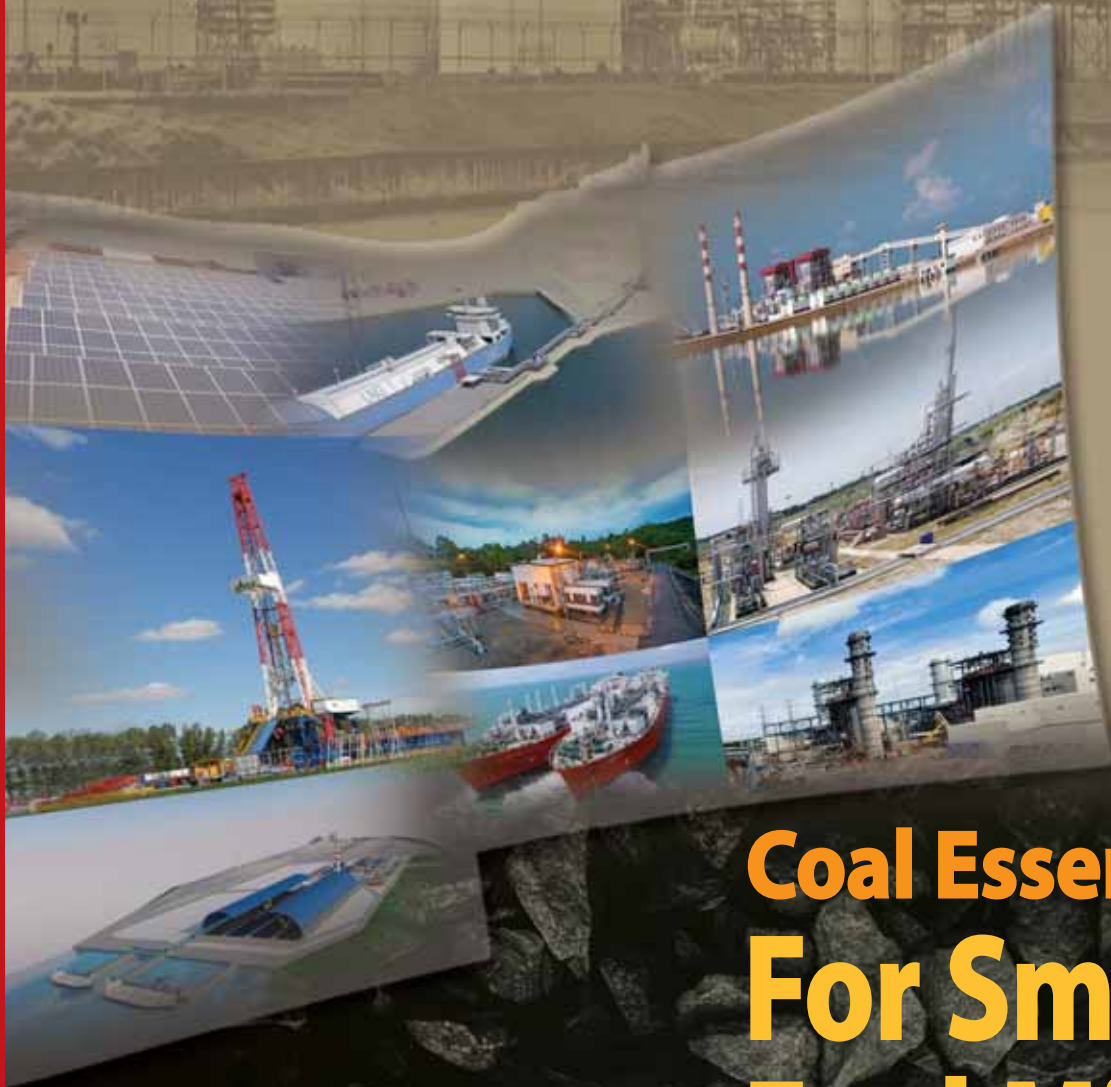


# ENERGY & POWER



## Coal Essential For Smart Fuel Mix

- Oil Market Optimistic as Vaccinations About to Start
- Int'l Community Starts Assessing Benefits of 100pc Coverage
- Excelerate Energy Sees Bright Future for LNG, NG in Bangladesh



**M2K TECHNOLOGY & TRADING CO., BANGLADESH.**

**M2K TECHNOLOGY & TRADING CO. PTE LTD., SINGAPORE.**









**BANGLADESH:**

Amin Court Building (2<sup>nd</sup> floor), 62-63 Motijheel Commercial Area, Dhaka -1000, Bangladesh.  
**Tel :** +880-2-5716-0955 **Fax :** +880-2-5716-0966 **E-mail :** m2kttc@gmail.com

**SINGAPORE:**

Block 428, Clementi Avenue 3 # 10-430, Singapore-120428.  
**Tel:**+65-8299-8715 **E-mail:** info@m2kttc.com **Website:** www.m2kttc.com

**WE REPRESENT:**

	<p>Phenix Technologies Inc., USA.            Phenix Systems AG, Switzerland.  <a href="http://www.phenixtech.com">www.phenixtech.com</a> &amp; <a href="http://www.phenixsystems.com">www.phenixsystems.com</a></p>
	<p>Doble Engineering Company., USA.  <a href="http://www.doble.com">www.doble.com</a></p>
	<p>Vanguard Instruments Company Inc., USA.  <a href="http://www.vanguard-instruments.com">www.vanguard-instruments.com</a></p>
	<p>Manta Test Systems Inc., USA.  <a href="http://www.mantatest.com">www.mantatest.com</a></p>
	<p>Morgan Schaffer, Canada.  <a href="http://www.morganschaffer.com">www.morganschaffer.com</a></p>
	<p>Globecore GmbH, Germany.  <a href="http://www.globecore.de">www.globecore.de</a></p>
	<p>Larsen &amp; Toubro Limited, India.  <a href="http://www.lntebg.com">www.lntebg.com</a></p>
	<p>Powerchina Nuclear Engineering Company Limited, P.R. China.  <a href="http://www.powerchina-ne.com">www.powerchina-ne.com</a></p>



---

## Customized service support With you every step of the way

Assuring the availability of your application is a critical part of securing your business. The right service reduces downtimes and increases your application's performance and lifetime. Getting your service plan from ABB Turbocharging guarantees dependable delivery of results and lower total cost of ownership of your turbocharger. We are dedicated to providing our customers a comprehensive turbocharging service offering 24/7, 365 days a year at any one of our 100+ ABB-owned Service Stations in 50+ countries across the globe. Get the right service. [abb.com/turbocharging](http://abb.com/turbocharging)





**LUBRICANTS**  
Passion to Perform

## BNO offers complete range of Lubricants and Associated Services for Power Generation Companies

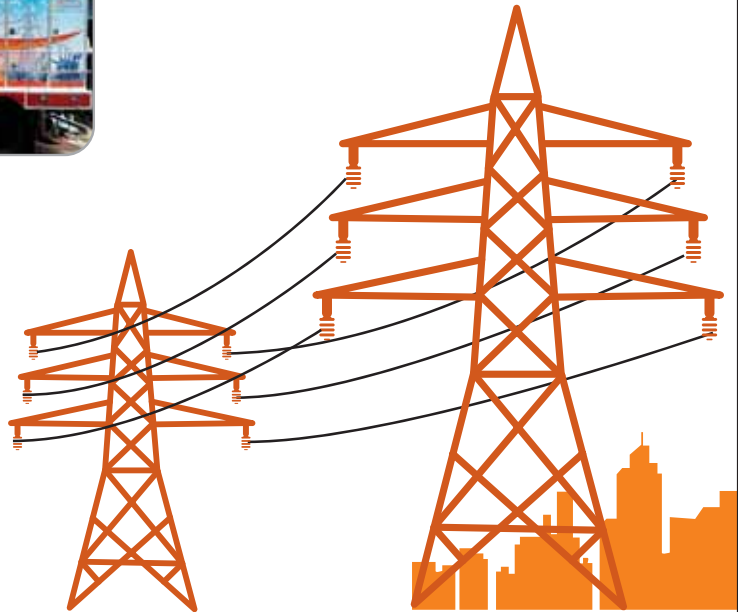
### Products:

- NAS Standard Hydraulic oil • NAS Standard Turbine oil • TPEO for both power plant and Marine Engine Oil
- Gas & Diesel Engine Oil • Transformer Oil • Lubricating Grease for high temperature application



### Services:

- Analysis of Lube Oil, Hydraulic Oil, Fuel Oil and Transformer Oil from its accredited laboratory.
- Filtration of Turbine oil and Transformer Oil at customer site



**Lub-ref (Bangladesh) Ltd.**

(An ISO 9001:2015, 14001:2015 & OHSAS 18001:2007 Management System Certified Company)

**Head Office:** B-6 (Part) 9-10 & 23-24, BSCIC Industrial Estate, Block-A Post Office - Custom Academy, Sagarika Road, Chattagram - 4219, Bangladesh.  
Phone: +88-02-43151995, +88-02-43150035, +88-02-43150036, Fax: +88-02-43151091, E-mail: info@lub-ref.com

**Corporate Office:** Rupayan Trade Center, Space # 5 (7th Floor), 114 Kazi Nazrul Islam Avenue, Dhaka-1000, Bangladesh  
Mobile: +88 01977 266061, 01977 266005, Phone: +88 02 55138710, Fax: +88 02 55138711, Email: infodhk@lub-ref.com

Editor  
Mollah M Amzad Hossain  
Advisory Editor  
Anwarul Islam Tarek  
Mortuza Ahmad Faruque  
Saiful Amin  
International Editor  
Dr. Nafis Ahmed  
Contributing Editors  
Saleque Sufi  
Online Editor  
GSM Shamsuzzoha (Nasim)

Managing Editor  
Afroza Hossain  
Deputy Editor  
Syed Mansur Hashim  
Reporters  
Arunima Hossain  
Assistant Online Editor  
Aditya Hossain  
Design & Graphics  
Md. Monirul Islam  
Photography  
Bulbul Ahmed  
Production  
Mufazzal Hossain Joy  
Computer Graphics  
Md. Uzzal Hossain  
Circulation Assistant  
Khokan Chandra Das

**Editorial, News & Commercial**  
Room 509, Eastern Trade Center  
56 Inner Circular Road (VIP Road)  
Naya Paltan. GPO Box : 677  
Dhaka-1000, Bangladesh  
Tel & Fax : 88-02-58314532  
Email: ep@dhaka.net  
energypower@gmail.com  
Website: www.ep-bd.com

**Price**  
Bangladesh: Tk 50, SAARC: US\$ 6,  
Asia: US\$ 8, Europe: US\$ 10, North  
America, Africa & Australia: US\$ 14



E D I T O R I A L

There is a move by the government to convert many coal fired plants to LNG. Experts and policymakers at a recent webinar opined that we have spent too little time in planning for contingencies on how to handle coal-import infrastructure. A sudden switch from coal to LNG would make us wholly dependent on import and mono-fuel. The problems associated with the import dependence carry high risk since price volatility will make it impossible to make energy affordable and deliveries uncertain.

While some experts believe coal will remain a mainstay for the next century, the setting up of coal mines should be at Phulbari and Barapukuria. Local people's concerns can be mitigated by having competitive compensation packages and technology is now available to mitigate water-related issues and environmental concerns. Most attention was put on building coal plants and not enough on logistics about how to transport the imported coal. The discussion over last five years has been focused on import of coal while ignoring challenge of transport that involves sustained and expensive dredging. It is time to rethink exploration of own coal for both affordability and energy-independence.

h i g h l i g h t s



19

C O V E R



9



45

LNG adoption has not been without its challenges – from overcoming cyclonic weather events (such as cyclone Fani in 2019) to the challenges of the global pandemic – but Bangladesh's resilience in the face of this adversity has allowed for the continuous growth of LNG adoption, and we are extremely pleased with the results... Mr. Wangdi tells EP

With the success of providing almost universal access to electricity, the country's GDP growth is estimated to have accelerated by 1.2 percent while the height of 1-3 years old rural children increased by 3 percent. It has also made significant contribution to medical and healthcare services of the country... more on Special Report

Moving out of the planned coal power program might prove to be suicidal as the primary energy is still considered the fuel of choice for base load power generation for at least 100 more years. Coal is still dominating the fuel mix of developed countries. Bangladesh should also continue with coal having at least 30% stake in its power generation fuel mix.



