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- Seek Int'l Finance to Cut Emission Based on CER
- BERC for LPG Pricing Formula, Announcing Retail Price Every Month



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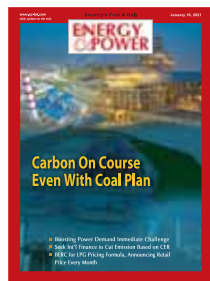
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EDITORIAL

Although Bangladesh's level of carbon emission remains much lower in comparison to other developed or developing countries, the country had pledged to commit to the global effort to limit the temperature rise below 2 degrees Celsius.

The NDC is coming up for a revisit and it was felt by some that waste management, agriculture and forestry sectors should also be included. It is impossible for the State to ensure environment protection, and the private sector needs to do its part, i.e. the private sector must be involved in the process of updating the NDC. Furnace oil plants need to be phased out as a major source of pollution with no possibility of making them more efficient. Speakers at a recent virtual discussion agreed that the country is on the right track to pursue a low carbon growth strategy, even though there will be a number of new coal-fired power plants. The rationale being that Bangladesh presently emits a very low level of carbon in the atmosphere and the level would remain within permissible limits. Hence, coal plants under various stages of implementation would not tip the emission level beyond the limit, since these plants are using advanced technologies.

h i g h l i g h t s



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Increasing demand for power would be the immediate challenge for the government as the generation capacity now remains idle. Improving the transmission and distribution systems would help ensure uninterrupted supply of quality power while a rational fuel mix would facilitate lowering the generation cost, creating demand for electricity ... More on Roundtable

COVER



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Bangladesh remains on the right track to pursue a low carbon growth strategy despite having plans to set up few coal-fired power plants. Experts urged the government to integrate the private sector towards achieving expected carbon reduction targets. They also suggested giving careful consideration of all issues while formulating the revised NDC.



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The main problem in getting investment is that the financiers want to know about the capability to utilize the fund and its transparency. But it would not have been possible for Bangladesh to achieve the economic growth at around 8.0% if there is lack of transparency and capability to spend the money. We should directly seek unconditional investment for our emission control initiatives... Dr. Sultan Ahmed tells the EP



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Greenpage

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

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Dr Sultan Ahmed Former Secretary Power Division

Aramco Announces Discovery of 4 New Oil, Gas Fields



Saudi Arabia has announced the discovery of four new oil and gas fields.

Saudi Energy Minister Prince Abdulaziz bin

Salman Al Saud said recently that the Saudi Aramco's discoveries are in different parts of the kingdom.

Non-conventional oil has been discovered in al-Reesh oil field, northwest of Dhahran, and in al-Ajramiyah Well No. 1, northwest of the city of Rafhaa in the Northern Borders Province.

Non-conventional gas has also been discovered in al-Sarrah reservoir at al-Minahhaz well, southwest of the Ghawar oil field, and at al-Sahbaa well, south of Ghawar.

The minister said that Saudi Aramco continues to work on determining the size and volume of discovered fields.

In August, Saudi Arabia announced the discovery of two oil and gas fields in the northern border region.

S'pore to Cut Household Electricity Tariff by 3.2pc

Singapore's electricity tariff is due to fall by an average of 3.2 per cent or 0.67 Singapore cent per kilowatt-hour (kWh), notwithstanding 7 per cent goods and service tax (GST), for the first quarter of 2021.

The downward revision is due to lower energy costs compared to the previous quarter, says SP Group in a recent press statement.

From Jan 1 to March 31, 2021, households will see a decline in the electricity tariff to 20.76 Singapore cents from 21.43 cents per kWh, excluding 7 per cent GST. Including GST, the new electricity tariff rate for households will be 22.21 cents per kWh.

SP Group estimates that the lower electricity tariff translates to an average of 3.1 per cent in electricity bill savings for domestic customers living in all types of property.

According to the Singapore national utility, this will amount to S\$2.39 in savings, excluding GST, in the average monthly electricity bill for families living in four-room Housing Development Board flats.

Indonesia Says \$9.8b EV Battery MOU Agreed with LG Energy Solution

Indonesia and a unit of South Korean firm LG Group have signed a memorandum of understanding (MOU) on a \$9.8 billion electric vehicle (EV) battery investment deal, the head of Indonesia's Investment Coordinating Board said recently.

The deal was signed on Dec. 18 and includes investments across the EV supply chain, the board head, Bahlil Lahadalia, told a news conference.

An official at LG Energy Solution, a unit of LG Group, South Korea's fourth-largest conglomerate, confirmed it had agreed an MOU but could not provide details or the deal's value.

LG Group in Seoul referred Reuters to its affiliate. Bahlil said the agreement made Indonesia the first country in the world to integrate the electric battery industry from mining to producing electric car lithium batteries.

"We have signed an MOU for the construction of an integrated electric battery factory from upstream to downstream," Bahlil said.

"Mines, smelters, precursors, cathodes, cars to recycling facilities will be built in Indonesia," he said, adding that the project will be located in North Maluku and Central Java.

Under the MOU, at least 70 percent of the nickel ore used to produce the EV batteries must be processed in Indonesia, he said.

Petrol Price at All-Time High in Delhi

Delhi saw the petrol price reach all-time high recently after a hike of 23 paise. Petrol was then retailing at Rs 84.20 per liter amid firming of international oil prices.

Diesel too received a price hike of 26 paise, after which its price reached Rs 74.38 a litre.

The previous high of Rs 84 a liter for petrol in Delhi was touched on October 4, 2018. Diesel too had scaled to an all-time high of Rs 75.45 a liter that day.

State-owned fuel retailers hiked rates after a nearly month-long hiatus. Petrol price was raised by 26 paise per liter and diesel by 25 paise a liter, according to a price notification from oil marketing companies.

Nagad Users Can Pay DESCO Bill Free of Cost

Nagad signed an agreement with Dhaka Electricity Supply

Company (DESCO) at DESCO head office in the capital recently.

Under the deal, users of Nagad, the digital financial service of the postal department, can now pay the electricity bills of DESCO without any additional costs, a move that would help them get rid of hassles and save time.

The customers of DESCO would be able to pay the prepaid and postpaid bills instantly.

The facility to pay the bills began the official journey at a program at the head office of DESCO at Nikunja in the capital recently.

Eastern Bank Ltd is the financial settlement partner of the initiative of Nagad and DESCO. DESCO customers in Mirpur, Pallabi, Kafrul, Kalyanpur, Cantonment, Gulshan, Banani,



Mohakhali, Uttara, Uttarkhan, Dakkhinkhan, Baridhara, Badda, Tongi and Purbachal would avail the service.

BIPPA Seeks Funds from Forex Reserves for PP

Bangladesh Independent Power Producers Association

(BIPPA), a platform of private sector power sponsors has sought loan from forex reserve of Bangladesh Bank for investment in new power plants.

In a letter to the governor of BB recently, it claimed the loan from forex reserve will help for setting up new IPPs and repayment of foreign loans secured for existing plants, reliable sources said.

The BIPPA said the reserve will help to implement power projects under public-private infrastructure initiative. "If such an initiative will take, then power sector will boost up and overcome difficulties in funding."

The BIPPA also said all IPP projects in power sector get a sovereign guarantee.

At present, there is a foreign debt of about \$3.0 to \$4.0 billion. "If a loan is available from the BB reserve, a large amount of foreign exchange will be saved."

Because the interest rate on foreign loans is 6 percent, they also pointed out.

Chevron Bangladesh Supports Its Fence Line Communities

Chevron Bangladesh has always undertaken initiatives to stand by its fence line communities, said a press release.

As part of its annual social investment efforts, the company recently provided materials (e.g., hand-pumps/pipes/filters, etc.) for 80 deep and shallow tube-wells for the supply of safe drinking water to people living near its operational areas, potentially covering 550 families in multiple Unions residing near Bibiyana, Bangladesh's largest producing gas field.

In addition, Chevron Bangladesh has also recently provided significant infrastructural support, e.g., by delivering bricks and river sand for the refurbishment of 1,230 meters of five village mud roads, enhancing road connectivity for up to 8,000 people living in three unions located near the Bibiyana Gas Field.

Also, near Bibiyana, the company has provided crucial key support in the renovation of an 'Eidgah' enabling approximately 1,000 people to perform their prayers during the two Eid festivals of the year, and ancillary construction materials (e.g., rods/cement/collapsible gate) for the renovation of a village mosque, covering about 300 people in the community.

SOSCL Receives 'President's Industrial Development Award'

Summit Oil & Shipping Co. Ltd. (SOSCL), the largest private importer and supplier of fuel oil in Bangladesh, recently received the prestigious 'President's Industrial Development Award 2018' in the small industries category for the outstanding contribution to the national economy.

Salman Khan, Director - Operations of SOSCL on receiving the award remarked, "We are grateful for the recognition of SOSCL's ongoing effort to support industries by safe supply and storage of fuel oil in Bangladesh."

Presently SOSCL supplies HFO to the following 8 power plants in the private sector with a fleet of 22 inland oil tankers having aggregate carrying capacity 30,000 tonnes and total storage facility of 100,000 MT capacity.

One behalf of the President, the Industries Minister Nurul Majid Mahmud Humayun MP handed over the awards. State Minister for Industries Kamal Ahmed Mojumder and FBCCI President Sheikh Fazle Fahim were present as the special guests while Industries Secretary KM Ali Azam presided over the event.

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DPDC Inks Deal with 3 Hospitals



The Dhaka Power Distribution Company Limited (DPDC) has signed agreements with three hospitals – United Hospital, Asgar Ali Hospital and Labaid Hospital – for

providing healthcare services and medical treatment to the DPDC employees on priority basis and with special discounts.

Under the agreement, DPDC employees and their family members will be able avail 20 percent discount on pathology test, 10 percent on radiology and imaging, and 5 percent on cabin rate from at United Hospital, said a press release.

DPDC employees will also get 10 percent, 5 percent, and 3 percent discount on pathology, radiology and imaging, cabin rate and treatment, respectively at Asgar Ali Hospital.

In addition, some 20 percent discount on pathology test, 10 percent on radiology and imaging, and 10 percent on cabin rate are also available at LabAid hospital.

Navana CNG Approves 10pc Cash Dividend

The 16th Annual General Meeting of Navana CNG Limited approved 10 per cent cash dividend (excluding sponsors and directors) for the year ended 30 June 2020 was held through digital platform recently, says a press release.

A large number of Shareholders attended in the meeting. The meeting was presided over by Sajedul Islam, Chief Executive Officer of the Company.

Atomash Connected 2 Semi-Vessels of Nuclear Reactor for RNPP

At the Branch of JSC AEM-technology in Volgodonsk the plant's specialists completed a finishing weld connecting the two halves of the reactor.

This is a key stage in the manufacture of the reactor pressure vessel for the first Unit of the Rooppur NPP.

The operation lasted for 10 days with continuous heating of the weld zone - from 150 to 300 degrees. During this time, about two tons of flux and more than one and a half tons of wire with a diameter of 4 mm are used.

After welding, the reactor pressure vessel weighing 320 tons is heated to 300 degrees and using a crane is transferred to the furnace, where the item will be heat treated for two days

The next stage is test operations. Specialists carry out the whole range of test measures in the weld zones: Radiographic, ultrasonic and penetrant tests.

Summit Hands Over Newly-Built School in Gazipur

Liberation War Affairs Minister AKM Mozammel Haque inaugurated the Summit funded newly-built Kalakoir Government Primary School.

Lt Col (Retd) Muhammad Faruk Khan, Chairman of the Parliamentary Standing Committee on Foreign Affairs and Presidium Member, Bangladesh Awami League and Mohammad Zahangir Alam, Mayor, Gazipur City Corporation (GCC) were present as the special guests, said a press release.

The new school building was constructed on 0.8 acres of land at a total cost of Tk 5.57 crore. The construction was fully funded and managed by Summit Gazipur II Power Limited.

One behalf of Summit, Managing Director of Summit Gazipur II Power and Summit Ace Alliance Power Eng Md Mozammel Hossain handed over the school building to the District Primary Education Officer of Gazipur Md Mufajjol Hossain.

Doreen Power Approves 20pc Dividend

The 13th Annual General Meeting (AGM) of Doreen

Power Generations and Systems Limited was held recently on a digital platform.

The AGM approved 10 per cent stock dividend for all shareholders and 10 per cent cash dividend for general shareholders except directors or sponsors for the financial year 2019-2020.

Anjabeen Alam Siddique, Chairman of the board of directors of the company, presided over the meeting. Managing Director Tahzeeb Alam Siddique, Independent Director Mahtab Bin-Ahmed and Masudur Rahman Bhuiyan, Company Secretary were present in the AGM.

Baraka Patenga Power Gets Nod to Find Cut-Off Price

The Bangladesh Securities and Exchange Commission (BSEC) recently gave approval for Baraka Patenga Power to find a cut-off price through bidding for its initial public offering (IPO) to raise Tk 225 crore in funds from the stock market.

The approval came at a meeting of the capital market regulator on its premises.

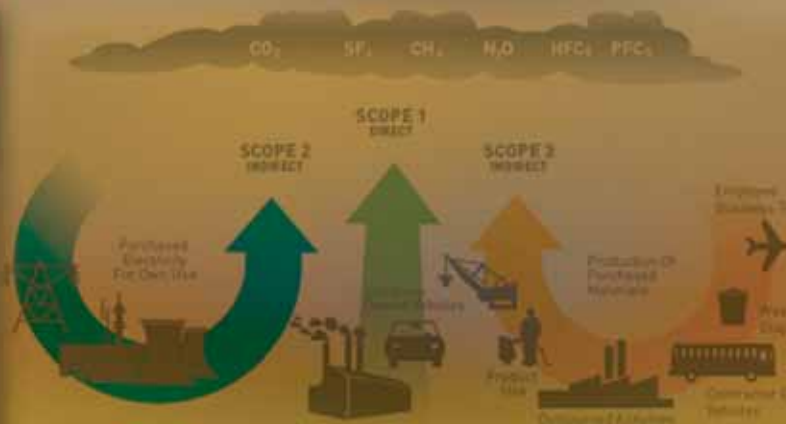
The power producer intends to use the IPO proceeds in making investments on its subsidiaries, Karnaphuli Power and Shikalbaha Power, and repay bank loans, the BSEC said in a press release.

The company's consolidated per share net asset value was Tk 23 as of June 30, 2020. The consolidated earnings per share was Tk 4.37 while weighted average EPS Tk 3.30.

LankaBangla Investments is its issue manager.

Carbon On Course Even With Coal Plan

EP Report



Bangladesh's energy sector growth and the consequent economic development have so far taken place through following low carbon path. The country's level of carbon or Green House Gas (GHG) emission remained much lower than other developed and developing countries. Yet, the country like other countries pledged to reduce the emission from the existing level to contribute to the global effort to limit the temperature rise below 2 degrees Celsius. Bangladesh had committed in the NDC (Nationally Determined Contribution) to reduce carbon emission by 5% with its own resources and an additional 10% subject to availability of external resources.

Speakers at a recent discussion highlighted the present state of growth strategy and observed that the country remains on the right track to pursue a low carbon growth strategy – be it in the energy sector or overall economic development – despite having plans to set up a few coal-fired power plants. They recommended the government to integrate the private sector towards achieving expected carbon reduction targets. They also suggested giving careful consideration of all issues while formulating the revised NDC and its appropriate validation before formally submitting it to the United Nations Framework Convention on Climate Change (UNFCCC).



