

# ENERGY & POWER

## Bungling Budget

- COP26 Pushed Back to Nov 2021
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- Natural Gas: Interim Fuel & Bangladesh Perspective



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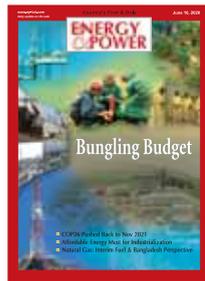
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E D I T O R I A L

The national budget for FY2020-21 placed by Finance Minister AHM Mustafa Kamal in parliament on June 11 was one of the most challenging tasks of economic and financial management of the state since its independence. Kamal had to deal with this tough job amid the Covid-19 pandemic that has slowed down the economy. It was not surprising that he would be cautious in spending in the next fiscal year since the economy is under severe pressure. In the energy and power sector he proposed a cut in budgetary allocation by 4.6 percent. However, experts in the sector expressed mixed reaction to his plan for energy sector. Apparently there was no change in the budgetary measures for the government's existing plans though it was suggested by the experts ahead of the budget announcement. The experts earlier suggested that the government should go slow with the development projects in the sector which were not in the process of implementation. Instead, they recommended, the funds should be directed to sectors that deserve emergency response due to the adverse impact of the pandemic.

*h i g h l i g h t s*

COVER



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Power & Energy supply at affordable price is essential for encouraging new investments from local and foreign entrepreneurs. This cannot be achieved only through exclusive reliance on imported primary fuel. For this, harnessing and optimum utilization of domestic primary fuel needs to be ensured.

Dr. Selim Raihan, Professor of Economics at DU & ED of SANEM, said this in an exclusive interview with EP.



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The COVID-19 pandemic has severely affected the energy and many other sectors. The global oil market crash caused price fall to its historic low. The global market is over supplied with crude oil, petroleum products, LNG and LPG. Countries having greater storage capacity have purchased and filled their storage. Some countries have already entered into future purchase contracts.



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The new national budget has proposed to cut in spending on power and energy sector by 4.6 percent to Tk 26,758 crore for the fiscal year 2020-21. The power division received an allocation of Tk 24,853 crore while energy and mineral resources division Tk 1,905 crore. The allocation for the whole sector was Tk 28,051 crore in the outgoing fiscal year.

Under the allocation for mega projects, Rooppur Nuclear Power Plant Project got Tk 15,691 crore and Matarbari Ultra Super Critical Coal-Fired Power Plant ..



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Dr. Selim Raihan; Professor of Economics, Dhaka University & Executive Director of SANEM

## KSA Makes Biggest Oil Price Hike in 20 Years

least two decades, doubling down on its strategy to bolster the oil market after OPEC+ producers extended historic output cuts.

The steepest jump will hit July exports to Asia, state producer Saudi Aramco's largest regional market, according to a pricing list seen by Bloomberg. Overall, the increases for Saudi crude erase almost all of the discounts the kingdom made during its brief price war with Russia.

The sharp price increases show that Saudi Arabia is using all the tools at its disposal to turn around the oil market after prices plunged into negative territory in April. As the price setter in the Middle East, the increases in its official prices may be followed by other producers.

Tighter crude supply is helping repair an oil market battered by the coronavirus. Unprecedented output cuts led by the



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## PowerCell Signs MoU with ABB Power Grids

dum of understanding with ABB Power Grids regarding a collaboration around fuel cell based zero emissions stationary power solutions.

The aim of the cooperation is to leverage the companies' existing technologies to jointly develop a complete solution for the market.

A final agreement is expected to be reached within approximately 12 months.

Following the joint development and licensing agreement with Robert Bosch GmbH regarding the PowerCell S3 fuel cell stack for the automotive segment last year, PowerCell Sweden



PowerCell Sweden AB has signed a memorandum of understanding with ABB Power Grids regarding a collaboration around fuel cell based zero emissions stationary power solutions. The aim of the cooperation is to leverage the companies' existing technologies to jointly develop a complete solution for the market. A final agreement is expected to be reached within approximately 12 months. Following the joint development and licensing agreement with Robert Bosch GmbH regarding the PowerCell S3 fuel cell stack for the automotive segment last year, PowerCell Sweden AB has made a review of its strategic prioritizations and decided to increase its focus on the stationary segment.

## First Power Unit of Belarus' NPP May Start Providing Electricity in Aug

unit of the Belarusian NPP (Astravyets District, Grodno

Oblast) may start generating electricity in August 2020, says Mikhail Pinchuk, CEO of the Rosatom's Energospetsmontazh PJSC.

The Ministry of Energy of Belarus said earlier that the start-up of the reactor of the 1st power unit was scheduled for July 2020.

Energospetsmontazh is involved in construction and installation works at various Rosatom facilities, including nuclear power plants outside Russia.

Belarus' first nuclear power plant in Ostrovets (a town in the Grodno Region also referred to as Astravyets) will have two units with a combined capacity of up to 2,400 megawatts, which are slated to be launched in 2019 and 2020, respectively.

The Belarusian nuclear station's design stems from the AES-2006



design developed by the St Petersburg-based institute Atomenergoprojekt, which is also the general contractor of the Belarusian project.

## Siemens Turbines to Power Kasawari Gas Field Complex

Malaysia Marine and Heavy

Engineering (MMHE) has contracted Siemens Gas and Power to supply power equipment for Petronas' Kasawari gas field development in the South China Sea, offshore Sarawak.

The package comprises three SGT-300 industrial gas turbine generators (GTGs), three mechanical-drive SGT-300 gas turbines, and three DATUM centrifugal compressors.

MMHE and TechnipFMC are managing the project under a joint venture. Kasawari, with estimated recoverable reserves of 3 tcf, will produce up to 900 MMcf/d of gas for delivery to the Petronas LNG complex in Bintulu, Sarawak.

The three SGT-300 GTGs will each have dual-fuel capability and a power capacity of 7.9 MW electric (MWe) at ISO condition.



They will provide the power for the platform complex that will process and export the gas, including living quarters and electrical utilities for all process systems and wellheads.

## PGCB Inks Tk 597cr Deal with China Firm

Four more power grid substations are going to be set up at different lo-

cations in the country while capacity of four more substations will be enhanced.

According to Power Grid Company of Bangladesh (PGCB), the implementing agency of the projects, the new substations, each having 230/132 kV, will be installed in Feni, Birulia (Savar), Noagan and East Sadipur (Dinajpur).

The substations, whose capacity will be extended, are 400/230 kV Bhulta (Narayanganj), 230/132 kV Bogra, 230/132 kV Barapukuria and 132/33 kV Niamatpur (Noagan).

The PGCB recently signed a bilateral contract with China National Technical Import and Export Corporation (CNTIEC) to implement the projects in order to facilitate enhanced power supply at better quality.

As per the contract, the CNTIEC will complete the construction and extension works of the projects within the next 30 months on turnkey basis at a cost of Tk 597.55 crore and hand over to PGCB.

German donor agency KfW, Bangladesh government and PGCB jointly financed the schemes under the Energy Efficiency in Grid Based Power Supply Project.

PGCB company secretary Md Jahangir Azad and CNTIEC project manager Pei Ruonan signed the contract on behalf of their respective sides at a function at PGCB headquarters in the city maintaining health guideline.

PGCB Executive Director (O&M) Md Masum Alam Bokshi, Chief Engineer (P&D) Abdur Rashid Khan, project director Md Shafiullah, CNTIEC site manager Zhang Kun were present on the occasion.

## Seven Hurt in Savar Gas Cylinder Blast

Seven people sustained burn injuries in a gas cylinder blast at a house at Kathgara in Ashulia of

Savar, on the outskirts of the capital recently.

The incident took place at the two-storey building of one Imon Hossain when the gas cylinder of the house went off, leaving seven people injured, said Zihad Mia, acting inspector of DEPZ Fire Service.



## Feeding of First RNPP Steam Generator with SG Tubes Completed

The Volgodonsk Branch of AEM-technology in Russia has completed the feeding with SG

tubes of the first Steam Generator for the Rooppur Nuclear Power Plant.

The plant will have four such Steam Generators in each of its two units, said a press release recently.

It took 22 days for the specialists to perform orderly mounting of the elements including Tube Bundle inside the Steam Generator Vessel.

The next stage of manufacture involves welding of the bottoms. The equipment will be subjected to hydraulic test and a whole range of other tests, including Eddy Current Test of SG tubes.

It is mentionable that AEM-technology is a part of Atomenergomash (machine building division of Rosatom) who is the sole manufacturer and supplier of all equipment for Reactor Com-



partments and major part of equipment for Turbine Islands in Rooppur Nuclear Power Plant.

## CAB Calls for Power, Gas Price Cuts

The Consumers Association of Bangladesh (CAB) has proposed a reduction in electricity and gas prices – to help

people increase their buying capacity during Covid-19 pandemic, and thus allowing the crumbling economy to revive.

The non-profit voluntary organization placed its proposal to the Bangladesh Energy Regulatory Commission (Berc) in an application recently, according to a press release.

The consumer rights group also made 13 suggestions for price reductions after analyzing the existing tariffs of power and energy. In the application, CAB's Energy Advisor Professor Dr M Shamsul Alam said the country' economy has been destroyed by the novel coronavirus pandemic.

"To restructure the economy, reductions in the prices of electricity and gas by rationalizing the sector's unreasonable expenditure is urgent," he added.

He said the purchasing power of consumers has fallen drastically in the current situation arisen out of the pandemic. Therefore, the government is not getting revenue.

"The expenditure of consumers will not increase if the prices of goods and services were not reduced. For that, the prices of power and energy need to be reduced first," said Professor Shamsul Alam.

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## Mohammad Alauddin Made Sreda Chairman



Mohammad Alauddin

Mohammad Alauddin, Additional Secretary (Policy & Renewable Energy)

to the Power Division, had been made chairman of Sustainable and Renewable Energy Development Authority (Sreda).

The appointment came into effect immediately, said a circular of the Ministry of Public Administration recently.

He has replaced Md Helal Uddin, who went on retirement after completion of the job as an additional secretary.

## 5 Electrocuted in 3 Districts

An auto-van driver was electrocuted in Tarash Upazila of the district recently. Deceased Jel Haque, 30, was

the son of Golap Mandol of Kohit Village under Tarash Municipality.

Locals said Jel Haque came in contact with live electric wire while he was charging his auto-van.

Later, his family members rushed him to Tarash Upazila Health Complex, where on-duty doctor Ruman Khan declared him dead.

In Mymensingh, three persons including two minor children were electrocuted in separate incidents in Tarakanda and Dhobaura upazilas.



The deceased were identified as Sajib Mia, 9, a fourth grader at a primary school, and his friend madrasa-going boy Abdus Samad, 9, of Dharakandi Village in Tarakanda Upazila; and Abdur Rahman, 65, of Uttarpara area in Dhobaura Upazila.

In Bogura, a school-going boy was electrocuted in Chithulia Village under Gosaibari Union in Dhunat Upazila of the district.

Deceased Abu Hasan, 15, son of Rafiqul Islam of the same area, was a student of class ten at Gosaibari High School.

Local sources said Abu Hasan came in contact with live electric wire while he was working at home.

## Baraka Power's Net Profit Up by 51pc in Nine Months

The net profit of Baraka Power Ltd rose

more than 51 per cent year-on-year in the nine months for July, 2019 to March, 2020.

The board of directors of the company in a meeting on Sunday approved the third quarter (Q3) un-audited financial statements of the company for the period that ended on March 31, 2020.

The power generating company's net profit stood at Tk 126.09 million in three months for January-March, 2020 which was Tk 65.77 million in the same quarter of the previous year, according to a recent official disclosure.

The company's earnings per share (EPS) stood at Tk 0.57 for January-March 2020 as against Tk 0.30 for January-March 2019.

In nine months, the company's net profit stood at Tk 423.35 million for the period of July, 2019 to March 31, 2020 which was Tk 280.24 million in the same period of year before.



Baraka Power witnessed an impressive improvement in all financial indicators riding on its subsidiary and associate company's performance, officials said.

## DPDC Engr Dies of coronavirus

A sub-divisional engineer of the Dhaka Power Distribution Company (DPDC) died from coronavirus at the last

day of his office.

The sub-divisional engineer was identified as Arun Kanti Dey, 60, hailing from Patya in Chattogram.

Arun Kanti had been working with corona symptoms for last couple of days, a top official said.

"Arun Kanti worked at Mugdapara customer services office at the day of his retirement on Wednesday. He got admitted himself at Kurmitola General Hospital with fever on the day and breathed his last on Thursday," said Dhaka Power Distribution Company Managing Director Bikash Dewan.

He left behind a son, a daughter and a host of well-wishers.

