fuelled power plants, accelerating the energy domain to a more sustainable, renewable future. Low-carbon energy demand is anticipated to surge due to its low operating costs and favourable access to many power systems. These will also reduce emissions and reduce global warming. Hence, harvesting the ambient mechanical energy to power up various electronic devices could be a preferred alternative. The introduction of piezoelectric nanogenerators could offer intriguing prospects in the field of ambient energy-harvesting techniques. In this regard, our developed ultrathin and large-area nanomaterials can be a promising building block for an efficient energy harvesting system.

Energy is an indispensable part of our daily life and sustainable advancement of our modern society. Well-established renewable energy sources like bioenergy, hydropower, solar, and wind assist to fulfil the increasing demand of energy. However, for a power source, such devices mostly depend on batteries with limited life. In this regard, harvesting the ambient mechanical energy to power up portable devices could be a promising alternative. Ambient mechanical energy and various human motions are abundant which can be harvested as an alternative energy source. Piezoelectricity is the property of a material that allows the conversion of electrical energy into mechanical force and vice versa. Recently, the exploration and implementation of two-dimensional (2D) planes as piezoelectric structures has been a focus of the attention due to the promising properties of these systems. 2D materials are a group of materials with a thickness of a few nanometres or less which is 100000 times less than the width of human hair. Due to the ultimate temerity, most of the 2D materials show superior structural, optical and physical properties arising from their atomic thickness, which can be uniquely distinct from their bulk parent materials. In particular, ultra-thin 2D nanosheets offer excellent mechanical flexibility and large surface area to volume ratios, which provide new prospects for next-generation electronic and optical industries.

Flexible self-powered sources for harvesting energy from mechanical stimuli in the environment has been considered as one of the expanding fields of nanoenergy as mechanical displacements, such as vibration, bending and stretching, are ubiquitously present in the ambient environment. Piezoelectric nanogenerators (PENG) work on the principle of piezoelectric effect, which means electricity generation when subjected to mechanical stress. The brittle nature of conventional piezoelectric ceramic thin-films limits their application in various small portable devices. On the other hand, the promising and distinctive physical properties of 2D materials can open up feasible avenues in this domain. The specific qualities offered by 2D materials including their lateral strength and high crystallinity along the planes, ability to withstand large strains and the emergence of piezoelectricity in specific 2D crystals, may facilitate the unique traits for developing nanogenerators for future industries. The emergence of zinc oxide (ZnO) nanowire based nanogenerator has demonstrated for efficient conversion of mechanical energy into electricity, which has drawn great attention among researchers in the field of energy sector.[1] However, technical limitations associated with developing large-area 2D material with strong piezoelectricity have so far hindered their application in actual devices. In addition, challenges related with the fabrication process of primising 2D piezoelectric materials at relatively low temperatures and compatibility with the current silicon processes also remain largely unsolved.

At the School of Engineering of RMIT University, Australia, we have developed techniques for achieving stable, large-area and homogenous monolayer films of archetypal piezoelectric materials at relatively low cost. The breakthrough of developing the novel ultrathin piezoelectric materials is achieved by a combination of liquid metal chemistry, piezoelectric and electronic engineering. Our approach can be used to create monolayer and multilayer films of various nanomaterials with higher piezoelectric performance providing new opportunities for piezo-sensors and energy harvesting. The elegance of our developed method is that it doesn't require expensive or specialised equipment to create the super thin piezoelectric films. The 2D films can be printed at low temperatures and in air which makes it cheaper than conventional methods. In addition, reducing the material thickness to only few atoms have substantially increased the piezoelectric performance of the material. The ability to achieve this super thin and incredible 2D piezoelectric material is also compatible with existing electronic technologies and readily adoptable by industry.

Flexible and wearable nanogenerator devices can be developed using our developed piezoelectric monolayer films. This piezoelectric nanogenerators are able to produce a high output voltage which would be suitable for practical energy harvesting applications arising from randomly available mechanical stimuli in the ambient. Our group has developed a flexible piezoelectric nanogenerator using ultrathin tin sulphide (SnS) monolayer, which showed a large average voltage peak output of ~150 mV at 0.7% strain (Figure 1).[2] The developed nanogenerators can be used in future self-powered devices arranged in parallel array which can offer tremendous



opportunities for the development of piezo-sensors and energy harvesters. Energy harvesting has the potential to reduce the need for batteries in general which is overall beneficial for the environment. As such the research will have tremendous environmental impact by eliminating constraints in fabrication techniques and obstacles to scalability.

Figure 1(a) output measurement in a practical wearable device application. (b)The voltage output of tensile bending and relaxing mode action as depicted in the inset (two-electrode device).[2]

Bangladesh is one of the world's most densely populated countries with a population of 165 million. In Bangladesh, electricity is the main source of power and the future economic growth significantly depends on the availability of electricity. In the last decade, Bangladesh has made significant progress in increasing electricity generation capacity with the growing demand. Hence, the exploration of an alternative energy source in the production of electric energy is highly desirable to meet the increasing energy requirements and to encourage the use of clean energy. The government of Bangladesh has already focused to improve the energy situation in the country and embraced an energy development strategy to seek supply-side options along with the increasing demand. Different kinds of mechanical energy and vibration is ubiquitous which includes human activities, vibrations, vehicle operation, etc. which is ignored and wasted in most situations. In order to utilize the mechanical energy from the ambient environment, piezoelectric materials, which can directly convert mechanical vibrations into electrical energy, can be exploited in practical applications. As such. the development of piezoelectric nanogenerators using ultrathin nanomaterials can be a significant milestone in the growing crisis of energy shortage and climate change. These nanogenerators are small, easily fabricated and which makes it a promising technology towards sustainability. Nanogenerators can be a successful replacement to batteries in the application of self-powered sensors. For example, our developed 2D piezoelectric materials can be applied to a broader scale for a country like Bangladesh by constructing a bikeway and pedestrian walkway with a piezoelectric energy harvester to generate a large amount of power through vibration which can be used as a power source of streetlights and traffic signals. Also, the power generated in this method could be cheaper than traditional power sources. As such, a momentous contribution in the field of power generation can be attained by a comprehensive development in this technology and an impressive impact can be received not only on the future progress of flexible electronics but also on our daily lives.

Piezoelectric nanogenerators can make a remarkable improvement and offer intriguing prospects for future green energy sector. However, more in depth studies are required for the efficient conversion of mechanical energy to electrical energy more stable nanomaterials are still required. Technical limitations associated with the development of piezoelectric nanogenerators can hinder their application in actual devices. For commercialisation and further development of flexible nanogenerators, extensive research and feasibility studies are required in tackling the potential risks, issues and constraints.

EP

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Engineers Australia's Most Innovative Engineer 2020 (Electronics and Communication)

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Sustainable Alternatives Available to Reduce Plastic Pollution

Mushfiqur Rahman

Plastic products have made our life easy. But with the use of plastic, we made our environment permanently dirty. Plastic waste management has become a serious global issue as it is associated with risks to human health. Plastic waste enters into our food chain, depletes ecosystems and affects biodiversity. Plastic materials are petroleum based products and it has become a major polluting substance both for land and our marine environment. World water bodies, rivers and oceans are becoming clogged with the plastic waste and landfill sites are rapidly running out as the volumes of plastic product increases. Unfortunately, 90% of all of the trash floating on the world ocean's surface are plastic products. Published reports suggest that more than five trillion pieces of plastic are floating in the world oceans. It is estimated that approximately 1,000 years would be required to degrade these floating plastics fully. Production cost of one bottle of water is much bigger than a bottle of tap water. Media reports indicate that in the USA production of bottled water uses 17 million barrels of oil a year. Researchers report that US citizens buy annually about 29 billion water bottles and only one out of six water bottles is recycled. People in the United States throw away more than 60 million plastic water bottles each day and major parts of them end up in landfills or in the streets, parks and water bodies. As the water bottles are made from non- biodegradable plastics, most of these discarded water bottles are finally landing at the landfills and in the world oceans. One estimate indicates that US landfills overflowing with 2 million tonnes of discarded water bottles. (U.S. citizens alone consume nearly 25% of natural resources and produce 30% of wastes and pollutants). Plastic production involves huge volumes of fossil fuels. BBC report (09 February 2018) suggested that 78 million tonnes of plastic packaging materials were produced in the world every year, of which 40% went straight to landfill. 32% of it leaks into the environment, 14% is incinerated and only 14% is collected for recycling. Of that, only 2% gets recycled into the same quality of plastic.'

Plastic wastes are not only a problem of the 'developed world' but equally important for Bangladesh. Waste Concern, a Bangladeshi NGO which earned fame for promoting waste recycling, carried out a study in collaboration with the government's Department of Environment and released the study findings in February 2019. The study found that a total of 821,250 tonnes of plastic waste was generated annually in the urban centers of Bangladesh while some 207,685 tonnes was dumped in marine environment annually. Further, the study found that 36% of the plastic waste was recycled in informal sector of the country, while 39 percent dumped in landfills and 25 percent leaked to environment. Major parts of the leaked plastic wastes finally went to the Bay of Bengal through the rivers. A separate study by the Environment and Social Development Organization suggests that 87,000 tonnes of single-use plastics, including plastic bags, bottles, cups, plates and straws are thrown away in Bangladesh every year. Reuters reports (6 January 2020) that Bangladesh High Court ordered the government 'to ban single use plastics in coastal areas and in hotels and restaurants within a year to combat pollution'. Director General of the Department of Environment AKM Rafique Ahamed told the press that the government banned polythene in 2002 but could not stop its use as the common people were yet to realize the dangers of the materials. Despite government's

efforts to encourage and promote use of biodegradable jute bags in the country, polythene bags are present everywhere.

Volunteers with Greenpeace Philippines clean up a heavily polluted beach in Manila

A report published in 'the Guardian' on 16 May 2020 suggests that the Dutch chemical company Avantium had been progressing towards mass production of 'cardboard bottles' from the bioplastic for the major bear making company Carlsberg. The world's leading food and beverage companies Coca-Cola and Danone supported for the investment. As reported, the Avantium company CEO Tom van Aken expected that the investment for the plant would see the greenlight by the end of this year. He hoped to progress his plant production in partnership with the major food and drink companies of the world. As reported the bioplastic production would be relying on the technology that enables to break down sugars into simple chemical structures and rearrange to form a new 'plant based recyclable plastic' resilient enough to contain carbonated drinks. Scientists have earlier discovered the technology to produce bioplastic from naturally grown starch and cellulose materials including corn, wheat, sugar, avocado, human waste. Bioplastic is also a plastic made from plant or other biological materials instead of petroleum.