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Energy & Power magazine in collaboration with M2K Technology and Trading organized the virtual discussion on “Bangladesh Energy Sector: Towards Low Carbon Growth” on 9 January 2021, moderated by EP Editor Mollah Amzad Hossan. Experts and officials concerned took part in the event held as part of a series titled “EP Talks”.

Dr. Sultan Ahmed, former Secretary of Power Division, said that Bangladesh emits very low level of carbon in the atmosphere and the level would still remain within the limit subject to achieving the country’s renewable energy target and ensuring energy efficiency. Even the coal-based power plants, the ones already in operation and under implementation at Payra, Rampal and Matarbari, would not increase the emission to an extent beyond the limit set at the NDC thanks to the advanced technologies that used in the plants. The technologies would increase the power generation cost though. As a result, Bangladesh can claim carbon credits.

Dr. Sultan said Bangladesh has also undertaken projects to generate power from municipal wastes while the country is going for developing green buildings that are expected to contribute to reduce the emissions and pollutions. He, however, stressed the need for intensive monitoring of the construction works and operations of the plants as there are a lot of talks about coal transportation and emissions from the Rampal plant. He suggested strengthening the Department of Environment (DOE) for effective monitoring and regulation. The consumption of power in the government and private offices is being reduced – the Bridges Division office is an example. They are now consuming 36,000 kwh less power per month.

Nurul Alam, Additional Secretary (Development) of Power Division, mentioned that Flue Gas Desulfurization (FGD) unit has been included in the design of Rampal power plant while

Bangladesh Energy Sector Towards Low Carbon Growth



tinyurl.com/eptalks17

online emission management system is provided with Payra power plant. Advanced technologies of power generation are being installed in the plants. We got proposal for installation of IGCC, but it is not a proven technology yet. We would be able to adopt it possibly in fu-

man of Bangladesh Power Development Board (BPDB) observed that Rampal power plant will be a unique model as the height of its chimney is 275 meters. Steam turbines are being brought under the repowering system. He mentioned that the nuclear power plants are less emitting. There is a plan that nuclear would contribute 15% to the power supply. The use of gas is increasing for its relatively benign nature. A simple cycle gas-based power plant can emit 600-650 grams, but if we replace it with combined cycle one, the emission will come down to 400 grams and 50MW additional power would be generated. Repowering is being done at Ghorashal while 12 more projects have been taken up under repowering of steam turbine. No simple cycle power plant would be constructed in future. The liquid-fuel based power plants would be retired and phased out as per the plan.

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ture. The world cannot get rid of the fossil fuel use as yet. Coal cannot be abandoned too. About the possibility of reviewing the coal-based plants, he said it would not be possible at this stage to say how many of the planned plants would be scrapped. He said the Power Division is working with a mission to reduce emissions at all segments of the power value chain from generation to distribution through transmission, following the advice of the Prime Minister to go for low carbon development.

Engr Khaled Mahmood, former Chair-

He said that he went through a news that the chimney of a power plant in USA has been dismantled in 2015. This plant was constructed in 1949. How many years it was in operation? Will it be fair shutting down all coal power plants based on this, he questioned? That plant and those we are constructing cannot be compared. Time has come to seriously think about why we cannot grow contribution of renewable energy. We have shortage of skilled manpower for developing bankable documents. We are using advanced technology and in that case it is not essential to use superior quality coal.

Siddique Zobair, Senior Energy Adviser of ACML and former Member of SREDA, pointed out that 48% power is used in the industrial sector. Power use must be conserved through car-



Sultan Ahmed



Siddique Zobair



Md. Nurul Alam

rying out energy auditing of large industries. We could not do it so far. This is stuck in mere campaigning till now. There is a lot of scope for energy conservation in the gas sector, a potential area of methane emission. We can reduce methane emission significantly if leakage and pilferages of natural gas can be eliminated. The power sector has adopted advanced technology for limiting emissions. Furnace oil is a major polluter and such plants should be phased out as there exists no technology for reducing emissions here. These can be replaced with gas/ LNG-based plants.

We are lagging way behind the renewable energy target as the present generation is only 471MW. We have to do a lot for achieving 10% contribution of renewables, including hydropower. Our energy efficiency target was 15% and achieved about 8.4%. We need to enhance institutional and regulatory capacities. There exists serious lack of coordination among relevant departments and agencies. Many cannot adjust with the NDC. It has not been possible yet to integrate actions. It should not be difficult to update the NDC, but the question is the ownership. Achieving the target would not be difficult if ownership can be ensured.

Dr. S. M. Munjurul Hannan Khan, former Additional Secretary, mentioned that waste management, agriculture and forestry sectors should be included in the NDC. Some elements were missing in the NDC of 2011. The government

alone cannot ensure the environment protection. The private sector has a major role to play here. We gather data and information from the government offices and adopt national policy and planning based on these. The NDC cannot be achieved without integrating the private sector. We could not develop skilled human resources. That is why we have to hire foreign experts. We must bear in mind that private sector is at the focal point of development. We have to update the NDC in coordination with private sector.

He stressed on preparing bankable documents for seeking and securing finance for achieving the additional 10% emission reduction target as per the NDC. But Bangladesh does not have skilled manpower for doing that. We have to take meaningful initiative for developing competent human resources. A new chapter on financing for achieving the NDC needs to be included. Otherwise,



Khaled Mahmood



S. M. Munjurul Hannan Khan



M Ziaul Haque



Utpal Bhattacharjee



Mushfiqur Rahman



Khondkar Abdus Saleque

low carbon development cannot be achieved.

Dr. Mushfiqur Rahman, Mining Engineer and Environment Expert, mentioned that rapid urbanization is among the reasons for increasing emissions. We have to keep in mind the food security issues while planning. We cannot do anything which would increase the cost of living. Affordable energy supply must be the prime target in power generation. At the same time, emissions must be controlled at transmission and distribution segments as well. We must think about increasing use of natural lights and natural cooling for saving energy.

Environment clearances for the power plants need revisiting. DOE approvals to the Rooppur nuclear power plant contain 60 conditions. Heights of chimney has been mentioned there. Nuclear plants do not emit and as such there is no chimney in such plants. These must be revisited. We have taken some projects for limiting emissions. But we failed to achieve desired outcome. Questions are being raised now whether many of these are bankable at all. The world scenario has changed. No finance is easily accessible now. Accountability is the order of the day now.

There is no alternative to oblige international guidelines for environment pro-



Ashuganj Power Station North Unit

File Photo

tection. But Bangladesh has issues for increasing contributions from renewable energy. Actions are underway for a floating 50MW solar unit at abandoned subsided area of Barapukuria Coal Mine. Further actions may be taken based on lessons from here.

Engr Khondakar Abdus Saleque, Contributing Editor of Energy & Power, connecting from Brisbane in Australia, observed that Bangladesh for its long-term energy security has to effectively manage the fuel mix for power generation at affordable cost. Coal is not an issue as Bangladesh is using superior quality (low sulfur and low ash coal) in addition to incorporating FGD, low NOX burner, dry ash collection method and high chimney. He, however, mentioned that 140-150 meters are the maximum height of Chimney in coal power plants all over the world. Australia has not constructed any new coal power plant for over a decade and rather shut down few plants. But now, it is experiencing power disruptions on some days.

Thoughts are gathering momentum for revisiting generation options.

M Ziaul Haque, Director of DoE, said that for developing countries, the per capita emission ceiling is 2.0 tonnes. The Prime Minister of Bangladesh declared not to cross that limit. We thought that we reduced it to 1.3 tonnes in 2018. Assessment is being done now. The results would be announced soon. All the power plants, old and new ones, would be brought under online emissions monitoring. The report has to be sent to us every two months. Advanced technology and close monitoring would negate all the concerns about coal power generation.

Utpal Bhattacharjee, Consultant of NDC update at UNDP, in his keynote speech spoke about 12 million tonnes of carbon emission reduction by 2030. The overall reduction would be 36 million tonnes. Whatever we plan or do, these must not create adverse impact on food security, poverty alleviation and economic development. The number is less important, but the priority is to engage

all relevant stakeholders. Otherwise, the NDC cannot be achieved. The NDC would be updated after taking opinion of all the stakeholders.

Carbon emission in industrial sector is 48%, power 19% and transport 8%. Over 98% of our power generation is from fossil fuel. We have to go to renewable energy. We are trying to shift to coal, but better would be gas and LNG. Solar and wind contributions must be reassessed and better would be replacing fossil fuel with RE as much as practicable. Some 710 km of our coastal area has potential for offshore wind power generation. We have so long talked about onshore resources only.

In conclusion, the virtual discussion recommended exploring all possible options of renewable energy sources as well as energy efficiency potentials besides generating power with an affordable fuel mix that would include a substantial contribution of even coal. The speakers thought that the country's carbon emission would still remain within the limit set in the NDC. **EP**



সেবা অঙ্গুলি রাখার স্বার্থে নিয়মিত
গ্যাস বিল পরিশোধ করুন

তিতাস গ্যাস ট্রান্সমিসন এন্ড ডিস্ট্রিবিউশন কোম্পানি লিমিটেড

(পেট্রোবাংলার একটি কোম্পানি)

পিএবিএক্স-৯১০৩৯৬০-৬৯

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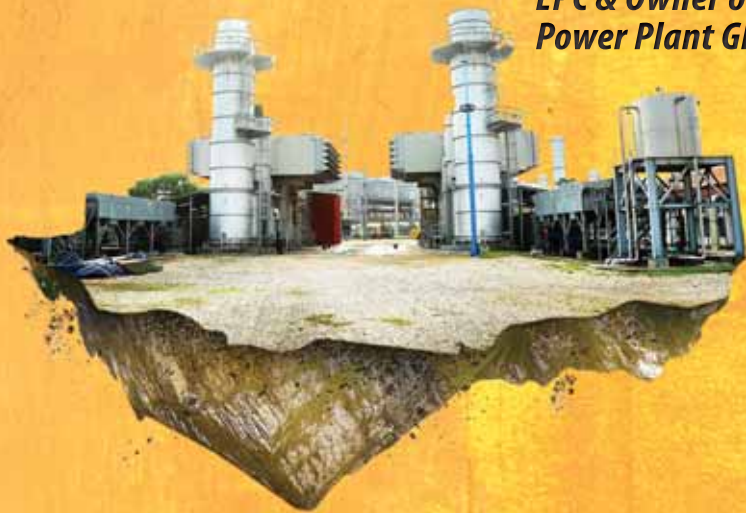
বিশেষ বিজ্ঞপ্তি

সম্মানিত গ্রাহকগণ কে জানানো যাচ্ছে যে, বকেয়া গ্যাস বিল সংক্রান্ত পত্র প্রেরণ করা হচ্ছে। সকল প্রকার বকেয়া বিল নিয়মানুযায়ী পরিশোধকরা না হলে গ্যাস সংযোগ বিচ্ছিন্ন করা হবে।

প্রচারে,
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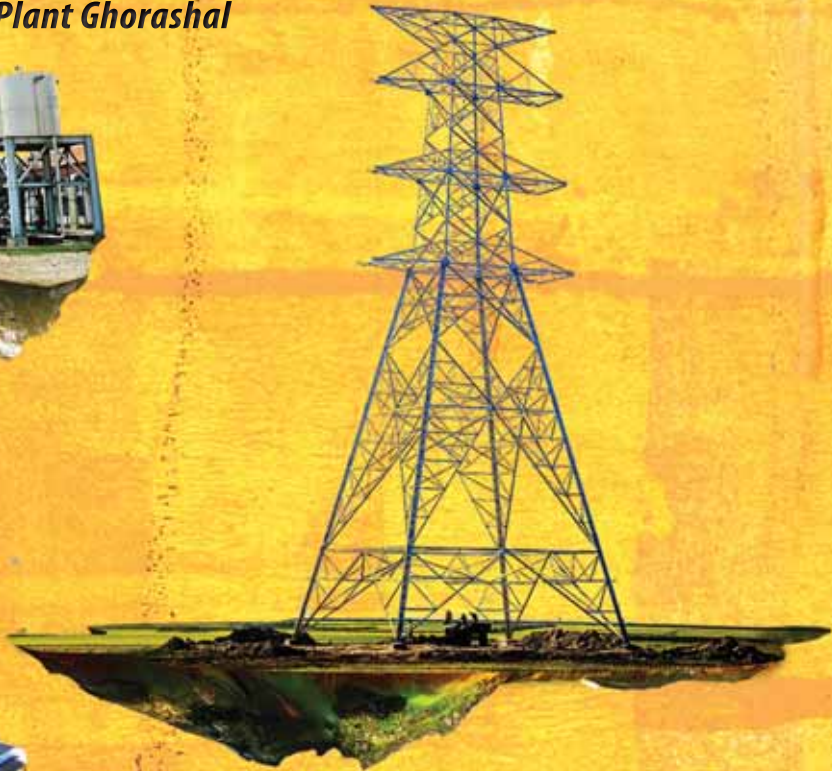
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Power Plant Ghorashal**



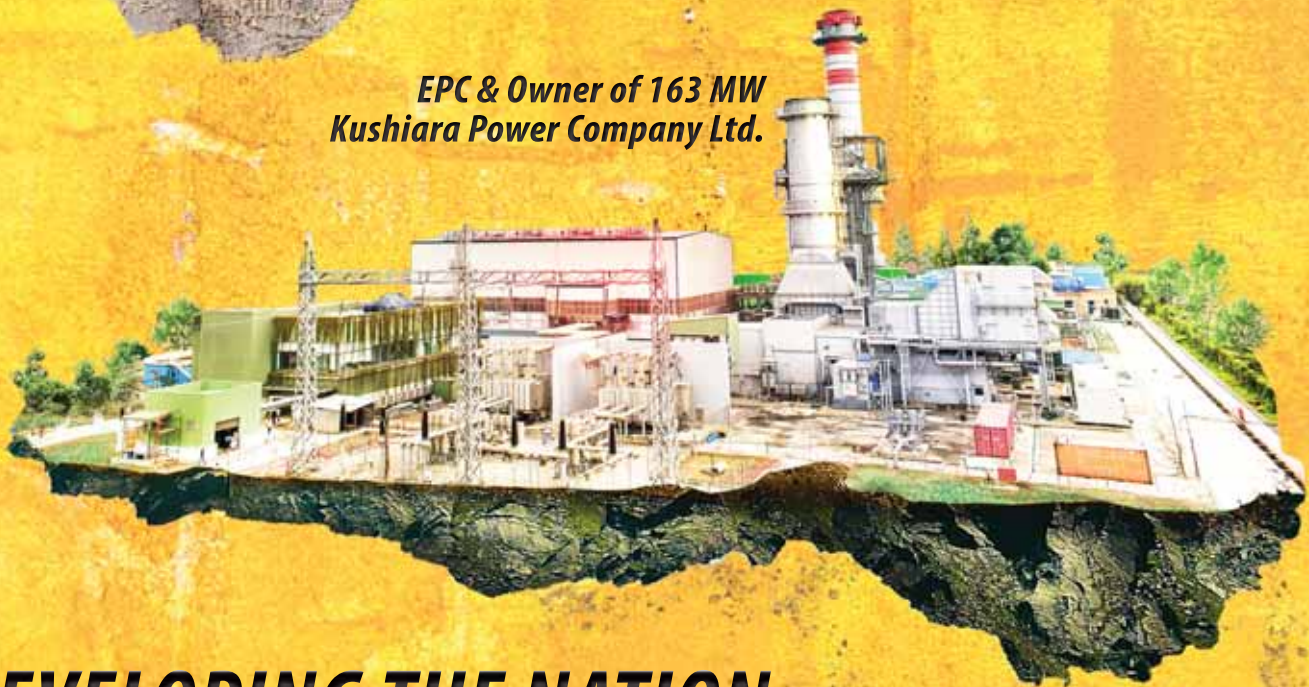
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BERC for LPG Pricing Formula, Announcing Retail Price Every Month

Amid different proposals submitted by the operators, the Technical Evaluation Committee (TEC) of Bangladesh Energy Regulatory Commission (BERC) has suggested readjusting the price of Liquefied Petroleum Gas (LPG) every month.