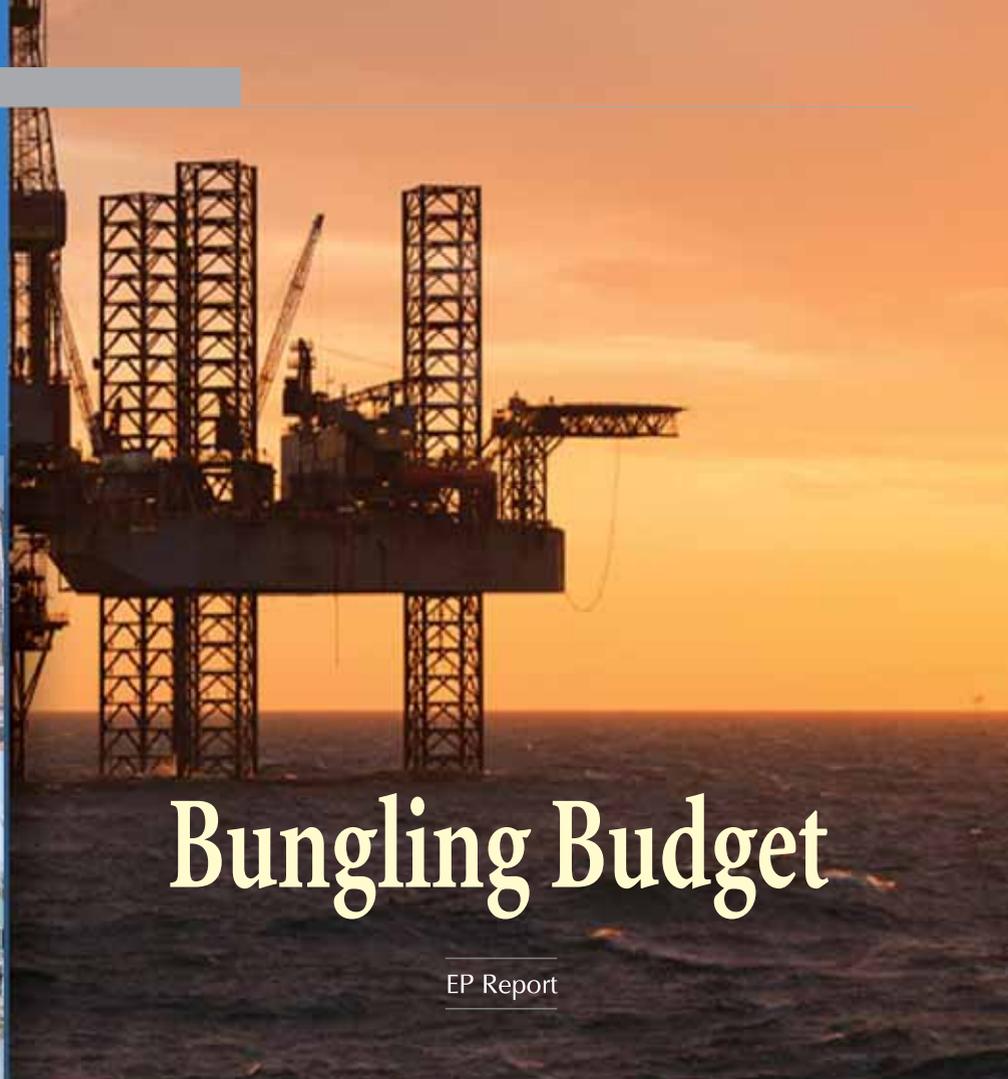
## Man, Son Electrocuted

A man and his son died after being electrocuted in

Rangpur's Pargachha upazila recently.

The deceased were identified as Azizar Rahman, 60, and his son Sujan Mia, 24.

Police said the duo came in contact with a live electric wire while they were setting up a bulb in the middle of their pond died on the spot.



# Bungling Budget

EP Report

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WÄRTSILÄ



Prime Minister Sheikh Hasina addresses a meeting of the National Parliament of Cabinet Minister on the occasion of the revised budget and specification bill for the fiscal year 2019-20 and 2020  
Photo: PID

Under the allocation for mega projects, Rooppur Nuclear Power Plant Project got Tk 15,691 crore and Matarbari Ultra Super Critical Coal-Fired Power Plant Project received Tk 3,670 crore.

Finance Minister AHM Mustafa Kamal proposed the allocation while placing the budget in parliament on June 11 in presence of Prime Minister Sheikh Hasina, cabinet members and some members of the parliament, with Speaker Dr Shirin Sharmin Chaudhury in the chair.

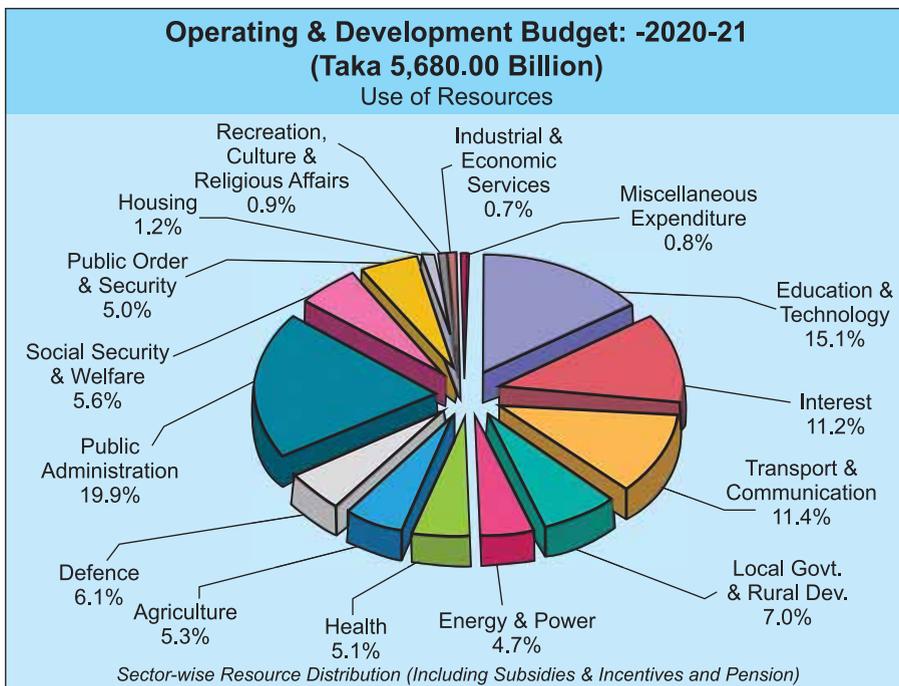
He gave a brief description of the present state of the country's power and energy sector and future plan for the sector. However, there was no change in the budgetary measure from the government's existing plans though suggested by the experts ahead of the budget announcement. The experts earlier suggested that the government should go slow with the development projects in the sector which were not already in the process of implementation. Instead, they recommended, the funds should be directed to sec-

tors those deserve emergency response due to the adverse impact of Covid-19 pandemic. They argued that the power projects now under plan should not necessarily be implemented at this moment when the demand for electricity is very minimum due to the pandemic. The demand for power was much lower than the country's generation capacity well before the spread of coronavirus across the country. The poor demand continues till now and unlikely to grow up to the present generation capacity anytime soon.

Much to the surprise of the experts, the finance minister spoke about all the projects in his budget speech. Currently,

he said, 48 power plants with a combined generation capacity of 16,875 megawatts are under construction, and the signing of agreements for construction of 12 power plants with a generation capacity of 2,785 megawatts are under process (LOA and NOA have been issued). Further, the tendering processes for 6 power plants with a generation capacity of 650 megawatts is underway. We have also taken up plans to construct 16 more power plants with a generation capacity of 19,100 megawatts in the near future.

The government, with its firm commitment to ensure uninterrupted and quality power supply in the Mujib Centenary, together with "Sheikh Hasina's commitment to extend electricity to all households", has been relentless in facilitating a co-ordinated development in power generation, transmission and distribution, said Mr. Kamal. As part of the Mega Plan to generate 60,000 megawatts by 2041, "we have already been able to enhance the electricity generation capacity to 24,000 megawatts





Finance Minister AFM Mostafa Kamal presents the budget for the fiscal year 2020-21 in the National Parliament in the presence of Prime Minister Sheikh Hasina  
Photo: PID

including captive and renewable energy, extend the electricity facility to 96 percent of our population, and raise the per capita electricity generation to 510 kilowatt-hours."

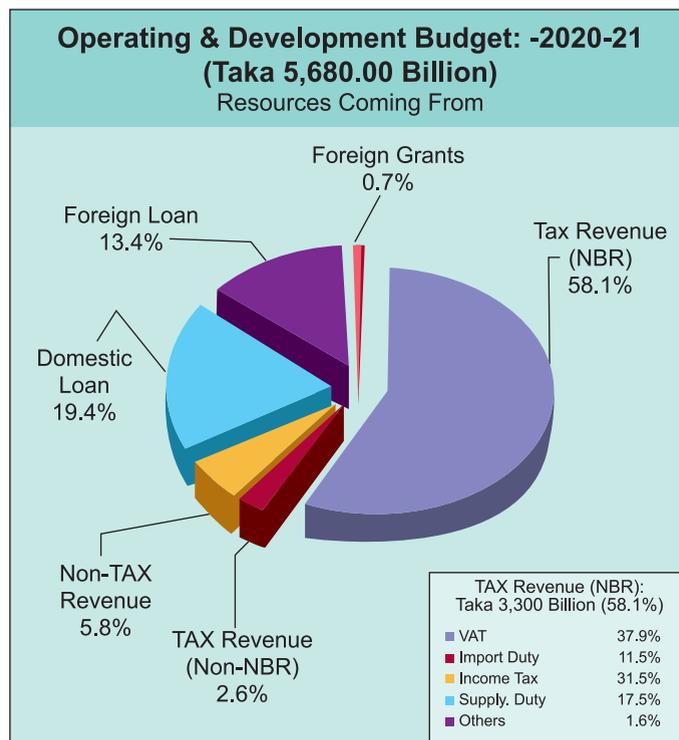
The generation capacity already in place is enough to meet the demand for the entire population of the country or to bring the population under full coverage. But the capacity could not be utilized to its fullest partly due to the weak transmission and distribution systems.

Before spreading of the virus in the country, the government had to pay capacity charges of around Tk 9,000 crore to the rental power plants that remained idle due to the low demand of electricity, according to a recent study by Ohio-based Institute for Energy Economics and Financial Analysis. The demand for power has fallen further following the out-

break, but the subsidy allocations for power and energy sectors – Tk 9,500 crore and Tk 9,000 crore respectively – remained unchanged in the proposed

budget.

"The government should prioritize on expenditure, cut subsidies, focus on transmission and distribution network, and provide some immediate benefit to the economy through a cut in the fuel prices," Zahid Hussain, former lead economist at the World Bank in Dhaka, told a media. It would help the government get rid of the capacity charges, what he sees no reason to continue as the country had an excess power generation in FY 2018-19 by using only 43 percent of its capacity. Another way to get rid of the rental power plants is not to renew the contracts that would be up for renewal in the upcoming fiscal year. "The government should explore ways to make savings from the subsidies without raising electricity prices.



Any power price increase would hurt everybody, from the middle class to businesses and industries to households."

Energy expert Professor M Tamim, Pro Vice-Chancellor of Brac University projected that the demand for electricity will not increase in the next two to three years due to job losses and the economic fallout of the pandemic. He suggested abandoning all new coal and LNG based-power projects in light of the coronavirus pandemic. In a post-budget reaction, he said the three ongoing coal power projects may continue and but stressed the need for giving a hard look at the power sector master plan once again. He said the government has accumulated a huge generation capacity, expecting that the electricity demand will increase massively due to industrialization and urbanization. But that did not happen. Based on this assumption, he said the authorities have developed a large capacity which remains idle.

"Even before the outbreak of the pandemic, we were seeing that electricity demand did not increase in a manner corresponding with our economic growth," Prof Tamim said, adding that the demand projection in the revised Power System Master Plan-2016 is highly ambitious. "The sector needs a short time projection and needs a review of the fuel mix policy." As part of it, he recommended abandoning the coal projects outside of the three ongoing ones. "The government should reduce the excess capacity because the cost of idle capacity is very high," he further said.

"No new investment will come when they [potential investors] see the country is already overburdened with capacity. So, in such a situation, all oil-based rental and quick rental plants need to be shut," he continued.

Having identified Payra, Maheshkhali and Matarbari as Power Hubs, the finance minister said, the government has been implementing a number of mega projects in the power sector. Implementation of the Rampal 1,320 megawatts Friendship Super Thermal Project, the Matarbari 1,200 megawatts Ultra Super Coal Project, and the Payra 1,320 megawatts Thermal Power Plant Project have been going on in full swing. Steps have been taken to construct coal-based power plants having 10,000 megawatts generation capacity in Maheshkhali in joint ventures. To tackle the scarcity of gas as a fuel for power, plans have been made to construct Liquefied Natural Gas (LNG)-based power plants. Construction of the 2,400

megawatts Nuclear Power Plant in Rooppur is progressing well.

Finance Minister AHM Mustafa Kamal, however, dropped a broader hint to curb further growth of expensive oil-fired power plants. He proposed to impose import duty on furnace oil to halt setting-up or extension of the oil-based plants. "I propose to withdraw the exemption benefit on the import of furnace oil to discourage the installation of furnace oil-based power plants," he said.

The government had encouraged setting up of furnace oil-based power plants to generate electricity quickly on an emergency basis after taking the responsibility of government in 2009, the minister said. In this regard, the import duty on furnace oil was waived in 2011 through a gazette notification to reduce the generation cost of electricity.

Alternative fuel has already been available, and power plants have been built based on such fuel to generate electricity at an affordable price, the finance minister said. "As a result, the country is now generating more electricity than is required," he added.

Bangladesh Independent Power Producer Association President Imran Karim said the electricity generation cost will be increased significantly due to the duty. It would also prompt the authorities to raise the tariff while affecting industrialization and pushing up inflation during the era of COVID-19, he told media after the budget proposal. He said the government move will also discourage the private sector investment.

Prof M Tamim, however, welcomed the government move for imposing duty on furnace oil import and said the government is taking right decision in the right time. "We are expecting a series of large coal-fired low cost power plants into generation....so there is no need to run oil-fired plants anymore." He suggested running low cost gas-fired plant and then coal-fired one. He said most of the oil-fired plants stand idle in the COVID-19 period. So, it's not necessary to run the plant or taking new oil-fired plants.

EP

## ENERGY & POWER

*18th year of publication*

The Energy & Power magazine is stepping into its 18th year of publication on June 16, 2020. Unlike previous years, its anniversary issue will be delayed this year and be published on September 16, 2020 instead of scheduled June 16th due to circumstances emerged out of the Covid-19 pandemic. We regret the inconvenience of our readers, patrons, valued writers, advertisers and well-wishers.

However, we would like to convey our heartfelt greetings to all our readers, patrons, advertisers and well-wishers marking the occasion of the anniversary.

– Editor





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# Natural Gas: Interim Fuel & Bangladesh Perspective

Saleque Sufi

The COVID-19 has already delivered knock out blows to the world economy. The grounding of most of the airlines, massive restrictions on all modes of transportation and shutting down industries have triggered the global oil market crash. The prices of oil-linked fuel have also plunged. The situation of oversupplied natural gas and LNG is not different. The policy-makers were considering reviewing the energy fuel mix in any case given the climate change for GHG and CO<sub>2</sub> emissions for using dirty fossil fuels mainly oil and coal. Now the COVID-19 has served one great lessons. Significant positive impact on environment is visible for reduced consumptions of fossil fuel. The air is cleaner to breath, water quality is much better than it used to be. The world must now review seriously about polluting fuel, coal, oil and move more expeditiously towards renewable energy and green energy. Given the present status of technology for solar, wind and other forms of green energy and presence of abundant coal and oil resources, it may still take a while to switchover. In the meantime, less polluting and environment benign natural gas (pipeline supply and LNG) is set to take over as preferred interim fuel along with hydropower and nuclear. This write up would attempt discussing the global and regional perspective of natural gas and Bangladesh

## Trend of Growth of Natural Gas Demand

According to International Energy Agency (IEA), natural gas consumption witnessed a growth by an estimated 4.6% in 2018 or by 170 billion cubic meters (bcm), the strongest since 2010. Natural gas demand started rebounding from the 2008 global financial cri-

sis. For the second consecutive year of strong growth (after a 3.7% gain in 2017) was three times the average growth of 1.5% over the past five years.