Unlike conventional plastic products, bioplastic uses no fossil fuels for its production and has the properties to degrade in nature 'much faster than normal plastics do.' Published reports indicate that the recycling of bioplastic is dependent on the type of polymer and its characteristics that have been used for its production. Used bioplastic materials can be dumped for a landfill, recycled or sent to industrial site for composting.

North Indian farmers (specially in Panjab and Haryana) and the farmers in Thailand's northern province Lampang have been burning rice straws after harvesting to clear the field. The smoke containing various harmful gases and ash (particulate matter) badly pollute the surrounding environment. Published reports suggest that NASA Earth Observatory has estimated that in October every year, farmers after harvesting of rice in Panjab and Haryana states in India burn approximately seven to eight million tonnes of rice straw and other agriculture wastes at their fields. People in the said states and in Delhi have been experiencing increasing health threats from the smoke pollution every year due to the prevailing practices. Such a practice is not uncommon in different parts of Bangladesh during winter. Keeping the agriculture wastes, including rice straw unaddressed in the field may enrich the farmlands with time but it will add a lot of greenhouse gases in the atmosphere. Young entrepreneurs in collaboration with the scientists in the Indian Institute of Technology, Delhi and Chiang Mai University in Thailand have come up with unique solutions to this problem. They have developed a technology that can convert agriculture wastes into pulp and process it to make biodegradable cutlery. Rice straws are no more wastes and burden for the farmers, rather it can deliver products with impervious coating on the eco-friendly tableware for several hours and serve as a sustainable alternative to plastic and polystyrene products. Not only in India and Thailand, disposable and biodegradable plates, bowls, cups have been used in major cities in Bangladesh as well.

A presentable, useful and convenient biodegradable plate produced from agriculture wastes can be found at Chawkbazar in Dhaka paying only Tk 12/piece. Instead of engaging a lot of efforts and expenses for using conventional tableware and cutleries, nowadays urban gatherings conveniently use biodegradable cutleries. Use of biodegradable products are not only cost effective, but also demonstrates the users' care for environment. Local media further reports that a Gazipur based Bangladeshi company 'Expo Accessories Ltd.' has been producing biodegradable packaging materials from corn or maze as an alternative to polythene bags since 2014. The company initially targeted (local and foreign) 30 garment factories and the demands for the product has been rising gradually. As published report says, Expo Accessories has been producing environment-friendly products including biodegradable and compostable bags, shirt clips, collar stays, hang tags, hangers using corn fiber raw material imported from India. Self-life of the biodegradable products is around 12-15 months. The biodegradable bags costs within 5-8 US Cents but the consumers prefer them as they are environment friendly and international famous brands like them.

It is important that the environment-friendly products use is encouraged with various incentives and policy supports.

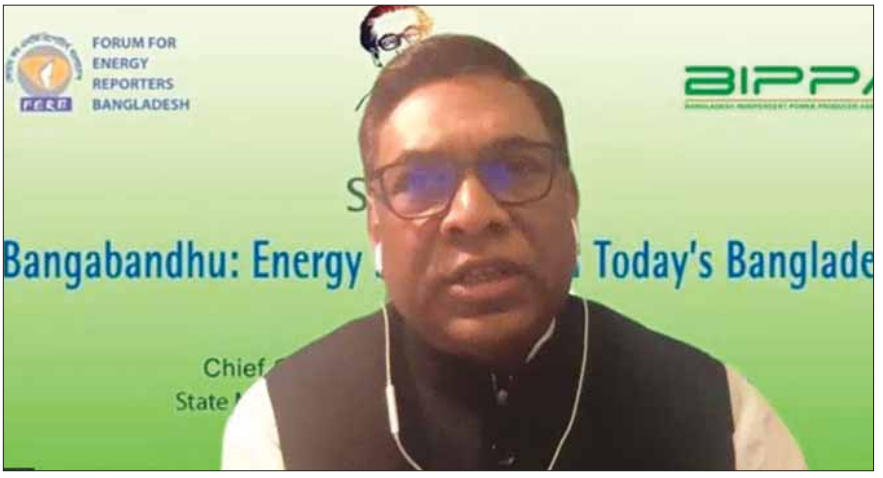
EP

Mushfiqur Rahman;
Mining Engineer,
Writes on Energy & Environment Issues

Thrust on Mining Own Coal to Ensure Energy Security

EP Report

Speakers at a webinar on August 13 stressed the need for mining domestic coal to ensure energy security of the country, which is increasingly getting dependent on imports despite having a very high quality coal reserve of 3.1 billion tonnes. But the government is yet to take any effective step to extract this resource and utilize it to generate power and ensure energy security.



Nasrul Hamid, State Minister for Power, Energy & Mineral Resources

A decision on extracting coal from the well-studied Phulbari coal project also remained pending for years, they said. The policymakers, however, pointed out that coal extraction is a matter of political decision. They added that the government is exploring suitable technology to extract the country's natural resource without affecting the agricultural land and environment.

The speakers also expressed concern over the fast depleting natural gas resources and said the existing reserve would deplete by 2031 if no new substantial reserve could be discovered.

Forum for Energy Reporters Bangladesh (FERB) and Bangladesh Independent Power Producers Association (BIPPA) jointly organized the webinar titled "Bangabandhu, Energy Security and Today's Bangladesh".

Nasrul Hamid, State Minister for Energy, Power and Mineral Resources, was the chief guest and Dr. Mohammed Farashuddin, Former Governor of Bangladesh Bank and PS to Bangabandhu, was the special guest. Khandoker Abdus Saleq, Former Director of Petrobangla and energy expert, Mr. Mortuza Ahmed Faruque, Former Managing Director of BAPEX, and Engineer Khaled Mahmood, Former Chairman of Bangladesh Power Development Board (BPDB) took part in the discussion.

Mollah Amzad Hossain, Editor of Energy & Power magazine presented the keynote paper of the webinar, which was moderated by Shamim Jahangir, Executive Director of FERB, and presided over by Arun Karmakar, Chairman of FERB. Senior journalist Shahnaz Begum, Rafiqul Bashar, Editor of Energy Bangla, Shahed Siddique and Azizur Rahman Ripon, among others, also spoke at the virtual meeting, the first of its kind organized by the FERB.

The speakers highlighted the achievements in the energy sector as well as identified a number of issues of concern, including unexplored domestic coal resources, the Phulbari coal project, and lack of good governance in the sector.

Nasrul Hamid,
State Minister for Power, Energy & Mineral Resources

Addressing the webinar, Nasrul Hamid said, we have kept all avenues open for energy diversification so that we can switch to another option if we face trouble with any one of those options. The PSMP-2010 has been reviewed in 2015, which was obvious given the changes in the global scenario. Regarding domestic coal extraction, he said that coal is there, but it is a matter of political decision whether it would be extracted or not. We have to assess the environmental impacts and how coal can be extracted avoiding farmlands and with our support to the people who would be affected due to mining. This is the priority. People and environment are the priorities of Prime Minister Sheikh Hasina. She has already directed to make a move if possible without making any harm to those. So, we are exploring that technology. It is not like that we would not do anything; coal is being extracted. We want to see how water can be managed; there is huge amount of groundwater in the area. He added that there are other issues too to consider things like whether the domestic coal extraction would be profitable or import would create bigger opportunities.

Mr. Nasrul said that appropriate manpower and experts are needed to face the future changes. Astonishingly, we have mine but there are no mining engineers. There was strong debate over coal-based power. We have sent professional journalists to visit coal-fired power stations abroad. He urged to physically visit the coal mines instead of doing debate in Dhaka to see whether coal-based power plants are the reason of any deaths or how far it affects the environment.

Dr. Mohammed Farashuddin,
Former Governor of Bangladesh Bank & PS to Bangabandhu

Dr. Mohammed Farashuddin said Bangabandhu was a man of great wisdom with vision. Regarding energy issues, he said that energy, power is such a thing that cannot be solved overnight. It is also an internationally sensitive issue. We have lot of achievements in energy sector, but there are challenges also. He added that the amount of high-quality bituminous coal we have in northern Bangladesh can ensure power security for 20 years,

provided that coal is extracted by open pit mining method and used in power generation. There are problems, debate over issues and also is bureaucracy. Certainly, we need good governance and brilliant technologies in energy sector, but also need strong institutional structure. He also questioned whether experts are in same opinion on those issues or differ widely with each other.

Mortuza Ahmed Faruque,
Former Managing Director of BAPEX
Mr. Mortuza Ahmed Faruque emphasized on strengthening BAPEX and urged to stop making frequent changes in the top management position to allow reasonable time to execute plans/programs properly. He said the government is setting up coal-fired power plants based on imported coal which is good but also need to focus on our own coal. Bangabandhu had the vision to extract own resources and to make the country self-reliant in energy. We could realize his dream easily if our own coal resource is extracted and utilized. He added that the government could take an initiative to do a feasibility study to assess whether coal can be extracted from Barapukuria by open cut method; but this is in a small area. Regarding Phulbari project, he said the coal here is at the shallowest depth and is ready to be extracted having all sorts of studies done including environmental, water, resource assessment etc. However, the project remained hanging for years and has not been terminated or accepted by the government. A decision needs to be taken on this project. The government, if wish, may cancel with the company entirely, terminate the contract and start in a new way or may allow them to continue. A new initiative of open pit mining in Barapukuria will take time and may not be economic as the mining area is limited. But Phulbari is a proven field with all sorts of studies done. If we are to do open cut mining, then why not Phulbari. A quick decision on Phulbari would play an important role to mine our own coal and contribute significantly to achieving energy security of the country.

Khondoker Abdus Saleque,
Former Director of Petrobangla & Energy Expert
On coal transportation issue, Mr. Khondoker Abdus Salek said the power plants which are being constructed based on imported coal, particularly Payra and Rampal, would face challenges of coal transportation. Only exception is Matarbari. The coal terminal which is being constructed at Matarbari is probabl y dedicated for the two power plants there, and might need to think about a full-phased coal port at Matarbari area, from where coal can be transported to Rampal and even to Payra by upgrading the railway system. Expressing his frustration, he spoke about Phulbari and said there is one coal field in Bangladesh which is 100% ready to be developed. if you go through the study reports, you will find the best consultants of the world have assessed the impacts of the Phulbari project. He added that if you feel Asia Energy is a weak group, renegotiate with them. If you are strong, cancel the contract. Although, I personally believe, there will be legal challenge if the contract is cancelled right now and also a possibility that Bangladesh might need to compensate billion dollars to a company without developing coal field of the country. Therefore, try to extract own coal. He requested particularly to the BPDB chairman to see whether it was properly coordinated with coal extraction requirement while the power plant was constructed in Barapukuria as it is obvious that transportation of imported coal to Barapukuria would not be a viable option. He added that the problems needed to be seen from the perspective of practicalities.