# EPC

ENGINEERING, PROCUREMENT & CONSTRUCTION

by the country's leading end to end engineering solution provider

**Energypac**®

WE'RE JUST ONE CALL AWAY  
**09612100200**

www.energypac.com sales@energypac.com  
EnergypacZone EnergypacZone

crafted with pride

## Greenpage

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

### Contents

- 35 ADB Proposes \$1.6bn Solar Irrigation Roadmap
- 35 Demand for Green Building Solutions Grows
- 36 New Electric Car Plants to Get Land Free-of-Cost
- 37 55MW Wind Power Project Wins Cabinet Body Approval



## Contents

- 5 **WORLD WATCH**  
Latest Development in World
- 6 **SNAPSHOT**  
Latest Development
- 9 **COVER**  
Coal Essential For Smart Fuel Mix
- 15 **COVER ARTICLE**  
Grid Power Access to All: Nation's Pledge Realized
- 19 **SPECIAL REPORT**  
Int'l Community Starts Assessing Benefits of 100pc Coverage
- 23 **WORLD**  
Oil Market Optimistic as Vaccinations About to Start
- 25 **SPECIAL ARTICLE**  
Nation's Crucial Decision to Select 'Appropriate Technology' for Managing Municipal Solid Waste
- 31 **REPORT**  
BPC, BERG at Loggerheads over LPG Price Fixing
- 32 **Azam Chy, Shayan Re-elected LOAB President, Vice President**
- 33 **PGCB Revision Involves 85pc Additional Costs**
- 33 **Bangladesh to Join WANO**
- 33 **1,200 Acres Land Sought for Future Expansion of RNPP**
- 39 **SDGs**  
Climate Vulnerability, Covid and Implementation of SDG
- 41 **CLIMATE**  
Hasina for Decisive Global Action to Save Planet
- 43 **Climate Goals Need 6pc Yearly Fossil Fuel Cuts: UN**
- 43 **IDCOL Seeks to Mobilize Funds for Developing Coastal Forests**
- 45 **INTERVIEW**  
Ramon Wangdi Managing Director of Excelerate Energy Bangladesh Ltd.

## Japan to Ban Domestic Gas-Fueled Car Sales by Mid-2030s



Japan will ban the sale of new gasoline-powered cars by the mid-2030s to help it put the brakes on greenhouse gas emissions, sources said.

The central government is expected to set the new regulations to achieve its goal of net zero carbon emissions by 2050.

The economy ministry will hold a meeting of experts and automobile industry leaders to discuss the new target, which will be included in the government's draft plan at the end of the year.

The new plan would ban the sale of new gasoline-powered vehicles in the domestic market and limit sales of new cars to those with no or low exhaust emissions, such as electric vehicles and hybrid cars.

## Chevron Makes Two Leadership Appointments

Chevron Corp. has named Al Williams as vice-president of corporate affairs, effective Mar. 1, 2021. Paul Antebi has been appointed as vice-president and general tax counsel, effective Feb. 1, 2021.

Williams succeeds Dale Walsh who is retiring after 38 years of service. Williams currently serves as managing director of Chevron Australia and head of the Australasia business unit.

Antebi succeeds C.N. (Sandy) Macfarlane, who is retiring after 36 years of service. Antebi currently serves as Chevron's deputy general tax counsel.

## Mitsubishi Pens Deal for Barossa LNG

Santos has signed a long-term LNG supply and purchase agreement for the Barossa gas/condensate project offshore Northern Australia with Mitsubishi subsidiary Diamond Gas International.

The contracted quantity of 1.5 MM metric tons/yr (1.65 MM tons) applies for 10 years, with extension options.

There could be further LNG transactions via 'commercial flexibilities' negotiated between the two companies.

Santos is targeting a final investment decision on the Barossa field development for the first half of 2021.

Managing director and CEO Kevin Gallagher said the deal was the company's first long-term equity LNG sale from one of its major LNG projects. In addition, Santos and Mitsubishi have signed a memorandum of understanding to assess opportunities for carbon neutral LNG from Barossa.

## TAPI Pipeline Afghanistan Construction to Start in Herat

Afghanistan confirmed that construction will begin in 2021 on the portion of the Turkmenistan-Afghanistan-Pakistan-India (TAPI) natural gas pipeline crossing its territory.

Minister of Mines and Oil Industry Guran Chakhansuri said work would start in Herat.

Turkmenistan's foreign minister last week said that his country would complete construction in its territory during 2020 and begin building in Afghanistan next year.

Chakhansuri also said Afghanistan plans to start building the 59-mile Shibargan-Mazar-i-Sharif gas pipeline through northern Afghanistan in the next 3 months.

TAPI will run 133 miles in Turkmenistan, 480 miles through Afghanistan (including the cities of Herat and Kandahar), and 512 miles across Pakistan (including Quetta and Multan) before reaching the Indian border.

## Mitsubishi Power Concludes Deal with Aubert & Duval

Mitsubishi Power Limited, a subsidiary of Mitsubishi Heavy Industries (MHI) Group, has concluded an agreement with Aubert & Duval, a leading European manufacturer of special alloys and metal powders, on technology licensing related to the specific composition and manufacturing of metal powders used as materials for metal additive manufacturing.

The agreement paves the way to full-scale inauguration of Mitsubishi Power's AM business in which the company will

apply its proprietary technologies accumulated through its operations in gas turbines and other thermal power systems, said a press release.



## Petronas Contracts Crane Services for Malaysian Operations

Petronas has awarded Thunder Cranes a three-year contract covering supply of offshore rental crane services in Malaysia.

The scope includes modular cranes and associated power packs, skidding systems, and operating crews.

The cranes, with self-lifting capabilities, feature numerous tie-down options, on-deck placement configurations, and boom-length options.

## 10 Hurt as Rooppur Under-Construction Bldg Collapses

At least 10 workers have been injured

when parts of an under-construction building at Rooppur Nuclear Power Plant in Ishwardi upazila of the district collapsed and tilted. The incident took place recently.

Critically injured Mamun, 30, was sent to Rajshahi Medical Collage Hospital while the rest were undergoing treatment at Ishwardi Upazila Health Complex. The authorities declined to disclose further information regarding this.



Ishwardi Police Station officer-in-charge (OC) Sheikh Md Nasir Uddin said the power plant authorities did not inform them anything officially but he has heard the news.

## G-Gas LPG, Shwapno Super Shop Sign Deal

G-Gas LPG and Shwapno Super Shop have recently

signed an agreement. Under this agreement, customers can order G-Gas cylinders from 17 designated outlets of Shwapno within Dhaka from December 01, 2020.

The number of outlets with G-Gas cylinders available has initially been decided to be 17 and will be increased in the future.

The cylinders will be delivered to the customers within 2 hours after they place the order. Higher officials from both organizations were present at the signing event.

## Oil Carriages Train Derailed in Habiganj

The rail communications to and from Sylhet remained sus-

suspended when four oil carriages of freight train derailed and caught fire near Shahjibazar Rail Station in Madhobpur Upazila in the district recently.

The accident occurred when the train reached near Shahjibazar from Chattogram suddenly four oil-laden bogies went off the tracks and caught fire, Station Master Mofazzol Hossain confirmed.

Fire fighting units from Shaistaganj arrived Shahjibazar and the rescue train will reach there soon, said railway authority.

## Gas Supply to National Grid Starts from New Well in Comilla

Gas supply to the national grid from well number 4 of Srikail-2 gas field located in Comilla's Muradnagar upazila has officially begun.

Md Anisur Rahman, senior secretary of the Energy and Mineral Resources Division, inaugurated the process as chief guest recently.

Previously, this gas field used to supply an average of 5 to 6 million cubic feet of gas per day.

"With the discovery of this new well, it is possible to extract an average of 22 to 24 million cubic feet of gas per day from here and supply it to the national grid," said Anisur Rahman.

Earlier, Bangladesh Petroleum Exploration and Production Company Ltd (Bapex) ran tests for 55 days and on November 20, it confirmed reserves of 30-40 thousand billion cubic feet of gas at the new gas level.

Petrobangla Chairman ABM Abdul Fattah and Energy and Mineral Resources Division Additional Secretary Gulnar Nazmun Nahar were

present at the inauguration event as special guests.



Bapex Managing Director Mohammad Ali and several other senior officials of the organization were also present.

## Case Filed Against 533 Villagers for Resisting Titas Drive

A case has been filed against 533 people for allegedly carrying out an attack on

officials of Titas Gas Transmission and Distribution Company Ltd during a drive to sever illegal gas connections in Narayanganj's Araihasar upazila.

Md Mezba-ur Rahman, engineering manager of Sonargaon zone distribution office of Titas, filed the case with Araihasar Police Station accusing 33 named people and around 500 unnamed people recently.

Shawkat Hossain, inspector (investigation) of the police station, said that the case was filed for illegally giving gas connection, obstructing police to discharge their duty, and carrying out an attack during the drive.

Nine people were arrested following the attack and they were produced before a court, the police official said. "We are conducting raids to arrest the other attackers," he added.



Engineer - Install - Maintain



## Engineer

Clarke Energy has comprehensive resources to support the engineering of your power generation project using Jenbacher gas engines. These capabilities include computer aided design, mechanical and electrical engineering.



## Install

Clarke Energy has dedicated teams to support you in delivering quality through the project management, installation and commissioning of your gas generation project.



## Maintain

Clarke Energy values the provision of reliable maintenance services for your gas generation equipment. This is delivered efficiently through its extensive network of service engineers.

**For more details please contact Clarke Energy**

Clarke Energy Bangladesh Ltd, Laila Tower, 12 Floor, 8 Gulshan Avenue, Gulshan-1, Dhaka-1212, Bangladesh

Tel. +880-2-9841638 (Extn.130)

Email. [bangladesh@clarke-energy.com](mailto:bangladesh@clarke-energy.com)

[www.clarke-energy.com](http://www.clarke-energy.com)

## JENBACHER

INNIO

Distributor & Service Provider

## 'JERA Asia Scholarship' Now Invites Applications



JERA Co., Inc. ("JERA") has established the 'JERA Asia Scholarship' and now receiving applications from Asian countries i.e. Bangladesh, India, Indonesia, Myanmar, Philippines, Singapore, Taiwan and Vietnam from Master's students at the International University of Japan ("IUJ") till 25th March 2021.

JERA and Summit are partners in the energy and power business in Bangladesh.

JERA Chairman Toshihiro Sano commented, "We already contribute to the economic development in Asian countries through our energy and infrastructure business, and hope that recipients of the newly established 'JERA Asia Scholarship' will go on to play key roles in the future economic development of these countries."

The scholarship includes 100% admission fee, 100% tuition fee at International University of Japan (IUJ) for the two-year Masters programme and JPY 150,000 monthly stipend (equivalent to BDT 1 lac 22 Thousand Only).

## First Voyage of BM LP Gas Carrier-1 Inaugurated

BM Energy (BD) Ltd's first LPG ship with 600MT LPG transport capability handed over and first voyage of BM LP Gas Carrier-1 completed successfully recently.

The first voyage of BM LP Gas Carrier-1 was inaugurated by its Director Mahafuzor Rahman, said a press release.

The officials of the organization were present on the occasion.

BM LP Gas Carrier-1 will ensure the supply of LPG from Chalna Motherplant to Kaliganj Satellite Plant, which will play a vital role in serving the LPG demand in Dhaka and the adjoining areas.

## Owners Forced to Buy Back Stolen Electricity Meters

As many as 25 electricity meters were stolen from Naogaon's Raninagar upazila in the past three months, all of which were returned after the thieves were paid.

After stealing the meters, the gang leaves a note where a bKash [mobile financial service] account number is provided, said sources at the upazila Palli Bidyut Samity office.

They ask for Tk 3,000-10,000 for each meter which is worth about Tk 14,000-18,000; especially meters of irrigation pumps are stolen, the office sources added.

Johurul Haque, Officer-in-Charge of Raninagar police station, said: "We are trying to bring the thieves to book as soon as possible. Palli Bidyut office should also try to raise awareness, so that owners and locals remain more vigilant."

## Atomash Ships Nuclear Equipment for First Unit of RNPP



The Branch of JSC AEM-technology in Volgodonsk (a part of machine-building division of Rosatom - Atomenergomash) has manufactured and shipped Steam Header for the first Unit of Rooppur NPP under construction in the Republic of Bangladesh, said a press release.