Two top economies – USA and China – together accounted for 70% of the growth as they strongly started replacing coal with gas. The switch from coal to gas was nearly about 40 bcm of the increase in gas, more than two fifth of the total extra demand. The United States was the single largest driver of the higher demand with a gain of 80 bcm, up to 10.5% from the previous year – its highest increase since the early 1960s. The higher consumption, the equivalent of the United Kingdom's annual consumption, absorbed the majority of the growth of domestic gas production, which reached the record high in 2018. Such historic demand growth was mainly driven by increased use in power generation and buildings. A colder winter and hotter summer than average were responsible for about half of the additional gas demand in both sectors. The ongoing switch from coal to gas in power generation also contributed strongly to the growth, adding 18 bcm to gas demand. The share of gas

in power generation hit an all-time record of 34%.

The gas demand in China increased by almost 42 bcm, the fastest growth since China introduced the 13th Five Year Plan (2018-2020) and its ambitious promotion of the use of natural gas more than previous years. Natural gas now accounts for 8% of the primary demand in China. This was the double its share at the start of the decade.

China became the highest importer of natural gas in 2018 ahead of Japan. It also became the second largest contributor in volume to the global demand growth after United States. This was the result from China's policy framework in favor of cleaner energies (known as the "Three Year Action Plan for Winning the Blue Sky war") and in particular restricting the use of coal in boilers for industrial and residential use. Across the sectors, the switch from coal to gas contributed 17 bcm to the demand growth. In Asia Pacific region, the natural gas demand was also grew at a considerable pace by rapid industrialisation and gas-based power generation in South Asia. The nuclear reactors shut down in South Korea also contributed to the growth.

In the Middle East and North Africa, the oil and gas producing countries, the trend of reducing use of oil for power generation and switching to natural gas using combined cycle power generation also played a great role in the demand growth. Egypt for example in 2018 inaugurated the world's largest combined cycle gas-fired power plant (14.4 GW). Iran, the regions largest natural gas consumer, started phasing out oil based power generation and replacing with gas.

After several years of decline, consumption rose in Russia for a third consecutive year. The increase in gas sales was driven mainly by power generation as the use of coal for power decreased slightly.

Europe experienced a decline in natural gas consumption in 2018 after two years of growth. This is partly due to the temperature

Top 10 Countries Having Higher Reserve & Bangladesh

Rank	Countries	Reserve Trillion Cubic Meter (IEA)
1st	Russia	47,805
2nd	Iran	33,721
4th	USA	15,484
5th	Saudi Arabia	9,206
6th	Turkmenistan	7,504
7th	UAE	6,091
8th	Venezuela	5,740
9th	Nigeria	5,475
10th	China	5,440
45th	Bangladesh	186

sensitivity of gas demand, with demand for space heating reduced by a mild fourth quarter (in spite of cold snaps over the first quarter).

Additionally, 2018 saw lower gas use for power generation, especially in some of the largest consumers such as Germany, Italy, Spain, Turkey and the United Kingdom. Despite lower demand, the combination of declining domestic production and urge to replenish storage after massive withdrawal over the first months contributed to a record of over 200 bcm of imports from Russia.

Bangladesh remained a mono fuel gas-based energy generation country till early 2000 when its burgeoning economic growth stressed its limited reserve of natural gas. For different reasons it could not exploit its own alternate fuel – coal. It planned to diversify fuel mix turning to liquid fuel for short term, imported coal and LNG for medium to long term. Several imported coal-based power plants it planned. But very soon it realised that shallow draft coastal area of Bangladesh creates huge challenges for coal transportation. Import of LNG is also equally challenging for the same reason. But FSRUs being a feasible option and small scale LNG, FLNG are other options – being realistic LNG appears to be the most feasible alternative. Moreover, Bangladesh has excellent possibility for discovering new gas resources in the mostly unexplored offshore areas in the Bay of Bengal.

### Gas Reserve, Production & Export

Gas resource endowment though now so diverse like coal, yet it is distributed almost evenly around different regions of the world. Natural gas has advantage over coal in that it can be transported through thousands of kilometres by high pressure gas pipelines. It can also be converted to Liquid Natural Gas (LNG) by compression and cooling.

It can be seen that Russia and Iran have much higher reserve than most of the countries. These countries have very hostile relations with USA-led western alliance. On the other hand, Qatar is now having not too good relation with other gulf and Arab countries. Hence, the world trade of gas in very much in-

### Ten Top Natural Gas Producing Countries

Countries	Production in MCM
USA	766,200
Russia	598,600
Iran	184,800
Qatar	180,000
Canada	149,900
China	138,900
EU	116,200
Norway	114,200
Saudi Arabia	102,300
Turkmenistan	83,700

fluenced by global and regional geopolitics. This graph also evidences that Bangladesh stands at 45th position. This is definitely not at all enough for meeting with huge growing demand for fuelling the impressive economic growth.

It can be seen that two super powers dominate gas production. Russia is exporting gas to Western Europe and China. USA converting gas to LNG is growing as major exporter of LNG. It also trades gas with Canada (export and import).

The table includes both five line supply and LNG. Russia dominates pipeline gas supply to Eastern and Western Europe and China, Qatar supplies mostly LNG, Norway supplies pipeline gas to Western Europe, Canada exports gas to USA and also imports from USA. Netherlands exports gas to Belgium, France and Germany. Turkmenistan exports gas to China and is waiting for TAPI pipeline for exporting to Afghanistan, Pakistan

### Top 10 Gas Exporters

Rank	Countries
1st	Russia
2nd	Qatar
3rd	Norway
4th	Canada
5th	Netherland
6th	USA
7th	Algeria
8th	Turkmenistan
9th	Malaysia
10th	Australia

and India. Malaysia exports to Singapore and LNG to regional countries. Australia exports LNG.

### Liquefied Natural Gas

Cryogenic fluid liquefied natural gas (LNG) is natural gas (predominantly methane, CH<sub>4</sub>, with some mixture of ethane, C<sub>2</sub>H<sub>6</sub>) that has been cooled down to liquid form for ease and safety of non-pressurized storage or transport. It takes up about 1/600th the volume of natural gas in the gaseous state (at standard conditions for temperature and pressure). It is odourless, colourless, non-toxic and non-corrosive. Hazards include flammability after vaporization into a gaseous state, freezing and asphyxia. The liquefaction process involves removal of certain components, such as dust, acid gases, helium, water, and heavy hydrocarbons, which could cause difficulty downstream. The natural gas is then condensed into a liquid at close to atmospheric pressure by cooling it to approximately -162°C (-260 °F); maximum transport pressure is set at around 25 kPa (4 psi).

Cross-border and even intercontinental pipelines are transporting gas from one region to the other. But LNG is now considered a popular mode of exporting natural gas for evacuating huge reserve of stranded natural gas in different countries and region.

### How COVID-19 Has Impacted Natural Gas and LNG Trading?

Not so spectacular fashion like oil, but at the same time natural gas trade has also fallen significantly for COVID-19 impact. The explanation goes far beyond low demand related to COVID-19 pandemic. It relies on a much larger and more complicated array of factors that include supply and demand and oil pricing. Disentangling those various considerations can be useful in assessing the future developments in natural gas trade.

Prices of natural gas have been extremely low for a while due to a trend of slowing global demand that was extraordinarily exacerbated by recent warm winter. The pandemic impacted further starting its avalanche with China and now moving through Europe and North America. Low

industrial activities have been major driver, while residential demand (much lower than industrial) can probably be sustained or even marginally increased wherever households are supplied with gas-based power generation and gas heating. The global gas market was experiencing over supply even well before the avalanche of COVID-19 pandemic with many new supply entering the market. These included US companies such as Chemiere, Freeport LNG and Dominion Energy. New pipeline routes have opened, including Power of Siberia from Russia to China, Nord Stream 1 from Russia to Germany. Russian LNG production is growing too as Novatek expands its Arctic operations. And Australia has been ramping up its LNG production with the recently commissioned floating LNG units (FLNG). Qatar—the world’s largest LNG producer—is not falling behind either as it plans to develop new supplies in its North Field and expand its production by 64 percent by 2027. In addition, new significant LNG projects are scheduled in Canada, Mozambique, or Nigeria, to name just a few.

Absent a reduction in supply (which could happen, see below on associated gas), lower global demand means lower prices in the competitive hub pricing and, as such, we see an immediate impact on spot prices. For example, future LNG prices as recorded in the Platts Japan-Korea Marker (JKM) are almost \$1/MMBtu lower for March 2024 than they were just a month ago.

That being said, if the COVID-19 economic slowdown edges off, we can envision demand recovering and even increasing—with the support of low prices. The latter would be related to a higher rate of coal to gas switching in power generation (including in China) and, as some argue, a more significant turn toward hydrogen generation where gas is used as feedstock.

**Oil Prices: Oil-Indexing**  
Where contract prices are indexed to

### Natural Gas Reserve of Bangladesh

Reserve Type	Trillion Cubic Feet	Trillion Cubic Meter (TCM)
Gas In Place (GIIP)	39.80	1.127
Proven+ Probable+ Possible 3P	30.82	0.873
Proven+ Probable 2P	27.81	0.788
Proven 1P	20.90	0.592
Used (Consumed Upto 30/06/2019)	15.90	0.470

crude (mostly in Asia and Europe) we also should see natural gas prices fall. However, the fall will experience a lag (per contract formula—up to 12 months). It will also be based on prices of crude oil and not on supply and demand conditions for natural gas. Given the precipitous fall in prices the world is experiencing today, there is a good chance that prices under oil-indexed contracts will be even lower than spot and hub-indexed prices. It makes one wonder whether buyers will try to go back to oil-indexed contracts, which would be opposite of the current trend toward market driven hub-based pricing.

#### Bangladesh Scenario of Natural Gas

Bangladesh remained predominantly own natural gas depended economy till it observed rapid decline of discovered natural gas from early 2000. Apart from finite discovered gas reserve, very limited exploration initiative and continuation of using gas in less utility sectors and inefficient use also contributed to the situation. The exploration and development of gas resources mostly concentrated in the onshore areas more specifically in the eastern and north eastern parts of Bangladesh. Vast offshore areas mainly deep water of the Bay of Bengal mostly remained unexplored. Many even think that there are possibilities of finding additional gas in

#### Top Eight LNG Exporting Countries

Rank	Countries	Export (MT)
1st	Qatar	77.20
2nd	Australia	44.30
3rd	Malaysia	25.00
4th	Nigeria	18.60
5th	Indonesia	16.60
6th	Algeria	11.50
7th	Russia	10.80
8th	Trinidad	10.60

the deeper horizon of some large under operation gas fields.

At the present rate of use, the left over 11.92 Tcf proven reserve may completely deplete by 2031. Bangladesh now can produce about 2,700 MMCFD from its own gas field. From

October 2018, it has started imported LNG from Qatar and using FSRU operated by foreign company started receiving RLNG. Another FSRU owned and operated by local company Summit Group is also delivering RLNG. It is possible to receive 1,000 MMCFD now produces. Bangladesh would require expanding capacity significantly as soon as possible through expediting own gas exploration and development and setting up land-based LNG terminal for importing LNG.

#### What Can Bangladesh Do?

Bangladesh has rightly decided to delay going for fresh round of PSC bidding sensing that bids now in all likelihood would fail to receive encouraging response from oil majors. Given the COVID-19 pandemic is over by June 2020, end of the year may be right time giving oil major enough time to reassess priorities. In the meantime, Petrobangla and EMRD must review LNG supply contracts with Qatar and Oman and FSRU operation contracts with two operators. The COVID-19 is definitely a Force Majeure situation. The gas demand is now all time low. There is no point accounting for minimum threshold payments. Side by side, Petrobangla can seriously consider constructing LNG storage facility for taking advantage of low price of LNG. The government may also consider future purchase provisions through amending the procurement law. Natural gas (pipeline gas and LNG) would remain preferred interim fuel during the transition from fossil fuels to renewable.



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**Saleque Sufi;**  
Contributing Editor, EP

## দেশের উন্নয়ন অগ্রযাত্রার গর্বিত অংশীদার-

নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড (এনডব্লিউপিজিসিএল)

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

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



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

### এক নজরে নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড

কোম্পানি গঠন : আগস্ট ২৮, ২০০৭

বিদ্যুৎ উৎপাদন শুরু : নভেম্বর ০৩, ২০১২

চলমান বিদ্যুৎ কেন্দ্র সমূহঃ

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

মোট বিদ্যুৎ উৎপাদন ক্ষমতাঃ ১৮১৩ মেঃওঃ

চলমান উন্নয়ন প্রকল্পসমূহঃ

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

চলমান উন্নয়ন প্রকল্পের মোট সক্ষমতাঃ ৭১৮৭.৬ মেঃওঃ

ভবিষ্যৎ প্রকল্পসমূহঃ

- সিরাজগঞ্জ ১০০ মেঃওঃ গ্রীড কানেক্টেড ফটোভোল্টায়িক সোলার বিদ্যুৎ কেন্দ্র প্রকল্প (যৌথ মালিকানা)
- পায়রা ৫০ মেঃওঃ বায়ু বিদ্যুৎ কেন্দ্র প্রকল্প (যৌথ মালিকানা)
- দীঘিপারা ১০০০ মেঃওঃ আল্ট্রা সুপার ক্রিটিক্যাল তাপ বিদ্যুৎকেন্দ্র প্রকল্প (যৌথ মালিকানা)

ভবিষ্যৎ প্রকল্পের মোট সক্ষমতাঃ ১১৫০ মেঃওঃ

এনডব্লিউপিজিসিএল-এর যৌথমালিকানাধীন কোম্পানিসমূহঃ

ক্র. নং	যৌথ মালিকানাধীন কোম্পানির নাম	অংশীদারী প্রতিষ্ঠান	এনডব্লিউপিজিসিএল-এর মালিকানা/শেয়ার
১.	বাংলাদেশ-চায়না পাওয়ার কোম্পানি লিঃ	চায়না ন্যাশনাল মেশিনারি ইমপোর্ট এন্ড এক্সপোর্ট কর্পোরেশন (সিএমসি), চায়না	৫০%
২.	সেফকর্প নর্থ-ওয়েস্ট পাওয়ার কোম্পানি লিঃ	সেফকর্প ইউটিলিটিজ (গ্রাঃ) লিঃ, সিসাপুর	২৯%

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



## নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিঃ

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

(বাংলাদেশ বিদ্যুৎ উন্নয়ন বোর্ডের একটি প্রতিষ্ঠান)

## Consumers May Face Difficulty in Paying Power Bills Without Fine

Consumers may face difficulty in paying their electricity bills for May without surcharge as the regulator is yet to issue any order to allow power consumers to collect their utility bills.