At a public hearing held recently, it also suggested introduction of a pricing formula to fix the LPG price in the domestic market in line with the international price.

The TEC recommended fixing price of a 12-kg LPG cylinder of private company at Tk 954 as the highest and Tk 758 as the lowest against the current price of Tk 1,259. However, the price of state-owned company's 12.5 kg container is Tk 902 where the government provides a subsidy of Tk 300.

The BERC will announce its final price in 90 days after scrutinizing the proposals. It considered that it should use LPG's cross subsidy fund here for keeping the volatile LPG market at consumers' tolerance level.

The TEC presented its report on both private companies' proposals and also the public company's proposal.

The maiden hearing on fixing the retail price of LPG in domestic market was held in presence of BERC Chairman Md Abdul Jalil and its full panel members at BIAM Auditorium in Dhaka.

Currently, state-run Bangladesh Petroleum Corporation (BPC) fixes and announces retail level LPG price for its product occasionally, while the private sector's retail price is fixed by the operators without any public announcement.

There are 28 LPG operators in the country at present with the capacity to provide two million tonnes of gas annually, against a demand of one million tonnes. Private companies are providing around 98% of the total demand.

To ensure a level-playing field across the country, the TEC said the retail price of LPG would be based on the import parity price (IPP) plus bottling and storage

charges, distribution charges, dealers' margin and VAT. The price of Auto Gas would follow the IPP plus bulk transportation cost, station charges, VAT, storages and bottling charges. It also said IPP means that the Saudi Contract Price (Saudi CP) plus premium charges and freight cost of LPG.

Following a court's instruction, the BERC started the three-day public hearing on the day but it was concluded on the first day as most of the technical issues were sent to the technical committee to discuss first.

The hearing witnessed no big debate over the pricing issue, rather the consumers' right body, CAB raised issues related to the 'power and authority' of the BERC and its autonomy.

"Considering the Covid pandemic, we are inviting all to post their valued opinion on our website by January 21," BERC Chairman Md Abdul Jalil said in his concluding remarks at the hearing.

Six officials from six major LPG traders presented their written arguments. Top officials from Petromax LPG Ltd, Omera Petroleum Ltd, Beximco LPG Ltd, Bashundhara LPG, Promita LPG, Universal Gas & Gas Cylinder Ltd, LP Gas Ltd and representatives of the LOAB took part in the hearing.

They sought 9.0 percent profit margin on LPG sales, taking into consideration the international price of the fuel including its freight, premium rate, bank interest rate, cylinder cost and different tax measures.

Both the consumer right groups and business operators demanded stoppage of the administrative interference in the price fixing process of LPG moved by the energy regulatory body.

They urged determining a single regulator to play watchdog role in ensuring a fair price of the LPG at consumers' level by protecting both the interest of the consumers as well as the operators in the business.

Managing Director of the state-owned LP Gas Company Limited Fazlur Rahman and also top executives of six other private LPG companies made their presentation in the hearing while Deputy Director of BERC Quamruzzaman presented the Technical Evaluation Committee (TEC) report.

Prof M Shamsul Alam, Advisor of the Consumers Association of Bangladesh (CAB), Ruhin Hossain Price of Communist Party of Bangladesh (CPB), Mohiuddin Ahmed of Bangladesh Mobile Phone Consumers Association took part in the public hearing.

"Interference of Energy Division in LPG price fixing process is a clear violation of the BERC Act-2003 which gives a clear mandate to the energy watchdog to fix the prices of 25 petroleum items including this LPG," said CAB Advisor Prof M Shamsul Alam. He also opposed the recommendations of TEC to raise the price of 12.5 kg LPG containers of the state-owned companies from current Tk 600 to Tk 900.

It will be unwise and unjust to raise the LPG price of state-owned LPG Company Limited on the ground of bringing a rationality between the public and private companies' product prices, he said. If it happens, the state-owned company's LPG will face the similar fate of state-owned sugar mills as those remain unsold, he added.

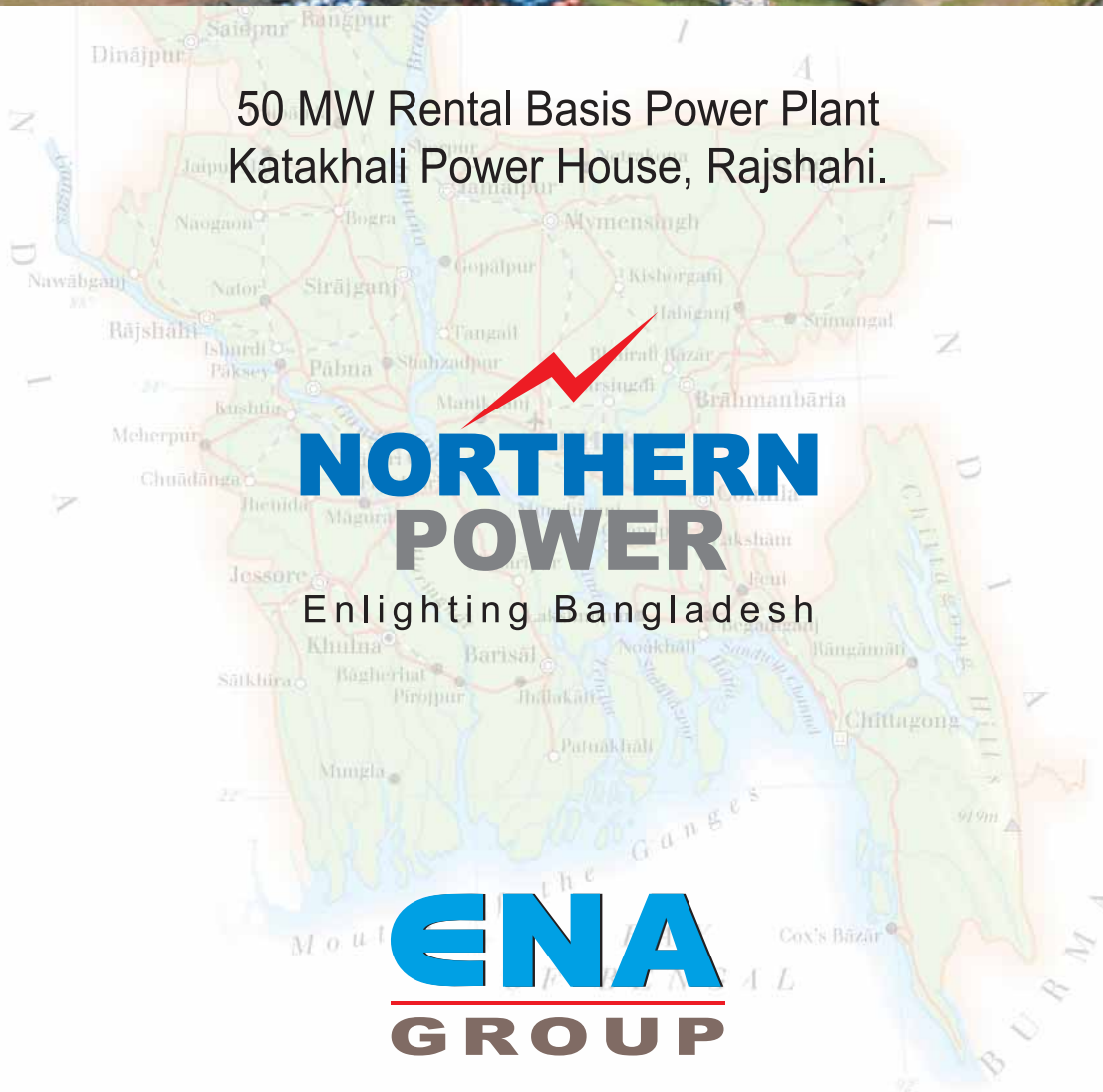
The TEC also urged the commission to ensure safety, security and standard of LPG bottles to ensure consumers' safety at the highest level.



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Challenges and Way Forward for Grid Connectivity in APAC Region

Vijay Kumar Kharbanda

1 Introduction: Asia Pacific Region is the fastest growing region in the world and also the main source of economy, with an average GDP growth rate of 5.7 % (2017). Further, Asia contributes about 60% of global growth and three fourth comes from China and India¹. About 60% of world's population (4.3 billion people) lives in Asia Pacific Region and it includes most populous countries in the world viz. China and India². Furthermore, maximum number of poor people in the world lives in this region (about 17% alone lives in South and South West Asia).

Asia Pacific region is blessed with huge and diverse natural energy resources such as Coal, Hydro, Gas, Oil, Solar, Wind etc. Out of estimated total global coal reserves of 892 billion tons, about 55% is available within the region whereas Oil reserves is about 20% of the international reserves (1,700 billion barrels)³. Natural gas is though evenly distributed, but bulk of proven reserves are concentrated in Middle East. Region has abundant renewable reserves such as Hydro, Solar and Wind. However, about 85% of total Asia Pacific energy resources are concentrated in few countries such as China, Russia, India, Iran, Turkey etc.; Whereas, other countries in the region have limited energy resources. In such scenario, where energy resources are concentrated in few countries and some countries have limited resources, inter-connectivity and trade of energy/electricity is one of the key driver for economic growth & social development of the region.

Asia Pacific Region contributes about 60% of global growth. Region blessed with diverse energy resources Coal, Oil, Gas, hydro, Solar, Wind etc. and about

85% of total Energy Resources are concentrated in few countries viz. China, Russia, India, Iran, Turkey etc., whereas other countries have limited energy resources.

Electricity demand in Asia and the Pacific is projected to be more than double between 2010 and 2035, increasing from 7,010.4 TWh in 2010 to 16,169.2 TWh in 2035. The annual growth rate will be 3.4% over the outlook period (through 2035) which is slower than the historical trend of 6.0% between 1990 and 2010. The electricity demand of the developing members will grow slightly faster, at an annual rate of 3.8% on average through 2035, and increase their share in the total electricity demand of Asia and the Pacific from 82.3% in 2010 to 91.1% in 2035⁴. As energy demand is expected to rise exponentially in future, region needs to take necessary steps to enhance capacity addition including development of renewable energy resources and inter-connectivity in the region for optimal utilization of energy resources and to address climate change to achieve goal of SDG7 etc.

2. Status of Grid Connectivity in Asia Pacific Region:

2.1 South & South-West Asia (S-SWA) comprises of 10 countries India, Nepal, Bhutan, Bangladesh, Sri-Lanka, Pakistan, Afghanistan, the Maldives, Iran and Turkey which constitutes 28.5% (approx.) of the world's population. India and Pakistan has diverse energy resources such as coal, hydro, renewable, whereas Iran and Turkey has huge Oil and Gas reserves. Nepal, Bhutan, Bangladesh have limited energy resources. Generation capacity in the S-SWA has grown from 203GW in 2000 to more than 569GW in 2018. As of 2018, major economies viz. India, the

Islamic Republic of Iran and Turkey contributes 90% of the total installed capacity of the sub-region. Currently on the eastern side of S-SWA sub-region, Bangladesh, Bhutan, India and Nepal are interconnected and trade of electricity (Bilateral) of more than 3,000MW (approx.) is taking place, which is expected to increase substantially in future once the hydro projects under construction in Bhutan and Nepal are commissioned. On the western side, Pakistan and Afghanistan are interconnected with Turkey and Iran and are importing electricity from them. Pakistan and Afghanistan are also implementing to connect to central Asia through CASA 1000 Project. Sri-Lanka and The Maldives Islands are yet to be interconnected. South Asia Association of Regional Cooperation (SAARC) an inter-governmental Institution has been created by eight South Asian Countries for welfare of the people, including promoting energy cooperation and connectivity.

2.2 North-East Asia (NEA) comprises of 6 countries viz. China, Democratic Republic of Korea, Japan, Mongolia, Republic of Korea and constitutes about 21.5 % of World's population. NEA has largest density of population, as it includes the state (China) with a population of more than 1.3 billion people. China and Russia are blessed with huge energy resources whereas Japan and Republic of Korea (DPRK) have limited natural energy resources. China is rich in Hydro whereas Russia is rich in Natural Gas reserves besides many minerals such as Uranium etc. NEA sub-region currently has a few cross border transmission interconnections though the first interconnection between USSR and Mongolia was put in place in seventies.

The most developed Cross Border Transmission systems are between Russian Far East and Northeast China. Electricity trading in 2017 was nearly 5 TWh. However, there is no intergovernmental body/association to support/enhance cross border grid connectivity in the sub-region.

2.3 South-East Asia (SEA) comprises of 10 countries viz. Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor Leste, Vietnam and constitutes about 8.6% of the World's Population. ASEAN and China has been long connected through cross-border power grids in the Greater Mekong Sub region (GMS). The cross border capacity under ASEAN APG inter-connections has increased to 5,212 MW from 3,489 MW in 2015. As per projections, ASEAN expects that power exchange will increase to 10,800 MW in 2020.(APAEC, 2015) . In South-East Asia sub region, three Inter-governmental Institutions are working to promote energy/electricity cooperation and connectivity viz. Association of Southeast Asian Nations (ASEAN), Greater Mekong Sub region (GMS) and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Five ASEAN countries, Cambodia, Laos, Myanmar, Thailand and Vietnam, are members of the GMS. Two ASEAN members, Myanmar and Thailand and five members of South Asia viz. India, Nepal, Bhutan, Bangladesh and Sri-Lanka are members of the BIMSTEC group.

2.4 North Central Asia comprises of 8 countries viz. Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian federation, Tajikistan, Turkistan, Uzbekistan and constitutes about 1% of World's Population. The electricity trade volume between the countries reduced drastically from 25GW in 1990 to 7.6GW in 1995, due to various factors. However, in 2017, Uzbekistan made changes in -banking sector and radically changed its relationship with neighboring countries, which resulted in increase of import of cheap hydro power by Uzbekistan in 2018 from Tajikistan and Kyrgyzstan. In 2018, import/export of electricity increased to 4313 million

KWh as compared to 2080 million KWh in 2016.

One of the major challenge for grid connectivity is lack of Trust and relationship, political uncertainty among countries. Asia Pacific region need to separate out their political interest vis-a-vis economic interest for the welfare of their People.