Engineer Khaled Mahmood,
Former Chairman of BPDB
Referring to the keynote presentation, Mr. Khaled Mahmud said that generating power in the northern region through developing coal mines of the country is, of course, a good option and would be cheaper. However, it needs additional infrastructure development with it. He said, we could not run power plant after sudden shut down of coal extraction in Barapukuria mine. When we took initiative to import coal and invited tender, we found it very costly. We used to buy coal at 130 USD/tonne from Barapukuria, but due to lack of infrastructure, the quoted price was 250 USD/tonne. We could definitely get coal supply if there was coal handling infrastructure. There are challenges, it will always be there, and we must face it, he added.

Mollah Amzad Hossain,
Editor of Energy & Power
In his keynote paper, Mollah Amzad Hossain said that the Father of the Nation Bangabandhu Sheikh Mujibur Rahman stressed on the country's industrialization through providing domestic energy at an affordable price. Based in this philosophy, he founded the organizations like Petrobangla and put top priority on oil-gas exploration. Through taking part in the onshore bidding process in 1973, the international oil companies (IOCs) started oil-gas exploration in Bangladesh. Following the global oil crisis after Arab-Israel war, Bangabandhu had decided to buy gas fields from the IOCs and accordingly amended the law and on 9th August 1975, bought five gas fields at a cost of 4.5 million pounds. Presenting a brief picture on the energy situation, he said our natural gas resource will deplete by 2031 if no new discovery is made. We have a reserve of around 3.1 billion tonnes of high-quality coal, equivalent to 76 TCF gas in terms of heat value, but we could not take effective decision on extracting the coal and utilization of this resource for power generation. The government is yet to decide on extraction of coal due to environmental and other issues. In the PSMP (Power System Master Plan), it had been stated that 35% of power generation will come from gas and LNG, and 35% will be from coal, of which 34% will be imported. It is stated in various analyses and researches that the power generation cost at mine mouth plants using own coal would be about 30% less than the imported coal.

Bangabandhu's philosophy was to meet energy demand using own resources and provide energy to all at affordable costs. We do not have that much of energy resources and no surprise that it would not always be possible to run with our own. There is no objection to import LNG or coal, but if we put emphasis on the philosophy of Bangabandhu, the priority should be given on extraction and utilization of own energy resources, particularly gas and coal.

Arun Karmakar,
Chairman of FERB
Mr. Arun Karmakar said there are a lot of achievements in energy sector as well as challenges and complexities. But those, I believe, can be solved through ensuring good governance.

EP

BSEC Approves Lub-rref to Fix Its IPO Cut-Off Price

Bangladesh Securities and Exchange Commission (BSEC) has approvedLub-rref (Bangladesh) Ltd to fix its cut-off price to raise funds from the capital market under the book building method.

Lub-rref got the approval at a commission meeting on August 20,presided over by BSEC Chairman Prof. ShibliRubaiyat-ul-Islam.

The securities regulator also approved a work plan to speed up the activities of its capital issue andthe plan to facilitate raising capital through IPO, debt securities and equity as early as possible, said a press release.

The company will now be able to raise capital worth Tk 1.50 billion from the marketunder the book building method.

The fund will be utilized to expand business operations, repay bank loan and bear the IPO expenses.

The company produces BNO diesel super, passenger car motor oil, motorbike oil, automotive gear oil, and automotive hydraulic oil including industrial products, marine oil products and greases.

Under the regulatory approval to fix its cut-off price,the company willissue shares to eligible investors. And the IPO shares will be issued to general investors at 10 per cent discount at cut-off price.

According to the financial statement of 2019, the company's net asset value per share was Tk 31.93 (with revaluation reserve) and Tk 25.96 (without revaluation reserve). For the same period, the company's earnings per share (EPS) stood at Tk 2.08 while weighted average EPS stood at Tk 2.23 based on the company's financials of last five years.

NRB Equity Management is the issue manager of Lub-rref (Bangladesh).

EP

Asia to Import Record LPG in 2020

Asia will likely import record volumes of liquefied petroleum gas (LPG) in 2020 as firms snap up the fuel to make petrochemicals used in protective gear against the coronavirus, while households under lockdown ramped up purchases for cooking.

The region will buy some 67-69.5 million tonnes of the gas from abroad this year, surpassing last year's record, analysts from consultancy firms IHS Markit, FGE and Wood Mackenzie said. That would represent a 1-3 percent increase on 2019 import volumes.

Strong Asian demand could weigh on supplies in coming months just as Europe is likely to step up purchases of the fuel for heating in winter, an industry source in Singapore said.

"We expect (LPG) import demand to increase in 2020 over 2019 with stronger demand in both residential and petrochemical sectors," said Rui Hou, research analyst of Wood Mackenzie.

He Yanyu, IHS Markit's executive director of natural gas liquids research, said some 33 million tonnes of LPG had already been imported in the first half of 2020.

In total, Asia would get some 52 percent of its LPG supplies this year from the Middle East, 35 percent from the United States and the rest from countries including Canada and Australia, he said.

EP

Kamal Skirts Query About Adjusting Oil Prices

Finance minister AHM Mustafa Kamal recently neatly sidestepped a question of adjusting fuel oil price in the domestic market following its price slump globally.

"There is a line ministry to look after it. The prime minister herself will decide on it in time," he said replying to reporters during a virtual briefing.

Earlier, the minister chaired two cabinet meetings.

Asked whether he should adjust price of the commodity as a finance minister for the sake of economy, Mr Kamal said, "Price increase and price cut is not my task."

"As a finance minister, I have many other things to do," added the businessmen-turned-minister.

Crude oil price was hovering $42.51 per barrel on Wednesday in the international market compared to around $53 per barrel in mid-August last year.

As the Covid-19 pandemic hit the global economy, crude oil price fell as low as $14 globally on April 20.

Despite the oil price crash, Bangladesh did not lower the price of the commodity in the domestic market despite repeated calls from the business community.

The cabinet committee on government purchase on the day approved the import of 150,000-tonne low sulphur marine oil under the government-to-government (G-to-G) arrangement.

The procurement will cost the exchequer Tk 4.38 billion.

EP

Jamuna Oil Co Observes National Mourning Day

Jamuna Oil Company Limited observed the National Mournig Day at Jamuna Bhaban at Agrabad in Chattogram recently.

Company's Managing Director Md Gias Uddin Ansary placed wreath at Mujib Corner on Jamuan Bhaban premises on the occasion, said a press release.

Later, the company arranged Khatome Holy Quran, holding munajat and doa-mahfil at S.A. Azim auditorium.

Officers, workers, employees and other leaders, including General Secretary of CBA Md. Yakub were present in the program.

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Omera LPG

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Power Sector Returns to Normalcy

The country's power sector has returned to normalcy after four months of disruptions caused by the coronavirus pandemic, a top official said.

"Even last month, we were worried about loan repayment for the ECA-funded projects having a combined capacity to produce 2,285 megawatts of electricity," Bangladesh Power Development Board (BPDB) Chairman Engr Balayet Hossain said.

He also said BPDB overcame the issues as the collection of revenue soared to over 90 per cent in the power sector.

The demand for electricity has increased to average 11,700MW now from 8500MW in April and 10,000MW in May during the COVID-19 pandemic.

"We are now getting back our capacity to repay any loans or payment after revival the sector from July 2020," the BPDB chief said.

BPDB is now implementing seven power projects with funding from the HSBC, ICBC and Japan Bank

EP

Four Oil-Fired Power Plants Miss Operation Deadline

At least four oil-fired costly power plants with 447MW combined power generation capacity have failed to meet their agreed commercial operation deadline.

The power plants are: Chandpur 115MW HFO based Power plant, Chowmohani 113MW Power Plant, Meghnaghat 104MW HFO-base plant and Thakurgaon 115MW Power Plant.

Among them, Chandpur and Meghnaghat plants were supposed to come into operation by July 16, 2019, Chowmuhani plant by June 04, 2019 and Thakurgaon plant by November 03, 2019, according to required commercial operation date (RCOD) under the contract.

Power division officials said the Chowmuhani 113MW power plant and Meghnaghat 104MW HFO-base plant are expected to achieve commercial operation date (COD) soon despite around one-year delay.

According to sources Meghnaghat 104MW HFO-base plant was a schedule to achieve required commercial operation date (RCOD) on July 16, 2019.

After failing to meet July16, 2019 RCOD, the Meghnaghat 104MW HFO-base plant was supposed to start commercial operation on March 15, 2020. But it also failed to mead the deadline and now it has sought fresh schedule to start operation.

Besides, Chowmohani 113MW Power Plant had a schedule to achieve RCOD on June 4, 2020 after singing power purchase agreement in December, 2017.

It was supposed to generate electricity from the plant on December 31, 2019.

EP

11 Base-Load Power Projects Delayed Amid Corona

At least 11 base-load power station projects with 4627 megawatts (MW) of combined power generation capacity have failed to meet commercial operations deadline amid the COVID-19 crisis.

The power plants are Bhola 220MW Power plant, Bibiyana unit-3 400MW Combined Cycle Power Plant (CCPP), Bibiyana (South) 400MW Combined Cycle IPP, 416MW Ghorasal Unit-3 Power Plant, Ghorasal Unit-4 Re-powering unit, Khulna 300MW CCPP, Mirsharai Dual Fuel Power Plant, Asuganj 400MW CCPP, Reliance 718MW LNG based CCPP, Summit Meghnaghat-2 600MW CCPP and Meghnaghat 584MW Gas-fired CCPP.

Among the plants, the Bhola 220MW Power plant, sponsored by Indian company Shapoorji Group, was supposed to come into operation by December 12, 2019.

The company informed the Power Division that they failed to meet the target for the COVID-19 crisis. The company assured to commission the plant in March 2020.