Bangladesh Energy Regulatory Commission (BERC) issued an order on March 24 to allow the residential consumers to pay their electricity bills in the month of February, March and April without any late payment surcharge amid the Covid-19 crisis.

Managing directors of several distribution companies informed that many consumers have paid their utilities bills through banking services in-

stead of mobile financial services (MFS).

"Despite some financial difficulties during the Covid-19 outbreak, the government move will help avoid further spread of the virus," said an official.

He said they are facing difficulties due to poor collection of bills as the regulator allowed late payment of bills during the Covid-19 crisis.

The ministry of power and energy has decided to extend the late payment surcharge facilities for another one month till May and allowed people to pay their bills without fine within June 30.

EP

## BPDB Seeks Tk 58b from Govt to Meet Expenses

The state-run Bangladesh Power Development Board (BPDB) has sought Tk 58 billion from the government to manage regular expenses, as a huge amount of its electricity bills remains due.

"We sought the fiscal support from the government, and will pay the fund back once the due electricity bills are collected," said an official at the BPDB.

The BPDB is the lone buyer of electricity from the country's all power plants, including oil-fired, gas-fired, hydro and coal-fired ones, and the entity has to pay the plant owners according to respec-

tive power purchase agreements (PPAs), he said.

The state-run power distribution companies, including the BPDB, did not impose any surcharge on electricity bill payment of household

consumers for the months of February, March and April due to the ongoing coronavirus pandemic.

The household consumers have been

asked to pay electricity bills for all these months along with that of May by June 30, according to a decision of the Power Division under the Ministry of Power, Energy and Mineral Resources.

EP



## Russian Firm to Install Security System for RNPP

Russian nuclear security company Eleron will develop physical security system of Rooppur nuclear power plant at a cost of Tk 24 billion, or US\$282 million.

Eleron inked an agreement recently with the Bangladesh Army and the Nuclear Security and Physical Protection Cell, or NSPPC, to develop the security system.

The deal was signed through video conferencing to avoid gathering amid the coronavirus pandemic.

The Russian firm will provide technical and technological support, including necessary documentation to the Army in accordance with interna-

tional standards.

Land acquisition, development of land, the procurement of technical equipment, and construction for the physical protection system will also include in the physical security system.

The security system will have to be verified by the International Atomic Energy Agency, or IAEA, before the arrival of nuclear fuel from Russia and one year ahead of the commissioning of 1200-MW Rooppur-1 scheduled now for 2023.

The system will have to be built in such a way that it can ensure security system of the plant at Ishwardi in northern

Bangladesh for at least a century.

It must have to be well in place until the decommissioning of the nuclear power plant projection, he said.

EP



## Govt Takes Tk 113b from State-Run Power, Gas Entities

The government has taken around Tk 113 billion (11,300 crore) from different state-run power and gas entities over the past several months during the coronavirus pandemic.

The Ministry of Finance (MoF) has taken the money in several installments since March, when Covid-19 outbreak started spreading across the country.

Of the total amount, paid by the state-run entities to the

public exchequer, the Bangladesh Petroleum Corporation (BPC) paid around Tk 50 billion, Petrobangla around Tk 48 billion, and Bangladesh Power Development Board (BPDB) around Tk 15 billion.

"We took the money in line with a new regulation to utilize surplus money of the state entities for bankrolling the current ongoing development programs," a senior official of the MoF said.

EP

## Govt Plans to Import 1.2m Fuel at Low Cost

lowing the instruction of

Bangladesh is likely to get a 20-year lower ever international petroleum fuel product benefit as it allows two fuel suppliers — Unipac Singapore and Indian Oil Company Ltd (IOCL) — to import 1.20 million tonnes of diesel, jet fuel and octane immediately under a competitive bidding.

The government is also expected to get a 50-percent lower price of procuring these petroleum products compared to last year despite the freight fare being so high.

“We have already selected a Singaporean firm and an Indian firm to purchase the products once the ministry approves,” a top official said.

The Bangladesh Petroleum Corporation (BPC) has moved to import the fuel fol-

the Ministry of Energy.

State minister for Power and Energy Nasrul Hamid said the ministry has instructed the concerned authorities to import the fuel.

The Unipac Singapore and Indian Oil Company Ltd (IOCL) have offered best proposals to supply 1.20 million tonnes of refined fuel oil products to Bangladesh Petroleum Corporation (BPC) during July-December period 2020.

Despite the companies' offer of comparatively higher premium rates, the government is expected to get a 40 to 50-percent lower tariff of petroleum fuel in fiscal year 2020 in comparison with that in the previous year, a top official said.

EP

## Morgan Stanley Flags Risk Oil Price Rally Will Lead to a Fall

Oil prices have quickly climbed to levels that raise the risk of price falls as demand is fragile, Morgan Stanley said recently, as benchmark crude hit its highest in three months.

Oil climbed recently after major producers agreed to extend a deal on record output cuts to the end of July and as China's crude imports hit an all-time high in May.

The bank said its base case

expectation remained that oil markets will be progressively under-supplied in the second half of this year and inventories will shrink in the fourth quarter and first quarter next year.

But it said in a note the rally "appears mostly supply-rather than demand-driven, and it is questionable how strong refinery runs can increase against this backdrop".

Refining margins are historically low and inventories of oil products remain elevated relative to crude oil inventories, suggesting the demand recovery is relatively fragile.

EP

## COVID-19 Fallout: Power Transmission Projects Work to be Delayed

Uncertainty looms large over resuming the field level works in the power transmission projects across the country due to upcoming monsoon.

“Now most of the ongoing projects will be delayed by at least a year as monsoon will start from July and field level works are not possible before the next winter,” said a top official of the Power Grid Company of Bangladesh (PGCB).

Field-level work on 25 ongoing power transmission projects remained suspended since the coronavirus outbreak in China in December last year, hitting hard the power sector development.

According to official sources, most of these projects were either awarded to Chinese contractors or their equipment were supposed to come largely from China.

“Neither the Chinese workers, nor the equipment are coming from China since the pandemic started in Wuhan,” said an official.

He said many Chinese companies are working as subcontractors as well in Bangladesh's power transmission sector.

The top PGCB official said although coronavirus situation in China has improved, Chinese officials and workers, especially the technicians, are

not coming back as the virus situation in Bangladesh is worsening.

EP



## Massive Thermal Plant Fuel Leak Pollutes Siberian River

Russian authorities have declared a state of emergency after more than 20,000 tonnes of diesel fuel seeped into a Siberian river sparking concerns from environmentalists.

The World Wildlife Fund environmental group recently praised local efforts to contain the spill with a floating dam, blocking dangerous pollutants from flowing into a lake near the Arctic city of Norilsk. Satellite images published by the WWF showed large red spillages in the Am-

barnaya river and local residents posted videos on social media showing polluted water.

The spill was caused last week by a leaking diesel fuel tank at a thermal power plant several kilometers west of Norilsk.

Russian mining conglomerate Norilsk Nickel, which owns the facility, said the tank was damaged when supporting pillars that had “held it in place for 30 years without difficulty” began to sink.

EP



## Petronas Appoints New CEO



Tengku Muhammad Taufik

**P**etronas has revealed that it has appointed Tengku Muhammad Taufik Tengku Aziz as its new president and group chief executive officer (CEO) following the retirement of Tan Sri Wan Zulkiflee Wan Ariffin from the company.

Aziz, who is currently the ex-

ecutive vice president and group chief financial officer of Petronas, will take up the position on July 1. Ariffin, who will become chairman of Malaysia Airlines Berhad, is due to retire from Petronas on June 30 after working for the company for 37 years.

Aziz has 20 years of experience in financial reporting, feasibility reviews, project analysis, capital projects restructuring and risk management with a primary focus on the oil and gas industry, according to Petronas. Ariffin was appointed as the president and group CEO of Petronas on April 1, 2015. He first started his career at the company in 1983.

EP

## Santos, ConocoPhillips Complete Northern Australia Transaction

**S**antos has completed the acquisition of ConocoPhillips' northern Australia and Timor-Leste assets for a reduced purchase price and an increased contingent payment subject to a final investment decision (FID) on Barossa.

Due to recent market volatility and the deferral of Barossa FID, Santos and ConocoPhillips agreed to decrease the \$1.39 billion upfront payment at completion to \$1.265 billion and increase the contingent payment on Barossa FID from \$75 million to \$200 million.

At completion, the net settlement amount was \$655 million, lower than the previously forecast amount of

\$800 million, comprising the revised firm purchase price of \$1.265 billion less cash in the acquired business from the effective date of Jan. 1, 2019 to completion with customary adjustments.

The net settlement amount is before any sell-downs of interests owned by Santos in the acquired assets.

The acquisition delivers operatorship and control of a portfolio of low-cost, long-life natural gas assets and strategic LNG infrastructure. Santos' interest in Bayu-Undan and Darwin LNG increases to 68.4% at completion and will provide a boost to 2020 production and cash flows.

EP

## Add Power Capacity is 'Reserve Margin'

**P**ower division under power, energy and mineral resources ministry said recently the country's additional electricity generation capacity is 'reserve margin,' necessary to meet unwanted needs.

This extra capacity is required, like any other countries in the world, as power plants have to go for regular overhauling and maintenance, and sometimes plants can be shut accidentally.

Besides, power plants are sub-

jected to run considering fuel issues and decline in electricity generation capacity of old power plants, it said in a statement.

With this end in view, countries like Germany have more than 100-per cent reserve margin and the neighboring India has more than 70 per cent, it maintained.

Power division made the clarification protesting a statement of Transparency International Bangladesh (TIB) issued on May 20.

The TIB criticized continuous addition of new power-generation outpacing demand, citing it a burden on consumers and pressure on government subsidy.



EP

## India's Petrol, Diesel Sales Improve in May

**I**ndia's gasoline and gasoil sales jumped sharply in May compared with April, in a recovery from historic lows after a partial easing of the lockdown imposed to curb the coronavirus pandemic, provisional sales data showed recently.

But industry analysts expect a full-scale recovery to pre-COVID-19 consumption levels in India to be months away as the monsoon season ap-

proaches while manufacturing activities remain low and trans-

portation demand takes a hit in some parts of the country.

State-retailers' gasoline sales in May rose by about 83% from April to about 1.6 million tonnes. Sales of gasoil, which accounts for about two-fifths of the country's overall fuel sales, rose by about 69% in May compared with April to 4.8 million tonnes, provisional sales data from state fuel retailers showed.

However, gasoline and gasoil sales in May are still down by about 36% and 31% respectively from a year earlier, after contracting more than 50% in April year on year.



EP

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## Qatar Petroleum Signs Landmark LNG Deals

Qatar Petroleum (QP) reported recently that it has signed a trio of liquefied natural gas (LNG) shipbuilding agreements whose scale is unprecedented.

The deals with Daewoo Shipbuilding and Marine Engineering (DSME), Hyundai Heavy Industries (HHI) and Samsung Heavy Industries (SHI) will reserve a major portion of the “Big Three” South Korean shipyards’ LNG ship construction capacity for QP through 2027, QP noted in a written statement.

QP added the agreements will secure more than 100 ships with a value exceeding

70 billion Qatari riyals (approximately USD 19.2 bil-

lion).

The state-owned firm pointed out the new LNG carriers will help it to satisfy fleet requirements for ongoing expansion projects in Qatar’s North Field and in the United States.

“The signing of today’s agreements with the three esteemed Korean companies reflects our commitment to the North Field expansion projects, even during these extraordinary times,” remarked Saad Sherida Al-Kaabi, Qatar’s minister of state for energy affairs and QP’s president and CEO.

EP



Saad Sherida Al-Kaabi, Qatar’s minister of state for energy affairs and QP’s president and CEO, has signed three LNG ship construction agreements.

## Global Energy Investment to Drop by \$400b: IEA

The COVID-19 pandemic has set in motion the largest drop in global energy investment in history, with spending expected to plunge in every major sector this year, the International Energy Agency (IEA) said in a report.

According to World Energy Investment 2020, at the start of 2020, global energy investment was on track for growth of around 2%, which would

have been the largest annual rise in spending in six years. But after the COVID-19 crisis brought large swathes of the world economy to a standstill in a matter of months, global investment is now expected to plummet by 20%, or almost \$400 billion, compared with last year.

“The historic plunge in global energy investment is deeply troubling for many reasons,”

## COVID-19 Hurts Solar Projects’ Development in Japan: GlobalData



In the wake of the COVID-19, electricity demand in Japan has dropped and the power prices have declined.

The drop in demand and the increase in solar power generation are eventually driving down the wholesale electricity prices.

The ongoing economic contraction, delays in the shipment of photovoltaic (PV) modules from China, and low nuclear availability are likely to facilitate the use of coal and gas to support the base-load power requirement in the country, says GlobalData, a leading data and analytics company.

Solar is the major driving force for renewable deployment in the country. Before the COVID-19 outbreak, revisions in the tariff structure and grid interconnection issues

were likely to slow down deployment.

Amid these times, the country witnessed a halt in construction activity, which is expected to further delay the installation of fresh capacities.

With hiccups in the solar front, coal is expected to continue to play an integral role in the country’s power sector. Despite the low power demand, the abnormal weather conditions and low availability of nuclear facilities are expected to support the high consumption of coal for electricity generation.

In the first three months of 2020, Japan imported 44.8 million tons of coal, which increased by 3.4% in comparison to 43.3 million tons imported in the first quarter of 2019.