3. Challenges in promoting Cross Border grid connectivity: Broadly, Challenges/risks associated with Cross Border grid connectivity in Asia Pacific can be classified as: i) **Lack of Trust and Geo Political Relationships/Political uncertainty:** Lack of stable government, trust among the countries, political uncertainty, intra-regional boundary, political governance, security threats etc.; ii) **Lack of common Policy, Regulatory & Legal framework:** Lack of coordination of policies/ regulatory framework, Lack of coordinated transmission planning and system operation, harmonization of grid codes, absence of Institutionalization viz. forming association /forum of regulators for coordination of regulations and for coordinated transmission planning etc. iii) **Financial and Commercial risks:** financial closure of cross border power projects; taxes/duties, Common currency, tariff framework, Offtake risks associated with PPAs and Transmission Service Agreements, Open access and trans-country transmission wheeling framework, transparent dispute resolution mechanism etc.; iv) **Cross Border Power Project Implementation challenges:** Lack of transparent policies on Land acquisition, right of way, environmental clearances, contract enforcement etc.

4. Role of Inter-Governmental Institutions/Multilateral Development Banks & Regional/Global Institutions working to promote Grid connectivity: Country



Governments in each sub-region have taken initiative and created Intergovernmental Institutions such as SAARC (South Asia; 8 countries), BIMSTEC (Part of South Asia and South East Asia; 7 countries), ASEAN (South East Asia; 10 countries), GMS (South East Asia; 6 countries), ECO (South-South West Asia; 3 countries), SCO (North East Asia and Central Asia; 8 countries), CAREC (Central Asia; 11 Countries), BCIM (part of South Asia and North east Asia; 4 countries), to enhance collective economic growth, social development etc. for the welfare of their people and provide a common platform to work together in spirit of trust and friendship. These Intergovernmental Institutions have created Working groups, Expert Groups, Ministerial Groups, and Energy Centers etc. to promote energy cooperation and also processed signing of inter-governmental energy treaties and have created necessary fund mechanism to support construction of viable infrastructure projects as a part of their commitment to enhance energy cooperation. Primarily due to prevailing Geo-politics, lack of relationship and trust among the countries has impacted role of these Intergovernmental Institutions to play an effective role to enhance energy cooperation and connectivity in each sub region. Further, multilateral development institutions such as World Bank, ADB, USAID etc., are also playing active role in promoting grid connectivity on multilateral basis.

On Global/Regional level, Economic Social Commission for Asia Pacific (ESCAP) arm of United Nations is playing an important role to promote con-

nectivity in Asia Pacific region. ESCAP has constituted Country nominated Expert Working Group (EWG) for enhancing energy cooperation and grid connectivity in the region. ESCAP's EWG has developed Road Map (draft) which identifies critical areas such as i) Building Trust & Political Consensus; ii) developing Cross Border Electricity Grid Master Plan iii) implementing Intergovernmental Agreements on Energy Cooperation & interconnection; iv) Coordinate, Harmonize and Institutionalize policy and regulatory framework; v) move towards multilateral power trade and create competitive market for electricity; vi) Coordinate Transmission Planning and System operation etc. It is important for ESCAP to convert this Road Map into time bound Action Plan to achieve the goal of grid connectivity in Asia Pacific Region.

4.1 Similarly, Global Energy Interconnection Development and Cooperation Organization (GEIDCO): A Nonprofit international organization which was established in 2016 in Beijing, China also promotes Global Energy Interconnection and meeting global demand through clean and green energy to serve the sustainable development of humanity. By the end of 2018, GEIDCO has 825 members from 112 countries and regions, involving 13 categories such as Energy & Power enterprises, Equipment Manufacture enterprise, Project Construction enterprise, Research Institutes and Universities etc. Recently, Govt. of India through its tender for "One Sun, One World and One Grid" has also shown its interest to promote development of Renewable Energy and grid connectivity on global level.

Way Forward: Adequate supply of energy/electricity is critical for all segment of life whether it is industry, agriculture, research, commerce, education, health etc. Cross-border trade of energy/electricity has enormous benefits such as optimal utilization of resources, power availability at competitive prices, to reduce dependency on fossil fuels imports, development of clean renewable energy to address climate change, enhancing access to electricity, enhancing energy mix, economic growth etc.

Cross-border energy/electricity trade is a win-win situation for all the countries by optimizing their energy resources for

the economic growth & development of their region. For example, presently, in South Asia Sub-Region, out of eight countries, four countries viz. India, Nepal, Bhutan and Bangladesh are interconnected and more than 3000 MW of electricity is being traded. Bhutan by selling its surplus hydro power to India is earning more than 40% of Bhutan's revenues (25% of its GDP) which helped Bhutan by increasing electricity access, creating new industries like cement and steel etc. Further import of 1,100MW of electricity by Bangladesh from India has benefited in reducing load shedding (1,048MW of load shedding in 2012-13 to 307MW of load shedding in 2014-15) and also in terms of annual savings (estimated) around Taka 40 billion (US\$500 million app-Shahi's report). Similarly, import of 300-500MW of electricity by Nepal from India has benefited to meet its shortfall and to meet start up power/auxiliary consumption for the new hydro power projects which are under construction. India being net exporter of electricity at present, is benefiting from optimum utilization of generation assets and revenue earnings. This shows that Cross Border Energy/Electricity trade is a win-win situation for all the countries through which they can optimize their energy resources for the economic growth & development vis-a-vis for the welfare of their people.

Based on learning's of successful power pools/power exchanges, Asia Pacific region need to draw Road Map and time bound action plan with a commitment of each country for enhancing energy cooperation and grid connectivity. Intergovernmental Institutions, Multilateral Development Banks, Institutions working at Global/Asia Pacific and large countries need to align together to overcome the various challenges to meet the goal of grid connectivity in the region. Successful Power Pools/power Exchange markets in the world such as Nord Pool, South African Power Pool, Western African Power Pool, PJM etc. shows that they have also faced all such challenges for grid connectivity in their regions including political commitment. However, they have been able to separate out their political interests vis-à-vis economic interests. They have also taken substantial time to overcome

these challenges including political commitment to enhance grid connectivity, creating regional Institutional structure such as forum/association of regulators and transmission & Power System Operation etc. in their region. Based on learning's of successful power pools/power exchanges, Asia Pacific need to draw an effective Road Map and time bound action plan with a commitment of each country for enhancing energy cooperation and grid connectivity in the region for optimum utilization of energy resources, development of renewable energy, economic growth and development for the welfare of their people and also to address climate change to achieve goal of SDG7. To achieve this, it is important that regional Intergovernmental Institutions, Large countries in the sub-region, World Bank, ADB, ESCAP, GEIDCO etc. need to unite and align together to promote energy cooperation and integration in the region. ESCAP being a neutral agency, can play a vital role in enhancing political consensus. Signing of Treaties/Agreement as commitment of the Countries and establishing regional institutions for coordination of regulations, transmission planning and system operations to enhance cooperation and connectivity can be followed up in line with successful examples of power pools/power exchanges. To promote investment, besides developing favorable investment guidelines, selling and buying countries can stake claim by forming joint venture/consortium for development of such common generation power projects. MDBs/ FIs would be more comfortable to fund such projects where more than 2-3 countries jointly stake claim to develop such power projects including associated transmission system for evacuation of power. As in each sub-region of Asia Pacific, energy/electricity trade is primarily bilateral and limited, it is important to focus each sub-region first to enhance energy cooperation and grid connectivity on multilateral basis in the medium term and it should be extended to whole of Asia Pacific region in the long term.

EP

Vijay Kumar Kharbanda;
Ex Project Director,
IRADe/USAID & ED(PFC)



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Lower Global Recovery May Erode Economic Outlook

Serajul Islam Quadir

The global health situation has been further deteriorated with the sharp rise of both death and numbers of infected people by deadly corona virus.

Every day we have been experiencing an unpredictable situation despite the possibility of availing vaccination in the near future.

Amid this situation, the World Bank early of the new year of 2021 has downgraded its outlook for the global economy, and warned that the situation could deteriorate further if Covid-19 infections accelerate or the vaccine rollout is delayed.

The World Bank with caution said that the corona virus pandemic also has worsened the risks surrounding the rising debt load in developing nations, and it will take a global effort to avoid a new crisis in those economies.

After shrinking 4.3 per cent in 2020, the world economy is projected to grow by 4 per cent this year, two-tenths lower than previously forecast, as more than half of countries were downgraded in the semi-annual Global Economic Prospects report.

The World Bank apprehended that China was a bright spot with a surprisingly fast recovery in 2020, but advanced countries which did better last year will fare worse in 2021.

The report warns the outlook remains "highly uncertain," and the growth of the gross domestic products (GDP) could be as low as 1.6 per cent in the fiscal year of 2020-2021 if the downside risks materialize.

The Washington-based development lender said with an urging tone that with

millions driven into poverty by the corona virus recession, countries will need to find a way to move beyond direct aid and reignite to stimulate growth.

Policymakers face "formidable challenges as they try to ensure that this still fragile global recovery gains traction and sets a foundation for robust growth," World Bank president David Malpass said.

Malpass, the chief of the leading global lender said that the expectation for a subdued recovery "assumes that vaccine rollout becomes widespread" and the economic reopening continues.

But even if the pace of growth holds steady, global gross domestic products in 2022 will be 4.4 per cent below pre-pandemic levels, the bank said.

And, further out, the "lasting damage to health, education and balance sheets" may lower the global economy's potential output.

Focus on policies to boost investment will be needed to counter "the pandemic's lasting scars," including through investment in green infrastructure which can boost growth while at the same time addressing climate change.

Malpass said that would include phasing out fossil fuel subsidies and providing incentives for green technologies.

The Chinese economy is expected to expand by nearly 8% this year, after 2% growth in 2020, while the United States' gross domestic products is projected to gain 3.5% -- a half point lower than the June forecast of last year.

Excluding China, developing nations as a group will see growth of just 3.4%, the World Bank predicts.

The inequality of the downturn and the recovery was dramatic, and drove a "devastating rise in extreme poverty," Malpass commented while he was expressing his observation.

"People at the bottom of the income scale were the hardest hit" by the recession, and "unfortunately will likely be the slowest to regain jobs, get health care, vaccinations and adjust to the post-Covid-19 economy," he passed his remark.

The pandemic also exacerbated the debt risks of developing nations.

"The global community needs to act rapidly and forcefully to make sure the recent debt accumulation does not end with a string of debt crises," Ayhan Kose, the Acting Vice President for Equitable Growth and Financial Institutions of the World Bank commented.

"The developing world cannot afford another lost decade," he continued.

On the other hand the World Bank head Malpass said that the situation is a "red alert" with some low-income countries facing deep debt distress, and the more they are forced to pay to service pre-pandemic debt, the less they have for health care and investment.

China, which holds 65% of the debt of the lowest-income countries, has a key role to play in addressing the challenge, and Malpass again called on the country to provide transparency on the terms of the loans, including collateral and interest rates.

EP

Serajul Islam Quadir;

The writer is the former Bureau Chief of Reuters in Bangladesh and Executive Editor of the American Chambers' Journal.



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Securing Energy Security of Bangladesh

Saleque Sufi

In the backdrop of commendable success in power generation achieving 23,583MW installed capacity (with captive), many under implementation projects for upgrading and modernizing power transmission grid distribution networks, now the challenge is securing the energy security of Bangladesh. 98% population is already under coverage of grid power supply. Government is well on course of achieving grid coverage of 100% by December this year. Sources in Ministry of Power, Energy and Mineral Resources (MPEMR) stated of bringing into operation 111 new power plants of 18,606 MW capacity in 11 years. The system now has 3.87 Crore consumers. The per capita power use has increased to 512 kWh in 2020 from 220 kWh in 2009. Government plan is achieving 60,000MW installed capacity by 2041.

SDG7 requires Bangladesh to ensure access to affordable, reliable, and sustainable energy for all. In the wake of depleting own proven natural gas reserve, reluctance to exploit coal resource and increasing dependence on imported fuel challenges are emerging challenges in securing energy security of Bangladesh. MPEMR appears to be in a dilemma whether or not to pursue with several imported coal fired power plants in the pipeline or replacing most of these with gas based (imported LNG) power plants. MPEMR sources stated about their plan for setting up 8,575MW total capacity new gas based power plants between 2016-2033. 8 new gas based plants with combined capacity of 3,471MW is due to start commercial operation between 2020-2022. In ap-

preciation of the reality that highest generation of grid connected power so far achieved remaining below 13,000MW and the industries still using about 3,000MW captive power, deep analysis and evaluation are required to achieve the mission of sustainable energy security.

Questions are: Can Bangladesh maintain sustainable supply of required fuel (domestic and imported), can power transmission and distribution networks advance to a level of reliability for supplying quality power on uninterruptible basis? Can power be supplied at price affordable to all?

Industries rely on captive generation with the excuse that grid power is still not reliable for supplying quality power on uninterruptible basis and is relatively expensive. Consequently, significant capacity of grid power remains idle making single buyer BPDB paying capacity charge to generators.

Challenges of Power Value Chain

Despite having huge surplus capacity of generation, power system of Bangladesh still suffers from reliable supply of qual-

ity power to all users for constraints of power transmission grid and distribution networks. There are also issues with fuel supply. Consequently, industrial consumers rely on own captive power generation. Power System Master Plans (2016) should have ensured compliance mechanism for integrated development of all segments including developing own fuel exploitations as well as imported fuel. If about 2,800MW captive power reliance could be replaced with grid power, the highest generation of 16,000MW could ensure far better utilization of 20,383 MW grid power generation capacity. The sole buyer BPDB would not have to pay capacity charge for considerable numbers of generators remaining idle. Generation cost remaining much lower would not require revising power tariff too often as has been done over the last 11 years.

Another issue created through combined failures of Petrobangla and EMRD in taking decision to exploit coal reserve and petroleum resource. Gas supply constraint is a major headache. Extraordinary delays in implementing import of LNG through setting up FSRUs and wasting time unnecessarily on too many FSRUs and small FSRUs and eventually abandoning all but two, did not help the cause. Government also realized late that opening Pandora box for imported coal based power plants without required feasibility studies for transportation of coal proved unrealistic.

Government has taken right decision for not letting any new industries growing outside Export Processing Zones (EPZ)

Present Scenario

Sector	Installed Capacity
Public Sector	9,717MW (48%)
Joint Venture	622MW (03%)
Private Sector	8,884MW (43%)
Import	1,160MW (06%)
Total	20,383MW

Captive Power: 2,800MW, Renewable Energy: 365MW, Grand Total: 23,548MW, Highest Generation: 12,893MW May 29, 2019.

and Special Economic Zones (SPZ). Bringing entire population under grid power coverage is a milestone achievement. But domestic connections alone will not let REB and its Palli Bidyut Samity (PBSs) recover huge investments made for extension of grid to remote villages.

In such situation, taking decision of mining own coal and expediting exploration of petroleum resources both onshore and offshore are major challenges. Expediting implementation of upgrading and modernizing distribution networks within the shortest possible time are other challenges.

Reviewing PSMP 2016

We all know PSMP is a dynamic document requiring reviewing on evolving circumstances after a frequency of 5-6 years. COVID-19 pandemic triggering oil market collapse and growing consciousness against use of fossil fuel have also created new dimensions. Bangladeshi policymakers are contemplating reviewing options of imported coal based power plants and replacing these with gas fired power stations (mostly gas from imported LNG). PSMP 2016 evidenced complete revision of fuel mix for achieving targeted power generation capacity by 2030 and 2041.