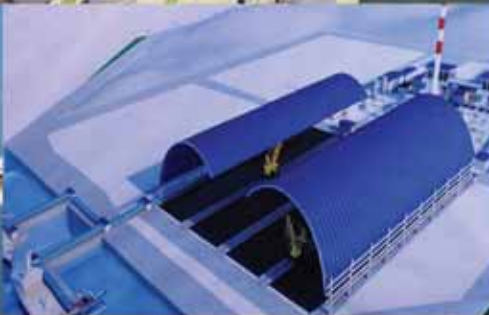
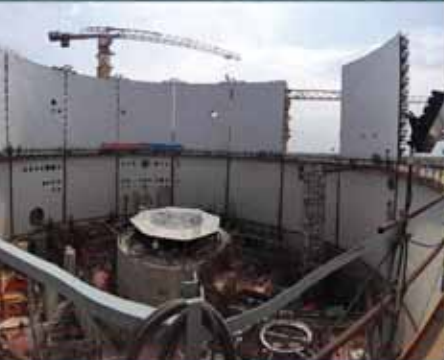
Steam Header is one of the largest components of Steam Generator. Its length is over 11 meters, width is 2.7 meters, height is about 3 meters, own weight is over 7 tons. Steam Header will be welded to 10 steam discharge nozzles on Steam Generator vessel. Dried steam goes out through the nozzles and enters the Steam Header, from where it enters the turbine plant through the pipeline system.

The Items were shipped by road to the port of St. Petersburg, then the equipment will be loaded onto a barge and transported to the NPP site. The sea route will be about 14,000 kilometers.

# Coal Essential For Smart Fuel Mix

EP Report

**A**mid debate over moving out of coal and going for LNG-based power generation, experts at a recent discussion suggested taking a policy to ensure a balanced mix of primary fuel to ensure the country's energy security. They viewed that narrowing down the fuel basket could emerge as a misstep towards making the energy security vulnerable and thus making uncertain the country's vision of becoming a developed one.





SUMMIT

SUMMIT POWER LIMITED

# POWER FOR OPPORTUNITIES



**464 MW Kodda, Gazipur Power Plants**  
Best Private Power Generation Company 2018  
in recognition of fastest implemented power plant

Experts, industry specialists and researchers observed that moving out of the planned coal power program might prove to be suicidal as the primary energy is still considered the fuel of choice for base load power generation for at least 100 more years. Though their observation runs counter to the present global sentiment against using the dirtiest fuel, they argued that coal is still dominating the fuel mix of developed countries. Bangladesh should also continue with coal having at least 30% stake in its power generation fuel mix. However, they warned of making sure that advanced technologies are used to address the environmental issues.

The views and suggestions emerged at the virtual EP Talks titled "Future Challenges of Fuel Mix for Power Generation and Way Forward" held on 28 November 2020. The Energy & Power magazine organized the meeting as part of a series of discussion on the country's emerging energy issues.

Presently, there is a discussion among the policymakers as well as the policy movers to consider whether the planned coal-based large power plants should be replaced with LNG-based ones for the sake of protecting the environment and the planet.

The experts advised to exploit own coal resources and set up mine-mouth power plants besides importing coal for power generation in the coastal areas. One mining expert suggested developing Barapukuria and Phulbari mines in tandem through technically appropriate open pit method as these are a single structure. There are off-the-shelf proven technologies for managing mine water and environment. These are not the issues though. Taking a political decision for mining is the lone issue now.

They also observed that Bangladesh is steadily becoming dependent on imported primary fuel despite having challenges in setting up the import infrastructure due to shallow draft in the coastal belts. They stressed on the need



Syed Abdul Mayeed



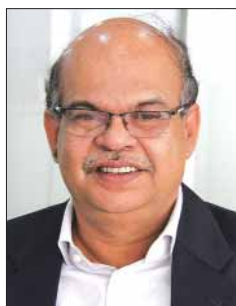
A.S.M. Alamgir Kabir



Md. Muqtadir Ali



Md. Nurul Alam



Khaled Mahmood



Md Quamruzzaman



Mushfiqur Rahman



Khondkar Abdus Saleque

for well-thought and appropriately-planned actions in developing the coal and LNG import infrastructures.

Taking part in the discussion, Engr. Khaled Mahmood, former Chairman of Bangladesh Power Development Board (BPDB), said that the PSMP 2016 provides for 54% reserve margin of power generation by 2030. If the mega coal power projects now under discussion are scrapped, around 7,000MW of genera-

tion capacity would be shelved. The reserve margin would then reduce to 30%, which should be enough. He said that up to 2,000MW of power could be imported through cross-border trading if necessary while the rest should come from the own gas and imported LNG-fired generation. The upcoming review of the PSMP 2016 would clarify the situation.

high and said it should not be more than 25% in countries like Bangladesh. Engr. Khaled Mahmood informed that review of the PSMP would start in 2-3 months with Japan International Cooperation Agency (JICA) as the consultant. He also informed that a committee was formed for conducting a feasibility study for the second nuclear power plant proposed to be set up at Patuakhali.

The wind mapping has suggested nine

**Sponsored By**



**M2K TECHNOLOGY & TRADING CO., BANGLADESH.**  
**M2K TECHNOLOGY & TRADING CO. PTE LTD., SINGAPORE.**

sites as the potential locations for wind energy. Bangladesh Rural Electrification Board (BREB) is working on solar irrigation. He thought that growing big in solar will be difficult until battery storage technologies advance further and get cheaper. Only two grid-connected solar plants – 50MW at Patuakhali and 20MW at Teknaf in Cox's Bazar – are in sight as of now. Two more solar plants each having 7MW capacity are also in the plan. He recognized that the future fuel mix should be planned with coal, nuclear and gas. If the second 1,320MW unit is not built, he said, the tariff would go up.

However, another former Chairman of BPDB Engr. A.S.M. Alamgir Kabir thought that the reserve margin is too

The infrastructure needed for two units of 1,320MW plants has been built there. The BPDB continued to pursue for the two units. The government would take the final decision in this regard. The 13 coal-based plants being considered to be shelved are mostly at the planning stage. Orion Group has two plants - 565MW at Gazaria and 522MW at Mawa. The government should think deeply before terminating these contracts due to having financial liabilities.

Engr. A. S. M. Alamgir Kabir, former Chairman of BPDB, mentioned that Bangladesh has no option but to rely on imported primary fuel. The natural gas and coal are not enough to provide necessary fuel for power generation. Coal remains and would remain as the preferred option for base load power generation. But use of coal should be capped at 15,000MW. Regarding extraction of coal mine, water management is a critical challenge, according to him. He said the priorities change from time to time. The price becomes the driving force for fuel priority changes in the planning. He agreed that for long-term planning, there is no way but staying with coal as major fuel.

We have to include renewable energy option in the fuel mix. But for using power at night, solar is still not a significant contributor due to limited battery storage capacity. Bangladesh's power demand peaks in the evening and it continues till the midnight. He said the contribution of renewable energy would not be more than 10 percent at any stage. Imported coal-based power plants should be built along the coastal regions. Challenges with coal import is much less than LNG. Coal price in global market is much more stable than that of the LNG. Coal projects that are now under planning stage must not be shelved. We must also go for a second nuclear power plant. The first one is relatively expensive, but the cost of the second one is expected to be 30-40% lower.

About the much talked about adverse impacts of coal power plants, Engr. Kabir said the present modern technologies have effectively addressed all the con-



Summit FSRU at Maheshkhali Coast

Photo: RPGCL

cerns. The realities are far different now. China is talking about zero emissions. Bangladesh is also using Ultra Super Critical Technology. Regulations are extremely tight now. Bangladesh has windows to lower the emission levels. There must not be concerns anymore with coal power plants. Coal power is the best solution for Bangladesh. But too much reliance on imported primary fuel will create an energy security issue. Transshipment of coal is an accepted phenomenon. Considering all these, Engr. Kabir thought that abandoning coal projects will be suicidal for Bangladesh at this stage.

Muqtadir Ali, former Chairman of Petrobangla and BPC, said that none could ever suggest a perfect fuel mix for Bangladesh. In 1970s, furnace oil was the main fuel. Own natural gas became the fuel of choice and almost exclusively dominated the fuel mix till 2000. There was a notion that Bangladesh was floating on gas. When proven gas reserve started depleting, coal became the priority. Forgetting about local coal reserve, Bangladesh leaned towards imported coal. But none possibly thought about challenges of coal transportation. We also forget about affordability. We did not consider whether or not consumers can afford the high price of power and energy.

We are now thinking about abandoning a number of coal power projects and replacing these with LNG. What is the

guarantee that the price of LNG would remain at the present level? Can we afford to absorb price shock of LNG when it would shoot up? Scenario would change any time. We supplied gas to industries for captive power generation on the excuse of power generation. Did the nation derive benefit out of it or the industrialists only? He said time has come to review the gas supply to end users which can be replaced with alternative fuel.

He also raised questioned about the pipeline infrastructure for evacuating regasified LNG (RLNG). The capacity of the present pipelines of GTCL would not be enough for the volume of LNG that is being considered to be imported. Another 50 inch-400km long gas transmission pipeline that the GTCL is thinking about must see the light and make it ready by 2030.

He said that there are criticisms about open pit mining at Phulbari. But, the affected communities would accept land acquisition if an attractive compensation package can be offered. In case of Barapukuria, we observed that the local people gladly accepted the compensation. We must not again become mono-fuel dependent. The fuel mix must be realistic and affordable for all.

Engr. Syed Abdul Mayeed, former Chairman of BPDB, mentioned that the PSMP is a dynamic document and gets updated at regular intervals of every five-year depending on the emerging situation and

circumstances. But these must be formulated with extensive homework. We always talked about power exchange when we started negotiation with India for power trading. Our thought at that time was India would import power from us for Tripura and adjacent region. We started importing from them and let them transport machinery and plants through our territory for power plant at Palatana, Tripura. Now India is in a position to export from Tripura as well.

We have initiated many mega projects. But we must invest in our own coal extraction. India generates 55% power from coal. If India right across the border at West Bengal, Bihar and Jharkhand can extract own coal, why we cannot do that? He also suggested that Bangladesh must keep all options open in fuel mix for power generation and must not move away from coal.

Nurul Alam, Additional Secretary of Power Division, informed that energy auditing would start soon. Power from Adani power plant under construction in India is expected to come in 2022. There may be some delays if the power evacuation infrastructure is not ready on time. He said that the Covid-19 has delayed all the projects by 3-6 months.

He said financing is a major issue for large coal power projects. Not only ADB and the World Bank, even the OECD is not agreeing to finance. They would not even finance for infrastructure for evacuating coal power. Each large coal project needs an investment of at least US\$2 billion. We know that Japan is developing more fuel-efficient technology that would require less coal and hence less emission will take place. If they become successful, it will be a great news for coal power.

None can say now when the LNG price will gain momentum again. "I agree that coal supply would not be a problem for at least 100 more years. The price would also remain stable. Transportation of coal is the main challenge for Bangladesh."

Some 55 coal ships have so far been handled at the Payra plant jetty. But the draft of the channel often remains only 5-6 meters. For this, half-filled Handy Max Carriers are being used. We thought



A view of Payra Coal Power Plant

Photo: BCPCL

that the Payra Port Authority would set up self-supporting Payra port including the coal port. They were also supposed to dredge the 90Km port channel. But they are also right that until the Padma Bridge opens for traffic, ships would not come to the Payra port. However, the Port Authority has already signed a contract for capital dredging of the channel. We would dredge and maintain 500 meters on either side of the port jetty.

We are contemplating development of a Coal Transfer Terminal (CTT) at Matarbari Port. BIFCP for Rampal Power Plant and Barisal Power Company for its power plant at Patuakhali have agreed to use this. When the CTT will complete, the power plants at Matarbari-Moheshkhali Power Hub, Rampal and Patuakhali "would not have to face any problem. We will be able to import coal at affordable price."

Responding to a question about replacing the planned coal power plants with LNG-based plant, he said: "This is still under discussion. What I can say is that we are discussing about it."

Sharing his opinion about energy mix, Prof. Firoz Alam from RMIT University, Australia said a country must not rely on single fuel (e.g., natural gas or liquid fuel) for power generation. At least one-third of the total power generation should be coal-based unless other fossil fuels (oil & gas) and hydro resources are abundant within the national boundary of a coun-

try. The price, demand and availability of coal will remain stable in the foreseeable future. He also said that a developing country must not rely on imported natural gas or oil for power generation as the price of these of fuels is highly volatile and politically sensitive to sourcing regions. According to him, today's coal-fired power plant uses modern technology enabling to achieve high thermal efficiency and low carbon pollution.