EP

said Dr Fatih Birol, IEA’s executive director. “It means lost jobs and economic opportunities today, as well as lost energy supply that we might well need tomorrow once the economy recovers. The slow-down in spending on key clean energy technologies also risks undermining the much-needed transition to more resilient and sustainable energy systems.”

The World Energy Investment 2020 report’s assessment of trends so far this year is based on the latest available investment data and announcements by governments and companies as of mid-May, tracking of progress on individual projects, interviews with leading industry figures and investors, and the most recent analysis from across IEA.

EP

## Gazprom to Restart 2021 Gas Price Talks with Minsk

Russia's gas monopolist Gazprom will be ready to negotiate gas supplies to Belarus after 2021 as soon as Minsk has settled a \$165.6 million debt, CEO Alexei Miller told reporters recently.

"The total amount of Belarus' debt for supplies of Russian gas stands at \$165.570 million. As soon as the debt is fully settled, the Russian side will be ready to schedule negotiations on conditions of

gas supplies from January 1, 2021," Miller said.

The official said that Gazprom had sent a letter to the energy minister of Belarus, stating this position.

A similar situation already happened in 2017, when in April, Gazprom and the Belarusian government signed a protocol on the formation of gas prices for Belarus in 2018-2019 only after the Belarusian authorities had paid the debt of \$726.2 million for gas supplied in 2016-2017.

EP



## Modi Calls for a Rooftop-Solar Powered City in Every State

Renewable power is increasingly cheaper than any new electricity capacity based on fossil fuels, a new report by the International Renewable Energy Agency (IRENA) published recently finds.

Renewable Power Generation Costs in 2019 shows that more than half of the renewable capacity added in 2019 achieved lower power costs than the cheapest new coal plants.

The report highlights that new

renewable power generation projects now increasingly undercut existing coal-fired plants. On average, new solar photovoltaic (PV) and onshore wind power cost less than keeping many existing coal plants in operation, and auction results show this trend accelerating – reinforcing the case to phase-out coal entirely.

Next year, up to 1 200 gigawatts (GW) of existing coal capacity could cost more to operate than the cost of new utility-scale solar PV, the report shows.

Replacing the costli-

## Utilities Maintain Liquidity to Deal With Uncertain Market



To cater to reduced demand and uncertain market conditions caused by COVID-19, utilities need to ensure that they have enough liquidity to safeguard their performance and smooth operations, says GlobalData, a leading data and analytics company.

Utilities face liquidity issues as their receivables are delayed or deferred and revenues have declined due to reduced demand.

Many utilities in these difficult times are lending a helping hand to customers by providing electricity to even those who are failing to pay their electricity bills.

In order to maintain cash-flows, tackle supply chain disruptions, handle repairs and replacement of components, utilities should ensure they have proper liquidity.

Many utilities are opting for

bonds as they are safer instruments as they offer less volatility compared to stocks and at times offer higher interest payments compared to dividends.

Somik Das, Power Analyst at GlobalData, comments: "Long and medium-term bonds might just be the best option for struggling utilities, as it will allow them to maintain liquidity in the current volatile environment."

"If the virus outbreak persists and government-mandated restrictions are extended, then utilities can pursue other measures to protect their liquidity. Utilities might first delay certain investments keeping capital expenditures plans at the same levels and later on reduce operational and maintenance costs. If the economy deteriorates further, then utilities might consider cutting down the capital expenditure budgets." EP

est 500 GW of coal with solar PV and onshore wind next year would cut power system costs by up to USD 23 billion every year and reduce annual emissions by around 1.8 gigatons (Gt) of carbon dioxide (CO<sub>2</sub>), equivalent to 5% of total global CO<sub>2</sub> emissions in 2019.

It would also yield an investment stimulus of USD 940 bil-

lion, which is equal to around 1% of global GDP.

"We have reached an important turning point in the energy transition. The case for new and much of the existing coal power generation, is both environmentally and economically unjustifiable," said Francesco La Camera, Director-General of IRENA.

EP

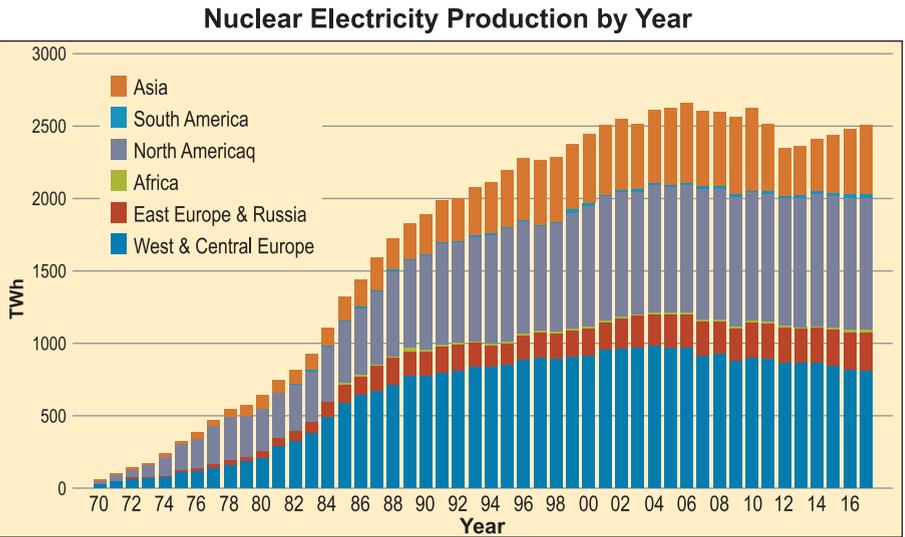


# The First Nuclear Power Plant of the World

Dr. M A Rashid Sarker & Sheikh Ahmad Sakib

**N**uclear technology uses the energy released by splitting the atoms of certain elements. During the 1940s the concept was introduced and focused on building bombs as it was the time of the Second World War. In the 1950s, attention turned to the peaceful use of nuclear fission, controlling it for power generation. According to the “World Nuclear Association”, nuclear energy now provides about 11% of the world’s electricity from about 450 power reactors [1].

There are many other applications of this technology. For example, nuclear medicine uses radiation to provide diagnostic information about the functioning of a person’s specific organs, or to treat them. Diagnostic procedures using radioisotopes are now routine. Sterilization of medical equipment is also an important use of radioisotopes. Nuclear technology is showing its magic in agriculture too. Some of the most innovative ways being used to improve agricultural practices involve nuclear technology. Nuclear applications in agriculture rely on the use of isotopes and radiation techniques to combat pests and diseases, increase crop production, protect land and water re-



Source: IAEA PRIS

sources, ensure food safety and authenticity, and increase livestock production [2].

### Background of Obninsk

After the disaster of World War 2, the world was looking for a new sustainable source of energy. And also people needed to believe that nuclear energy can bring something good towards humanity, the USSR government decided to build a nuclear power plant with a soul purpose of serving as a provider of

electricity and creating research facilities. That is how the first nuclear power plant in the world started its journey in Obninsk. It was located at a little more than 100 miles northwest of Moscow it was very convenient for research and experimental works because the Institute of Physics and Power Engineering was located nearby. It was commissioned on June 27, 1954. It went on and operated for almost five decades without any significant mishaps.



Obninsk Nuclear Power Plant



Source: Essence of time Europe, www.bashny.net

In the Soviet Union's time, nuclear energy was something more than just a source of energy; it was a sign of the Soviet Union's success.[3] Utilization of nuclear fuels for energy production started to burgeon in early 1954 when Russia was a part of the Soviet Union. Since then, the interest in nuclear energy continued to rise and the share of nuclear energy to the total energy production continued to grow accordingly. In post-revolution (1917-1922) and Stalin's periods (1922-1953), the fundamental base of Russia's industrial sector was created, while in the so called Khrushchev era (1953-1964), successes in nuclear power and space technologies were achieved [4].

With the birth of Obninsk Nuclear Power Plant, the United Soviet Socialis-



The control room of the Obninsk power plant

Source: [www.energybangla.com](http://www.energybangla.com)

tic Republic (USSR) became the first country in the world to adapt the energy of atom to produce electricity for civil use [5].

It was closed on April 29, 2002. An incredible fact about the Obninsk power plant is it was the world's very first nuclear power plant feed into an existing commercial grid [6]. It was very astonishing how they planned this power

plant without considering military purposes even being in the heat of the cold war. This small nuclear plant has become a symbol of the peaceful and effective use of atomic energy, and the date of its start-up has been marked as the birth of nuclear power.

### Commercial Emphasis

The plant had a reactor capacity of 5 mWt only. This was not able to solve soviet power crisis, not that it was meant to. And it was certainly not meant to give the Soviet Union a leg up in the cold war [7]. The authority rather had intentions to build the plant as an experiment for commercial electricity. The big question was "could a reactor be used to supply the commercial grid with energy?" Obninsk proved that it could, and did so successfully. I V Kurchatov, a soviet



Igor Kurchatov, the man who led the "Peaceful Atom or Atom Myrnyi project"

Source: [www.russkiymir.ru](http://www.russkiymir.ru)

nuclear physicist who was widely known as the director of the soviet atomic bomb project, guided the development of the design proposal. It was planned to construct a 'trinity' – a nuclear power plant with three reactors producing steam for one turbine, at V Laboratory. It was proposed first to construct the AM reactor (Atom Mirny – peaceful atom). The primary task was to choose the general



65 years anniversary celebration ceremony of world's first nuclear power plant

Source: [www.rosatom.ru](http://www.rosatom.ru)

concept and the main characteristics of the plant, which took six months of intensive work. The concept of a channel-type reactor with a graphite moderator and reflector was chosen. The reactor's thermal power was 30MWt and the electric power of the turbine generator equal to 5MWe. [8]

One of many achievements of this design was to give birth to the modern powerful RBMK reactors.[9] The success of Obninsk encouraged further building of many other commercial plants all over the world.

### Progress

48 years went away, yet the power plant showed no damages or had any accidents and performed so smoothly. It is an astonishing accomplishment especially if we consider the number of such incidents in the modern day power plants all over the world. It is quite clear that the relative small stature of the reactor made it safer than the other ones. Also it should be kept in mind what purpose this reactor was built to serve. It was referred to as the "Atom Mirnyi" which means "peaceful atom" in Russian. Since the beginning of 1957, AM reactor operation was devoted to fulfilling research programs on justification of the future nuclear power plant designs.

Although utilization of generated heat was going on, and production of isotopes was even enhanced, the main task was to carry out experimental studies on the test loops installed in the reactor.

To conduct scientific and engineering research in the reactor of the first NPP, all in all, 17 loops were built for various purposes.[6] In particular, they were the following: A two-circuit steam superheater loop, with nine evaporation and three superheating channels; high-pressure water loop to study fuel elements of water-cooled reactors, with two channels: Two loops of natural circulation with boiling and without boiling of water coolant; Two loops for testing thermionic elements of direct conversion of thermal energy released during nuclear fission into the electrical one; A loop for water and chemical studies with two circuits of stainless and carbon steel; A loop for testing structural materials in various gas environments and vacuum. The first experimental event consisted in installation of a test fuel assembly into the AM reactor in September 0956 to study boiling processes occurring directly in the reactor. It was caused by the fact that in 0955, at the suggestion of the State Committee on the Use of Atomic Energy in the USSR, the development of a new reactor for

the first unit of the Beloyarsk Nuclear Power Plant (BNPP) with nuclear superheating of high-pressure steam began. At that time, neither the USSR nor other countries had any experience in development of a reactor of this type. Creation of such an installation required the solution of a whole complex of scientific and technical problems: physics, thermal physics, materials science, chemistry, and many others related to boiling and superheating of water coolant in the fuel channels of the reactor. Thus, they came over the idea of direct generation and superheating of steam in a nuclear reactor, the idea of creating a nuclear power plant with high efficiency (up to 38%).

The very fact of launching the first nuclear power plant was of great strategic importance even though the power generation might not be that significant. For decades, Obninsk NPP has played the role of a unique experimental platform for the latest developments.

### Present Condition

The power plant has stopped its power generation in 2004 and it has been turned into a museum. People can visit and learn about this magnificent piece of ultimate engineering brilliance which led to formation of a great nuclear industry throughout Russia.

The anniversary of the launch of the first nuclear power plant in the world is celebrated in Russia on June 26, 2019. It has been 65 years since the beginning of work of the power plant.

ROSATOM's CEO Alexey Likhachev said: "Looking back on the last 65 years, the evolution of nuclear technology has made it safer, more reliable and more efficient than ever. Since 1954, our whole industry has learnt many lessons and has implemented so many safeguards, best practices and has adopted such high standards, that a world without nuclear power is now unthinkable. Now, in the year 2019, we are proud to be able to offer our state of the art generation 3+ VVER-1200 nuclear reactor where power output is bigger than ever and safety has been further enhanced." [10]

### Conclusion

Obninsk nuclear power plant was a great step forward in the world of nuclear energy at that time. It showed the world that nuclear energy can be used for the greater good of humanity. From the very start of its construction process, Obninsk focused on changing the previous conception of nuclear energy.

The capacity of the world's first nuclear power plant is rather low, but the experience gained in its design, construction and operation, as well as results of studies cannot be overestimated. It should be emphasized that during 50 years of its operation there has not been any nuclear incident hazardous for personnel and inhabitants.

Many years will pass yet the guiding light of the small reactor in Obninsk will shine brighter for the people as a symbol of our achievements and a triumph of our principles of humanism, welfare and justice.

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## Report

# Govt Okays New Renewable Energy Project Plan



Government has approved a Power Division plan to form a new company to generate mega Renewable Energy/Power Projects in the country.

As per plan, a new company titled "Bangladesh- China Power Company (BCPCL)" would be formed under the supervision of state owned North West Power Generation Company (NWPGC) to implement mega- power projects from solar and wind energy.

"We got the Cabinet Division's nod in this regard; however, we have already started paper work in this regard," State Minister for Power, Energy and Mineral Resources Nasrul Hamid told media.

Earlier, government formed Sustainable

and Renewable Energy Development Authority (SREDA) in 2012, which is now working under Power Division but failed to increase satisfactory amount of energy from there.

"A novel agency was formed to promote, facilitate and disseminate sustainable energy (SE), covering both the areas of Renewable Energy (RE) and Energy Efficiency (EE) to ensure the energy security of the country. Our aim was to stop carbon emission and reduce long-term cost of energy generation. We plan to take some mega projects and for that the new initiative was taken up," a senior official said.