The main reason for this was continued dilemma for mining own coal. But after struggling over the past 5 years government realized the challenges of setting up infrastructure for fuel import and transportation as well as securing huge finance required. Government now is planning to give higher priority to gas based power generation anticipating that it may be easier importing LNG. But experts observe that world will continue to rely on coal for foreseeable future as it is the preferred fuel for providing base load power generation and technology will continue to evolve for minimizing emissions to acceptable limits. Moreover, remarkable development of storage batteries has created avenues for Bangladesh growing big in roof top solar power. Additionally, floating solar

Fuel Mix (Per Installed Capacity) July 2020

Fuel Type	Generation (%)
Natural Gas	10,979MW (53.86%)
Furnace Oil	5,540MW (27.18%)
Diesel	1,290MW (0.6.33%)
Power Import	1,160MW (06.00%)
Coal	1,146MW (05.62%)
Hydro	230MW (01.13%)
Grid Connected Solar	38MW (00.19%)

Source: BPDB, July 2020

plants, hybrid solar has also added new dimensions. Gas fired power stations are usually designed for a life cycle of 25-30 years while a properly designed and professionally operated coal plant can be operated economically for 50 years. Modern ultra-supercritical plants can be operated at 40-45% efficiency as well.

Introduction of Nuclear Power and realistic contribution of imported power are other options. Bangladesh must also ensure that industrial growth must get momentum for demand growth for utilization of power. Provision must also be created for export of power in future as Bangladesh power demand observed seasonal fluctuations. Energy efficiency and conservations are other areas those must get priority attention. Experts have advised to keep all options opened and prescribe balanced and affordable fuel mix in PSMP.

Gas Based Energy Generation

Before taking decision for increased dependence on gas based power generation, Bangladesh must realize that present recoverable reserve of own gas in fast depleting. The present exploration activities do not indicate that depleting reserve would get replenished significantly soon. If we continue to take a 'business as usual' approach, own reserve would completely depleted by 2031. Bapex in its present state cannot continue as sole option for onshore exploitation. International Oil Companies (IOCs) must be engaged through PSC bidding for western region and deeper

prospects of discovered gas fields. Irrespective of what some experts suggest, Bangladesh must invite fresh PSC bidding for deep water exploration. It may take 7-10 years to get fruits from deep water discovery, Bangladesh may consider Joint Development Agreements (JDA) as preferred options for exploration at blocks adjacent to India and Myanmar.

Bangladesh must also realize that apart from Matarbari, no other region is suitable for land based LNG terminal. We are not sure whether setting up FSRU 90km away from Payra would be ideal for LNG based power plants there. In such situation maximum 3,000 MMCFD LNG import would be possible by 2030. These may create embarrassing situation in 2030 and beyond unless Bangladesh explores own petroleum resources and takes decision for exploiting coal.

Suggestions and Recommendations

Bangladesh must demonstrate its readiness for welcoming FDI for industries in SEZ. It must seriously analyze cost of doing business is as attractive as other destination like Vietnam, Cambodia, and Myanmar. The fuel supply and power supply are ensured. Speedy disposition is another aspect that must be looked into. Approval process must be quicker and bureaucratic interference must be as minimum as possible. Without massive investment (FDI and local) in industries, Bangladesh cannot grow as developed economy by 2041. Power and Energy value chain operations must be advanced significantly with the adoption of modern technology. At the same time energy efficiency and energy conservation need to be prioritized. These will necessitate creation of core competence and services of smart group of right professionals. All these factors combined will secure energy security - quality modern power supply on uninterrupted basis at affordable cost.

EP

Saleque Sufi;
Contributing Editor

Boosting Power Demand Immediate Challenge

EP Report

Increasing demand for power would be the immediate challenge for the government as the country's generation capacity now remains idle. And, improving the transmission and distribution systems would help ensure uninterrupted supply of quality power while a rational fuel mix would facilitate lowering the generation cost, creating demand for electricity particularly in industries.

Energy experts identified the immediate challenges of the energy sector at a virtual discussion titled "2021 Energy Sector Challenges" held on January 2, 2021. Energy and Power magazine in collaboration with M2K Technology and Trading organized the event titled "EP Talks" as part of a series.

Director General of Power Cell Engr. Mohammad Hossain presented the keynote paper and Editor of Energy & Power Mollah Amzad Hossain moderated the discussion.

The experts discussed in details the problems and challenges, and put forward recommendations to address the issues so that the sector could contribute more to the economic development of the country.

In his keynote presentation, Engr. Mohammad Hossain mentioned that the power sector has achieved commendable success through embracing and confronting various challenges. The target for power to all and achieving 24,000MW generation capacity was set for 2021. We have achieved 100% coverage

of the grid power supply and with the 3,000MW captive power, 24,500MW generation capacity was achieved one year ahead of the schedule.

Now, we are working on ensuring quality power supply on uninterrupted basis to all. Confidence on grid power supply would be enhanced after completion of the works. We are endeavoring for ensuring supply from dual sources. Now actions are underway for automatic data generation. Around

hensive power generation policy combining all these. We want to bring private sector in the power transmission. The new policy will provide that opportunity. We are trying to access wholesale market of Indian power for a while. We entered into long term power supply, but our own plants remain idle now. We will rather purchase power when it is required. Let utilities purchase own power. We are trying to develop that strategy.

Prof Dr. M Tamim, noted energy

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50% automation would be completed within 2021.

Engr. Hossain said that consistent with the prevailing situation, we formulated Captive Power Policy (CPP), Small Power Policy (SPP), Merchant Power Policy (MPC) and Independent Power Policy (IPP). Now we are working on a compre-

expert and former Special Assistant to the Chief Advisor of the former caretaker government, said that use of grid power in the industry must be increased as it remained static over the past 3-4 years. The demand projection for power sector has so far been proved wrong. Power Cell should be given the responsibility for better projection. The power demand should be estimated from the macro considerations. We will be in a serious trouble if we fail to more accurately project the demand for next five years. Planning should be restricted for 10 years. Planning for 20 years in a developing country is useless. The 20-year-old plants using primitive technologies must be phased out. Due to gas deficit, about 2,500-3,000MW generation



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বিশ্বাস আর আস্থায়
ফ্রান্সের টোটাল
এলপি গ্যাস



capacity remains idle. Cooling load is 3,500MW. Forecasting is very important on how Bangladesh would manage that load in summer.

He said that it is possible to purchase power at lower price if Bangladesh can access to the wholesale market of India. We are now importing power from India through two single lines of one-way connectivity. We have to update the connectivity for accessing the wholesale market. Solar power is traded at 3.0 Indian Rupees per unit now. This is not the actual cost, however. They are looking for market. We should have at least three to four more connectivity with India for power trading. Payra and Matarbari hubs are being developed. Automated power transmission system needs to be there. Rooppur nuclear power plant will soon be ready for commercial operation, but we would not be able to utilize that power until appropriate transmission facilities are in place. Evacuating more than 10% power from a single source would create a risk.

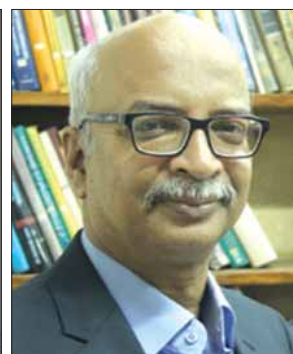
Engr. Md Quamruzzaman, former Director of Petrobangla, raised question whether the energy sector could create a dream career destination for the new professionals. Until such situation can be created for the new professionals, the cherished objectives cannot be achieved. These areas have so far been neglected. In my opinion, this is a major challenge. Knowledge gathering through training is essential so that works can be efficiently done without fear. Business as usual operation of the board of directors of the state-owned enterprises (SOEs) is not delivering much. The Managing Directors are bringing the projects and the boards are simply approving those. The directors have to own the companies, provide essential directives and monitor progresses. The works



Mohammad Hossain



Md Quamruzzaman



M. Tamim



Ahsan H Mansur



Imran Karim



Firoz Alam

must be done through maintaining the quality and completed within the stipulated time and estimated budgets.

Engr. Quamruzzaman said enabling infrastructure would be required to improve energy supply situation. The LNG storage capacity required to be increased if LNG is considered as a preferred fuel. We have to grow smarter about fuel use. We would use more LNG when global price remains lower and when the price goes up, we will have to use more own gas. For this, we must expedite gas exploration activities. The capacity of land-based LNG terminal needs to be increased up to 25 million tonnes per annum. It would be technically feasible.

The energy expert said Bangladesh is lagging way behind exploration of own gas. For lack of a decision, lower global price and extraordinary delays in commencing multi-client survey, nothing could be done yet in deep offshore explo-

ration. We could exploit possible gas resource in the deeper zones. PSC can be done for this.

"We cannot also afford to exclude coal, which is still the most affordable primary fuel. But we have to decide what would be its contribution?" he said. He added that the Mosharraf Committee had prepared and submitted a comprehensive report, but was not discussed about it. The reports of Phulbari mining need more reviews. IWM gave a report on open pit mining. That report was also not discussed. We have already observed challenges of transportation and price in case of imported coal.

Dr. Ahsan H Mansur, Executive Director of Policy Research Institute, observed that primary fuel import dependency would definitely create an impact. If Bangladesh can continue developing its export trade, such impact can be absorbed. The impacts from fuel import may not take full effect.

He suggested changing focus of en-

ergy and power from domestic sector to industries. That will assist in maintaining cycle of financing. Higher investments must be directed to transmission and distribution segments now.

Let the private sector come to transmission, but this must be done in a fair and transparent manner starting in a limited way without creating any risk for the government. Investors also have to share the risks. It is high time to bring private sector in transmission and distribution segments. We have to explore whether we can introduce private-to-private sector linkage between India and Bangladesh. That will make sectors much more competitive.

Huge investment is being made for creating back up facilities for power supply. We have to enter lifts with the apprehension of getting stuck for probable power disruption. Generators are being installed to address this situation. The cost is increasing. We could supply power at cheaper rate due to use of own gas. But the cost is now increasing for not exploiting our own coal reserve. There is no talk even at policy level about own coal. After 20 years, our own coal may not be mined at all.

Imran Karim, President of Bangladesh Independent Power Producers Association (BIPPA) and Vice-President of Confidence Group, pointed out that the power system has about 1,700MW capacity power plants using outdated old technology. There is no point keeping these going. Other than captive and other generators, the grid power generation capacity is 15,000MW. Often we see in media that the system has much surplus generation. In my opinion, the government has done it correctly. The situation demands introducing private sector in transmission and distribution segments. There must be a policy developed for this. I think the government policy for preferring gas in the future fuel mix is a right consideration.



View of a Power Transmission Line

Responding to a question about investors' interest in power transmission, he mentioned that land acquisition is a serious challenge in Bangladesh. In such situation, it is extremely difficult for any other organization other than the government in constructing transmission lines. Subject to the government's generous interest, many investors would come forward. A large group of investors are working in the sector.

Prof. Dr. Firoz Alam, an academic, researcher and a chartered professional engineer from RMIT University at Melbourne in Australia, illustrated a comparative power consumption at residential, industrial, commercial, and agricultural sectors in Bangladesh, India and Pakistan. Unlike other South Asian and global trend, the residential sector in Bangladesh is the largest power consumer with over 57% of the total. As an emerging and developing economy, the industrial sector in Bangladesh should have been the largest power consumer. In fact, Bangladesh industrial sector's power consumption is lowest among South Asia's major economies and significantly lower among other developing

economies with similar per capita GDP. Citing the power consumption data over eight years (2012-2019), Prof Alam stated that the power consumption in industrial and agricultural sectors remain almost unchanged despite the nation achieved almost 10% compound annual growth rate (CAGR) of power consumption for the same period. Over 90% of this annual power consumption growth is absorbed by the residential sector. He urged exploring the reasons and encouraging industrial sector to use grid-connected power and to minimize the use of captive power. Prof Alam has also mentioned that efforts (making sure south facing building's orientation) need to be undertaken during residential and commercial buildings construction to maximize natural light during daytime and natural ventilation for reducing power loads of air-conditioning and artificial lights. He underscored the need for bilateral and multilateral cooperation in power and energy exchange/ trade among Bangladesh, India, Bhutan, and Nepal for enhancing country-specific and regional energy security.

EP

Climate Vulnerability, Covid and Implementation of SDG

Md. Abul Kalam Azad

“To end poverty in all its forms, everywhere”; what a bold determination and sky-high ambition of the global community in SDG 1 of agenda 2030!

UN data says in 2015 about 736 million of the global population was under extreme poverty (income per day below 1.90 US\$) and 1.3 billion under multidimensional poverty as it was in 1990 and now before Covid it stood at 8.2% with a projection to reach 6% by 2030 which is already off track. One person in every 10 lives as extreme poor and 80% of them live in Sub-Saharan and South Asia. The rate of decreasing extreme poverty was excellent during 1990-2015; it came down to 10% from 36%. Covid pushes at least 71 million people in 2020 in the line of extreme poverty. This is to be noted that about three forth of these extreme poor live in rural area mainly dependent on agriculture for their livelihood. The poor are hungry, has less access to education, health and electricity. Fulfilment of basic needs through increased social protection, access to services can reduce poverty. UN defined SDG 1 with 5 targets, 2 means of implementation and 14 indicators.

These five targets are eradication of extreme poverty, reduction of all poverty by half; implementation of social protection systems; ensuring

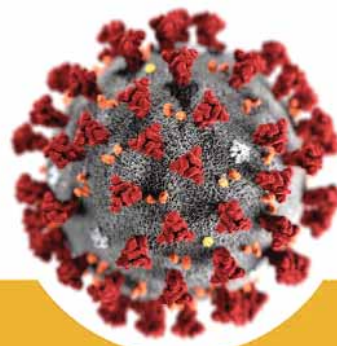
equal rights to ownership, basic services, technology and economic resources; and the building of resilience to environmental, economic and social disaster. The two targets related to means of achieving SDG 1 call for mobilization of resources to end poverty; and the establishment of poverty eradication policy frameworks at all levels.

Key business area of SDG 1 are availability of products and services for those on low incomes, their earning, wages and benefits, economic development in areas of high priority, access to quality essential health care services, access to WASH, electricity availability and reliability also non-discrimination.

Under Target 1.1 eradicate extreme poverty, track record of Bangladesh

is remarkable; in 2000 in Bangladesh extreme poor was 33.7% which came down to 13.8% at the end of MDG period. With that base line our target is to reach 9.3% in 2020, 4.8% in 2025 and zero in 2030. Record shows that in 2019 we had extreme poverty count at 10.5% which is almost near the target. During 2000-2016, yearly reduction of global extreme poverty was 0.62% where Bangladesh achieved almost 1% and in last four year it reduced at the rate of 0.75% yearly. We understand if Covid was not there we could meet the target where rest of the South Asia is far from the target. Doubling GDP per capita in 5 years 1002 US\$ in 2015 stood at 2068 US\$ in 2020 shows the inner strength also.