Prof. Alam emphasized ardently on the use of high heating value coal (> 6,700 kcal/kg or 28,000 kJ/kg) instead of low heating value coal (4,000 kcal/kg or 16,736 kJ/kg). He provided an example for the case of Payra power plant. Using 6,700 kcal/kg heating value coal with its 42% thermal efficiency and 65% plant factor, Payra Power Plant for its 2 units can save nearly 1.5 million tonnes coal annually from its current need of 3.9 million tonnes coal with heating value around 4,000 kcal/kg. This is extremely important when coal unloading is a serious issue due to low draft at Payra river channel.

He also mentioned that our plant designers, engineers and policymakers must have a 40-50 years long plan for coal-fired power plant especially based on imported coal along with selection of long-term sourcing countries and designing boiler characteristics based on those countries' coal specifications long before the start of physical construction of the power plant.

However, Engr. Alamgir Kabir pointed out that sourcing high heating value coal is extremely difficult as major suppliers do not want to enter into long-term contracts. That is why Bangladesh is importing a lower heating value coal. He said that financing challenges of coal power projects could be addressed if the government provides 50% of the project cost as loan. He said that China has lowered the emission limits of coal power plants as low as that of gas power plants. Bangladesh should also lower the limit he observed. He said that if any fuel use is required to be abandoned, that should be dirty liquid fuel.

In his keynote presentation, Engr. Khondkar A Saleque, Consulting Editor of Energy and Power Magazine, said that Bangladesh has considerable surplus generation capacity now and already brought 98% of the population under coverage of the grid power. But a lot remains to be done for reliable, sustainable, quality supply of power to all at affordable cost. He pointed out that sustainable supply of primary fuel, affordable fuel mix, modern reliable power transmission grid and distribution network and required number of qualified, trained human resources are major challenges.

He said proper attention was not given to challenges of coal import infrastructure development and coal transportation. Now after planning for so many projects and spending 5 years, thoughts for replacing coal projects with LNG has emerged. Two challenges are highlighted now – financing and coal transportation. It is true bilateral donors and development partners are not interested in financing coal projects now. But Bangladesh cannot suddenly switch from coal to LNG.

Engr. Saleque predicted that coal will remain the fuel of choice for base load power generation for another 100 years. He said gas based plants even if it is combined cycle has 25-30 years of life cycle. Whereas a modern coal power though a bit expensive can be operated efficiently for 50 years or more. He recommended not to scrap coal projects – especially the ones near the coastal areas.

Starting from 2010 Bangladesh could manage importing 1000 MMCFD LNG in 10 years. A flawed plan was made for too many FSRUs without considering the turbulent nature of Bangladesh offshore waters. Enough time was wasted on improbable small scale LNG at CUFL and KAFCO. Logically, not more than another 2,000 MMCFD of LNG import would be possible by setting up land-based LNG terminal at Matarabari.

Bangladesh must keep all widows (coal, gas, nuclear, power import, renewable, open in the fuel mix because mono-fuel dependency would make the energy security vulnerable. According to him, extraction of local coal should get priority.

Moderating the discussion, Mollah Amzad Hossain, Editor of Energy & Power magazine, said the country's primary and secondary energy would become 90% dependent on imports by 2030. So, the energy mix should not be based on mono-fuel like gas under any circumstance. He argued that Bangladesh was almost entirely (98%) dependent on natural gas for its power generation. As soon as the gas supply started declining, the country had to fall in a sudden fuel crisis and go for expensive liquid fuel-based generation to meet the growing demand. By then, the government started developing coal-based base load power plants. In the half-way of its coal plan, the government again contemplating to go for gas-based generation, mainly due to starting import of LNG comparatively at lower cost thanks to the Covid-induced price debacle in the global market. But the price of the imported fuel of any kind could shoot up anytime. In this context, coal is the only fuel the price and supply of which remain stable for around last 100 years and is predicted to remain stable for 100 years more. So, the policymakers should not consider going back to mono-fuel again.

Dr. Mushfiqur Rahman, eminent mining engineer and environment expert thought that it would be wise to keep all options open for an affordable fuel mix. Leaning to a particular one will, of course, create vulnerability. For us, feasible renewable options are solar and

wind power. We have only 1.9MW of wind power now while efforts are being made for a 50MW windmill at Payra.

According to IDCOL, 2,000MW of solar power is possible by 2025. In my opinion, he said, it is highly optimistic. We cannot expect this unless the technology advances significantly. We should not expect large grid-connected solar coming soon. Among the traditional fuel-based new generation capacities, we have seen power at little higher cost at Tk 6.00 per unit could be generated from Payra Unit one. But there are challenges of dredging the channel and coal transportation.

The plan for setting up as much as 21 coal power plants was way too much right from the outset. Challenges similar to the imported coal projects are also there for the large-scale LNG imports. The LNG price could hit sky-high anytime. I do not think required considerations were taken into account while talking about the LNG-based power generation.

Engr. Quamruzzaman, former Director (Operation) of Petrobangla, however, welcomed the government's plan to replace planned coal projects with LNG-based plants. But he stressed the need for proper coordination with Petrobangla and EMRD in this regard.

An affordable fuel mix is necessary. Planned capacity must be higher. It gives flexibility to change based on circumstances. The land-based terminal planned to be set up at Matarabari can be extended to 30 million tonnes of storage capacity.

In conclusion, the energy sector experts have cautioned the policymakers of the dangers of going for mono-fuel in generating power to meet the fast-growing demand for electricity. They also warned of the risks of complete dependence on imported energy and suggested enlarging the fuel basket that would have the strong contribution of the local resources – be it coal or other fossil fuel, which are yet to be explored.

EP



# Grid Power Access to All Nation's Pledge Realized

Saleque Sufi

**A** proud Bangladeshi Nation celebrates its Golden Jubilee of Victory of the Glorious Liberation War on 16 December 2020. 50 years into the past on this historic day in 1971, Lieutenant General Amir Abdullah Khan Niazi led mighty Pakistani occupation army unconditionally surrendered to joint command of Bangladesh Liberation Force (Muktibahini) and Indian Army at Ramna race course (Now Shaheed Suwarawardy Uddyan). The same grounds also witnessed the clarion call of commencing preparation for the liberation war by the father of the Nation Bangabandhu Sheikh Mujibur Rahman on March 7, 1971. Three Million Bangladeshis made supreme sacrifice for the motherland. The indiscriminate looting, destruction carried out during that time made our land of love virtually ruined. Father of the nation Bangabandhu upon return from his captivity in Pakistan had to launch rebuilding the country from a ruinous state. One of his missions was creating facilities for providing quality power supply to all citizens including the rural population. With this end in view, right to energy and power for all citizens was incorporated in the constitution of Bangladesh. We are truly unlucky that agents of occupation force brutally killed Bangabandhu (including all but two daughters) and his four top allies in 1975. Had there been no assassination, his cherished dream of power supply to all could have been achieved much earlier. History stands as witness to the efforts of the government led by his loving daughter Sheikh Hasina has already achieved access of 99% popula-

tion by December 16, 2020. The remaining 1% access (mostly in the remote isolated Islands and Chars) would hopefully be achieved by March 17, 2021 the end of birth centenary of the visionary architect of Bangladesh.

By any yardstick, it is a great milestone achievement especially if one considers the diabolic power and energy supply situation that prevailed in 2009 when the Awami League Government was voted to power through adult franchise in December 2008. The government was committed to provide access of power to all by 2021, the year the pledge was also to turn Bangladesh into a middle income country.

We are aware that seamless supply of quality modern power to all at afford-

## The Achievement Till December 16,2020

Generation Capacity (Grid)	20,383 MW
Maximum Generation	12,893 MW
Access To Grid Power	99%
Distribution Line	5,88,000 KM
Transmission Line	12,379 Cktkm
Per Capita Generation	512 kwh
System Loss	8.73%

## The Areas Outside the Coverage Area Identified Were

Utilities	Areas
BREB	1,059 Villages
BPDB	Kutubdia, Hatiya, Char Sonarampur (Ashuganj), St. Martin Island and Three Districts Of Chittagong Hill Tracts.
WZPDCL	Monpura Island , Bhola
NESCO	Poba, Godagari (Rajshahi), Chapai Nawabganj Sadar, Kaliganj, Hatibandha (Lalmonirhat)

able price is the backbone of economic development. The impressive growth of GDP of Bangladesh over the past decade is an indication of government success of vastly improved power supply to development hubs. Supplying power to 99 percent population including almost to 65,000 villages is no mean feat. Yes lot needs to be done for making the supply modern, reliable and sustainable. The mission is launched and success can be foreseen.

## Power Sector Vision and the Pledge of Present Government

The pledge was providing reliable electricity to all at affordable manner by 2021. Ensuring reliable electricity to all by 2041 through integrated development of generation, transmission and distribution system.

In a key note presentation to a Webinar organized by Energy & Power Magazine DG Power Cell, the think tank of Power Division presented details of Government plan for completion of access to the remaining 1% population by March 31,2021.

**BREB:** Bangladesh Rural Electrification Board

**BPDB:** Bangladesh Power Development Board

**WZPDCL:** Western Zone Power Distribution Company Limited.

**NESCO:** Northern Electricity Supply Company.

Government is currently implementing different projects to ensure access for power to all by March 2021. Some areas are to be served by Renewable Energy and some areas are being connected through submarine cables.



ENERGY  
ENVIRONMENT  
ECONOMY

WARTSILA.COM

# POWER WHEN YOU NEED IT. NOT AFTER.

With the ability to achieve 25 percent power in 2 minutes and full load in 8, Wärtsilä Flexible Power Plants make every minute count. Today, with 65,000 MW installed, Wärtsilä is making a difference for customers around the globe. Get to know the difference we can make for you at [wartsila.com/power](http://wartsila.com/power).

Wärtsilä Bangladesh Ltd.  
SMC Tower (3rd Floor), 33 Banani C/A, Dhaka-1213, Bangladesh  
Tel +880 2 982 1070 Fax +880 2 982 1071



Government is also implementing different projects for expanding and strengthening power transmission system and modernizing distribution networks for ensuring quality and reliable power supply to all including industrial users. Among the activities are Smart Prepaid Meters and Capacity Bank, GIS, Under Ground Network, Automation of Distribution System, Distribution Transformer Switching Station, Fully Operational SCADA.

**Challenges and Mitigation Measures of Grid Reliability:** The challenges as pointed out were Inadequate Transmission and Distribution Facilities, Lack of Automation, Absence of Smart Grid / Advanced Metering Infrastructure, Absence of ISO, Obstacles on Overhead Networks and Scattered Industries.

Power Sector Utilities are implementing the following action plans for achieving grid reliability.

Implementation of FGMO (Frequency Governing Mode In Operation), Merit Order Dispatch, Strict Compliance of Grid Code, Regular Maintenance of Power Plants, Development of Skilled Operation and Maintenance Teams. 25 Power Plants are already under FGMO and another 16 are in the process of coming under soon. Works are advancing for bringing 30 more plants in near future. Total spinning reserve will be 1,000 MW for managing contingencies. DG Power Cell mentioned about various other measures planned for enhancing reliability like bringing all base load power plants under FGMO, Following Instruction of NLDC (National Load Dispatch Centre). Ensuring Reactive Power Compensation for improving voltage regulation. He also outlined various measures planned for Power Transmission and distribution segments as well.

The Present SAIDI, SAIFI indices will improve once distribution companies implement automation and modernization. Bangladesh must be extremely careful about accurate data acquisition and management.

It is believed that Power System would get smarter and competent for ensuring reliable and sustainable power supply to all soon.

**PGCB Needs Smartening:** We noticed that too much emphasis on power generation increase lost focus on Power Transmission and Distribution systems upgrading and reinforcing. Evacuation of Power from Payera Power Plant is already delayed. By 2023 Rampal, Matarbari and Roopur Power Plants would come into operation. The activities of PGCB must be smartened and vigorously monitored.

### **Industries Must Move Out of Captive Generation**

Industries still rely on about 2,800 MW captive generation of their own. Most of these use scarce natural gas resource. On the other hand a significant portion of grid power remains idle. As the grid supply is getting more and more reliable, government and industries must positively interact for grid power supply for industries letting gas relocated for other value added use. Government may consider few incentives. Government must not allow any further captive generation in Special Economic Zone.