The 718MW power plant project in Meghnaghat, sponsored by Indian company Reliance, is also progressing slowly as the project work remained suspended since March due to corona pandemic.

The Bibiyana unit-3 400MW CCPP was scheduled to start electricity generation from a simple cycle in July 2018 and combined cycle on March 6, 2019. But the plant has also been pushed back amid the corona crisis.

The Bibiyana (South) 400MW Combined Cycle IPP is also being delayed. The project officials said transportation of the heavy machinery was affected due to siltation in river, causing a delay in the project. The plant was expected to produce electricity from the plant between March and July 2020.

The 416MW Ghorasal Unit-3 Power Plant and Ghorasal Unit-4 re-powering unit project have already been delayed by over a year.

EP

BERC Moves to Fix Retail Price of LPG

The Bangladesh Energy Regulatory Commission (BERC) has taken up an initiative to fix the retail price of liquefied petroleum gas (LPG) through a pricing policy like natural gas and electricity as per High Court order.

LPG consumption in the country has witnessed a whopping four-fold growth in 2016 and 2020 with households, commercial entities, and vehicles increasingly relying on the fuel, as there is no LPG price monitoring system or existence of energy pricing policy to discuss the issue.

"The government recently amended the law that empowered it (BERC) to review the prices of gas and electricity whenever it wishes," Energy Secretary Md Anisur Rahman said.

BERC fixes natural gas price and the law made it obligatory for it to set the price after holding public hearing but it never fixed LPG price, the price is being fixed up by the market players.

In 2016, the High Court has ordered the BERC to submit a report within one month about the measures it has taken to fix the price of bottled LPG (examining the volatile market of LPG and consumers suffering that time), the High Court asked the authorities concerned why it will not term illegal the inaction about the pricing. But the rule remained unanswered ever since.

EP

BD to Import 1st Spot LNG Cargo Next Month

Bangladesh is set to import its first spot cargo of liquefied natural gas (LNG) late next month (September) and is inviting offers from shortlisted companies it has signed agreements with, two energy officials said.

State-run Rupantarita Prakritik Gas Company plans to issue a tender in the next few days and has informed 14 shortlisted companies it has signed sales and purchase agreements with on their eligibility to participate in the tender, a senior company official said.

"We will seek 138,000 cubic meters of lean LNG for end of September delivery," the official said, adding that only the 14 companies will be able to take part in the tender, which will be awarded to the lowest bidder.

Submissions will be due by Aug. 17 and the shipment is for delivery from Sept. 30 to Oct. 8, the official said.

Last year, Bangladesh shortlisted 17 companies for spot LNG and among them 14 have signed sales and purchase agreement with Rupantarito Prakritik Gas Company.

The companies include Marubeni Corp, Mitsui, Vitol Asia, Trafigura, Petronas, Excelerate Energy, Woodside Petroleum, AOT Trading, and ENI.

"We haven't fixed any target yet for spot LNG. We'll seek LNG from spot market as per our demand. We need to diversify market and ensure cheaper prices for our LNG imports," another company official said.

EP

JBIC Keen to Invest in Power, Energy Sector

Japan Bank for International Co-operation (JBIC) has expressed keen interest to invest in Bangladesh power and energy sector as the environment for foreign investment in Bangladesh is very favorable and profitable.

State Minister for Power and Energy Nasrul Hamid made the comment at a virtual meeting with JBIC, said a press release.

The minister said that JBIC showed interest to invest in LNG Terminal, LPG terminal, gas pipeline, power generation, renewable energy, hydropower, energy efficiency, and power system master plan.

In this regard, JBIC has already sent a proposal to the Ministry to sign a Memorandum of Understanding (MoU).

Welcoming the interest in investing in Bangladesh, Nasrul Hamid said Bangladesh is a country with a growing economy. The size of the economy of this country is getting bigger day by day.

"Japan is our tested friend. Such investment will strengthen our bond. The MoU could be signed by the end of September", he added.

Among others, Senior Secretary, Department of Energy and Mineral Resources Md. Anisur Rahman, Additional Secretary, Department of Energy and Mineral Resources AKM Fazlul Haque, Director, Japan Bank for International Co-operation Akaya Yoshio, Deputy Director Morimoto Soichiro Ohkawa Yoshio, and Loan Officer Asai Mizuki, were present on the occasion.

EP

BPC Plans 8% Interest on Railway's Unpaid Fuel Bills

Bangladesh Petroleum Corporation (BPC) is likely to charge eight percent interest on the outstanding fuel bills stuck at the railway agency.

The state-owned lone petroleum organization is planning to impose the penalty to realize its fuel bills and eliminate the tendency to not pay bills before they become due, said a source at the BPC.

As per the sales and purchase agreement, the railway agency is supposed to pay fuel bills within 15 days of delivery.

However, it has failed to pay the bill as per the contract. Sometimes, bills are not paid even for a year.

Therefore, the three fuel distribution companies under the BPC demanded to amend the sales and purchase contract with the railway by adding a provision to charge interest on the dues.

EP

Second Oil Refinery Project at Payra

The state-owned Bangladesh Petroleum Corporation (BPC) has taken up a project for the second crude oil refinery unit near Payra Seaport in Patuakhali titled 'Composite Petroleum Refinery with SPM (Single Point Mooring)."

According to Energy Ministry sources, One Firm of Spain has already been selected by the BPC for appointment as consultant for conducting feasibility study of the project.

A senior official of the energy ministry said the proposal, submitted to the ministry for approval in March, is likely to be approved by the current year.

Sources in the ministry said a total of 17 firms from home and abroad have submitted their proposals for conducting the feasibility study.

With the approval of the proposal, the BPC will go for a feasibility study on the construction of the second refinery with the capacity to process seven million tonnes of crude oil annually.

BPC sources also said the decision for setting up the second refinery at Payra had been taken at a meeting of the Energy and Mineral Resources Division held on July 5 in 2017.

Besides, a feasibility study and front end engineering design will also complete soon for establishing the refinery with a Single Point Mooring (SPM).

An SPM facilitates the transfer of crude oil from mother vessels to offshore tanks and then to onshore tanks. The SPM's main objective is to ensure the unloading of imported crude oil in a more efficient and time-saving manner. EP

Maddhyapara Mining Company Resuming Production

After a four-month closure due to the coronavirus pandemic, the Maddhyapara Granite Mining Company Ltd is going to resume production soon.

The deal with the hard rock lifting Belarus-based Germania Trest Consortium (GTC) has already been extended by one year. Authorities said the workers have returned to their posts and the rock lifting would resume soon after completing some required measures.

Abu Taleb Mohammad Farazi, the general manager of the Maddhyapara Granite Mining Company Ltd (MGMCL), said the workers would enter the mine from Friday after undergoing a Covid-19 test.

Meantime, Jamil Ahmed, general manager of GTC, said the one-year deal extension will be counted from the first day of rock lifting.

The production suspension at the mine left its 800 workers jobless, and interrupted the rock supply to the Padma Bridge and Ruppur Nuclear Power Plant projects.

MGMCL went on commercial production at the lone rock mine of the country in 2007. At the initial stage, 1500-1800 tonnes of rock was lifted per day from the mine which later dropped to 500 tonnes only.

Against the backdrop of dropped production, GTC was appointed in 2014 for rock mining and maintenance of the site. According to the agreement, GTC will get $171.86 million for 92 lakh tonnes of mined rock while the MGMCL will be responsible for supplying the mining equipment and other items. EP

Chevron Distributes 8,800 Relief Packs to Communities in COVID-19 Response Effort

Like communities across the world, the COVID-19 global pandemic has had a significant impact on the lives and livelihoods of many people, including those that live around Chevron's gas fields in Bangladesh.

Recognizing the importance of standing by its fence line communities during this challenging time, Chevron's Bangladesh companies have implemented a multi-phase relief distribution effort.

During the months of May through July, Chevron planned and distributed 5,500 relief packages (containing soap and essential grocery items like rice, lentils, cooking-oil, etc.) for families of three Unions under Nabiganj Upazila, located near the Bibiyana Gas Field.

On one such occasion, among the notables that attended the ceremonial handover of the relief packs were Shahnewaz Milad Gazi, Member of Parliament for Nabiganj-Bahubal and Biswajit Kumar Paul, Upazila Nirbahi Officer, Nabiganj.

Meanwhile, in Sylhet, 3,000 relief packs were distributed amongst families of two Wards near Jalalabad Gas Field. EP

BPC Seeks Relief from Oil Firms Skipping Bills

State-run Bangladesh Petroleum Corporation (BPC) has sought use of force majeure provision with the global oil suppliers to avoid the 'demurrage' due to cancellation or deferment of cargoes over the past several months on coronavirus pandemic.

Force majeure is a common clause in contracts that frees both parties from liabilities or obligations when an unforeseen event such as war or epidemic occurs forcing either side to dishonor the sanctity of the deal.

"We wrote letters to implement the force majeure clause to a number of oil suppliers whose cargoes had to be cancelled or deferred due to lower than expected petroleum product demand since March," BPC chairman Shamsur Rahman told a newspaper recently.

He said the issue might be settled through bilateral negotiation.

The BPC had to cancel or defer 17 oil cargoes from April to July due to lower oil demand and shortage of storage constraints.

Each cargo vessel has the capacity to carry an estimated 30,000 tonnes of oil products.

The corporation had to shut operations of the country's lone crude oil refinery in June due to oil storage shortage.

As a consequence, the BPC had to cancel a 100,000-tonne Murban crude oil term cargo from Abu Dhabi National Oil Company in June.

EP

Port is Ready to Receive Large Cargo

Freight water terminal located at Padma river became fully operational on Rooppur NPP construction site in Bangladesh (General Contractor — JSC "Atomstroyexport", a company of Rosatom Engineering Division).

The port is intended for receiving various process equipment for the construction and further operation of Nuclear Power Plant, including the delivery of fresh fuel.

The port on Padma river is operating normally, receiving both construction cargo and process equipment.

"Main components of the Reactor Compartment of Unit 1 i.e. VVER-1200 reactor pressure vessel, 4 Steam Generators and polar crane will be delivered to the construction site this year through this cargo terminal," said Mr. S. G. Lastochkin, Vice President and Director of the Rooppur NPP construction Project.

Transportation of large oversized cargo for the Nuclear Power Plant under construction in Bangladesh will be carried out by sea from St. Petersburg and Novorossiysk to the Bangladeshi port of Mongla.