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## মানসম্পন্ন বিদ্যুৎ নিরবচ্ছিন্নভাবে দেশের সকল মানুষের নিকট পৌঁছে দেয়াই আমাদের অঙ্গীকার

- \* গ্রীড উপকেন্দ্র, গ্রীড লাইন ও টাওয়ার জাতীয় সম্পদ, তা রক্ষা করা সকলের দায়িত্ব।
- \* গ্রীড 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 গ্রীড লাইন ও টাওয়ার হতে নিরাপদ দূরত্বে স্থাপনা নির্মাণ করুন।
- \* বৃক্ষ রোপনে গ্রীড 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।



# Architecture After The Covid-19 Pandemic: Re-Imagining Our World

Zebun Nasreen Ahmed



Since the early months of 2020 we the inhabitants of Planet Earth are experiencing conditions hitherto unprecedented. Fear, isolation, total lack of control are mere ingredients of this – a position humans so proud of their advancement in technology and control of situations, had never conceived possible. No sci-fi novel prepared us for the complete breakdown of all our systems. But much has been published about the event – both those leading up to it and its after-effects – and therefore I will not repeat them. This paper merely looks at one aspect of the World of Tomorrow – architecture. And the relevance of architecture to the energy sector cannot be underestimated – for whatever is put into practice in the building sector is bound to affect energy consumption, as buildings and the construction industry are one of the major consumers of electricity. So changes likely to occur in the building design and construction sector will reflect on considerations and budgeting of energy.

Is there anything that Architects can do under these extreme conditions? How does the profession respond? Are there things we can do to affect the actual control of pandemics? How do architects contribute? These are questions we are asking ourselves time and time again. This piece reflects on such issues on a conceptual level. Much research will be needed in the coming days and

months, to arrive at numbers and hard facts about the issues discussed – but it is important at the outset to clear our thoughts and embrace this new scenario.

Realisations: Imagining the New World May be one of the important realisations of this whole nightmare is that we as humans have gone wrong somewhere. We have been too complacent about what we are doing. The inherent interconnectedness of things is clearly asserting itself by showing us that the way we have neglected human impact on the environment can have vastly significant after effects and situations can easily go beyond our control. We humans are not the only species on earth – and we certainly cannot control nature or its forces – we must learn to interpret the signs of our intercessions and to curtail negative impacts as soon as they appear. We must be the ones to modify our actions whenever we sense this, rather than waiting for the environment to deteriorate beyond recall.

From the crisis itself, living through the days of isolation and lockdown, we have each of us individually come to various realisations, many of them positive. And when I make these observations, I realise that I am commenting from the perspective of a professional/academician, an architect assured of a steady income, living in a modest apartment in Dhaka, and not

subject to the difficulties faced by day wagers and people who live in constrained circumstances, within crowded squatters' settlements/slums.

- Life need not be as busy and it is possible to slow down
- Working from home is very possible in this age of wifi connectivity
- When traffic is minimized, nature gets a chance to enter
- Families can be a big source of happiness and support
- Air quality and environmental conditions are strongly linked to our life-styles
- There is the need for values to change to improve the environment

At the same time, some of the shortcomings in our approach to the built environment, and the process of design are also emerging.

- We have been too focused on serving an affluent group, while the deprived majority remains largely neglected
- In nature, there is no separation between the affected and safe – so solutions must be inclusive

Architecture as a profession is based on solving problems, and this pandemic is an absolutely new problem. While architects cannot control of the disease itself, the profession has a lot to contribute towards alleviating the human condition under the new

restrictions that may be necessary in the post-pandemic world. The built environment has always had a significant impact on the comfort, well-being and productivity of its inhabitants – while building professionals have always maintained this connection, its reality has never been so prominently evident to laymen, as now, when through prolonged confinement, the quality of the spaces inhabited may lead to the realisation of very significant defects in interiors. If social distancing has the chance of becoming the ‘new-normal’ in fear of pandemics becoming a recurring phenomenon, it is imperative to focus on how to create good clean liveable architecture, and how to thus improve the quality of living.

### Way Forward?

In the last two or three months the whole world realizes that things need to change at a very basic level. The numbers of death irrespective of geography has brought the realization that no one is privileged and we need a sea change in our future and in the way we conceive of things.

Undoubtedly, under the situation we have all been much more home-bound than we have ever been. So indoor spaces are having to serve us almost round the clock. There is definitely much to do from the architectural point of view to make the setting more comfortable and inhabitable. We have to find spaces within the homes where occupancy is 24 hours, to be able to have private places to do office work, have online consultations and meetings. And in the case of sickness, these homes have now to be equipped to be able to accommodate and handle highly infectious patients, while attempting to keep the rest of the household safe from contamination. A very high ask!

But the home is a place of isolation. How about spaces that serve groups or even crowds of people? Supermarkets and transport hubs continue to serve crowds even given the pandemic, and proximity is the measure of safety under the new world order – are these spaces suited to such restrictions? Soon offices will start to reopen – can they function

as they normally used to, or are we to look for a new normal? All these public buildings will require that while allowing access, much of the spaces can easily be modified to allow compartmentalization, to restrict the dangers of cross contamination whenever the need arises. There will be much more monitoring and virtual touch-free technology used in the building systems – checking the health of the occupants and also ensuring that infections are not spread through surfaces of these buildings, like lift buttons, door handles, light and other switches and so on. Similarly, choice of materials for all internal surfaces and many external ones will also directly depend on their wash-ability and on their ability to remain free from collecting and propagating germs/infections – thus even bringing the need to use nanotechnology as a weapon to fight disease into the realm of architecture.

Industries have always been the power houses of the economy of a nation. In many of the countries these have continued to run, despite the dangers inherent in their continued operation to the spread of the virus. The need driving these people to continue their wages compels them to work, even at the threat of infections. These spaces need to be re-imaged in the light of this pandemic. How to ensure safety in confined spaces with large numbers of workers. What are the spatial needs for safe working distances, and are our machines conducive to allowing such distancing, or will their design too be under scrutiny?

Hospitals are the new frontiers – the battle stations, where design needs to focus in order to arrive at the most efficient and safe combination in order to save lives. Isolation metrics and needs will guide their layout. Clinics where the number of infected will definitely be much larger than in other building types will require to be handled with care to prevent these becoming hothouses for the spread of infections.

Another need that is emerging focuses on the production of temporary make-shift architecture. We need to be able to

use the large open plan spaces of our cities, which are likely to remain unutilised during times of lockdown and social distancing, like stadiums, multi-purpose/conference/wedding halls, religious buildings, and so on, and to be able to install in them temporary structures which can provide isolated pockets for the infected, or can serve to provide some social distancing for communities to shift to, when their own abodes are too crowded for safety.

### A Sea-Change in Our Outlook

In the previous section I have mentioned some thoughts regarding various building types. But what is becoming apparent is that we need a sea change in our outlook towards architecture, the built environment and life itself. Also why limit ourselves only to interiors? Spaces between buildings and outdoor urban spaces are also very much under the influence of the built environment – would we look at these differently, given our understanding of the pandemic?

One thing is becoming clear with this virus – that it is very possible to work, shop and socialize at a distance. Technology has made it possible for us to remotely connect – proximity is no longer close to us! Do we really need so much rushing to and from in our lives? There are many professions that can very well survive, and even thrive, by remote access. The internet has liberated us in that sense. If the Covid-19 had struck us just two decades ago, the story would have been completely different – we would have been out of touch, isolated and left abandoned in the face of the disaster!

In architecture this can mean that the home design particularly gets more focus – materials are looked into which can be easier to clean, wipe and disinfect, bringing nanotechnology to the forefront, and wherever the public interacts with the private, touchless and voice-activated gadgets get preference, like automated doors, bells, switches, etc. Greater ventilation, more daylight and sunlight, would undoubtedly help control dampness and bacterial build-up, and legislation regarding these will, therefore, need to be much more stringent and demanding. The immediate

surroundings need to be clean and fresh, while we cannot afford to let our waste air to be blown into adjacent spaces, which become vulnerable to infection.

Another important issue emerging from the spread of these infections is the realization that central air-conditioning may actually cause us damage, as certain temperatures (some say below 27C) may encourage the proliferation and longer life of the Covid-19. There seems to be no way out of such difficulties, outside of toning down our environmental needs, accepting comfort at higher temperatures, and thus aiming for lifestyle changes, for those who have in the recent past conditioned their bodies to such cooler conditions. As air conditioning is only a very recent phenomenon in cities like Dhaka, this may seem an easy adaptation, but strong motivation, will and incentive is needed to effect the figures, along with strict legislation. This need also coincides with one of the key guidelines of green architecture. The good news is that such steps are only likely to affect a very small percentage of the population, and now that it is their health that is at stake, such legislation might actually be implemented and have the benefit of also being more energy efficient.

Parks and open spaces will become important new focus areas – along with adequately spaced public toilets and other shared infrastructure. These are in extremely urgent need in cities where these have not been adequately addressed in the past, e.g. Dhaka. When

people are confined in crowded homes for long periods, more attention is needed to providing attractive and safe places for them to spend some free time, both for mental health, as well as to provide fresh air and sunlight, for physical well-being. Hand in hand with the need for open areas will be how to incorporate emergency temporary make-shift spaces within these areas, as well as in large public spaces like stadiums and multi-purpose halls, in case of future recurrence of such infectious episodes.

### Concluding Remarks

It is difficult for the architects and planners to come to a compromise, regarding the need to have ever-more compact and dense built environments, one of the suggestions for green and eco-friendly cities, which conflicts with the need to have large open spaces, which allow for social distancing, and for the occupants to spread out, to reduce proximity. As always, architects, who are problem solvers, will have to arrive at informed compromises, equitably serving these diverse requirements, while providing safe and healthy environment for all.

Training and education will have to be moulded to include these new realizations. Architecture education will need to modify its current curriculum – instilling the new learning into the future practitioner – for responsible reactions to this crisis. The awareness of these issues must also be generated to the general public and policy makers – and those responsible for creating the built environment, namely building profes-

sionals, will need to play a leading role, to bring to the notice of all, the dangers of having unhealthy surrounds in our lives, how much of our past complacency regarding the built environment needs to be rethought, and even at the cost of some additional expenses, the environment must be made ready to confront a repeat of such pandemics.

Finally, we must realize that no single profession can address all the emerging issues from this pandemic. While the role of doctors cannot be shared, the issue of providing a suitable environment for the public is a participatory exercise. It will require multi-disciplinary inputs and its success can only be achieved when all the stakeholders, from policy-makers to designers, to manufacturers, to users and innovators, understand and participate in responsible interactions.

Clearly we are coming to the conclusion that we cannot act selfishly and think only of our personal needs. This has to come with consideration of others, with their needs, and the overall equation will require lifestyle changes. Airborne diseases have no physical boundary – all classes of the population are equally affected, no matter where the original infection is generated. Reverting back to Alexander Dumas, therefore, I suggest that the new motto must thus be 'All for one – one for all'.

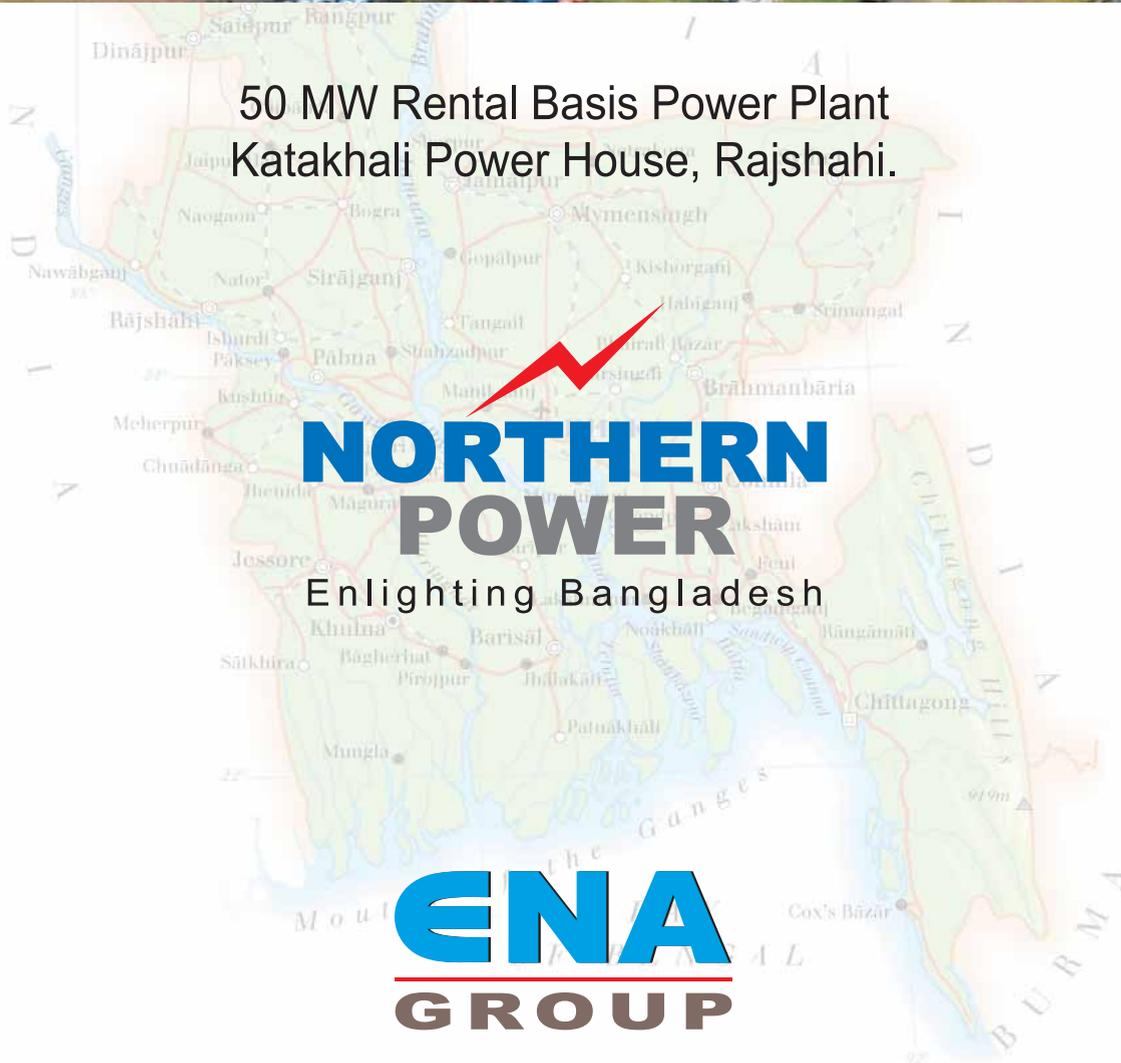
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# Green page

## IDCOL Gets Int'l Award for Solar Mini-Grid Project



**T**he Bangladeshi clean energy company – Infrastructure Development Company Limited (IDCOL) – has won the Alliance for Rural Electrification (ARE) award in the ‘Multilateral/International Organization’ category for its solar mini-grids projects.