Quality power impacts all positively. Needless to mention that availability of quality uninterrupted power to all in Bangladesh especially in the rural areas will create social and economic revolution. Farming community will have ready access to all facilities (modern farming technologies), telemarketing of agro produce, modern medical care and education facilities would be extended to rural areas. Industries based on local raw materials will grow. Urban rural reverse migration will reduce excessive load on few cities. People living in slum areas can get back to their places of origin. Growth of Industries in different parts of the country will create huge job opportunities for unemployed youth. Agro based economy will be complemented by smooth industrialization. We have already witnessed the positive impacts during the ongoing pandemic.

### **Energy And Power Pricing**

Power Utilities must not be mixed up with other service organizations like community hospitals. These are commercial organizations. Government will definitely facilitate power supply to all

at affordable price. But for creating access to all and making power supply reliable, utility service providers have to spend a fortune. They must be compensated with economic price of their services. Quality power supply too will create economic development. Affordability of people will increase. Hence pricing can be gradually made market oriented. BERC must be armed with competent resources for regulating energy and power price efficiently.

**Cyber Security:** Grid reliance and automation have some associated risks as well. Some countries in the developed world experienced Cyber crimes. Bangladesh must develop in-house expertise and train its resources for ensuring cyber security.

**Countries like USA and UK experienced major grid failures:** Even Bangladesh power grid's failure one time created chaos. Fully operational SCADA and other modern technologies would guard against that. But we must be always prepared for the worst. We must remember that operating 40,000 -60,000 MW power system and present 13000 MW system will not have same challenges. There should be enough provision of standby local generation to fall back upon especially during unscheduled grid failures, if any.

### **Conclusion**

Power to all is a nation's dream realized. It was also a dream of the father of the nation. It is great that Bangladesh is achieving this during the birth centenary of the father of the nation on the eve of 50th Anniversary of the glorious liberation war. It will also facilitate the implementation of the Vision of Bangladesh Prime Minister "Villages Will Turn into Towns." Well-done Bangladesh! Nations pledge is fulfilled. This success must be widely publicized by Bangladesh missions abroad for encouraging more FDI in Special Economic Zones of Bangladesh.

**EP**

.....  
**Saleque Sufi;**  
Contributing Editor, EP



জ্বালানী খাতে  
সেরা পুরস্কার প্রাপ্ত

**Omera**  
LPG

সঠিক মাপ ও মানসম্পন্ন

বিশ্ব সেরা প্রযুক্তির

নিরাপদ সিলিন্ডার



# Int'l Community Starts Assessing Benefits of 100pc Coverage

## EP Report

The international community has already started assessing the socio-economic benefits of Bangladesh's success in providing access to electricity for almost all its citizens. The country's vision is to ensure access to power for all by 2021. By the end of 2020, it has already provided electricity to 99% of the population and is expected to achieve 100% by March next year.

With the success achieved so far – almost universal access to electricity - the country's GDP growth is estimated to have accelerated by 1.2 percent while the height of 1-3 years old rural children increased by 3 percent. It has also made significant contribution to medical and healthcare services of the country.

Dr. Firoz Alam, Professor of RMIT in Australia, shared the socio-economic benefits from an international Journal as he took part at a recent virtual discussion. Energy and Power magazine organized the meeting on "100% Electricity Coverage: Bangladesh is Almost There" on 5 December 2020, as part of a series titled "EP Talks".

Moderating the virtual conference, EP Editor Mollah Amzad Hossain informed that access to power for the remaining 1% population mostly in the isolated islands and char areas needs solar power or submarine cable connectivity. There is a plan to complete these works by 17 March 2021, by the end of the year-long birth centenary program of father of the nation Bangabandhu Sheikh Mujibur Rahman. Power sector officials also expressed opti-

mism about achieving the vision.

In his keynote presentation, Engr. Mohammad Hossain, Director General of Power Cell, said the constitution of Bangladesh being unique is a role model with having a provision for rural electrification. Bangladesh Rural Electrification Board (BREB) was created with that mandate. Bangabandhu while addressing the engineers in 1975 stressed on rural electrification on priority basis as 85% of the population used to live then in rural Bangladesh. Under the visionary leadership of Prime Minister Sheikh Hasina, the country has almost achieved it. The hilly and some remote Char areas are only left behind. The target will definitely be achieved by the end of 2021, if not by March next, he said.

Works on ensuring power supply to 1,059 villages of BREB franchise, Kutubdia, Hatiya, Charsonarampur

40,000 consumers in the hill districts will be served with solar power.

Around 40 million consumers are now enjoying the power supply. Some 7,750 villages out of 9,795 of BPDB franchise are already served with 100% supply. BPDB coverage is 98.75%. BREB supplied 100% power to 83,686 villages out of 84,700. Their customer number is 30.3 million. WZPDCL has supplied power to 1,276 villages out of 1,285. NESCO could supply to 2,498 villages out of 2,539.

"We agree that we have to ensure quality power supply. We have carried out survey to know about the consumers' satisfaction," he said. The System Average Interruption Duration Index (SAIDI) is a measure of frequency of power interruption against duration of interruption. BREB recorded highest 1,327 minutes in 2019-20. NESCO with 229

### Sponsored By



**M2K TECHNOLOGY & TRADING CO., BANGLADESH.**

**M2K TECHNOLOGY & TRADING CO. PTE LTD., SINGAPORE.**

and three hill districts under BPDB and Monpura Island of WZPDCL are under progress. We want to provide renewable power to Monpura. Paba, Godagari, Kaliganj and some parts of Hatibanda in NESCO franchise areas needed supply now. We know which areas remain to be connected – the distribution companies were working to ensure supply. This is a matter of time only. Around

minutes was the lowest. Another measure is the frequency of load-shedding or the System Average Interruption Frequency Index (SAIFI). NESCO with 95 times was the highest and DESCO with 13.77 times was the lowest. The average was 46.95 times. "We must realize that these are technical glitches. With system upgrading and modernization, these will be minimized."

Taking part in the discussion, Prof. Dr. Ijaz Hossain, Dean of the Engineering Faculty of BUET, observed that Bangladesh required 50 years to supply electricity to 99% of the population. It is a commendable achievement, however. He congratulated all involved in this major work, but questioned whether it is merely an extension of the grid or it has been possible to provide connections to all in the coverage area. Another major success of Bangladesh was installation of 5.0 million Solar Home Systems (SHSs). There must be a study on the impact of power through the SHS program. We should also see whether this has impact on the mini solar grids, which has already come into operation.

Engr. Belayet Hossain, Chairman of Bangladesh Power Development Board (BPDB), said spontaneous appreciation about the success of power sector pleases us, but it also triggers a bit of concern as making it sustainable is a big challenge now. We have also had some mistakes. Objective criticism also benefits us.

Works in the off-grid region is the main challenge now. Completion of all the projects taken up for completion by 17 March 2021 is a challenge. It is not possible giving connection to Hatiya laying submarine cable. We planned to set up IPP there. A power plant of 8-10MW capacity will be set up there. We initially planned it will be a diesel-fired plant, but now we decided to make it furnace oil-based IPP and a proposal in this regard has been given to the ECNEC. When approved, we will start implementation. Execution of this work within the timeframe is the challenge now. We could develop confidence of general consumers by now. But we acknowledge that we could not achieve confidence of industrial consumers so far. There are issues of stable voltage. Maintaining this over long power lines is a genuine

problem. Upgrading of distribution system, introduction of smart grid and SCADA are being done. Pre-paid meters are being installed.

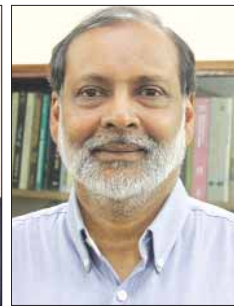
There are few reasons for lack of confidence of industrial consumers. Almost all the 2,800MW captive power is gas-based and their generation cost is relatively lower and as such tariff is lower compared to the grid power.

Hence it is difficult to get out of captive generation easily. Whatever you do for improving the reliability of grid power, it will not be so easy to replace the captive power with grid power. The government needs to take policy decision. Quality power on uninterruptible basis will be supplied as the system is being upgraded and modernized. We do realize that the cyber security is essential. It is neglected until now.

The BPDB Chairman said that industrialization and economic development would obviously happen if power supply is assured. We want uniform development through out the country. He mentioned that the South Western Bangladesh is developing as a major power generation hub. Power supply issues in the region are being addressed.



Mohammad Hossain



Ijaz Hossain



Belayet Hossain



Md. Zohirul Islam



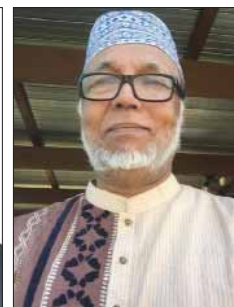
Shah Zulfiqar Haider



Zakiul Islam



Md. Shafique Uddin



Khondkar A Saleque Sufi



Firoz Alam

Md. Zohirul Islam, Member of BREB, mentioned that 100% electrification of villages has only been declared after getting certification by the respective Deputy Commissioners. Only 1,059 villages are still not covered – 1,030 villages will be connected through submarine cables while 29 villages will be provided with solar power. We are optimistic about bringing all villages under electricity coverage by March 2021.

Our long distribution lines have to traverse through villages. There are many trees. More Power transmission grid lines are essential for facilitating quality power supply. The length of 33KV lines from source to power hub must be reduced. Otherwise, power at stable voltage cannot be ensured. Works on supplying electricity from dual sources is progressing.

Former General Manager of Polly Bidyut Samity (PBS) and former Director of Sustainable and Renewable Development Authority (SREDA) Engr. Shah Zulfiqar Haider pointed out that mini grid was once our pride. Narshingdi has the largest mini grid. Phenomenal growth of demand has happened due to economic growth. The main achievement is the uniform rate across the country. Once rate of BREB was higher, mini grid power was still higher. Now there is one rate. Around 1,000MW reserve margin target is commendable. It is a matter of great delight that Pakistan is following Bangladesh achievement for replication.

He said that there was a power system disaster in Ukraine. He questioned whether power utilities have capabilities for managing contingencies. We are outsourcing many works. This may create vulnerability. Bangladesh must have own qualified trained resources for cyber security, he suggested.

Zakiul Islam, Managing Director of Northern Electricity Supply Company Limited (NESCO), said the company has become self-sustaining from whatever it earned over the past four years. Four projects are under implementation for ensuring quality, uninterrupted power supply. When completed, there will be significant improvement in place. It will be possible supplying power to all within the grid coverage area in our franchise by end December 2020. We have provided SHSs to the far-flung areas of Padma Char.

However, one challenge is that now a char would go under water during the rainy season. So, the SHSs are not suitable there. We are trying to extend grid power coverage there.

Data and education system are integrated through power lines in the developed countries. If we can set our system with SCADA and GIS along that line in 5 years, it can be another source of revenue for the distribution utilities.

Prof Firoz Alam from RMIT University

in Australia shared his opinion on the impact of rural electrification undertaken by the BREB and said providing electricity to the rural masses has made huge positive impact on socio-economic condition, health, and education in rural Bangladesh. Citing some research data on rural electrification, Prof. Alam mentioned that household income, rural employment, access to education, healthcare and telemedicine, and child nutrition are doing much better in Bangladesh compared to many countries around the world with similar per capita gross domestic product (GDP). He also mentioned that access to power in rural Bangladesh has made incredible positive impact on the body mass index (BMI), especially the height of children under the age of five. Prof. Alam also stated that the rural population having access to power are embracing digital technology to generate income, including making YouTube video clips on Bangladesh's rural lifestyle, food and culinary, fishing, farming, cultural heritage, etc. He emphasized on ensuring secured and reliable power supply to rural masses in Bangladesh. Ensuring reliable power supply and high-speed broadband internet connection in rural areas will reduce the income disparity and digital divide that exists at present in Bangladesh.

Engr. Md. Shafique Uddin, Managing Director of West Zone Power Distribution Company Limited (WZPDCL), informed that his company achieved providing power access to 99.99% population. However, Monpura of Bhola is a major challenge. One diesel-driven power plant is being used to supply power for 8 hours daily. Now renewable power is providing supply at Tk 30-35. But this is a disparity when you consider rates in other places. Now a 3MW capacity Hybrid Solar Power Plant is being set up there and 24/7 power supply can be given when this will come into operation. We are trying to complete it within March 2021.

PLC communication is now being used. Communication with all is possible

now. We can now know about the state of the transformers. In the past, we used to search for the location during transformer tripping. Now that difficulty is no longer exists. Technologies are making the life easy.