From there, the construction materials and equipment will be placed on the river vessels and transported along the Padma river to the freight terminal located at NPP construction site.

EP

The first of Six LNG-Powered Neo-Panamax Ships Completes Sea Trials

MAN Energy Solutions successful ME-GI (Gas Injection) engine has set a new industrial standard for two-stroke propulsion engines aboard LNG carriers, container vessels, car carriers and bulk carriers.

The company announced that the first ME-GI engine featuring its newly-developed Pump Vaporizer Unit (PVU) has successfully completed LNG trials in Korea.

The engine is the first in a series of six neo-Panamax boxships – built by HSHI (Hyundai Samho Heavy Industries), and ordered by Eastern Pacific Shipping (EPS), the Singapore-based shipping company – with each powered by individual MAN B&W 11G90ME-GI main engines. CMA CGM has already chartered the vessel, named 'Tenere', from EPS.

"The successful gas and sea trials and the on-schedule delivery of CMA CGM Tenere make for an important MAN and EPS milestone. Three years ago, we committed to investing in alternative marine fuels, like LNG, to lead the industry towards decarbonization and environmental preservation.

This commitment included selecting MAN's high-pressure ME-GI engines, which are highly efficient and, importantly, reduce methane slippage to negligible levels. These vessels will be IMO 2030 compliant years ahead of schedule and will be the cleanest vessels of their category on-the-water today," said EPS CEO, Cyril Ducau.

Source: MAN Energy

EP

Tribute to an Energy Sector Legend

Mortuza Ahmad Faruque

An eminent geoscientist/geologist of Bangladesh Mir Moinul Huq is no more. He left biding bye to all of us on 26th August, 2020. He was a very honest, efficient, highly knowledgeable person of great integrity with full of commitment. He also mentored developing some geologists of quality. He used to share his knowledge about new technologies among all. Others used to call him Masud Bhai, but I used to call him Moinul bhai.

Contribution to Petrobangla and BAPEX

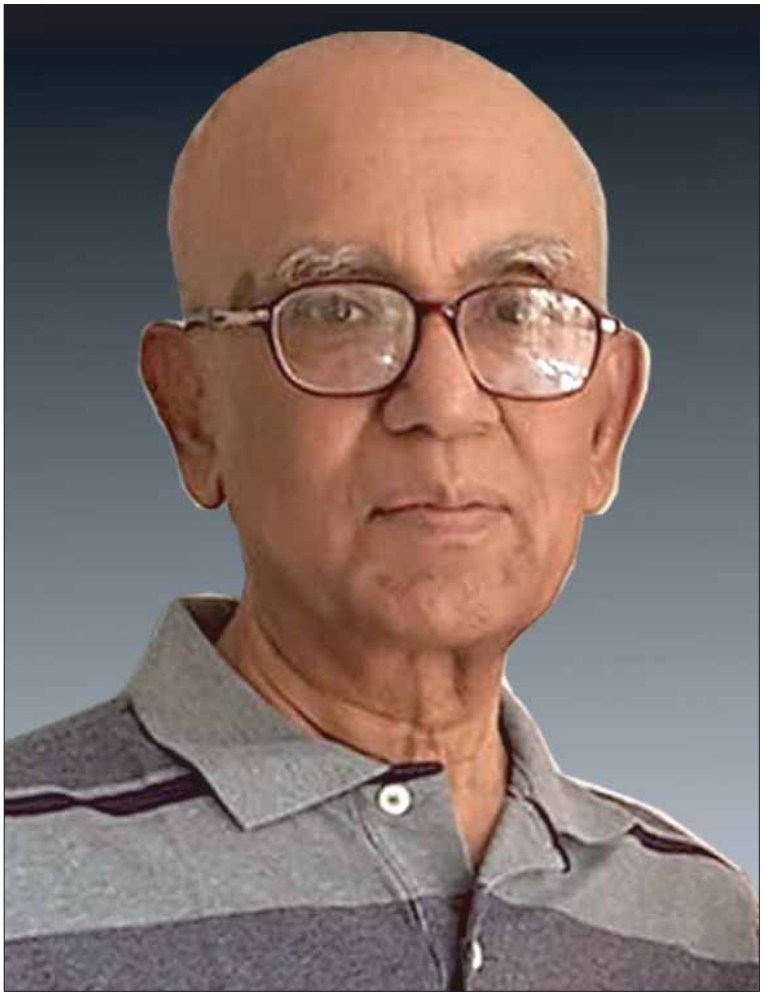
Moinul Bhai had started his career with the then Oil and Gas Development Corporation of Pakistan in 1970 after completing his master's degree in geology from Dhaka University. He made commendable contributions to explore and develop oil and gas resources through his long term works at BAPEX and Petrobangla.

During 1975 to 1978, Moinul Bhai worked as a Senior Geologist in Tailo Sandhani Company under Petrobangla and performed duty as well-site geologist in onshore wells, which were drilled by Tailo Sandhani. He worked in offshore wells as a representative of Petrobangla, drilled by the International Oil Companies (IOCs) under PSC. After the independence of Bangladesh, he worked as a Geologist in Oil and Gas Development Corporation (OGDC) under the Ministry of Energy.

In early 1970s, a group of geologists joined Petrobangla – most of them were educated in Dhaka University and some others came back from USSR. On his own, he shouldered the responsibility of developing them as geologists of choice. I was one those fortunate ones who with his blessings learned a lot and could make useful contributions to develop oil and gas resources for BAPEX. Many of them went abroad leaving the job at certain stage. He also pioneered establishment of Bangladesh Geological Society and twice elected secretary general of the organization.

On his initiative, Petrobangla purchased computerized mud-logging unit for monitoring the drilling data and activities. On his initiative, geologists and technical officers were sent to France for training on operation of mud-logging unit. Later, these trained professionals could operate the unit successfully. He also arranged bringing wire line logging experts from France for providing three months training for Petrobangla officials. These initiatives made invaluable contributions to develop expertise of Petrobangla officials and definitely minimized the dependency on foreign experts.

Moinul Bhai worked as a Senior General Manager (Exploration)/ Head of Geology Division/ and Operational Geology in BAPEX. He was involved in the entire spectrum of exploration and development activities of BAPEX, rendered technical assistance to BGFCL and SGFL on gas field development activities. He contributed as a team member of Petrobangla to assess undiscovered hydrocarbon resources of the country with US Geological Survey. He prepared and presented paper on geological development of Bengal Basin for understanding of the USGS experts. He was involved in the regional geological study for prospect evaluation and selection of location for exploratory drilling, preparation of exploration program of BAPEX. He supervised works on selection of location for wells, reserve estimation work and study of depositional history of the Bengal Basin.



Mir Moinul Huq

Moinul Bhai also worked as the Head of Well Services Division and was responsible for mud-logging, mud engineering, well cementation and well testing jobs. He recommended location for many exploratory and development wells, preparation of data acquisition program during drilling. He was actively involved in preparing wire line logging program of many wells, did evaluation of wire line logs and selected zones for Drill Stem Test.

Mir Moinul Huq & his wife

In 1984, I have been transferred to Petrobangla from Bakhrabad Gas. At that time, gas well drilling was going on at Habiganj Gas Field. I was assigned for working in mud-logging unit. Truly speaking, I did not have adequate knowledge at that time to run the mud logging unit and to perform duties of well-site geologist. Moinul Bhai encouraged me, saying not to worry about it. He said, "I will guide you." Only to guide me, he went to Habiganj Gas Field and explained every aspect very systematically over a period of seven days. I did not have any training on how to run a unit. But what I learnt from Moinul Bhai was more than enough for discharging my duties as a well-site geologist as well as mud logger from then and onwards.

In 2000, the Board of Directors of BAPEX awarded a Certificate of Appreciation for the contribution in developing Habiganj Well#8 of BGFCL into a production well while it was about to be abandoned as a non-producer.

He earned love and respect from all of his subordinates for his clear mind of sharing knowledge with all. He was a very simple and adorable person by heart. He never cared for position and personal gains. He politely refused to take up the job of Managing Director of BAPEX. He always disliked corrupt officials and persons.

Moinul Bhai worked as a Resource Person of Bangladesh Petroleum Institute and organized many training programs. He contributed a lot in drafting of Gas Act of Bangladesh. He was engaged as a member of two enquiry committees formed by the government to find out the reasons behind the blowout of Chattak Well#2 and to find out reasons behind the blow out of the relief well designed to kill the blow out of that well.

After retirement, Moinul Bhai was a part time teacher of Petroleum Geology at Dhaka University and Jahangir Nagar University. He worked as a National Consultant of UNDP for updating the National Energy Policy 1995 and then engaged with the Hydrocarbon Unit (HCU).

Contribution to HCU

Moinul Bhai worked as a lead member of the Hydrocarbon Unit team. Norwegian consultants were involved as expatriate consultants. Experts of Norwegian Petroleum Directorate always used to take his advice and very much depended on him in the areas of regional geological setting, tectonic evolution, major structural elements, depositional history, stratigraphy, source rock potential, resource evaluation, petroleum systems, trap types and plays of Bangladesh. He worked as a Strategic Policy Expert and had a great contribution in the assessment of re-estimation of the country`s gas reserve and undiscovered hydrocarbon resource potential on the basis of individual leads and prospects. He contributed to prepare exploration and field development plans, apart from drafting a Reserve Classification System for Bangladesh. I had the opportunity to work with Moinul Bhai for about four years at the Hydrocarbon Unit. From very intimate position, I have observed his enormous wealth of knowledge.

The reserve of all discovered gas fields were assessed and reviewed at that time. Moinul Bhai possessed extensive knowledge about all discovered gas fields in Bangladesh. At that time, Petrobangla used to believe recoverable reserve of Titas Gas Field as 2.1 Tcf, which was earlier estimated in 1992 by IKM, a reputed consulting firm of Canada. But from the HCU study, it was raised to 6.4 Tcf. Based on this study, 13 more development wells were drilled and increased production substantially from Titas. Till now, over 5.0 Tcf of gas

has been produced from Titas. Not only Titas field, the recoverable reserve of Habiganj, Rashidpur and Kailastila was also increased substantially and reserve figures were accepted by Petrobangla and Energy and Mineral Resources Division.

Moinul Bhai visited USA, Canada, France, Indonesia, Croatia, India, Japan, Sri Lanka and Germany to participate in the training, conferences, seminars, workshops and bilateral discussions.