Under SDG Target 1.2 we need to half the poverty level in 15 years. Globally Bangladesh is much-admired for her achievement in poverty reduction. During the MDG period global poverty reduced by half and Bangladesh did that three years earlier than the stipulated time. Bangladesh is credited for her extraordinary success in poverty reduction, as it is the number one No.1 densely populated LDC and once more than eighty percent people were living below the poverty line. The beauty of poverty reduction strategies applied in Bangladesh is that not only poverty head count de-



COVID 19



জ্বালানী খাতে
সেরা পুরস্কার প্রাপ্ত

Omera
LPG

সঠিক মাপ ও মানসম্পন্ন
বিশ্ব সেরা প্রযুক্তির
নিরাপদ সিলিন্ডার





clined from 56.8 percent in 1991-92 and 24.3 in 2016 to 20.5 percent in 2020, the poverty gap (intensity of poverty) has also reduced from 17.2 percent to 5 percent in the same period. Moreover, during the same period, the squared poverty gap, which measures the severity of poverty, has also declined from 6.8 percent to 1.5 percent. The prevalence of under-nourishment was 32.8 percent in 1990-92, which has come down to 14.7 percent in 2018. Prevalence of stunting among children under 5 years of age was 42 percent in 2012-13 which has declined to 28 percent in 2019.

For enhanced and more structured social safety network Bangladesh government passed National Social Safety Strategy (NSSS) in 2015 and law on protection for the disabled were passed in 2013 which help achieving SDG 1.3 Social Protection to cover poor and vulnerable. NSSS work plan for the ministries were introduced in 2018. According to monitoring and evaluation framework of Bangladesh, we had to target to raise

the beneficiary house hold to 30% in 2020, 35% in 2025 and 40% in 2030 from 28.7% in 2016. In 2019 Bangladesh achieved 58.1% beneficiary under SSN. Different Ministry implement 130 types of SSN program like Old age allowance, allowance for the widows, maternity allowance, allowance for the disables etc. which has allocation of 13.81% of 2018-19 budget covering 2.53% of our GDP. During Covid in May 2020 government allocated a special allowance of taka 2500 for each of 5 million poor families.

Target 1.4 covers wide range of issues relating to life, livelihood and wellbeing. This includes equal opportunity to all irrespective of gender in the area of economic resources, basic services like health, education, electricity, water and drinking water, sanitation, ownership of land and other property, natural resources, new technology including financial services and microfinance.

Resilience of the poor in climate related vulnerability Target 1.5 put

targets for reducing death and missing population in climate related events also reduce loss in disasters in climate issues. In Bangladesh in 2019 number of affected people was 2,487 per one hundred thousand and death rate was 0.1545 person per one hundred thousand. Though Bangladesh is 3rd among countries hard hit by disaster and 7th vulnerable country of the globe, in CRI 2018 Bangladesh is not within 10 most affected country; this shows the resilience of Bangladesh. From just after independence Bangabandhu started with huge plantation through coast line, construction of cyclone shelter, create cyclone volunteer and constructing Mujib killa (high land for the shelter of cattle head) which continues now with additional efforts by Prime Minister Sheikh Hasina. Bangladesh had its National Plan for Disaster Management (2016-2020) and action plan to achieve the targets under Sendai Framework (2015-2030).

Means of implementation of SDG 1 are 1a: Resource mobilization and 1b: Pro-poor public spending are addressed well in our budget. In 2014-15 budget allocation for education, health and social sector was 12.82, 4.81 and 12.72 percentage respectively. Education sector had allocation increased to 15.2% in 2018-19 and in 2020-21 15.1%. Likewise, health sector was allocated 4.9% and 5.1%. Also, allocation for the social sector was increased to 14.2% of the national budget of 2018-19. All these help achieving 'No Poverty' in Bangladesh. (to be continued...)

EP

Md. Abul Kalam Azad
Former Principal Secretary and
Principal SDG Coordinator,
Prime Minister Office



অনিবার্ণ আগামী

বিদ্যুৎ ও জ্বালানি সপ্তাহ ২০১৮



দ্রুত বিদ্যুৎ উৎপাদন বৃদ্ধির স্বীকৃতি স্বরূপ মাননীয় প্রধানমন্ত্রী শেখ হাসিনার হাত থেকে পুরস্কার গ্রহণ করছেন
নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানির প্রধান নির্বাহী কর্মকর্তা মহোদয়

দেশের উন্নয়ন অগ্রযাত্রায় গর্বিত অংশীদার

নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড এর সার্বিক চিত্র



নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিঃ

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

(বাংলাদেশ বিদ্যুৎ উন্নয়ন বোর্ডের একটি প্রতিষ্ঠান)

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

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

50pc Power Sector Data Generation to be Automated This Year



The government is set to bring 50 percent of data generation of power sector under automation system by this year to ensure uninterrupted power supply as well transparency of power distribution companies, officials familiar with the process said.

"We're working on setting up automatic machine at each distribution feeder to count every disruption of electricity round the clock, which is now being done manually," Director General (DG) of Power Cell Engineer Mohammad Hossain said.

Hossain said the digital machine will generate data of interruption, which the distribution companies are now counting manually. "There was no such a system to ensure original number of disruption per day," he added.

Despite facing many hurdles, Hossain said, the power sector witnessed incredible success in the last 11 years under the leadership of Prime Minister Sheikh Hasina.

The Power Cell DG said the government successfully achieved the target of 24,000 MW generation capacity and

100 percent power coverage before one year of the target.

"Everyone will get quality and uninterrupted electricity. Industrial confidence will be regained for grid power system. ... we're trying to ensure 'double source' for electricity," he said.

According to a Power Cell official, the preparation for an integrated power generation policy is underway. Opportunity for private companies to engage them in transmission sector will be opened in the policy.

The power cell official said that a plan has been undertaken for generating 60,000-MW electricity by 2041, of which 19,000 MW capacity will be gas-based, adding 3,000 million cubic feet gas will be needed per day for power generation.

The official said the country will require 5,500 mmcfd gas for mitigating all demand. "If LNG import option is considered, storage capacity will have to be increased and for optimization, we should import LNG in a larger volume, when its price will be less," he said.

EP

Govt to Recruit 664 Officials for RNPP

The government will recruit a total of 664 officials by 2021 in two phases to operate, maintain and manage the country's maiden nuclear power plant at Rooppur in Pabna, official sources confirmed.

A station director and a chief superintendent will be appointed for the plant under the new recruitment process.

Besides, deputy superintendent of the station, officers for department of environment protection, department of nuclear safety and reliability, department of radiation safety officers will also be appointed for the plant.

Of the total manpower, 243 officials, including station director and chief superintendent, will be recruited immediately because the Rooppur Power plant author-

ities have already completed all the formalities to complete the recruitment process.

Besides, another 421 officials will also be appointed in several phases in the current fiscal year, according to sources.

The government will finalize the organogram to operate the power plant with the support of International Atomic Energy Agency (IAEA), official said.

The Rooppur Power Plant Authorities have a plan to train up 1,925 officials with the support of Russian contractor JSC Atomstroyexport as per the contract agreement.

A total of 1424 officials have got training so far under the general contract and another 517 officials have been sent to Russia for training on the operation of Rooppur Power Plant.

EP

BCPCL Celebrates Payra PP Phase-1 COD



The Bangladesh China Power Company Ltd (BCPCL) has celebrated the commercial operation date (COD) of the 1st phase of the Payra Thermal Power plant recently.

The power plant has already faced delay due to COVID-19 crisis, sources said.

Commercial operation of the 2nd phase of the plant will also linger for six months due to the Covid pandemic, officials said.

They said the company

is working on to prepare the design of the phase-2 of the plant.

North-West Power Generation Company Ltd (NWPGL) and Chinese company CMC are jointly implementing the power project at Payra in Patuakhali district.

EP

ADB Provides \$200m Loan to Improve Rural Electricity Access



The government and the Asian Development Bank (ADB) recently signed agreements for US\$200 million in additional loans, including \$130 million concessional loan, to improve access to efficient and reliable electricity supply in rural areas in the country by strengthening transmission and distribution networks.

The additional loans will scale up the ongoing \$616 million Bangladesh Power System Enhancement and Efficiency Improvement Project, which ADB approved in 2017, said a press release.

Fatima Yasmin, Secretary, Economic Relations Division (ERD), and Manmohan Parkash, Country Director, ADB, remotely signed the loan agreements on behalf of Bangladesh and ADB, respectively.

Md Khayrul Hasan, Member (Finance), Bangladesh Rural Electrification Board (BREB), the implementing agency of the project, signed the project agreement.

"Access to electricity in rural areas is a prerequisite to improved quality of life, enhanced economic activities,

industrial and agriculture productivity, essential services, such as health care, and education," said Country Director Manmohan Parkash.

"Uninterrupted and reliable electricity supply can expedite economic recovery of the country from the losses of the coronavirus disease (COVID-19) pandemic by powering critical activities including food supply services, digital education, online businesses, and essential household activities," he added.

Appreciating the government's success in enhancing access to power, Parkash said "This project will help Bangladesh achieve its goal of providing electricity for all by 2021, and related sustainable development goals."

The additional ADB assistance will finance installation of an additional 990 kilometers (km) of 33 kilovolt (kV) and 3,000 km of 11 kV below distribution lines and associated facilities, including 51 units of 33 kV/11 kV substations in rural areas in Khulna division. This will result in increasing electricity access to 150,000 rural households.

EP

Bulgaria Becomes Nuclear Energy Agency's 34th Member

more units at the Belene site. Expanded

On 1 January 2021, Bulgaria became the newest member of the OECD Nuclear Energy Agency (NEA) and its Data Bank.

"Bulgaria's membership will enrich the NEA's work in areas such as nuclear safety and regulation, decommissioning and radioactive waste management," said OECD Secretary-General Angel Gurría. "The accession of Bulgaria to the Agency also underlines the developing co-operation between Bulgaria and the OECD."

Bulgaria currently has one nuclear power plant at Kozloduy with two VVER units that generate about one-third of the country's electricity.

The country has ongoing plans to build a new unit at the Kozloduy site and two

use of nuclear power is a strategic priority for Bulgaria, supporting the country's efforts to enhance energy security while reducing greenhouse gas emissions.

With several decades of VVER experience, Bulgaria will reinforce the NEA's capacity to address matters related to pressurized water reactor technologies and their operational characteristics.

At the same time, the NEA will support Bulgaria's efforts in many technical and policy areas, including work to address nuclear skills capacity building needs in the country, the development and application of nuclear data and simulation codes, and many issues related to radioactive waste management, decommissioning and nuclear economics.

EP

Govt May Extend Power Import Deal with India

from existing one after fresh negotiation, he said on condition of

The government is likely to extend the tenure of 160MW electricity import from Tripura for another five years as the current power purchase agreement (PPA) will expire in March, 2021.

The Indian state-owned NTPC Vidut Vyaper Nigam Ltd (NVVN) has already made a proposal to extend the PPA.

"We are paying Tk 6.1324 per unit (kilowatt hours) from Tripura. After the payment of tax, Dhaka pays Tk 6.45 per unit under no-electricity no-pay method," an official said. The government is expected the tariff comparatively lower

anonymity.

In addition, Bangladesh will need to pay Tk 15.05 million per month as transmission charge to import the electricity.

Now, Bangladesh is utilizing 24 kilometers Indian transmission line and 31 kilometers Bangladesh Power Grid line to import the electricity.

The existing four-year tenure of 160MW electricity import from Tripura will expire on March 15, 2021.

The NTPC NVVN had signed the electricity import to import 100MW of electricity from Tripura on March 15, 2016.

EP

Omera, Beximco Seek Extension for LPG Export to Tripura

Omera and Beximco, two leading operators of Liquefied Petroleum Gas (LPG) in the country, have sought a two-year extension of approval for export of cooking gas to the neighboring Indian state of Tripura.

The two companies applied to the Ministry of Commerce for the extension as the first approval expired on 31 December 2020.

Not only Omera and Beximco, but also other big operators are trying to gain export access to neighboring countries as the local market is over-invested with many players.

Seeking anonymity, a commerce ministry official said the time-frame for export will be extended till 30 June 2021. He said a letter will be issued to the companies in this regard soon.

Earlier in 2019, Omera and

Beximco got the go-ahead from the Ministry of Commerce and the Ministry of Power, Energy and Mineral Resources to export 50,000 tonnes of LPG to Tripura annually.

Each of the companies had a plan to export about 2,000 to 4,000 tonnes of Liquefied Petroleum Gas (LPG) per month as per Business to Government (B2G) model.

However, due to the outbreak of Covid-19, the target could not be met.

From January to March of the outgoing year, Omera could export only 623 tonnes of LPG.

Earlier, during August-December in 2019, it supplied 120 tonnes of cooking gas to the Indian Oil Corporation (IOC) following a purchase order from the landlocked state in the neighboring country.



Energypac IPO 10.6 Times Oversubscribed

Energypac Power Generation's initial public offering (IPO) is raising quite the interest among general investors, who placed orders for shares 10 times their allotted amount.

Investors booked shares worth about Tk 662.5 crore for the diversified end-to-end engineering solution provider against the Tk 62.5 crore allocated for them.

The lucky few will get to know at 11 am on Sunday whether they have managed to get shares when the company's IPO lottery draw will be held.

The IPO draw results will be published on the websites of the Dhaka Stock Exchange (DSE), Chittagong Stock Exchange (CSE) and the company's own.

The company has a bright outlook due to being a diversified end-to-end en-

gineering solution provider in a fast-growing Bangladesh.

It is engaged in supplying gas and diesel generators and provides rent, solar panel, accessories & turnkey solutions; procures independent power plant and operates and maintains them; transmits and distributes power; runs CNG refuelling station and conversion kits; imports and markets commercial vehicles, machinery and materials, spare parts, installation and service in Bangladesh and overseas; manufactures pre-engineered buildings and has entered the liquefied petroleum business.

The bulk of the IPO proceeds would go towards ramping up the three-year-old LPG business G-Gas, which has a promising future ahead due to fast depletion of natural gas.



Mitsubishi Supplying Pair of M501JAC Gas Turbines

A Canadian utility has ordered two Mitsubishi Power natural gas-fired turbines to repower its combined cycle plants in Alberta.

Capital Power will use the two M501JAC gas turbines in its Genesee units 1 and 2 (see rendering) as it converts from coal-fired generation. The repowered plant will provide 1,360 MW of electricity capacity by decreasing carbon emissions by about 60 percent.

"Capital Power is following a strategy toward a low-carbon future with a target to be net carbon neutral before 2050," said Brian Vaasjo, President and CEO of Capital Power.

"The repowering of Genesee Units 1 and 2 with Mitsubishi Power technology will position the Genesee station to be off-coal in 2023, delivering 3.4 megatonnes of annual carbon emission reductions, and will position it for additional carbon emission reductions in the future."

The repowering project timeline calls for the units to operate in natural gas simple cycle mode during construction, allowing the Genesee station to be off-coal in 2023, with expected repowering completion of Unit 1 in 2023 and Unit 2 in 2024. The project is expected to employ up to 500 workers during peak construction phases.



Govt to Procure 12.85 Lakh Tonnes Fuel Oil

The government has okayed a proposal to procure 12.85 lakh metric tonnes of refined fuel oil for January-June period of this year spending Tk 43.85 billion.

The approval came from the meeting of the Cabinet Committee on Government Purchase (CCGP) held virtually with Finance Minister AHM Mustafa Kamal in the chair.

The government aims to procure 25.50 lakh metric tonnes of fuel oil in the calendar year 2021.