Engr Khondkar A Saleque Sufi, Consultant Editor of Energy & Power, said the grid coverage and automation, apart from achieving the quality power supply, would expose the system to cyber-attack. Hence skills development of own professionals and guarding against cyber-attack must be given priority. Introduction of GIS, SCADA would help gather quality and accurate data. These would facilitate much accurate forecasting and system planning.

### Recommendations

The speakers recommended ensuring cyber security as it would be the main challenge now. Due attention must be given in this regard. Outsourcing may be gradually reduced while developing in house expertise. Otherwise, cyber-attack may create major disruption, crippling the economy, commerce and lives.

Ensuing quality uninterrupted power supply to all would remain as the major challenge for the power system utility companies after achieving the power to all vision. This challenge is more applicable to PBSs under BREB, distribution wing of BPDB, WZPDCL and NESCO.

Experts suggested reducing the lengths of 33KV transmission lines. Numbers of grid substations must be increased. Automation must be introduced as soon as possible for operation and monitoring of supply lines, transformers, substations. Gradually smart grid needs to be introduced. All substations must be provided with dual source supply. For managing implementation of all above and operating these facilities, human capital must be made technology-friendly and skilled through training and capacity building.



বিশ্বাস আর আস্থায়  
ফ্রান্সের টোটাল  
এলপি গ্যাস





# Oil Market Optimistic as Vaccinations About to Start

Serajul Islam Quadir

Sentiment boosted up as optimism grows day by day with news that the world may be able to handle ongoing pandemic over the next few months by using vaccination across the world. This expectation raised Brent Crude to \$50 a barrel on December 10, 2020 for the first time since oil prices crashed in early March.

Brent Crude was rallying by 3.56 percent at \$50.60. The price of Brent reached the \$50 a barrel threshold for the first time since the first days March, when Saudi Arabia and Russia broke up the previous OPEC+ pact, contributing to massive slides in oil prices exacerbated by the demand crash in the lock downs in the spring.

Oil prices were boosted by Canada approving the Pfizer-BioNTech vaccine, joining the UK. Canada's health authorities approved the vaccine, and the first doses of the vaccine are expected by the end December.

The UK has already started vaccinating vulnerable people and essential personnel, and the first person in the UK has already received the Pfizer vaccine.

Hopes of faster-than-expected vaccine releases turned the oil market sentiment bullish, even after the EIA reported a massive crude oil inventory build of 15.189 million barrels on December 4. This rise in crude inventories came close to the largest crude build ever, which was recorded earlier this year for the week ending April 10, when the EIA reported a 19.25 million barrel inventory build.

The market was already ignoring the massive build, due to

the vaccine hopes and signs that oil demand in Asia continues to recover and be a bright spot on the market. Indian Oil Corp, the biggest refiner in the world's third-largest oil importer, said its refineries operated at 100 percent capacity in November, for the first time since the pandemic started, in order to meet growing domestic fuel demand.

On December 9, extending last week's gains as traders anticipated coronavirus vaccine trials would spur a recovery in demand.

Sentiment was also bolstered by expectations that the Organization of the Petroleum Exporting Countries (OPEC), Russia and other producers, a group known as OPEC+, would extend a deal to restrain output.

Brent crude rose 66 cents to \$45.62 a barrel by 1247 GMT while U.S. West Texas Intermediate crude gained 52 cents to \$42.94 a barrel. Both benchmarks jumped 5% last week.

Oil prices rose more than 1% early of December, extending previous week's gains as traders anticipated coronavirus vaccine trials would spur a recovery in demand.

Outlook for demand has improved with news indicating progress towards developing COVID-19 vaccines. A U.S. official said the first inoculations in the United States could start a day or two after regulatory approval was secured.

British drug maker AstraZeneca NSE 0.10 % said its vaccine, developed along with the University of Oxford, could be around 90% effective. PVM analyst Stephen Brennock said the news was detaching sentiment from "gloomy fundamentals".

"Investors are ignoring near-term headwinds, chief among which are surging global COVID infections, and instead looking ahead to next summer," he said.

On the supply side, OPEC+, which meets on Nov. 30 and Dec. 1 will look at options to extend its deal on output cuts by at least three months from January. Smaller Russian oil companies are still planning to pump more crude this year, a group representing the producers said.

Yemen's Iran-aligned Houthi group said it fired a missile that struck a Saudi Aramco site in the western city of Jeddah. There was no immediate Saudi confirmation of the claim. Aramco's main oil facilities in are in the east.

Brent crude prices hit their highest levels since March as news of a third promising vaccine candidate spurred hopes of a quicker recovery in oil demand.

"Progress on developing and distributing a vaccine de-risks the path back to normal for oil markets," said Stephen Innes,



chief global markets strategist at financial services firm Axi.

"If mobility data is a measure of oil price sentiment, in the not too distant future, the vaccine will get people back on airplanes and cruise ships."

AstraZeneca said its COVID-19 vaccine was 70 per cent effective in pivotal trials and could be up to 90 per cent effective, giving the world's fight against the global pandemic a third new weapon that can be cheaper to make, easier to distribute and faster to scale-up than rivals.

This follows positive trial results from Pfizer/BioNTech and Moderna.

Also helping to ease uncertainty in financial markets, President Donald Trump allowed officials to proceed with a transition to Joe Biden's incoming administration, giving his rival access to briefings and funding even as he vowed to persist with efforts to fight the election results.

U.S. crude oil inventories likely edged lower, while distillate stockpiles were seen decreasing for a 10th straight week, a preliminary Reuters poll showed, ahead of reports from the American Petroleum Institute and the Energy Information Administration (EIA).

Traders also focused on a week of technical meetings by OPEC and its allies to prepare the ground for next week's ministerial gathering, which is set to discuss extending oil output curbs into next year due to weak demand amid a second wave of COVID-19. The volume of natural gas vented or flared in the U.S. in 2019 was 1.48 billion cubic feet per day, a record high. That amounted to 1.3% of total gross gas withdrawals. North Dakota and Texas accounted for 85% of the total gas vented or flared. The environmental impact is causing reputational damage to the industry. Some European buyers are backing away from purchasing U.S. LNG because of the enormous volume of vented and flared gas upstream.

Oil prices declined recently due to a weak short-term demand outlook but steadied during midday trading. The

macro backdrop has a bullish tinge as coronavirus vaccinations officially began in the UK.

U.S. gasoline demand falls 8%. U.S. gasoline demand over the Thanksgiving holiday fell to its lowest level in 20 years, and it was down 8.4% from the week before. "We're heading toward a 90-day period where gasoline demand gets further crimped by winter weather and post-holiday cocooning," Tom Kloza, executive director, IHS Markit, told a news agency. "By January, we may regularly see demand numbers not witnessed since the last century."

Saudi Arabia hiked its oil pricing for cargoes heading to Asia, the largest price increase in five months.

"Aramco views the demand picture in Asia as recovering to pre-pandemic levels, led mainly by China," said Edward Bell, senior director for market economics at Emirates NBD PJSC in Dubai.

Tesla to issue shares to raise \$5 billion. Tesla decided to take advantage of its soaring share price by issuing new equity. The third share sale in 10 months could raise as much as \$5 billion.

UAE's jockeying at OPEC meeting hints at ambitions. Some tough negotiation and arm-twisting at the OPEC meeting by the UAE was a bit of a departure from the past. The UAE typically follows Saudi Arabia's lead at OPEC. The UAE also said that it plans on spending \$122 billion on increasing production capacity. It looks at the UAE's rising ambition.

The Energy Information Administration said at the beginning of December in 2020 that a massive crude oil inventory build of 15.189 million barrels for the week to December 4, after a modest draw of 700,000 barrels estimated for the previous week.

This week's rise in crude inventories came close to the largest crude build ever, which was recorded earlier this year for the week ending April 10, when the EIA reported a 19.25 million barrel inventory build.

A day earlier, the American Petroleum Institute had said a crude oil stock build of just of 1.1 million barrels along with

much larger builds in gasoline and distillate fuels.

In fuels, the EIA reported an inventory build in gasoline and another build in distillate stocks for the week to December 4.

In gasoline, the authority estimated an inventory increase of 4.2 million barrels, compared with a sizeable build of 3.5 million barrels for the previous week. Gasoline production averaged 8.3 million bpd, compared with 8.6 million bpd a week earlier.

In distillate fuels, the EIA estimated an inventory build of 5.2 million barrels for the reporting period. This compared with an increase of 3.2 million barrels for the previous week. Production of middle distillates averaged 4.7 million bpd last week, compared with 4.6 million bpd a week earlier.

Optimism driven by OPEC+ finally reaching an agreement how to continue cutting production from January next year also helped pushed prices higher, even though the agreement was for a moderate increase in collective production.

"We are confident that the weak demand will soon move back into the market's focus," Eugen Weinberg, head of commodities research at Commerzbank, said to reporters. "The latest price rise has been driven by speculation."

The volume of natural gas vented or flared in the U.S. in 2019 was 1.48 billion cubic feet per day. That amounted to 1.3% of total gross gas withdrawals. North Dakota and Texas accounted for 85% of the total gas vented or flared. The environmental impact is causing reputation damage to the industry. Some European buyers are backing away from purchasing U.S. LNG because of the enormous volume of vented and flared gas upstream.

**EP**

**Serajul Islam Quadri;**

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

# Nation's Crucial Decision to Select 'Appropriate Technology' for Managing Municipal Solid Waste

Prof. Kunio Yoshikawa  
Shaikh Ehsanul Habib  
Hashin ur Reza

If managed well, it is an 'Asset' and failure of it will lead to a big 'Liability'. It is MSW [Municipal Solid Waste]. MSW is a serious concern for environmental & health hazards and cause of many urban social problems in Bangladesh. Currently, a massive volume of solid wastes are generated daily in municipal areas all over Bangladesh and consequently, they have become difficult to be managed economically due to an increase in their volume with the augmentation of urban lifestyle. Till now, MSW management has been a 'Liability' for all municipal authorities in our country while in some counties, MSW has become a valuable 'Asset' now!

We have several major cities in Bangladesh; Dhaka, Chittagong, Rajshahi, Khulna, Barisal, Rangpur, and Sylhet, etc. These cities are generating a huge amount of solid wastes every day which are only disposed of by open-dumping. The enormous increase in the quantity and diversity of waste materials generated by human activities is resulting in adverse effects on environment & health, which have led to increasing awareness to adopt environmentally sound methods for safe disposal of wastes. The technologies to recover energy from wastes can play a vital role to mitigate the problems. At present, there are 522 urban centers in the country including 254 pourashavas and 6 city corporations generating about 13,332 MT of solid wastes per day and they will increase to about 47,000 MT/day by 2025.

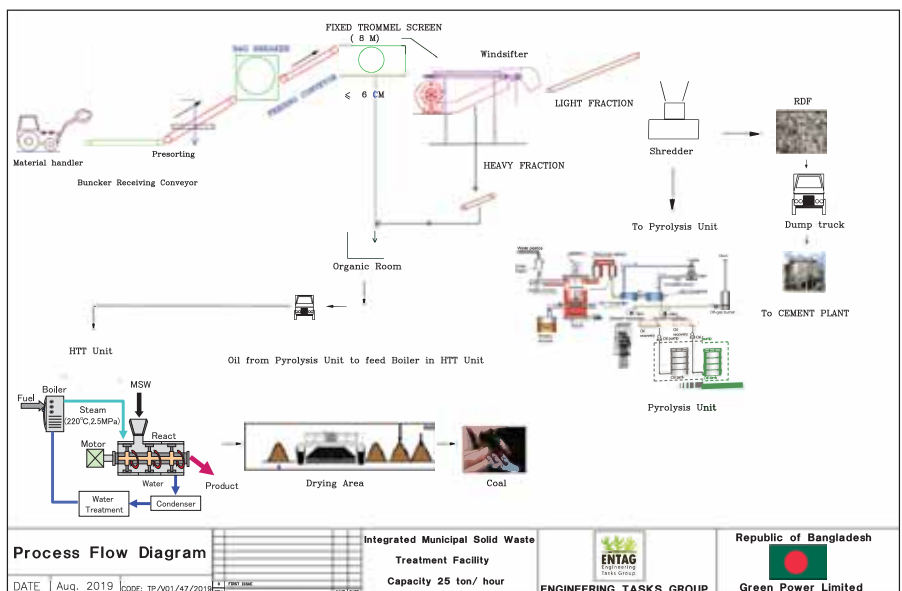
The known environmentally sound MSW treatment technologies are as follows:

1. Recycling
2. Sanitary Landfilling
3. Biological Treatment Including Composting & Biogas Production
4. Incineration & WTP [Waste To Power]
5. Pyrolysis and Gasification
6. Hydrothermal Treatment

Unfortunately, our country is following none of the above technologies yet! In most cases, wastes are openly dumped like in other developing countries and any resource recovery plants for MSW are not available yet. We are continuing primitive open-dumping of MSW causing environmental hazards of air pollution and underground water pollution

by leachate from wet MSW into the soil. Proper treatment of MSW will reduce the waste volume up to 95% and consequently will reduce the required land-filling area.