Membership of Professional Associations

Moinul Bhai was an elected General Secretary (two terms) of Bangladesh Geological Society, active member of American Association of Petroleum Geologists of USA. He was also a member of the Society of Petroleum Engineers (SPE) and served as a Section Chairperson, Section Secretary and Program Chairperson of SPE Bangladesh Section. He was a member of the Society of Exploration Geophysicists of USA.

Publications

Moinul Bhai has written many articles on different gas fields of Bangladesh viz. Titas, Bakhrabad and Rashidpur, exploration activities of Bangladesh, new concept to the stratigraphy of the Bengal Basin, geology and hydrocarbon prospect of Block # 9, elemental analysis of depositional system in relation to petroleum reserve estimation, stratigraphic analysis by interpretation of seismic and drill hole data of Rangpur-Dinajpur area, large sedimentation rate in Bengal Delta etc. These articles were published in different international journals of Japan, Philippines, Sri Lanka, China, and Bangladeshi ones.

Apart from the published papers, prepared reports on individual well, reserve estimation reports on different gas fields, prepared report on production of Bakhrabad Gas Field, water production problem of Habiganj well#11, water production problem and gas seeps of Titas Gas Field etc.

It hurts me when such a person's contributions are not evaluated properly and blamed for no justifications at all. We know it well that all probe committees are not able to find out corrupt officials properly. For this, many innocent persons suffer from humiliation. This has happened with Moinul Bhai in connection with the NIKO scam. Moinul Bhai was a hundred percent honest person through his service life. It is him who did not even received any gift from any one at any time, but unfortunately drawn into controversy. Such a person had to serve a year in the jail. He had no role in Niko controversy, yet he was dragged into it. What a tragedy? Some conspirators and beneficiaries of the scam victimized him. He past his last few years struggling with ill health and lost his mental balance. Many have shined with sharing his light. I sincerely pray for the salvation of his soul.

EP

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

Report

Atommash Ships First Reactor Vessel & Steam Generator for RNPP

AEM-Technology (part of Rosatom machine-building division – JSC "Atomenergomash") announced the shipment of the first key elements of the nuclear island of the first Rooppur NPP unit, the first nuclear power plant in Bangladesh's history.

A VVER-1200 reactor and a steam generator, manufactured at the "Atommash" plant in Volgodonsk, the largest nuclear engineering production site in Russia, were shipped to the NPP construction site.

The Rooppur NPP consists of two units with a capacity of 1200 MW each and will be put into operation according to the following schedule: the first unit will start working in 2023, and the second one in 2024.

General Director of JSC "Atomenergomash" Andrei Nikipelov said: "Manufacturing equipment with high quality and in time is one of our main priorities.

In addition to that, despite a number of restrictions due to the coronavirus, we managed to ship the first reactor vessel for the Rooppur NPP according to the contractual obligations.

Further, our equipment has a long way to go - it will travel another 14 thousand kilometers by sea to be at the construction site of the first nuclear power plant in Bangladesh by the end of this year."

Nuclear power plants on the base of the VVER-1200 reactor are characterized by an unprecedented level of safety, which allows them to be classified as generation "3+". This has been achieved by the introduction of new "passive safety systems", which are able to function without operator intervention even when the station is completely de-energized.

The life cycle of the reactors is 60 years with the possibility of further extension.

EP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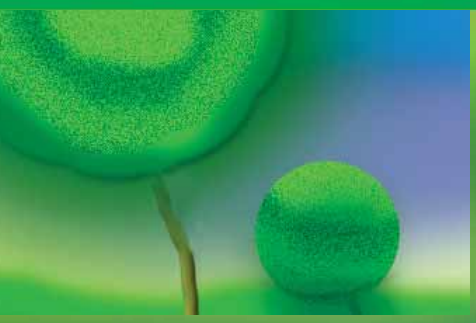
Chevron
supplying ever-cleaner energy for Bangladesh
At Chevron, our people are our greatest asset. Our workforce in Bangladesh, which is approximately 95 percent Bangladeshis, has been delivering affordable, reliable and ever-cleaner energy for more than 25 years.
Learn more at https://bangladesh.chevron.com/



Green page

ABB Supplies Substation for 100MW Bangladesh Solar

ABB has signed a contract for the installation of a substation and transformers, plus automation and control systems at a 100MW solar photovoltaic plant in Bangladesh.

ABB will work with Energon Renewables, a subsidiary of independent power producer Orion, to install the electrical hardware required for grid connection, as well as its distributed system control technology at the Moidhara solar power plant.

The plant is expected to start generating electricity by end of 2020.

ABB will implement a fully integrated automation and electrical system for control and monitoring of the entire plant, including the weather monitoring station, to increase the plant's efficiency and reliability.

Moidhara will act as a blueprint to help to define a road map for a further 1000MW worth of solar power projects across the country, ABB said.

ABB power, water and energy industries head Danilo Moresco said: "This project is the first of its kind in Bangladesh.

"Through it, we will enable clean power to be supplied to residents and industry alike, helping the government to meet its global benchmarks of energy through renewable sources."

Orion managing director Salman Obaidul Karim said: "Rapid industrialization in Bangladesh has seen the demand for power sharply increase and this continues to grow daily.

"The total generation capacity of the country is 20,000MW, yet currently only 188MW is delivered from renewable sources. With this new solar project, we hope to increase this and help the country meet its target of 2000MW generated through renewable sources by 2020."

EP

BP's Green Energy Targets to be Tough to Meet

BP will need to invest tens of billions of dollars over the next decade and may have to accept lower returns than it can get from oil if it is to meet its target of becoming one of the world's largest renewable power generators.

The British oil and gas company wants 50 gigawatts (GW) of renewables such as wind, solar and hydropower in its portfolio by 2030, up from just 2.5 GW now and more than the total renewable capacity in the United Kingdom at the moment.

European oil firms are under pressure from activists, banks, investors and some governments to shift away from fossil fuels and are trying to find business models that offer higher margins than the mere production of renewable energy would generate.

Recently, BP followed Eni in committing to cut its oil production over the coming decade and set a bigger target for reductions than the Italian company.

Analysts say large offshore wind farms probably offer the quickest route for BP to scale up but as they can take years to develop, and have high start-up costs, it may have to turn to acquisitions - and they won't come cheap.

"Getting value for that will be hard because these assets are very attractive and selling at very high prices," said Peter Atherton, associate at British strategy consultants Stonehaven.

BP already has debt of US$41 billion and as investors increasingly turn away from fossil fuel producers in favor of green energy firms, its shares have halved over the past two years, slashing its market value to under US$80 billion.

EP

শেখ হাসিনার উদ্যোগ ঘরে ঘরে বিদ্যুৎ

পাওয়ার গ্রিড কোম্পানি অব বাংলাদেশ লিঃ

POWER GRID COMPANY OF BANGLADESH LTD.

(An Enterprise of Bangladesh Power Development Board)

মুজিব শতবর্ষ MUJIB 100

PGCB Bhaban, Avenue-3, Jahurul Islam City, Aftabnagar, Badda, Dhaka-1212 Web : www.pgcb.gov.bd

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।

17pc Electricity to Come from Renewable Sources: Nasrul

Around 17 percent of Bangladesh's electricity will come from renewable energy sources by 2041, said State Minister for Power, Energy and Mineral Resources Nasrul Hamid.

Nasrul said this in an online bilateral meeting with UK Minister for Pacific and Environment Lord Zac Goldsmith recently. During the meeting, they discussed various issues of mutual interests.

Nasrul said Bangladesh has always been giving priority to environment-friendly development. "Incentives are being given for the promotion of renewable energy."

The state minister mentioned that Bangladesh has already installed 5.6 million solar home systems in off-grid areas. "Solar home systems are making a significant contribution to illuminating off-grid areas."

He said net-metering guidelines have been introduced which are expected to encourage people to use rooftop solar power.

Welcoming technical cooperation from the UK government, Nasrul urged government and non-government companies to invest in clean energy of Bangladesh.

Both the ministers discussed potential areas of investment in Bangladesh and other issues of bilateral interests.

Lord Zac Goldsmith expressed his country's keen interest to work together with Bangladesh to promote clean energy.

EP

'Aminbazar Waste-To-Energy Plant to Be Game-Changer'

Bangladesh's capital Dhaka, which generates some 6,000 tonnes of garbage every day, is expected to see a sea change in garbage disposal once the country's first proposed waste-energy plant at Aminbazar goes into operation.

"No garbage will be seen lying indiscriminately in the city once the proposed waste-energy plant in Aminbazar starts generating electricity. When the plant is set up, it'll require 3,000 metric tonnes of garbage a day. If a power plant collects so much garbage, there'll be no more waste everywhere in the city," said Local Government, Rural Development (LGRD) and Cooperatives Minister Md Tazul Islam.

The LGRD Minister made the remarks while visiting Aminbazar Dumping Station and Gabtoli Mechanical Workshop in Dhaka North City Corporation (DNCC).

Describing the waste-to-energy plant as his dream project, Tazul Islam warned that no irregularity and corruption will be tolerated in the project. He said a deal will be signed with a foreign firm to implement the electricity project.

Though it is supposed to go on production within 18 months after signing the agreement, the firm seeks some more time.

So, the minister said, the project period will finally be fixed during the deal signing and the project will be implemented keeping the environment in special consideration.

EP

Green page

Australia to See Fastest Energy Transition, says GlobalData

Australia is headed towards achieving the fastest energy transition to renewable sources in the world despite challenges such as bushfires and a halt in construction activities due to COVID-19.

The country's declining cost of distributed energy resources, variable energy, and the willingness to provide cheap electricity to its consumers will be strong underlying catalysts for the roadmap towards achieving 94% renewable generation mix by 2040, and the country's strong pipeline of solar and wind projects will bring investor confidence in the bankability of the market, according to GlobalData, a leading data and analytics company.

Somik Das, Senior Power Analyst at GlobalData, comments: "Australia currently has a strong renewable pipeline of 102GW, comprising of projects in nascent and advanced stages. Out of this, 102G of wind and solar PV represent almost 90% of the pipeline. The government has put the final nail in the coffin for coal-fired power plants, having no plans to continue coal and gas generators beyond the planned retirement dates. In fact, there is potential for coal and gas generators to retire earlier if renewables provide greater cost benefits before the 2040 horizon."

Globaldata notes that solar PV will spearhead installations this year followed by wind power. Solar PV and wind are anticipated to represent over 25% of the total installations this year, compared to 24% shaped last year.