These include the Monpura Island project, which is implemented in partnership with the United Nations Development Program (UNDP) and funded by the Global Environment Facility (GEF).

As the Covid-19 crisis and cyclone Amphan continue to lay bare the pressures that many people face across Bangladesh, this award is a timely recognition that clean energy projects can help these communities build resilience, said the UNDP recently.

The award highlights in particular the important role mini-grids can play in Bangladesh’s national strategy of universal access to electricity by 2021. UNDP has long been promoting clean energy

in the country, and is supporting renewable energy projects that bring life-changing access to electricity in rural areas.

IDCOL was selected for implementing solar mini-grid projects in Bangladesh through the development of a sustainable business model which ensures productive access to electricity for the last mile population living in off-grid areas, while facilitating local industries by creating jobs and supporting local businesses.

Its Monpura Island project was implemented under UNDP’s “Sustainable Renewable Energy Power Generation Project” in partnership with the Sustainable and Renewable Energy Development Authority (SREDA) at the Ministry of Power, Energy and Mineral Resource.

It provides uninterrupted supply of grid quality electricity to 1,199 households, 684 shops, and 41 institutions on the island.

EP

## Saudi Firm's Solar Power Plan Faces Opposition

**S**audi power company ACWA’s proposal to generate solar power in the farms of state-owned sugar corporation has triggered opposition from interest groups who fear destruction of fertile agricultural land.

The Bangladesh Sugar and Food Industries Corporation (BSFIC) has written a letter to the Saudi company requesting them to explain how they would construct the solar plants without disturbing the sugarcane farming.

In February last year, a letter of intent was signed by the corporation and Saudi ACWA Power for generating 180 megawatts of solar power.



The signing was held on the sidelines of the 13th session of the two-day Bangladesh-Saudi Arabia Joint Commission meeting.

Under the proposed project, the ACWA will use the farmlands of different state-owned sugar mills of the country.

The BSFIC has 15 sugar mills in different parts of the country having farm areas comprising around 40 thousand acres.

Some sugarcane farmers and employees of sugar mills apprehended that if the Saudi company would be given the go-ahead, it would jeopardize the livelihoods of thousands of sugarcane farmers, who mostly depend on the income of sugarcane farming.

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## IDCOL Partners Propose Installation of Solar System at Hospitals, Community Clinics

Partners of Infrastructure Development Company Limited (IDCOL) want to install solar system at all the hospitals including 18,000 community clinics, 100,000 solar-powered irrigation pumps and 1 million solar street lights in rural areas across the country.

Leaders of the IDCOL Partner Organization Forum Trust (PO Forum), an association of the solar system suppliers, submitted a proposal in this regard to the Ministry of Disaster Management and Relief (MDMR) recently to ensure uninterrupted power supply during emergency period of disaster by utiliz-

ing the renewable energy potentials.

"We sent the proposals to the State Minister for Disaster Management and Relief as we are emphasizing the renewable energy needs to be part of sustainable and effective disaster recovery and management," said Munawar Misbah Moin, president of the IDCOL PO Form.

Over 50 organizations have been working with the state-owned IDCOL to implement different programs of the MDMR for long.

PO Forum leaders said they have already installed 5.3 million solar home systems across the country of which 1.1 million were installed directly under the MDMR programs in the last five years as part of the government target to reach electricity to all.

EP



## ADB Signs \$17.7M Financing Package with SSPL

The Asian Development Bank (ADB) has signed a \$17.7 million financing package with Spectra Solar Park Limited (SSPL) to invest in a 35-megawatt utility-scale solar photovoltaic plant in Bangladesh.

The solar park is one of the first private sector solar plants in Bangladesh to be financed by multilateral institutions, and will support the country's efforts to attain long-term energy security and meet climate goals by stepping up its use of



clean energy, said an ADB press release.

The

agreement for the Spectra Solar Power Project was signed by the Director of Infrastructure Finance, South Asia, Central Asia, and West Asia at ADB's Private Sector Operations Department Shantanu Chakraborty, and Managing Director of Spectra Solar Park Limited Khan Md.

Aftabuddin. DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH is cofinancing the project with ADB.

"This project strongly demonstrates that the solar energy sector in Bangladesh is an attractive destination for private sector engagement," said Chakraborty.

"This is a landmark project that will also incorporate very specific and meaningful design features to empower women and ensure a gender inclusive workplace," he added.

EP



## Asia's Top RE Markets: China, India & Japan

According to a new report by EY, seven Asian countries rank among the globe's most attractive markets for renewable energy sources including wind power, hydropower and solar energy.

EY's Renewable Energy Country Attractiveness Index (RECAI) ranks markets across the globe based on investment and implementation opportunities in the renewables space. Out of all countries assessed, the 40 best performing countries are listed in the index.

South and Southeast Asia have a strong representation in the list, with more than seven countries making the top 40. China has been among the top markets worldwide for years now, although the country has slipped one spot to second, providing the United States to regain pole position.



EY attributes China's fall to a government shift from subsidizing the renewables sector to allowing it to develop competitively. The Covid-19 crisis also appears to have played a part in its dip, although the Big Four accounting and advisory firm anticipates a promising future for the country's renewables market.

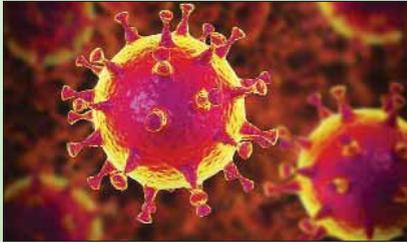
India is the next country from the region to feature on the index, holding 7th place. The country has fallen significantly on the rankings, having previously occupied third position. According to EY, India is expected to fall short of its renewable energy generation target of 175GW by 2022, which has been branded 'disappointing' among the global community. The Covid-19 crisis has worsened this scenario.

EP

## COVID-19 Leads to Uncertainties in Renewable Project Financing Space

Delays in renewable projects financing is expected during COVID-19 because lenders are aware of the volatility existing in the market and are likely to refrain from making short-term investments, says GlobalData, a leading data and analytics company.

Somik Das, Senior Power Analyst at GlobalData, comments: "The inability to assess emerging risks would likely increase debt pricing in the short term. The increase in debt pricing would not be an attractive proposition for developers seeking to commit to long-term contracts, because in the long run, markets are expected to eventually



stabilize and consequently the financing rates is expected to drop."

Finances are released based on project milestones. Therefore, developers are either liable for not adhering to development timelines or are forced to source equipment from other markets at higher prices and remain committed to development schedules.

It is likely that existing deals will need to be refinanced at a cost for all the stakeholders involved to provide flexibility for developers to execute projects while mitigating the COVID-19 impact.

EP

## Siemens Scores Big US Play for New Record Wind Turbine

European wind turbine manufacturer Siemens Gamesa announced May 26 what could be the first U.S. installation of its just-unveiled giant 14-MW to 15-MW offshore wind model at Virginia Dominion Energy's planned 2,640-MW offshore wind project, under an agreement with the utility that is subject to a final investment decision.

The project would be located 27 miles offshore of Virginia Beach, Va.

Siemens Gamesa is considering whether

to build a large manufacturing plant at a close onshore site, possibly Hampton Roads, Va., for what would be industry-leading 108-m-long blades, and it will decide within a year on sourcing and a supply chain to serve the U.S. market, it says.

Other East Coast states, particularly Massachusetts, New York and Maryland, also are competing to site a major offshore wind manufacturing hub as projects proceed.

The development adds a new edge to the competitive mega-turbine market in the U.S. and globally, which had seen GE Renewables take a leading role over the last two years with its launch of the 12-MW Haliade-X turbine, the current size record holder.

EP



## Indian Railways to Set Up 3GW Solar Plants on Vacant Land

Indian Railways has tasked the Railway Energy Management Company Ltd (REMCL) with 3 GW of solar power procurement from plants to be set up on vacant Railways land.

Besides tendering, the REMCL shall handle installation supervision and management of power supply from these solar power plants.

REMCL is a joint venture between Indian Railways and state-owned engineering consultancy Rites Ltd.

The project—REMCL's largest solar power mandate from Indian Railways—will be divided into three phases of 1 GW each.

The first and third phases of 1 GW each will be developed on public-private partnership (PPP) basis under 'design, build, finance, operate and transfer' model.

The second phase of the project (1 GW) will be on the ownership model of REMCL, which will be eligible for capital subsidy under the Central Public Sector Undertaking Scheme for the development of 12 GW of solar.

The entire installation is expected to be completed by 2022-23.

The Railways have already identified suitable land to be leased to REMCL on nominal lease rent.

Commenting on this mandate, Rajeev Mehrotra, Chairman & Managing Director, RITES Ltd and Chairman REMCL, said, "This is the largest mandate received by REMCL for tendering, installation and power management of solar energy. This will strengthen REMCL's position as the green energy solution provider and energy manager to Indian Railways and firmly establish REMCL in the green energy sector in India."

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## COP26 Pushed Back to Nov 2021

Critical UN climate negotiations at which nations were expected to ramp up plans to combat global warming have been pushed back a full year to November 2021, British politician Alok Sharma, president of the talks, announced on Twitter recently.

"Pleased to have agreed a new date for @COP26," wrote Sharma, Britain's Secretary of State for Business, Energy and Industrial Strategy. "COP26 will now take place between 1 and 12 November 2021."

Britain proposed the new dates for the Glasgow conference -- which had already been suspended -- in a letter to the UN climate forum, cit-

ing health concerns amid the coronavirus pandemic, and the need for more time to prepare the 30,000-strong meet.

The revised schedule was vetted and approved recently.

Possible drawbacks of the delay were laid out in a briefing note, prepared ahead of the deliberations.

"A broadly shared concern relates to the potential loss of momentum in the UNFCCC process," the note said, using the acronym for the UN climate body.

One 2020 deadline in the original schedule was the submission of revised -- and hopefully more ambitious --

"nationally determined contributions", each country's plan to cut greenhouse gas emissions.



## UN Launches Push for Net-Zero Emissions by 2050

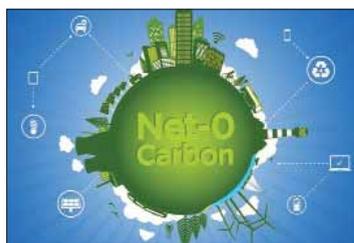
Business leaders, cities and investors are being urged to back a UN campaign aiming for net-zero greenhouse gas emissions by 2050.

Race to Zero is part of the diplomatic push to increase ambition in the lead up to the

COP26 international climate change summit in Glasgow next November.

It is the first major event since it was confirmed the summit was being postponed due to coronavirus. Nestlé and Rolls-Royce are among the first to endorse the campaign. Around a third of the world's GDP is already committed to the principles of Race to Zero, the UN estimates.

UN climate chief Patricia Espinosa warned that the



## Bangladesh to be Voice of Climate Vulnerable Countries: FM



Bangladesh has taken over the presidency of Climate Vulnerable Forum (CVF) and the Vulnerable Twenty (V20) Group of Ministers of Finance for the term 2020-2022 from Marshall Island and urges all to attach highest priority to CVF and V20.

Bangladesh also urged all to contribute by providing technical and financial support to carry out the priority works ahead.

"Under the leadership of Prime Minister Sheikh Hasina, Bangladesh will be the voice of the vulnerable countries and will promote their interests in the global platform during her presidency of CVF and V20," said Foreign Minister Dr AK Abdul Momen recently.

He made the remarks during a virtual press briefing on CVF Troika Meeting.

Casten N Nemra, Minister of

Foreign Affairs and Trade, Marshall Island and Professor Dr Fekadu Beyene, Commissioner for the Environment, Forest and Climate Change, Ethiopia were also present.

They particularly discussed the priorities of Bangladesh during her presidency of these two important platforms. Among other priorities, creation of a new CVF and V20 Trust Fund, possibility of having a new Special Rapporteur on climate change, appointing CVF's thematic Envoys and Special Envoys for Climate Change, publication of the third edition of the Climate Vulnerability Monitor will rank high during our presidency.

Dr Momen said they will also highlight the issues of 'Loss and Damage' and the cases of displacement of the climate refugees caused by climate change.



coronavirus pandemic must not lead to delays in committing to emissions cuts.

She said: "While we had little warning about Covid-19, we had years of warning about climate change.

"We must act now to avoid the tragedy that runaway climate change would cause. It is entirely within our power to

do this.

"If Covid-19 has taught us anything it is that society can, where necessary, pull together to address a global challenge."

In a virtual launch that was troubled with technical problems, a speech by COP26 president Alok Sharma - who is also the UK business secretary - was cut short.



## CO<sub>2</sub> Hits Record High Amid Pandemic

A key measure of carbon dioxide emissions in the Earth's atmosphere hit a record in May even as a global pandemic brought the world's economies to a virtual standstill this year, according to US government data published recently.

Carbon dioxide recorded at the Mauna Loa Observatory in Hawaii reached 417 parts per million (ppm) in May, higher than the record of 414.8 ppm set last year, according to the report.

The drop in worldwide emissions due to the coronavirus outbreak -- estimated to be as

much as 26 percent in some countries during the peak of government confinement orders -- fails to cancel out the large natural variations in carbon emissions caused by how plants and soils react to temperature, humidity and other factors, scientists said.

It would take carbon dioxide reductions of 20% to 30% for six to 12 months to slow the rate of increase in the measurements at Mauna Loa, Scripps said in a statement.

Last month, research published in the journal *Nature Climate Change* predicted that global emissions could fall by up to 7% this year.

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## GM Plans Electric Van for Business Users to Pre-Empt Tesla



General Motors Co is developing an electric van aimed at business users, joining a growing list of carmakers planning EVs for the same segment which includes customers such as Amazon.com Inc and United Parcel Service Inc, five people familiar with the plans told Reuters.