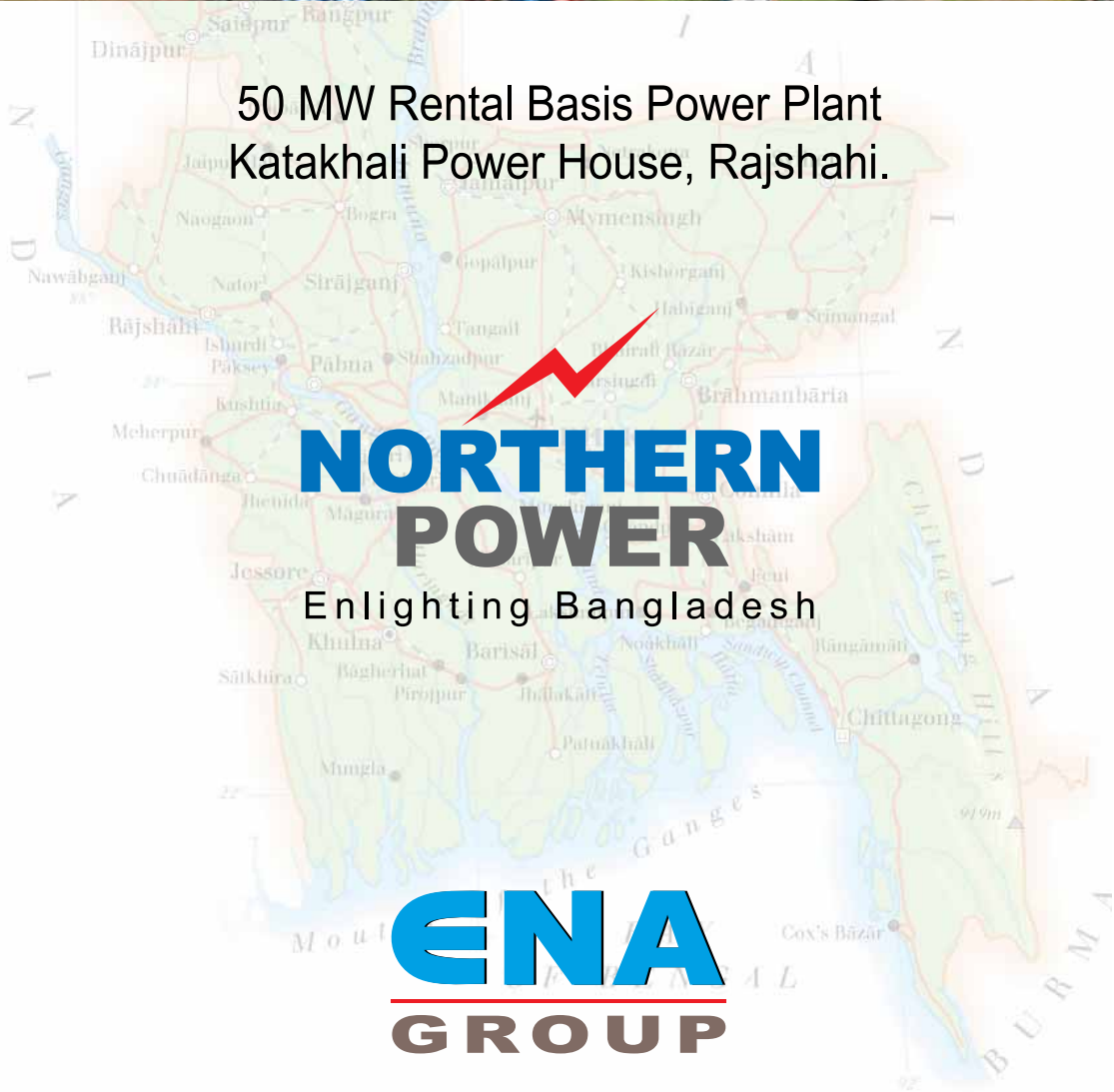
Secondly, we have conceptualized the most traditional way of the incineration process to generate electric power called Waste to Power [WTP] without a holistic assessment of its appropriateness for the high-moisture and low-calorific value MSW in our country. We should remember that any particular technology is not appropriate everywhere for all kinds of MSW! In Europe, the composition of MSW is different from ours. MSW in Europe has a lower moisture content with a higher percentage of paper and plastic while our MSW



Flow diagram of the integrated HTT & pyrolysis process



50 MW Rental Basis Power Plant  
Katakali Power House, Rajshahi.



**NORTHERN  
POWER**

Enlightening Bangladesh

**ENA  
GROUP**

**NORTHERN POWER SOLUTION LIMITED**

Corporate Office : ENA TOWER, 57/3 & 57/4, Panthapath, Lake Circus, Kalabagan, Dhaka-1205, Tel : +88 02 58151280, 9102659, 9102660, 9103035, 9103037, 9112148, Fax : +88 02 58155720, E-mail: info@enagroup.net, web : www.enagroup.net  
POWER PLANT : Northern Power Solution Limited, Katakali Power House, Rajshahi, E-mail : npsl@enagroup.net

is composed of high water content [50–60%] wastes such as kitchen and food wastes and consequently it has very low heating value. Therefore, WTP is not appropriate in our country and not financially viable at all. We have indigenous much cheaper sources of electric power such as natural gas, coal, and liquid fuel. The government needs to subsidize heavily for WTP for the whole of the operational life of WTP plants.

Furthermore, ‘Fly ash’ generated in WTP plants is another big environmental concern. Where should we dispose of it? In our water body nearby rivers? No way! Air pollutants like small particulate matter [PM 2.5] emitted from incinerators in WTP plants cause serious health hazards leading to a fall in lung function, irregular heartbeat, heart attacks, and premature death. If you are infected by COVID 19 virus, inhalation of polluted air is like ‘putting gasoline on the fire’.

A WTP plant installed in old Timarpur, Delhi had to shut down in 21 days after starting its operation in 1987 due to environmental and health hazard issues together with a low calorific value [2.5–2.9MJ/kg] of incoming MSW. Totally 14 WTP plants were installed in India since 1990 and half of them have already been shut down and the remaining ones are also under scrutiny and re-evaluation of Socio-Economic Impact Assessment.

Now after further drill down into the traditional WTP concept, we understood that the reasons for high installation and operating costs of WTP plants in our country are the 50 - 60% moisture content in our MSW as well as their exorbitant CAPEX and huge land requirement. It needs high energy input to dry them up to evaporate the moisture content before burning them starts to generate sufficient heat to generate electric power. Therefore the cost of electric power by WTP of MSW in our country

Waste Component	Percentage of the Total	Moisture Contents
Organic Waste	70%	64% 7% 48% 2% 12% 14% 7%
1. Food/vegetable waste		
2. Paper waste		
3. Garden waste		
4. Rubber		
5. Wood		
6. Textile organic waste		
7. Leather waste		
Inorganic Waste	20%	2%
1. Glass		
2. Ferrous & non-ferrous material		
3. Construction waste		
4. Electronic waste	10%	4%
Plastic waste		

will become very expensive.

The biological treatments of MSW including composting & biogas production need big land areas and long process times because the biological processes are slow. Also, only the organic part of MSW can be treated so plastics and papers shall be presorted. In our country, this kind of presorting of MSW has not been implemented and it is very difficult to ask the citizens to cooperate in house-level presorting. Without appropriate presorting, the quality of the produced compost will become low and the biogas production will decrease. That’s why such treatments have not yet been widely applied in our country.

Now we can look into a holistic approach of MSW treatment combining

Waste Component	Calorific Value (MJ/kg)
Organic Waste	5.70 14.24 7.90 18.00
1. Food & Vegetable waste	
2. Paper waste	
3. Garden waste	
4. Rubber	
5. Wood	
6. Textile organic waste	
7. Leather waste	n/a
Inorganic Waste	
8. Glass	
9. Ferrous & non-ferrous material	
10. Construction waste	40.00
11. Electronic waste	
Plastic waste	

the HTT [Hydrothermal Treatment] process for organics and papers, the pyrolysis process for plastics, and landfilling for rejects. Around 7% of our MSW are construction materials, glass, metal, etc. which are treated as rejects for landfilling and 93% can be used in the HTT and pyrolysis processes to produce green solid and liquid fuels.

### What are the HTT & pyrolysis technologies?

All burnable wastes can be converted into coal-like solid fuel by the process called hydrothermal treatment [HTT]. It is a controlled one-hour cooking process using saturated steam with a temperature around 200°C and a pressure around 2MPa. This process can reproduce the natural coal production process from biomass in millions of years with high temperature and pressure inside the earth.

This integrated waste treatment process includes another process called the pyrolysis process. It decomposes plastic wastes at a high temperature around 400°C in the absence of oxygen to produce petroleum-like liquid fuel. We call this integrated HTT & pyrolysis processes a new Waste to Energy [WTE] process whose flow diagram is shown in Fig.1. In this process, plastic wastes and rejects in MSW will be mechanically separated first.

This WTE process can handle organic components with high moisture content in MSW directly without pre-drying and convert them into solid fuel having similar heating value with natural coal to be burned together with coal or burned as a substitute for coal in the existent coal-firing facilities. Therefore, this HTT process can be characterized as ‘Appropriate Technology’ to treat our high moisture content MSW to produce coal alternative fuel. This ‘new coal’ is a financially viable domestic product from MSW in our country where most coals are imported.

Also, policymakers are getting interested in making MSW into a source of renewable energy, as there is a huge amount of energy locked in these wastes. So,

Issues	Incineration	HTT	Landfilling
<b>Moistures</b>	In this process, a large amount of energy is required to remove the moisture from the wastes to burn them.	In this process, we don't need to remove the moisture beforehand.	No effects.
<b>Installation &amp; operation</b>	The installation of an incineration plant is very expensive. Moreover, its operational cost is also high.	The HTT plant is significantly cheaper compared to incineration plants.	Relatively easier to implement compared with incineration and HTT. But the amount of required land is very large which is expensive for a country like us.
<b>Environmental effect</b>	Incinerators produce 'Fly ash' whose disposal is a big problem. Moreover, without costly emission control facilities, air pollutants will be emitted during the burning process. The air pollutants include acid gases, carcinogen dioxins, particulates, heavy metals, and nitrogen oxide.	The HTT plant is significantly cheaper compared to incineration plants.	Relatively easier to implement compared with incineration and HTT. But the amount of required land is very large which is expensive for a country like us.
<b>Human health</b>	According to (CAP, 2013) research, in the communities where incineration plants were built, their long-term effects come in the form of health hazards such as cancer, birth defects, reproductive dysfunction, neurological problems, and other health effects are known to occur at very low exposures.	The HTT process causes no health hazards.	Landfilling produces methane gas which pollutes the air and also there is a chance of fire hazard due to methane. And it produces a bad odor and ammonia gas etc., which is a risk for human health.
<b>Energy Consumption</b>	Very high energy requirement for the treatment of MSW with high moisture content.	Very low energy consumption, only 15% of the final product is enough for producing required steam for the process.	No energy consumption.

coal-alternative fuel production from MSW can play a vital role in the socio-economic development of our country.

### Composition of Our MSW

MSW in our country is originated from residential houses, street sweeping, commercial places including market, industry, and other sources including dust, ash, vegetable farms, etc. The major part of the wastes is found to be organic and their average composition is shown in the table below.

### Heating Value of Our MSW

Around 70% of our MSW is an organic component of food & vegetable with a huge moisture content of around 65%, and consequently, its calorific value is as low as appx 7.94MJ/kg having a big difficulty to be burned to generate electric

power in WTP plants economically.

### Comparison among HTT, incineration, and landfilling

Incineration and landfilling are the most widely applied processes for MSW treatment now. The incineration process is suitable for MSW with less moisture content. But in our MSW, the moisture content is around 50-65%, so the incineration process is not the 'Appropriate Technology' to be adopted in our country. Also, the scarcity of our land makes landfilling of MSW very expensive in our country. Therefore, landfilling is not a viable option for us also.