Out of the 12.85 lakh metric tonnes of fuel oil for the first six months, 9,60,000 metric tonnes will be gas oil, 1,20,000 metric tonnes Jet 1 fuel, 40,000 metric tonnes furnace oil, 1,05,000 metric tonnes mogas and 60,000 metric tonnes marine fuel.

Bangladesh Petroleum Corporation (BPC) would procure this fuel oil from various sources of different countries, Cabinet Division Additional Secretary Dr Abu Saleh Mostafa Kamal informed at an online news briefing later.





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Oil-Based Power Plants Idling



The government has kept almost all oil-fired power plants shut and import of expensive LNG to a minimum to reduce energy procurement costs owing to lower winter demand and sluggish economic activities.

As on December 30, all diesel and many furnace oil-fired power plants having a total generation capacity of 1,140 megawatts (MW), remained shut, according to state-run Bangladesh Power Development Board or BPDB.

State-run Petrobangla has been importing the lowest quantity of LNG, or liquefied natural gas, amounting to around 388 million cubic feet per day, or mmcf, only around 38 per cent of the terminals' capacity, to slash energy import costs as energy demand waned.

The BPDB has asked the plant owners to keep the majority of the oil-fired power plants shut to save the entity from providing large payment for electric-

ity purchase, a senior BPDB official said.

The board, however, needs to "incentivize" the power plant owners in the form of capacity payment so that they can keep units idle.

Capacity payment is a kind of penalty for the BPDB, which it has to pay to the plant owners, if the government fails to buy a certain portion of power readily available with them.

As per the power-purchase agreements, this penalty is calculated on the basis of around 40 per cent plant factor of the power units, including the oil-fired rental and quick-rental ones.

The Petrobangla, however, has also been making same payment to the country's two operational FSRUs, or floating, storage and re-gasification units, without utilizing much of the capacity of the LNG import terminal operators under contractual obligations, said a senior Petrobangla official.

EP

3.3m Consumers to Get BPDB's phase prepaid meters by 2023

With the aim of reducing system loss, pilferage and bill arrears, Bangladesh Power Development Board (BPDB) will bring 3.3 million consumers under smart prepaid metering system by 2023.

"We have installed 1,220,947 prepaid meters out of its total 3.3 million existing consumers," an official familiar with the process said.

He said currently the BPDB runs two different prepayment metering systems-unified prepayment metering system (CTS) and STS (UTS) prepaid metering system.

According to BPDB source, the BPDB installed 1,151,899 smart prepaid meters under unified CTS prepaid metering system, of which 1,123,545 single phase and 28,354 three

phase prepaid meters.

It said some

69,048 prepaid meters were installed under STS (UTS) prepaid metering system, of which 67,717 single phase and 1,331 three phase prepaid meters have been set up.

The source said the state run organization has four distribution zones across the country, which would be brought under prepaid metering system in phases.

It said the BPDB has installed prepayment meters under 67 sales and distribution zones across the country.

Besides, currently 99 percent people of the country are getting electricity facility, as the government led by Prime Minister Sheikh Hasina wants to ensure balanced electrification development in all places across the country.

EP

Tenure of Madhyapara Hard Rock Mine Contractor Extended

Germania-Trest Consortium (GTC) will operate Madhyapara hard rock mine in Dinajpur until July 2021 despite its poor performance.

"We signed a six-year contract with GTC in 2013, a consortium between Bangladesh-based Germania Corporation Ltd and Belarus-based JSC Trest Shakhtos Petsstroy for management of operation and development, production and maintenance of Madhyapara hard rock mine. Though the tenure of GTC expired on February 14, 2020, we have allowed them to continue operation until July this year," a senior official of the Energy Division said.

The Madhyapara mine area spans over 1.2 square kilometers and has a reserve of around 174 million tonnes of hard rock and granite. However, country needs around 70 lakh tonnes of rock annually and the MGMLC have the ca-

capacity to supply over 10 lakh tonnes a year if production goes smoothly.

"As per the previous contract, the company had to produce 92,000 tonnes of rock during its contract period but it extracted only 37,000 tonnes. For last two months, interestingly, GTC is producing around 5,000 tonnes of rocks per day and earning Tk 40 crore per month," a Petrobangla official said.

"Now GTC is showing its capacity only to sign a long term final agreement with the government," the official added.

Regarding its poor performance, GTC claimed that the relationship between the officials of MGMCL and GTC deteriorated over various issues, which affected the production and sales.

"The government changes eight managing directors of MGMCL in GTC tenure (in the last five years) due to this cause," the official added.

EP



পাওয়ার গ্রিড কোম্পানি অফ বাংলাদেশ লিঃ
POWER GRID COMPANY OF BANGLADESH LTD.
(An Enterprise of Bangladesh Power Development Board)

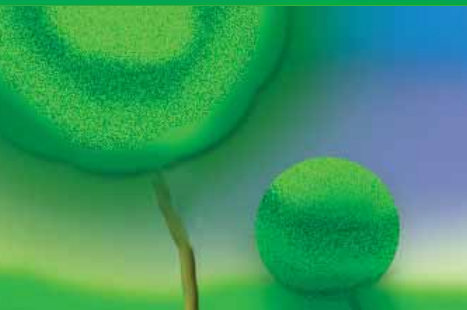


PGCB Bhaban, Avenue-3, Jahurul Islam City, Aftabnagar, Badda, Dhaka-1212 Web : www.pgcb.gov.bd

মানসম্পন্ন বিদ্যুৎ নিরবচ্ছিন্নভাবে দেশের সকল মানুষের নিকট পৌঁছে দেয়াই আমাদের অঙ্গীকার

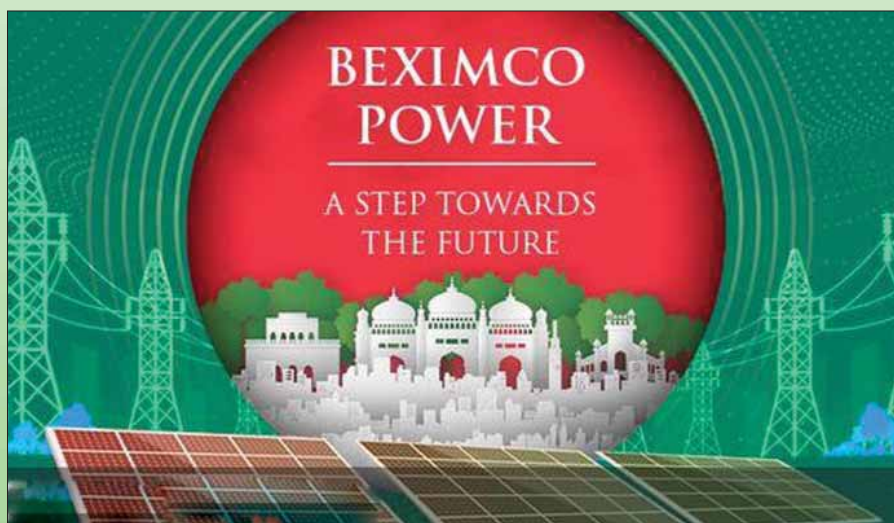
- * গ্রিড উপকেন্দ্র, গ্রিড লাইন ও টাওয়ার জাতীয় সম্পদ, তা রক্ষা করা সকলের দায়িত্ব।
- * গ্রিড উপকেন্দ্র, সঞ্চালন লাইন ও বৈদ্যুতিক টাওয়ারের গুরুত্বপূর্ণ যন্ত্রাংশ চুরি প্রতিরোধে সহায়তা করুন, বিদ্যুৎ বিপর্যয় থেকে দেশকে বাঁচান।
- * উচ্চ ভোল্টেজের বৈদ্যুতিক টাওয়ার ও লাইন হতে নিরাপদ দূরত্ব বজায় রাখুন।
- * 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।





Greenpage

Beximco Raises Stakes in Beximco Power



Beximco bought an additional 3.5 crore shares for Tk 35 crore of its power-generating subsidiary to bring the total holding to 7.5 crore shares, which is 75 per cent of the company

Beximco is pinning great hopes on solar energy, with the company last week raising its stake in its subsidiary Beximco Power, whose main focus is the clean energy.

The development comes at a time government has set a target to produce 10 per cent of its electricity from renewable sources by 2020. But it managed about 3 per cent.

Beximco bought an additional 3.5 crore shares for Tk 35 crore of its power-generating subsidiary to bring the total holding to 7.5 crore shares, which is 75 per cent of the company.

The remaining 25 per cent shares are held jointly by ASF Rahman, Salman F Rahman, Nazmul Hassan and OK Chowdhury, according to a press release.

Beximco Power owns 80 per cent of two solar generating companies, Teesta Solar and Korotoa Solar, which have previously concluded power purchase agreements with

the Bangladesh Power Development Board and an implementation agreement with the government for the supply of 200MW and 30MW solar-generated electricity from solar electricity plants to be established in Gaibandha and Panchagarh respectively.

The solar electricity plants will begin in 2022 and thereby make significant contributions to both revenue and profitability of the listed company.

Technical partners from China hold the remaining 20 per cent of the stake in the two solar companies. **EP**

Total & Clean Energy to Build Biogas Plants

Clean Energy Fuels Corp. and its largest shareholder, Total S.E., announced a memorandum of understanding to create a 50/50 joint venture to develop carbon-negative renewable natural gas production facilities in the United States, as well as credit support to build additional downstream fueling infrastructure.

Total will provide \$50 million and Clean Energy \$30 million for the proposed joint venture and Total will be providing credit support of \$65 million to support Clean Energy development in the biomethane value chain, including \$45 million for contracted fueling infrastructure.

The companies have already partnered to expand the use of renewable natural gas in the heavy-duty truck market with its Zero Now program, which allows fleets to purchase natural gas trucks for the same price as diesel trucks, according to Clean Energy.

The demand for biomethane has rapidly accelerated through the Zero Now program with trucking companies such as Kenan Advantage, KeHE Distributors, Estes Express Lines, Tradelink Transport, among many others, taking advantage of the economic savings while powering their new fleets with this clean fuel.

The California Air Resources Board gives these carbon-negative renewable natural gas projects a carbon intensity (CI) Score (gCO₂e/MJ) of -250 (or lower) compared to 97 for diesel and 46 for electric batteries.

"We are very fortunate to have a partner in Total that is so supportive on a number of levels," said Andrew J. Littlefair, CEO and president of Clean Energy. **EP**

SREDA Asked for Guidelines to Make Rooftop Solar Systems Effective



Prime Minister's Energy Adviser Tawfiq-e-Elahi Chowdhury has asked the Sustainable and Renewable Energy Development Authority (Sreda) to develop a guideline to make the solar rooftop systems effective.

He gave the directive while attending a workshop titled "Scaling up Net Metered Rooftop Solar in the garment industry," organized by Sreda as the chief guest recently.

The directive came when the prime minister's energy adviser was replying to a question regarding the ineffectiveness of most of the rooftop solar systems installed at domestic and commercial buildings.

Earlier, on 25 December, a report titled "Rooftop solar panels are now junks" was published in The Business Standard, which showed that around 90% of the country's rooftop solar systems

are now non-functional.

Tawfiq-e-Elahi urged the industries to come forward to set up solar systems on their rooftops to increase the country's green credentials at a global level.

The prime minister's energy adviser also asked Sreda to set up an anonymous complaint box at its office premises so that the customers can file their complaints.

Md Habibur Rahman, secretary of the Power Division of the Ministry of the Power Energy and Mineral Resources, presided over the workshop while Mohammad Alauddin, chairman of the SREDA moderated the program.

Ahmad Kaikaus, principal secretary of the Prime Minister's Office, graced the program as the special guest and talked about the benefit of the rooftop solar systems. **EP**



Berlin Confirms New Renewables Laws

The German Government has confirmed new renewables laws that came into force on January 1.

The law amending the Renewable Energy Sources Act and other energy regulations contains the new framework conditions for the future expansion of renewable energies in Germany.

Federal Minister of Economics Peter Altmaier (pictured) said: "The EEG amendment 2021 will come into force on January 1, 2021 as planned.

"This is a clear future signal for more climate protection and more renewable energies.

"The new EEG creates the framework with which we can achieve the goal of 65% renewable energies by 2030 and greenhouse gas neutrality in the electricity supply in Germany before the year 2050.

"The scope of the amendment alone shows that this is a major and central step for the energy transition."

The law stipulates the speed at which the individual technologies such as wind and photovoltaics will be expanded in the next few years so that the 65% target can be achieved by 2030.

Furthermore, every year, a strict monitoring process will be used to check whether renewable energies are actually being expanded at the desired speed.

The new EEG 2021 also creates the instruments to be able to make adjustments at short notice at any time if obstacles emerge.

At the same time, the funding conditions for the individual energies will be re-regulated. **EP**

Green Energy Getting a Shot in the Arm



The government is moving to save solar mini-grids supplying green energy in remote areas from incurring staggering losses and closure as power distribution companies expand operations in off-grid areas.

Power tariff from such mini-grids is much higher compared to grid-electricity, an official at the Sustainable and Renewable Energy Develop-

ment Authority (SREDA) said, explaining that if the tariff for a 50-unit consumer of grid electricity is Tk 3.75 per unit, it is Tk 18-35 for a mini-grid consumer.

Official sources said 26 solar mini-grids have so far been set up in different areas and their total general capacity is about 5 megawatts. They said the Power Division

primarily calculated the asset value of these mini-grids at 1.09 billion (Tk 109 crore).

Sreda, the agency responsible for promotion of green energy and energy conservation, is likely to finalize the modalities and other tariff related issues within a month to purchase electricity from solar mini-grids across the country. **EP**

JICA Installs Solar Panels in Six Edn Institutions in Gaibandha



Japan International Cooperation Agency (JICA) installed high capacity solar panels at six educational institutions in different chars of Kamarjani union under Sadar upazila in the district recently to run their academic activities smoothly.

A discussion on solar panel distribution was held on the premises of union parishad (UP) with UP Chairman Abdus

Salam Jakir in the chair.

The speakers in their speeches thanked the JICA for standing beside the chars academic institutions with solar panels to help the students run their academic activities.

Later, they distributed high capacity solar panels to the chiefs of the six institutions.

Besides the solar panels, table, ceiling fans and lights were also distributed to the chiefs of the academies that included Kunderpara Gana Unnayan Academy, East Batikamari Government Primary School, Keblaganj Government Primary School, Nungola Government Primary School, Pardiara Nurani Hafezia Madrasa and Kharjani Government Primary School. **EP**



Sembcorp Energy India 400 MW Capacity Power Project

Sembcorp Energy India Limited (SEIL), a wholly owned subsidiary of Sembcorp Industries, has won a bid for a new 400 MW solar power project.

Through its renewables subsidiary, Sembcorp Green Infra, SEIL won this bid in a closely contested auction conducted by



the Solar Energy Corporation of India (SECI).

SEIL has received the letter of award (LoA) from SECI to develop the project in Rajasthan connected to the state's transmission utility Rajasthan Rajya Vidyut Prasaran Nigam Limited (RVPN). The project's entire output will be sold to SECI under a 25-year long-term power purchase agreement.