That multibillion-dollar strategy could enable GM, Ford Motor Co and at least two EV startups to build and deliver more electric vehicles at a time when consumer de-

mand for battery-powered models is still a small fraction of overall industry sales, while targeting a potentially lucrative market segment that Tesla Inc has yet to address.

GM's plan to develop an electric van has not previously been reported. The No. 1 US automaker did not confirm the van, but has said it plans to introduce at least 20 new all-electric vehicles by 2023, in a variety of body styles including sedans, trucks and crossovers.

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## Reduced Carbon Emissions: Silver Lining on Covid-19 Cloud



Bangladesh's carbon emissions have dropped by 24 percent to 183,000 tonnes per day during the recent country-wide shutdown.

It normally emitted around 240,000 tonnes per day (86 million tonnes per year), said a study published in the journal *Nature Climate Change*.

Due to the shutdown in Bangladesh, daily carbon emissions in the country dropped by about 24 percent, according to the study.

The environmental impact of the lockdowns in April, however, were felt not only in Bangladesh, but also across the world. The study revealed that global carbon emission per day decreased by 17 percent -

- 17 million tonnes of carbon dioxide -- in April, lower than the average emissions of 2019.

According to the report, 17 percent decrease in daily CO<sub>2</sub> emissions is "extreme and probably unseen before".

In order to quantify the drop in carbon emissions, the authors examined data from more than 69 countries, including the US, and 30 Chinese provinces.

The sampling represents 85 percent of the world population and 97 percent of global carbon emissions.

According to the report, emissions decreased by 26 percent on average in all the countries at the peak of their respective shutdown.

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## Rosatom Designed NPP's to Prevent Emission

Russia's state atomic energy corporation Rosatom reaffirms its commitments to care for the common home for all the planet while celebrating the World Environment Day this year.

Nuclear energy is a reliable source of low-carbon electricity, which makes a huge contribution to protecting the planet from the climate change, and is one of the global partnership tools to preserve, protect and restore the Earth's ecosystem. Rosatom is the largest producer of low-carbon electricity in Russia.

According to experts, the operation of all nuclear power

units of Russian design in the world prevents the emission of about 210 million tons of CO<sub>2</sub> per year, including 107 million tons of CO<sub>2</sub> in Russia (the assessment was made using the 2018 world power generation statistics by source type).

In nuclear energy there are no direct emissions of chemically hazardous substances that destroy the ozone layer and contribute to the greenhouse effect. In 2019 the share of Rosatom pollutant emissions in Russia was only 0.1%.

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## World Can Capture, Store Enough CO<sub>2</sub> to Meet Climate Targets

The capture and storage of carbon dioxide (CO<sub>2</sub>) underground is one of the key components of the Intergovernmental Panel on Climate Change's (IPCC) reports on how to keep global warming to less than 2°C above pre-industrial levels by 2100.

Carbon capture and storage (CCS) would be used alongside other interventions such as renewable energy, energy efficiency, and electrification of the transportation sector.

The IPCC used models to create around 1,200 technology scenarios whereby climate change targets are met using a mix of these interventions, most of which require the use of CCS.

Now a new analysis from Imperial College London, published today in *Energy &*

*Environmental Science*, suggests that no more than 2,700 Gigatonnes (Gt) of carbon dioxide (CO<sub>2</sub>) would be sufficient to meet the IPCC's global warming targets.

This is far less than leading estimates by academic and industry groups of what is available, which suggest there is more than 10,000 Gt of CO<sub>2</sub> storage space globally.

It also found that the current rate of growth in the installed capacity of CCS is on track to meet some of the targets identified in IPCC reports, but that research and commercial efforts should focus on maintaining this growth while identifying enough underground space to store this much CO<sub>2</sub>.

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## China's Carbon Market Launch Expected to be Delayed: GlobalData

The COVID-19 outbreak causing severe economic disruption in China is expected to derail the efforts that had been put in all these years to establish the country's national emissions trading market by the end of 2020, says GlobalData, a leading data and analytics company.

Earlier in the year, China had ordered firms from eight industrial sectors, namely, oil, chemicals, construction materials, steel, nonferrous metals, papermaking, electric power and shipping to submit their carbon emission data before the end of March 2020, in preparation for the ETS

launch but the pandemic prevented participating industries to begin calculating and reporting emissions data.

China's trade war with the US, weak consumer demand and the outbreak of the pandemic have largely affected



## UK Electricity Plant Nears Full Switch Away from Coal



As the coronavirus pandemic undermines the production of cleaner renewable fuels, the UK's biggest electricity plant is close to using only biomass following a bumpy transition away from coal.

Situated in Yorkshire, northern England, the Drax Group power plant will complete its switch next year after embarking on a journey almost a decade ago to use organic matter alongside the fossil fuel to slash carbon emissions.

But the company's method of capturing CO<sub>2</sub> continues to raise concerns even as biomass has become Britain's second largest renewable energy behind wind power,

the country's economy and roll-out of the carbon market.

Somik Das, Senior Power Analyst at GlobalData, comments: "The pandemic has

with only a handful of coal-run plants remaining in the UK.

The Drax operation, providing four million households with electricity, sees CO<sub>2</sub> emitted from burnt wood captured by newly planted trees.

Four of the plant's six reactors use wood pellets and a carbon-capture system, while Drax intends on becoming carbon negative by 2030, by removing more CO<sub>2</sub> from the atmosphere than it emits.

Drax adds that the switch, in line with UK government policy to ban the use of coal by 2025, allows it to keep the plant running and maintain 900 jobs.

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prevented officials from conducting the verification process of the companies reporting the emissions data. In April, the province of Guangdong had pushed back its annual compliance deadline for companies by two months in its emissions trading scheme, giving companies more time to finalize their 2019 data verification. Hence, further delays would only push back the establishment of the market and raise doubts over the possibility of meeting the deadline."

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## লাফস গ্যাস

লাইফ হবে স্বচ্ছন্দ ও নিরাপদ

লাফস গ্যাস-এর মূল শক্তি আন্তর্জাতিক মান, স্বাস্থ্য ও নিরাপত্তার নিশ্চয়তা এবং পরিবেশ ও জীবন যাত্রার মান উন্নয়নের প্রতি দায়িত্ববোধ। সর্বাধুনিক প্রযুক্তি ও নিরাপদ সিলিন্ডার সরবরাহের মাধ্যমে বাংলাদেশসহ বিশ্বের লাখো মানুষের জ্বালানী চাহিদা পূরণে লাফস গ্যাস প্রতিজ্ঞাবদ্ধ।

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# 'Affordable Energy Must for Industrialization'

**P**ower and Energy supply at affordable price is essential for encouraging new investments from local and foreign entrepreneurs. This cannot be achieved only through exclusive reliance on imported primary fuel. For this, harnessing and optimum utilization of domestic primary fuel needs to be ensured.

Dr. Selim Raihan, Professor of Economics at Dhaka University and Executive Director of SANEM, said this in an exclusive interview with Energy & Power Editor *Mollah Amzad Hossain*.

***The allocation for power and energy sectors has been reduced in the proposed budget for 2020-21. What are your observations?***

This has been done perhaps due to giving lesser priority to the sectors amid the COVID-19 pandemic. In reality, there is a huge surplus in generation capacity. Hence the reduction of allocation is justified. No allocation is there for additional power generation. Rather additional investment in transmission and distribution is justified for ensuring reliable quality power supply to the end users. I have not deeply analyzed whether allocations could be further reduced. There are also scopes for reviewing whether this allocation could have been more or less in the context of the entire proposed budget. But in primary review, the allocation appears justified to me.

***What kind of preparation in power and energy sectors you feel needed taking for encountering the post-COVID challenges? Do you think that the proposed budget has given those sense of directions?***

Actually, the budget proposal has not given any such direction at all. Economic recovery would be the key over the post-COVID period. It is being told that extensive opportunities for attracting Foreign Direct Investment (FDI)

would be created after the pandemic is over. The reasons assigned for that is the idea conceived for many entrepreneurs relocating their investments from China. But for attracting these investments to Bangladesh, very robust and smoothly functioning modern power and energy infrastructure would be required.

The pandemic is now climbing to its peak. Hence containing and combatting this is now the top priority. The government has diverted priority correctly to that direction. But investments would be essential for areas where new jobs can be created for recovery of the economy. Completely reliable power and energy supply must be ensured for attracting local and foreign investments in new industries. The government must give due attention to this area as well on priority basis.

Energy experts and economists were suggesting for concentrating on transmission and distribution segments of power supply chain rather than on generation. The budget proposal has addressed that. What are your views? There are allegations that the government has not taken any suggestions from any quarter.

Let me start from the end. It is not true that the government does not take any suggestions from any one. Possibly it does not take all suggestions in entirety. The fact is that the priority has been directed to transmission and distribution segments which amply demonstrates that the government has recognized the suggestions and acknowledged it through the budget proposal.

***Was there any scope for redirecting allocations to other priority sectors reducing the allocations for the power and energy sectors?***

Please note that even after approval of the budget, if situation demands, allocations from one sector can be redirected to the other. Contingency action plan



**Dr. Selim Raihan**

*This has been done perhaps due to giving lesser priority to the sectors amid the COVID-19 pandemic. In reality, there is a huge surplus in generation capacity. Hence the reduction of allocation is justified. No allocation is there for additional power generation. Rather additional investment in transmission and distribution is justified for ensuring reliable quality power supply to the end users.*

implementation may be required for containing health crisis from the COVID-19 pandemic. The institutional limitations and plugging the leakages may become essential. If the pandemic persists longer, not only the energy and power sectors, allocations from few other sectors may be required to redirect to the health sector.

***Like other years, Tk 9,000 crores have been assigned as subsidy for power and energy sectors in the proposed budget. Though it appears as subsidy in the budget, but it is allocated as loan to Power Development Board (PDB). What are your views?***

Neither the provision for subsidy in the budget nor the manner in which soft loan is provided to PDB is transparent.

Why power needs subsidy after so many years of independence? Why PDB has to be rescued from getting bankrupt through injecting subsidy? LNG and coal-based power plants have started commencing generation as per government plan. Hence the government should have taken initiatives for rationalizing power tariff rather than increasing it.

We are well aware of huge power crisis in the past. There was crisis in gas production too. No alternative was there, but to adopt liquid fuel-based rental and quick rental power plants as interim contingency action. That was a significant transition. Though it increased the cost quite a bit, but the crisis could be averted. Though delayed yet the base load power plants have started coming into operation. Hence actions must be there for rationalizing the power tariff.

I think, the government should announce year-wise generation cost and project power tariff alongside its power system plan or mega plan whichever they mentioned.

***The generation capacity is remaining idle and capacity charge are the two most talked about matter of Bangladesh power sector now. Some bodies like Consumers Association of Bangladesh (CAB) are suggesting not to provide capacity charge. But capacity charge is a universally practiced phenomenon for making the private sector investments in power sector bankable. What are your views?***

The terms and conditions of agreed contracts requires to be complied with. If BPDB fails to use the agreed minimum amount of electricity, it is under contractual obligation for paying capacity charges. The project economics is based on that basis.

But PPAs may be reviewed and made these time tested. There must be provisions for reviewing PPAs at regular intervals.

***New import duty has been imposed on furnace oil. Private sector entrepreneurs are contesting. How do you look at it?***

To me, it does not appear as a well-thought decision. Considerations for imposing duties on secure areas are not

taken when the government is under pressure for increasing revenues. Furnace oil is one such item. The National Board of Revenue (NBR) did not appear to have done required ground work before imposing or reliving import duty or tax.

***The proposed budget has some provisions for tax relief on cooking gas meaning LPG. There are allegations that the consumers are not getting any benefit from huge depletion of LPG price in the global market. What should be done for the end users getting the benefits?***

The government must ensure that users get the benefit directly from any tax relief on imported LPG. In my opinion, users have the right to benefit from any price reduction of imported fuel at global market. Now only consumers connected with distribution networks get some benefits. In my opinion, the government must fix a ceiling of LPG price. This must also be closely monitored. Legal actions must be taken in the event of violation.

***Failure in exploration of own gas and exploitation of own discovered coal reserve have pushed the government going increasingly towards imported primary fuel. The budget proposal talked about stressing upon gas exploration. But allocation is insignificant considering the works involved. What are your observations?***

Some allocations have been there for gas exploration in the proposed budget. But how much will be left after meeting the revenue expenditure? I think it as a peanut for oil and gas exploration. BAPEX is the state-owned enterprise working as Exploration and Production (E&P) company. What is its competence? A particular syndicate is keen upon primary fuel import as an excuse for crisis management. For their strong lobbying, fuel import is getting priority for a long time over exploration and development of own fuel resources. On the other hand, practically little or no initiative has been taken to exploit own coal reserve or expediting exploration for oil and gas resources.

In my opinion, the government must review the situation on right perspective and take urgent initiatives for financing

for expeditious exploration and utilization of own fuel resources.

***The installed capacity of grid connected power is 21,000 MW. Industries are still using own off-grid captive power. The under-implementation Special Economic Zones (SEZ) have been given permissions for generating own power. Consequently, grid-connected capacity remaining idle. The cost of generation is increasing for paying capacity charge. What are your views?***

The government has planned for developing 100 Special Economic Zones (SEZ). But apart from few privately owned ones, others have not yet come into business operation. The investment situation in the SEZs in operation is also not encouraging at all. According to UNCTAD report, the FDI has reduced in Bangladesh but increased in Cambodia. The Power Division must be ready to supply uninterrupted power to SEZs. Without grid power, affordable power supply cannot be ensured. No permission should be given to SEZs for generating own power under the given circumstances.

On the other hand, industries are forced to use captive power as grid supply is still far from being reliable. Only reliable supply of quality grid power can remedy the situation.

***What is your opinion about the price structure of power and energy for industrial sector? There are some suggestions for subsidizing power tariff and energy price for industries. What are your views?***

Please note that reliable supply of power and energy at affordable price is a precondition for rapid industrialization of Bangladesh. Failure in doing so would act as disincentive for the entrepreneurs for considering investment in Bangladesh. We must bear in mind that exclusive reliance on imported primary fuel cannot create that situation. In my opinion, Bangladesh must not leave any stone unturned in exploring and developing own petroleum resources and exploiting own coal reserves besides fuel import. For this, the government must immediately adopt primary fuel utilization policy without wasting time any more.

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