Das continued: "The steep reduction in module costs, improved efficiency, and low power purchase agreements (PPA) have placed solar PV next to wind as green transformation flag bearers. The proposed energy transition would mean expansion in energy storage and investment towards building and improving the grid infrastructure to support the renewable expansion of this scale."

EP

Govt to Produce Power from Waste Soon: LGRD Minister

Local Government and Rural Development (LGRD) Minister Tazul Islam recently said that the government is going to produce power from waste very soon.

He said, "The government is going to produce power through proper management of waste under its 'Waste to Energy' project."

The minister came up with the remark at a thanksgiving ceremony arranged to express gratitude to waste management workers of Dhaka North City Corporation (DNCC).

The minister thanked DNCC mayor Atiqul Islam and cleaners as they removed the waste produced from sacrificial animals during Eid-ul-Adha within shortest time.

Speaking at the occasion mayor Atiqul Islam also thanked cleaners of DNCC. The mayor said DNCC is working for cleaners' welfare.

"We are constructing a residential building for cleaners at Gabtoli where 484 families can be accommodated. The construction will end by 2021," he added.

EP

Renewable Energy Projects See Major Delays

A series of green power projects were facing massive delays in their implementation, arguably due to the COVID-19 pandemic, though these projects received extension before the Coronavirus crisis.

The government has already signed power purchase agreements (PPAs) with 12 green power projects having the combined capacity to generate 715MW of renewable power and to produce at least 10 per cent of electricity from renewable sources by 2020.

Of them, only two power projects have started electricity generation. The remaining nine renewable energy projects are yet to make any significant progress. Only the 50MW Solar Park project at Mymensing is expected to start commissioning within the timeframe.

Another three power projects including the 32MW (AC) Solar Park at Sunamganj, 50MW Solar Park in Mymensing and 5MW each Solar Parks at Lalmonirhar and Sylhet have sought time extension due to COVID-19 crisis.

According to sources, the government has signed the PPAs with most of the power sponsors without verification of their land or evacuation capacity. Besides, the Power Division has also issued letters of intent (LoIs) to another 12 green power projects having the capacity to generate another 780.77MW from renewable sources.

Of them, the government has issued letters of terminations to four solar power projects including the 200MW Grid solar power plant at Trisal in Mymensing and 47MW of solar power project at Panchagar.

The rest of the power projects have sought time extension to sign the PPAs, sources confirmed.

EP

India to have 60pc Renewable Energy by 2030: Power Minister

India will have around 60 per cent of its installed electricity generation capacity from clean sources by 2030, Power and New & Renewable Energy Minister R K Singh said recently.

The minister also exuded confidence that the renewable energy capacity would touch 510 GW by 2030, including 60 GW of hydro power.

In September last year at the United Nations Climate Action Summit, Prime Minister Narendra Modi had announced increasing the renewable energy target to 450 GW by 2030 from 175 GW by 2022.

Participating in a webinar organized by The Energy Resource Institute (TERI), Singh said, "I would say that by 2030, 60 per cent of our capacity will be from renewables, and that is on a conservative scale."

The minister explained that by 2030, 450 GW of power generation capacity would come from renewables like solar and wind.

Besides 60 GW would come from hydro-electric power, he said.

About the progress on clean energy, he said that India's clean energy capacity including under development projects and hydro-electric power is around 190 GW, which is more than the targeted 175 GW by 2022.

EP

Want Youths in Global Fight to Achieve Climate Justice: Momen

Report

Foreign Minister AK Abdul Momen has said that the government will promote youth-led innovations and solutions to build greater resilience and combating climate emergency.

AK Abdul Momen

"We want to see young people in the global fight to achieve climate justice for Bangladesh," the minister said recently while addressing as chief guest the launching ceremony of Coastal Youth Action Hub.

The minister said, "We will include young people in our delegation in the Next COP and will take special action under our CVF presidency. Bangladesh Parliament has adopted a first ever motion on planetary emergency to protect future of our next generation."

Nahim Razzaq, lawmaker from Shariatpur-3 and the convener of Climate Parliament Bangladesh, also joined the programme -- organised by ActionAid Bangladesh and YouthNet in partnership with Bangladesh Model Youth Parliament, British Council, BINDU and BEDS -- as special guest.

Razzaq said the recent flood has created huge displacement in his constituency.

"We all know about the impact of climate change in Bangladesh and globally, and it is us who needs to take climate action now," Razzaq noted.

He congratulated the young people for committing to lead coastal resilience in Bangladesh and urged to bring behavioural changes to protect our ecosystem.

Ken O'Flaherty, the COP26 regional ambassador for Asia/ Pacific and South Asia, also joined the webinar as a special guest and noted, "It is very clear to us that the climate change is the biggest threat to our planet and it will be the young people who will be the most affected group."

"We have to be very careful and practical in our planning and implementation of climate action," said Dr Qazi Kholiquzzaman Ahmed, chairman of PKSF, who led and contributed to a number of policies in Bangladesh on climate change. EP

BD May Face Extreme Heat, Humidity by 2050

Bangladesh along with its neighboring India and Pakistan could see extreme increase in heat and humidity, which may significantly affect workability and liveability, according to a global report.

The McKinsey Global Institute (MG) launched the report recently that also said the three countries could face increased likelihood of lethal heat waves than the rest of Asia by 2050.

The report titled 'Climate risk and response in Asia' categorized Bangladesh, India, and Pakistan as parts of the Frontier Asia.

These rapidly urbanizing economies have historically seen low levels of regional integration and have a diverse global base of trading partners and investors, the report observed.

"For example, by 2050, Frontier Asia could face increased likelihood of lethal heat waves than the rest of Asia," the MGI said, adding "We estimate that by 2050, between 500 million and 700 million people in Frontier Asia could live in regions that have an annual probability of a lethal heat wave of about 20 per cent."

The report also estimated that by 2050, in an average year 7.0 to 13.0 per cent of the gross domestic product (GDP) could be at risk as a result.

The report estimated that there is high risk probability in Bangladesh's liveability and workability as growing number of population may be exposed to lethal heat waves. EP

UNFCCC Papers Highlight Technologies Supporting Low-Carbon Transition

EP Desk

The first paper reviews the process by which climate technologies best suited to each country's needs are identified and prioritized.

The second paper reviews innovative approaches to scale up the implementation of climate change mitigation and adaptation technologies.

The third paper provides an overview of knowledge on and technologies for addressing climate change-related loss and damage in coastal zones.

The UNFCCC Secretariat published three papers that document the climate technology "journey" – the path between the identification of technological needs for countries to increase sustainability and develop climate change resilience, to full implementation of those technologies.

The publications review best practices for responding to countries' technological requirements, the significant role that innovation plays in speeding up the implementation of technology, and opportunities to leverage new technology approaches to increase coastal resilience to climate change.

The Technology Executive Committee (TEC), the policy arm of the UNFCCC's Technology Mechanism, organized a virtual event to launch the publications.

Part of the TEC's regular briefing series, the paper titled, 'Enhancing Implementation of the Results of Technology Needs Assessments,' explores the starting point of countries' climate technology journey, including the identification and prioritization of climate technologies best suited to each country's needs.

The report reviews challenges, best practices, and opportunities for improvement in the Technology Needs Assessment (TNA) process, which countries undertake to determine their climate technology priorities. It also provides case studies that demonstrate countries' progress in implementing TNA-prioritized technologies.

The publications show the crucial role of technologies in the transition to low-carbon, resilient economies.

The paper titled, 'Innovative Approaches to Accelerating and Scaling Up Climate Technology Implementation for Mitigation and Adaptation,' reviews opportunities to scale up the implementation of identified climate change mitigation and adaptation technologies through innovative approaches.

The paper presents innovations in the following areas: the country selection process for technology options; the solicitation process by climate technology planners of stakeholder views and practitioner knowledge and preferences; financial innovations for enhancing funding for technology projects and programmes; and opportunities for enhancing private sector engagement and incubators.

Finally, the paper titled, 'Technologies for Averting, Minimizing and Addressing Loss and Damage in Coastal Zones,' provides an overview of knowledge on climate change-related loss and damage in coastal zones.

It also reviews the technologies for averting, minimizing, and addressing loss and damage. Co-issued by the TEC and the Executive Committee of the Warsaw International Mechanism for Loss and Damage (WIM), the policy brief highlights technologies needed for risk assessment, risk retention, and recovery and rehabilitation in coastal zones, and reviews how combinations of technologies can be used to comprehensively assess, manage, and accommodate the impacts of climate change.

EP

'Highest Temperature on Earth' Recorded in US

What could be the highest temperature ever reliably recorded on Earth - 130F (54.4C) - may have been reached in Death Valley National Park, California.

The recording is being verified by the US National Weather Service.

It comes amid a heatwave on the US's west coast, where temperatures are forecast to rise further this week.

The scorching conditions have led to two days of blackouts in California, after a power plant malfunctioned recently.

What were the previous records?

Before this, the highest temperature reliably recorded on Earth was 129.2F (54C) - also in Death Valley in 2013.

A higher reading of 134F, or 56.6C a century earlier, also in Death Valley, is disputed. It is believed by some modern weather experts to have been erroneous, along with several other searing temperatures recorded that summer.

According to a 2016 analysis from weather historian Christopher Burt, other temperatures in the region recorded in 1913 do not corroborate the Death Valley reading.

Another record temperature for the planet - 131F, or 55C - was recorded in Tunisia in 1931, but Mr Burt said this reading, as well as others recorded in Africa during the colonial era, had "serious credibility issues".

EP

UK Helps Reduce Greenhouse Gas Emission

Thirty-one million tonnes of greenhouse gas emissions were reduced globally in the last nine years as a result of UK intervention – the equivalent to taking 6.7 million cars off the road for a year – according to new climate finance data published recently.

UK International Climate Finance (ICF) investments aim to reduce poverty by helping developing countries build resilience and manage the risks of climate change.

Developing countries are the hardest hit by climate change and the World Bank estimates that without intervention the impact of rising emissions could push an additional 100 million people into poverty by 2030, said the British High Commission in Dhaka recently.

The results show that since 2011, UK aid investment has provided 33 million people with improved access to clean energy, including connections to off-grid renewable energy sources, access to solar lanterns and clean cook stoves.

In 2021 the UK will host the COP-26 climate summit in Glasgow, building on the success of the landmark 2015 Paris Agreement to tackle climate change internationally.