Vipul Tuli, CEO South Asia, Sembcorp Industries said, "As a long-term player committed to India's energy transition, we are pleased to secure the 400 MW utility scale solar project in Rajasthan. Sembcorp has established a track record of delivering world-class power projects within timelines. We are confident of delivering this project thanks to strong support from central and state government agencies and our business partners. India is a key market for Sembcorp, where we will continue to contribute to the nation's clean energy mission. With this win, we have moved into our next phase of growth." **EP**

Megaproject to Address Climate Change Impact in Khulna



The Bangladesh Water Development Board (BWDB) has proposed a mega project worth Tk1,545.53 crore incorporating multi-faceted goals, including tackling the adverse effects of climate change and developing current socio-economic conditions.

The Development Project Proposal (DPP) for the rehabilitation of coastal Polder 31 at Dacope upazila in Khulna district has already been submitted to the Ministry of Water Resources.

WDB's Polder 31, located at Chalna union under Dacope upazila, consists of many important infrastructures, including the Mongla port, the second largest seaport in the country, also known as the lifeline of the south-west.

For the conservation and development of the much-important Polder 31 area,

people's representatives have sent letters to the Director-General of BWDB and the Secretary of the Ministry of Water Resources regarding the protection of the disaster-prone area from erosion and flooding.

In response, State Minister for Water Resources Zahid Faruk visited the area and recommended a project outline, including embankment rehabilitation, embankment conservation, riverbank protection, drainage infrastructure rehabilitation, canal re-excavation, river re-excavation and other necessary works for the rehabilitation of Polder 31.

Accordingly, Khulna WDB drew up the project, entitled "Rehabilitation of Coastal Polder 31", at a cost of Tk1,545.53 crore, which was sent to the Planning Commission by the Ministry of Water Resources on July 26.

EP

2020 Weather Disasters Boosted by Climate Change: Report

The ten costliest weather disasters worldwide this year saw insured damages worth \$150 billion, topping the figure for 2019 and reflecting a long-term impact of global warming, according to a recent report.

The same disasters claimed at least 3,500 lives and displaced more than 13.5 million people.

From Australia's out-of-control wildfires in January to a record number of Atlantic hurricanes through November, the true cost of the year's climate-enhanced calamities was in fact far higher because most losses were uninsured.

Not surprisingly, the burden

fell disproportionately on poor nations, according to the annual tally from global NGO Christian Aid, entitled "Count the cost of 2020: a year of climate breakdown".

Only four percent of economic losses from climate-impacted extreme events in low-income countries were insured, compared with 60 percent in high-income economies, the report said, citing a study last month in *The Lancet*.

"Whether floods in Asia, locusts in Africa, or storms in Europe and the Americas, climate change has continued to rage in 2020," said Christian Aid's climate policy lead, Kat Kramer.

EP

Tesla Almost Touched 5 Lakh Vehicle Delivery Goal in 2020

Elon Musk-owned electric car maker Tesla delivered 499,550 vehicles in 2020, slightly missing its most recent guidance of 5,00,000 vehicles.

In the fourth quarter, Tesla delivered 1,61,650 Model 3 and Model Y cars and produced 1,63,660 such vehicles. The automaker also delivered 18,920 Model S and X vehicles and produced 16,097 of them.

"In 2020, we produced and delivered half a million vehicles, in line with our most recent guidance. In addition, Model Y production in Shanghai has begun, with deliveries expected to begin shortly," the company said in a statement recently.

The company achieved the feat despite closing its new factory in China as well as its vehicle plant in Fremont, California for several weeks as the new coronavirus spread.

Musk also tweeted: "So proud of the Tesla team for achieving this major milestone! At the start of Tesla, I thought we had (optimistically) a 10% chance of surviving at all".

Tesla delivered 88,400 vehicles in Q1, and 90,650 vehicles in Q2.

In October, Tesla said it delivered 1,39,300 vehicles during the third quarter, slightly better than the 1,37,000 Wall Street had expected.

EP

Media Support Needed to Protect Environment



Environment, Forests and Climate Change Minister Mohammad Shahab Uddin recently said the present government has constantly striving to control environmental pollution, conserve biodiversity, plant trees and address the impacts of climate change.

“To control air pollution, the government has intensified steps against illegal brick kilns, vehicles and factories and the active participation of the people is a must with all initiatives of the government to reach the control of environmental pollution into desired level,” he said.

“I seek media support to help create public awareness on

overall environmental pollution control, including the use of harmful materials, polythene and plastics.

Environmental protection can only be ensured with the joint efforts of all,” he further said.

The minister said this while speaking as the chief guest at a function at the National Press Club to mark 10th founding anniversary of the online newspaper ‘The News’.

He said, the media has played a strong role in different critical juncture of the nation especially restoration of democracy.

“The responsible role of the country’s media in stamping out corruption and irregularities is also commendable,” Shahab Uddin said. **EP**

Decarbonization Agenda Takes Center Stage in ME: GlobalData’s MEED

The decarbonization of the Middle East economy is moving rapidly up the region’s business and investment agenda, and there is no doubt that it is set to reshape business in the region in the coming decades, says GlobalData’s MEED.

The Riyadh G20 Summit in November saw the world’s leaders endorse Saudi Arabia’s call for a circular carbon economy built around the four R’s:

reduce, reuse, recycle and remove.

Richard Thompson, Editorial Director at GlobalData’s MEED, comments: “In seeking to create an integrated global framework through which carbon dioxide (CO₂) emissions can be managed, Riyadh is positioning itself as a leading player in the decarbonization agenda. The UAE is also establishing itself as a leader in clean energy, and aims to re-

CO₂ Levels This Year 50pc Higher Than 18th Century

Carbon dioxide levels in the atmosphere will this year reach levels 50 percent higher than before the industrial revolution because of manmade emissions, Britain’s Met Office predicted recently.

It forecasted the annual average CO₂ concentration measured at the Mauna Loa Observatory in Hawaii in 2021 will be around 2.29 parts per million (ppm) higher than in 2020.

It said CO₂ concentrations will exceed 417 ppm at some point between April and June — 50 percent higher than the 278 ppm present in the late 18th century when the industrial era kicked off.

This is despite an unprecedented fall in greenhouse gas emissions in 2020 because of the pandemic.

“Since CO₂ stays in the atmosphere for a very long time, each year’s emissions add to those from previous years and cause the amount of CO₂ in the atmosphere to keep increasing,” said Richard Betts, lead producer of the Met Office’s annual CO₂ forecast.

“Although the Covid-19 pandemic meant that less CO₂ was emitted worldwide in 2020 than in previous years, that still added to the ongoing build up in the atmosphere.”

Mauna Loa has been continuously monitoring atmospheric CO₂ levels — which fluctuate according to season but continue to climb annually — since 1958. **EP**



duce its net carbon emissions by 70% by 2050.”

As per the Saudi renewable energy strategy, the solar objective for 2023 has been raised from 5.9 GW to 20 GW, with the target for renewables revised up from 9.5 GW to 27.3 GW.

Thompson continues: “It

makes sense that the world’s biggest oil producers want to lead the transition into a clean energy future. As well as managing the declining role of oil as the world’s primary source of energy, the Gulf Cooperation Council (GCC) has some of the highest levels of carbon dioxide emissions per capita.”

EP

Climate Change Could Create 63m Migrants in South Asia by 2050



The growing impacts of climate change have already pushed more than 18 million people to migrate within South Asian countries, but that could more than triple if global warming continues on its current path, researchers warned recently.

Nearly 63 million people could be forced from their homes by 2050 in the region as rising seas and rivers swallow villages, and drought-hit land no longer supports crops, said ActionAid International and Climate Action Network South Asia in a report.

The projection does not include those who will be forced to flee sudden disasters such as floods and cyclones and so is likely an under-estimate, noted Harjeet Singh, global climate lead at ActionAid. He said the situation could become "catastrophic".

Many will head from rural areas to towns and cities in their own countries, in search of work, he said.

There they often end up living in slum areas exposed to flooding and with very limited access to social services, doing precarious jobs such as rickshaw-pulling, construction or garment-making.

"Policy makers in the Global North and the Global South

are not yet waking up to this reality," Singh told the Thomson Reuters Foundation. "They are not realising the scale of the problem, and how we are going to deal with (it)."

He urged rich nations with high planet-warming emissions to redouble efforts to reduce their carbon pollution and provide more funding for South Asian countries to develop cleanly and adapt to conditions on a warming planet.

If governments meet a globally agreed goal to limit warming to below 2 degrees Celsius, the number of people driven to move in India, Bangladesh, Pakistan, Sri Lanka and Nepal could be cut almost by half by 2050, the report said.

It builds on research published in 2018 by the World Bank, which said unchecked climate change could cause more than 140 million people to move within their countries' borders by 2050 in sub-Saharan Africa, South Asia and Latin America.

The projections have financial implications for countries such as India and Bangladesh, where the poorest people often lack the means to move far from their original homes to safer places without state support.



Consortium to Help Facilitate SE Asia's Energy Transition

A multi-stakeholder consortium with the goal of accelerating the energy transition in Southeast Asia by leveraging the strengths of various national and international funders and institutions has begun its first five-year implementation period as of 20 November 2020.

The Energy Transition Partnership (ETP), for which the United Nations Office for Project Services (UNOPS) serves as fund manager and secretariat host, was set up to help Southeast Asia deliver on the goals of the Paris Agreement.

It will focus initially on Indonesia, The Philippines and Vietnam, since these countries have the highest energy demand in the region, as well as fossil fuel pipeline infrastructure and significant renewable energy and energy efficiency potential. In the longer term, more countries in the region will benefit from its support, says the group.

The consortium states its

primary objectives to be strengthening the policy and planning environments for renewable energy and energy efficiency in the region; increasing public and private investments into renewable energy, energy efficiency measures and grid upgrades; providing technical expertise for grid planning and operation, and fostering capacity and skills development.

Members of the partnership include: Agence Française de Développement (French Development Agency); Bloomberg Philanthropies; Environment and Climate Change Canada; the Children's Investment Fund Foundation; Germany's Federal Ministry for the Environment, Nature Conservation and Nuclear Safety; the High Tide Foundation; and the UK's Department for Business, Energy and Industrial Strategy.



Seek Int'l Finance to Cut Emission Based on CER

Bangladesh has achieved a lot in reducing carbon emission despite having no obligation in this regard. The power sector has already been able to cut the emission by 7-8%. I think, we will have to ensure advanced technologies in the power value chain from generation to consumption levels, efficient use of energy and increasing renewable energy to reduce the emission. Taking all these into consideration, we will have to obtain recognition in this regard. And, based on that certified emission reduction (CER), we will have to seek funds from the international community to accelerate reduction of emission. The issues will also have to be presented clearly while updating the Nationally Determined Contribution (NDC) to limit the global temperature rise below 2 degree Celsius.

Former secretary of the government Dr. Sultan Ahmed, who is also an energy and environment expert, made the observation in an exclusive interview with Energy & Power Editor **Mollah Amzad Hossain**.

One of the priorities of the Prime Minister Sheikh Hasina is low carbon development. How do you see the measures and their implementation towards achieving the goal?

Bangladesh is not a carbon polluting country and it has no obligation to reduce it. But the country is under various kinds of threat due to the impact of climate change. Under the circumstances, the country has already adopted low carbon development policy and started its implementation. In fact, the Prime Minister has given highest priority to sustainable development, which is SDG-7.

As part of the low carbon development path, the PM asked the authorities concerned to formulate the upcoming Power System Master Plan (PSMP). Her government is strictly following the low carbon path from generation to distribution in successfully achieving the target to ensure power for all by 2021. She also asked for using advanced technologies to ensure pollution-free generation of power. Following this path, Bangladesh has even set up coal-based power plant at Payra, but with using ultra super critical technology that has de-sulfurization plant and low SOx burner. Similar technology is also being used in Rampal and Matarbari coal plants now under construction. Meanwhile, the old simple cycle gas based power plants are being converted into combined cycle ones to reduce pollution and increase generation efficiency. We are also importing 1,160MW of power from India. All



Dr. Sultan Ahmed

Based on certified emission reduction (CER), we will have to seek funds from the international community to accelerate reduction of emission. The issues will also have to be presented clearly while updating the Nationally Determined Contribution (NDC) to limit the global temperature rise below 20 Celsius.

these measures are contributing to reduce carbon nationally. Besides with a plan to generate 10% power from renewables, Bangladesh is following an energy efficiency roadmap for ensuring efficient use of energy and power. It is expected to help reduce household power consumption by 36%. The household consumption of energy and power contributes 38% of the country's total carbon pollution.

Bangladesh is working on updating its NDC that had focused

on reducing emission from transport, power, energy and industry sectors. It had no commitment to reduce pollution in the agriculture sector. To what extent the country could control the emission so far as targeted in the NDC? What issues should get priority in the updated NDC which will be submitted to the UNFCCC?

A proper progress report should be included with adequate narratives in the updated NDC. We have achieved more than that of the committed 5% - we could reduce 7-8% of emission in the power sector. So, we could set a target to reduce emission by 18% until 2030 in the updated NDC. Bangladesh is also working on finalizing a roadmap to implement the updated NDC now being formulated.

The country is working on agriculture as it is trying to go for alternative wetting and drying (AWD) of crop land instead of flooded irrigation. Out of the country's 30 ecological zones, 11 are cluster zones. There is a scope to use AWD in 10 of the clusters. It would facilitate reduction of methane pollution without affecting production. On the other hand, massive works are going on in the transportation sector to reduce the pollution as the speed of transports would be accelerated due to metro rail, elevated expressway and Padma Bridge. Meanwhile, the government has already restricted marketing of fuel oil containing high level of sulfur content under a clean fuel master plan. The country would also go for advanced technology as far as engines are concerned.

All these issues should be highlighted in the updated NDC.

At a recent virtual discussion, you stressed on making specific where Bangladesh needs assistance to reduce GHG emission by 10% more. How it can be done?

It should be made clear that what we did so far and what we are doing now in specific sectors like transportation, power and energy sectors. For example, we have been able to generate 700MW of

Bangladesh has even set up coal-based power plant at Payra, but with using ultra super critical technology that has de-sulfurization plant and low SOx burner. Similar technology is also being used in Rampal and Matarbari coal plants now under construction. Meanwhile, the old simple cycle gas based power plants are being converted into combined cycle ones to reduce pollution and increase generation efficiency.

power from renewables against a target to bring 4,200MW. In this case, we can seek investment from the world community to generate 50% of the target. The main thing is we will have to convey that we are reducing the emission and you the world community provide us with investment.

The main problem in this case is that the financiers want to know about the capability to utilize the fund and its transparency. But it would not have been possible for

Bangladesh to achieve economic growth at around 8.0% if there is lack of transparency and capability to spend money. We should directly seek unconditional investment for our emission control initiatives.

The generation cost of coal-and gas-based power went up significantly due to using advanced technologies in the process. Do you think we have the scope to demand carbon benefit?

We should demand financing based on the Certified Emission Reduction (CER) status we have achieved so far in the three sectors. At the same time, we should strengthen our lobbying capacity.

An integrated development in the generation, transmission and distribution segments must be ensured for low carbon growth of the power sector. Where do we stand in this regard?

We will have to automate the whole power system and go for smart grid to reduce the system loss and enhance operational efficiency. It would help save use of electricity and reduce pollution.

What do you think about nuclear as the low carbon power generation option?

There is no debate that nuclear generates non-carbonized power. However, many countries, including Germany, do not agree that it is environment-friendly considering its safety risks. I had the opportunity to know that the world's safest nuclear power plant is being set up at Rooppur as I was involved in the process of issuing NOC for the plant.

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