EP

Global Warming Makes Tropical Soils Leak CO_2

Tropical forest soil warmed in experiments to levels consistent with end-of-century temperature projections released 55 percent more CO2 than control plots, exposing a previously underestimated source of greenhouse gas emissions, researchers reported recently.

Before humanity began loading the atmosphere with carbon pollution by burning fossil fuels, the input and outflow of CO_2 into soil—one key element in Earth's complex carbon cycle—remained roughly in balance.

Gases emitted by deadwood and decaying leaves, in other words, were cancelled out by microorganisms that feed on such matter.

But climate change has begun to upset that balance,

according to a new study, published in Nature.

"Carbon held in tropical soils is more sensitive to warming than previously recognized," lead author Andrew Nottingham, a researcher at the University of Edinburgh's School of Geosciences, said.

"Even a small increase in respiration from tropical forest soils could have a large effect on atmospheric CO_2 concentrations, with consequences for global climate."

EP

Greenland's Ice Has Melted to a Point of No Return: Study

Greenland's ice sheet may have shrunk past the point of return, with the ice likely to melt away no matter how quickly the world reduces climate-warming emissions, new research suggests.

Scientists studied data on 234 glaciers across the Arctic territory spanning 34 years through 2018 and found that annual snowfall was no longer enough to replenish glaciers of the snow and ice being lost to summertime melting.

That melting is already causing global seas to rise about a millimeter on average per year. If all of Greenland's ice goes, the water released would push sea levels up by an average of 6 meters -- enough to swamp many coastal cities around the world. This process, however, would take decades.

"Greenland is going to be the canary in the coal mine, and the canary is already pretty much dead at this point," said glaciologist Ian Howat at Ohio State University. He and his colleagues published the study recently in the Nature Communications Earth & Environment journal.

The Arctic has been warming at least twice as fast as the rest of the world for the last 30 years, an observation referred to as Arctic amplification. The polar sea ice hit its lowest extent for July in 40 years.

The Arctic thaw has brought more water to the region, opening up routes for shipping traffic, as well as increased interest in extracting fossil fuels and other natural resources.

Scientists, however, have long worried about Greenland's fate, given the amount of water locked into the ice.

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'Smarter Plan to Help Mitigate Investment Risks'

Prof. Dr Ijaz Hossain

The use of prepaid meters in power and energy sector is not a popular concept in most countries. We have started with prepaid meters for power consumers more than five years back, now we are being told that all consumers will be brought under its coverage. In actual practice, it may not be possible to bring industrial and low-end consumers under this.

The projected demand growth of power could not be achieved and, I think, the post-COVID demand growth is unlikely to be more than 5%. So, the government should be smarter in implementation of the power and energy sector projects – smaller projects of two-year term should be undertaken under the long-term plan. It might create some temporary supply deficit, but would help shield the country from over-capacity investment risks. It would also help stabilize energy prices, thus providing some relief to the consumers.

Prof Dr. Ijaz Hossain, Dean, Faculty of Engineering, BUET, said this in an exclusive interview with Energy & Power Editor *Mollah Amzad Hossain*.

How do you foresee the post-COVID global and Bangladesh Power and Energy Sector?

The economy of Bangladesh like that of the rest of the world has slowed down due to the impacts of the global pandemic. This has obviously cut the demand for power and energy. But continuation of investment in mega projects has created adverse impacts on the power and energy pricing. The situation will become worse when loan repayment will start. Consequently, the consumers have to bear the brunt of the increased prices. The pandemic has already put financial stress on the consumers in many ways. Unless the situation is reversed soon after the pandemic, the adverse impacts on prices would become more prominent.

The global fuel market crashed due to the pandemic. It is not at all certain how long such situation would prevail. But Bangladesh could take advantage of the situation being increasingly dependent on imported fuels. The government should adopt appropriate strategies for reaping benefits through extensive review of the situation.

What kind of policy adjustments you would suggest for Bangladesh power and energy sector in the context of the global situation?

The government must adopt smart planning. It has been working on long-term plans, but now it should go for shorter 2-year plans upon careful review of the global situation. This may create some supply shortage but would save the industry from the risks of investment in capacity that may never get utilised. Bangladesh Power Development Board (BPDB) is now suffering from over-capacity due to wrong projections of the power demand. We should now do our plans based on a conservative 5% demand growth instead of the originally prescribed ambitious growth rate of 10%. The mega projects now under implementation must be completed in phases (unit by unit), not in one go as has been the practice in the last decade. We must bear in the mind that the impact of over-investment on the economy is far greater than the occasional power deficit.

It is being told that the virus would have an impact on financing the energy transition. The initiatives taken for restricting global warming below 2 degrees Celcius would be impacted. What are your views?

It is difficult to predict whether the pandemic would affect the growth of renewable energy. The prices of fossil fuels have been depressed. It is extremely difficult to judge how this may influence investment in renewable energy. But we should keep an eye on India. The price of renewable energy there is on a declining trend. We can take initiatives for importing solar power from India. Bangladesh should invest in solar power generation in India, import solar power by setting up a special grid and import hydropower from Nepal and Bhutan.

But we need changing of mindset for energy transition especially through launching of effective action programs for expanding renewable energy. We must bear in mind that renewable energy will never be competitive in price with traditional energy and power. We must be prepared to pay higher prices. But it cannot be said definitely at this time whether the fall in prices would influence the investment in renewable energy.

The low-cost options for power generation in Bangladesh is progressively getting diminished. On that consideration, many observe that mining own coal and setting up mine-mouth power plants can

redress the situation. What are your views?

We could not stick with the low-cost options due to the combined effects of the source of finance, sector governance and over investment. Now we have become derailed from the low-cost option path due to the huge deficit of own primary fuel. Hence, mining own coal and setting up of mine-mouth power generation plants can definitely be the least cost option. Apart from cost control, it can ensure energy security as well. Consequently, it can stimulate economic development in the coal mine region.

Installation of prepaid meters for domestic gas users can control unaccounted for gas (system loss). Installation of Electronic Gas Volume Corrector (EVC) meters is also getting priority attention now. What is your opinion?

The use of prepaid meters in power and energy sector is not a popular concept in most countries. We have started with prepaid meters for power consumers more than five years back, now we are being told that all consumers will be brought under its coverage. In actual practice, it may not be possible to bring industrial and low-end consumers under this. We must assess the economic benefits of the very expensive pre-paid installation program before further proceeding with bringing all consumers under this. Of course, there would be benefits from the installations of prepaid meters for domestic gas users. But again, the overall economic benefit must be assessed. Industrial consumers must be brought under EVC metering system.

The LPG sector is now in an unhealthy market competition due to excessive number of operators than the market size. What are your suggestions for getting rid of it?

Permitting so many operators without accurately assessing the market and its future potential was a seriously flawed policy. This has created the present environment of unhealthy competition. The responsible people must be brought under accountability. Similar situations have been created by awarding too many licenses in other sectors also thus creating an excessively large number of TV channels and banks.

The shipping cost of LPG is also higher for Bangladesh compared to that in India as small companies are importing smaller volumes of LPG. This has increased the cost. The transportation cost can be reduced greatly if upon setting up of deep-sea terminals, arrangements can be made to import LPG in bulk. However, this will require cooperation from all operators.

Bangladesh may also provide subsidy to LPG like India. That will assist in rapid expansion of LPG market. This would reduce cost for the health and environment sectors. The LPG market will also get larger.

The procedural bottlenecks of auto gas use must also be removed. LPG must be encouraged as auto fuel. So, too many rules and regulations must not unnecessarily impede its growth.

LPG is exclusively import based. The price is global market based. But the government has empowered the Bangladesh Energy Regulatory Commission (BERC) for fixing the price. Do you agree with the logic?

I don't think BERC should set the price of LPG. BERC can at best prescribe the formula. Based on that, the selling price for the operators should be set based on the CP (contract price). But the main focus here should be on BERC strictly monitoring the market operation. Local consumers would get benefit from reduction of the LPG price in global market if the above can be implemented.

The works of renewable energy projects are not advancing as planned. What should be done to expedite it?

I have already mentioned this. The mindset of the policymakers is a major impediment here. I believe the government should implement about ten showcase projects of approximately 100 MW capacity each. For this, low-cost financing, the required land and power evacuation facilities must be ensured for the entrepreneurs. That will stimulate the dissemination and generate success stories. The costs will further reduce if money can be arranged from Green Climate Fund (GCF).

Failure in introduction of Feed-in-Tariff is a major setback. The success in industrial rooftops has been observed after the introduction of net metering. But we must encourage innovative projects in renewable energy. We must take advantage of new technologies.

Do you think Bangladesh is on the right track for achieving the energy efficiency? If not, what are your suggestions?

Not much energy consumption reduction is expected from energy efficiency if demand does not grow as planned. The demand for power is still considerably low. How much reduction can you expect if the demand remains at 15,000 -16,000 MW? But till now the success is good.

What should be done for enhancing efficiency?

Sustainable supply of quality power to all cannot be achieved till power transmission and distribution systems are modernized and updated. But there is no guarantee that the industries will switch over to the grid power, abandoning captive generation even after enhancing reliability of the grid power. Price is a major factor here. But for increasing grid power use in the industrial sector, there is no option but to stop awarding licenses to any new captive generation plants and going all out for modernization of the power distribution system.

What is your opinion about future energy pricing and industrialization in Bangladesh?

Please note that the power tariff and energy price are two important elements of cost of doing business. By themselves, the level of power tariff and gas price that are expected in the future due to the growing dependency on imported fuels may not be a major issue for industrial growth because of the effect of the pandemic on fossil fuel prices. But other negative factors of the cost of doing business must be minimized. Land for industries must be made available at affordable price like in other countries of the world. The cost of infrastructure development other than energy and power in Bangladesh is relatively higher. The combined effect of all these can make future energy price an impediment for attracting investment in Bangladesh.

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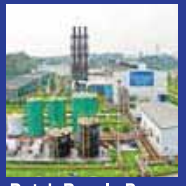
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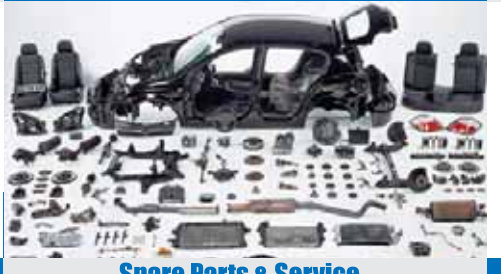

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