Considering the situations in our country, a spotlight comparison among HTT, incineration, and landfilling is depicted in the below table.

### Salient Uniqueness & Technical Advantages of HTT & Pyrolysis Processes:

1. MSW in our country contains a huge amount of moisture. It is a huge disadvantage for the incineration process where it requires high energy input to dry it up and to burn it to produce costly electric power if desired so. On the contrary, the HTT process cooks MSW with steam to produce 'Coal' [RDF] without its pre-drying.
2. This integrated process leaves nearly zero wastes except for the rejects as all burnable wastes are converted to solid/liquid fuels.
3. Technically both the HTT & pyrolysis processes are simple and do not need complicated equipment.

## Salient Commercial Advantages:

1. The capital cost of the HTT plant is lower than incineration, gasification, and other thermochemical processes.

2. The payback period of HTT is significantly lower than incineration, gasification, and other thermochemical processes.

3. The erection and commissioning time for HTT is 10-12 months while that for WTP is 30-36 months.

Economic value analysis of MSW with different technical processes is shown in the following table.

### Assumptions:

1. Capex of incineration plant is based on a plant capacity of 200,000 MT of MSW per year which is appx BDT 8.42 Billion.

2. Capex of gasification plant is based on a plant capacity of 195000 MT of MSW per year to produce 8MW electric power worth of appx BDT 18.89 Billion.

3. Capex of HTT & pyrolysis plant is based on 500MT per day capacity MSW plant worth of BDT 910 Million.

4. Capex of biogas & compost plant is based on a plant capacity of 40MT per day of MSW which is appx BDT 240 Million.

Economic Value Analysis of MSW [1MT/DAY] with Different Technical Processes									
SL NO	CAPEX [Million BDT/ (MT/DAY) MSW]	YIELD	TECHNICAL PROCESS	UNIT	YIELD QTY PER DAY.	CYCLE TIME	TARIFF [BDT]	ECONOMIC VALUE [BDT/DAY]	ANNUAL THROUGHPUT [BDT]
1	15	Electric Power	Gasification	kWh/D	450	Continuous	8.53	3839	1,401,053
	35		Incineration	AY	360	Continuous		3071	1,120,842
2	2	Liquid Fuel	Pyrolysis	Liter	50	2 Hours	35	1750	638,750
3		Coal	HTT	kG	350	6 Hours	6	2100	766,500
4	6	Fertilizer	Composting	kG	200	45 Days	6	1200	438,000
5		Electric Power	Biogas	kWh	12	30 Days	8.53	102	37,361
6	N.A.	Recycle [metal, glass, debris etc.]	All	kG	130	N.A.	20	2600	949,000
7	N.A.	REJECT [poor quality rejects]	All	kG	70	N.A.	6	420	153,300

## Salient National Advantage:

1. Both the solid and liquid fuels produced from this integrated process are our national import substitute and consequently will save our foreign currency.

2. No subsidy is required from the government to run such a plant as it produces commercially viable 'primary fuels' instead of producing costly electric power where government subsidy is required.

3. This process does not need the involvement of too many ministries and long red tape to decide upon. The City Corporation/Ministry of Local Government alone can decide the uses of their wastes and give a supply guarantee to the third-party investor willing to set up such a plant.

4. The fuels produced from this integrated process are green and can earn carbon credit by the Kyoto Protocol.

### Recommendations

1) HTT and pyrolysis technologies are to be declared the 'Appropriate Technology' vis-à-vis to any other waste treatment technologies available and known to us until today, and they shall be adopted in our country by national policy to roll over all local government authorities soon.

2) These technologies can convert our wastes from 'Liability' to 'Asset'.

3) All local government authorities should supply sufficient land area to set up such integrated plants in the landfilling area in their respective territories.

4) The government should patronize the investors with tax holidays and waiver of VAT on the products obtained from these plants to promote marketing within the country.

### Economic Value Change of MSW at a glance with different technologies

Economic Value Analysis of MSW [1MT/DAY] with Different Technical Processes									
SL NO	CAPEX [BDT/ MT MSW]	YIELD	TECHNICAL PROCESS	UNIT	YIELD QTY PER DAY.	CYCLE TIME	TARIFF [BDT]	ECONOMIC VALUE [BDT/DAY]	ANNUAL THROUGHPUT [BDT]
1	35,562,852 14,544,708	Electric Power	Gasification	kWh	15	28 Days	8.53	128	46,702
			Incineration		200	3 Hours		1706	622,690
2	1,820,000	Liquid Fuel	Pyrolysis	Liter	50		35	1750	638,750
3		Coal	HTT	kG	410	2.5 Hours	6	2460	897,900
4	6,000,000	Fertilizer	Composting	kG	200	45 Days	10	2000	730,000
5		Electric Power	Biogas	kWh	12	30 Days	8.53	102	37,361
6	N.A.	Recycle [metal, glass, debris etc.]	All	kG	130	N.A.	20	2600	949,000
7	N.A.	REJECT [poor quality rejects]	All	kG	70	N.A.	6	420	153,300

**Assumptions:**

1. Capex of Incineration plant is based on a plant capacity of 200,000,MT of MSW per year which is appx Euro 83.9 Million.
2. Capex of Syn Gas Plant is based on Plant Capacity of 195000 MT of MSW to produce 8MW Electric Power worth of appx USD 223 million.
3. Capex of HTT & Pyrolysis plant is based on 500MT per day capacity MSW Plant worth of BDT 910 Million.
4. Capex of Biogas & Compost plant is based on a plant capacity of 40MT of per day of MSW which is appx BDT 240 Million.
5. 1USD=85 BDT and 1 Euro=95 BDT

**Comments:**

1. Lowest Capex is with HTT & Pyrolysis Process.
2. Highest Revenue is with HTT & Pyrolysis Process.

EP

**Prof. Kunio Yoshikawa;**

*Tokyo Institute of Technology, Japan.*

**Shaikh Ehsanul Habib;**

*Managing Director, Green Power Ltd.*

**Hashin ur Reza;**

*General Manager, Green Power Ltd.*



# অনির্বাণ আগামা

বিদ্যুৎ ও জ্বালানি সপ্তাহ ২০১৮



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

## দেশের উন্নয়ন অগ্রযাত্রায় গর্বিত অংশীদার নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড এর সার্বিক চিত্র



## নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিঃ

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

(বাংলাদেশ বিদ্যুৎ উন্নয়ন বোর্ডের একটি প্রতিষ্ঠান)

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

ফোন : ৯১৪২০৬২, ফ্যাক্স : ৯১৪৩৭৪৫, Website : [www.nwpgcl.gov.bd](http://www.nwpgcl.gov.bd)



## BPC, BERC at Loggerheads over LPG Price Fixing

Bangladesh Petroleum Corporation (BPC) is now at loggerheads with Bangladesh Energy Regulatory Commission (BERC) over fixing the price of liquefied petroleum gas (LPG) at the consumer level.

Mentioning its full power and authority to fix or to regulate the LPG price, BPC recently said they were empowered by the government to fix the LPG price and accordingly they were maintaining the LPG pricing issue from their side. So, there is no need to send any proposal to the BERC from their side.

Mentioning the 'Public Corporation (Management Co-ordination) Ordinance -1986', BPC's Managing Director M Fazlur Rahman Khan said this in a letter to the BERC.

"The ministry or division which has the administrative control over a public corporation shall determine the policy relating to

the price of goods and services produced and rendered by such corporation and its enterprises, and the corporation shall fix the price of such goods and services according to such policy," BPC said quoting from 'the pricing policy of public corporation'."

The letter disobeyed the Energy Division's plan to streamline the LPG price and create a level playing field for the consumers to get the essential commodity at equal rate.

"Now, the Energy Division and the Law Ministry will decide who to regulate the LPG pricing issue. We sent the letter to the Energy Division," a senior official of the BERC said.

The move to fix LPG price by the BERC came against the backdrop of a showcase notice issued by the High Court seeking explanation on why action would not be taken against the energy product regulator for its failure to set LPG price.

EP

## ONGC Plans Drilling in Two Offshore Wells from Oct

Indian ONGC Videsh Ltd has planned to drill two exploratory wells in two separate offshore blocks in the next drilling season starting from October 2021.

It is preparing to drill the wells-Titly in shallow sea block SS-04 and Moitree in block SS-04 areas, a senior energy ministry official said.

He said the Indian oil-gas exploration firm has already completed a portion of geo-hazard survey on the blocks.

Tender will be floated soon to select subcontractors for carrying out the drilling job, the official added.

Drilling these wells along with Kanchan is mandatory

for the firm within its contract period by February 2023.

The ONGC had a plan to initiate drilling an exploratory well at Kanchan in block SS-04 last year.

But the onslaught of the deadly coronavirus pandemic and a row over advance income tax or AIT, demurrage charges to port delayed its previous drilling plan.

Sources said the ONGC has now planned to drill the wells buoyed by the findings of two dimensional (2D) seismic surveys.

Currently, no exploration is being carried out in offshore blocks inside the country's territorial areas in the Bay of Bengal.

EP

## No VAT Waiver for Petrobangla LNG

The Bangladesh Petroleum Corporation does not qualify for a VAT waiver on ingredients for liquefied natural gas (LNG) since Petrobangla subsidizes imported LNG on the local market.

Though the new VAT law has provisions for a VAT waiver on imports, Petrobangla will have to pay Tk4.73 on imports and Tk0.55 on sales of each cubic meter of LNG.

According to this estimation, total VAT per cubic meter of LNG will be more than half of the sale price.

However, National Revenue Board (NBR) officials said this

will not increase the price of gas at the consumer level.

The revenue board VAT wing, in a clarification Sunday, said that items with a specified VAT rate or with VAT rate below 15% will not qualify for the waiver. Therefore, there will be no VAT waiver on Petrobangla LNG imports.

Petrobangla imports each cubic meter of LNG at Tk31.53 while the 15% VAT on it is Tk4.73. After liquifying the gas, the corporation sells it at subsidized rate of Tk4.45. According to the revenue board, the corporation will have to pay 15% VAT, or Tk0.55 per cubic meter, even on the subsidized rate.

EP

## Oil Rises, Hovers Below \$50/bbl

Brent crude oil futures rose more than 1per cent recently, remaining just under \$50 a barrel, as expectations of a US economic stimulus package and the possibility of a vaccine for the coronavirus overrode rising supply and increased COVID-19 deaths.

A bipartisan \$908 billion coronavirus aid plan gained momentum in the US Congress.

Brent settled up 54 cents or 1.11per cent at \$49.25 a barrel. During the session, the contract hit its highest since early March at \$49.92. West Texas Intermediate rose 62 cents to \$46.26 a barrel, after touching a high of \$46.68 a barrel.

Both benchmarks gained for a fifth consecutive week, with Brent up 1.7per cent and US crude up 1.9per cent.

OPEC+, comprising of the Organization of the Petro-

leum Exporting Countries and its allies, on Thursday agreed on a compromise to increase output slightly from January but continue the bulk of existing supply curbs to cope with coronavirus-hit demand.

OPEC and Russia agreed to ease deep oil output cuts from January by 500,000 barrels per day with further as yet undefined increases on a monthly basis, failing to reach a compromise on a broader policy for the rest of 2021.

OPEC+ had been expected to continue existing cuts until at least March, after backing down from plans to raise output by 2 million bpd.

The increase means the group will reduce production by 7.2 million bpd, or 7per cent of global demand from January, compared with current cuts of 7.7 million bpd.

EP

## Azam Chy, Shayan Reelected LOAB President, Vice President



Azam J Chowdhury



Shayan F Rahman

**A**zam J Chowdhury and Shayan F Rahman have been reelected President and Vice President of the LPG Operators Association of Bangladesh (LOAB) for the next two years.

The election was held earlier and approved on a virtual platform at the second Annual General Meeting of LOAB, said a press release.

All the members of the outgoing committee were reelected as members of the Executive Committee.

The primary aim of the LOAB is to add value to the energy sector of the country through harnessing full potential of LPG, while also promoting compliance to good business and safety practices.

Azam Chowdhury is the Chairman of East Coast Group, a very large diversified conglomerate engaged in this line of business for over three

decades while Shayan F Rahman is Chairman and Managing Director of Beximco LPG (Unit1) Ltd.

While expressing thanks to the Members of the LOAB for reelecting him as the President, Azam Chowdhury said the association will ensure strict compliance and development of LPG business representing the complete value chain in the country.

He added that the LPG industry is a service sector and the people in the business have obligations to ensure uninterrupted supply of LPG to the customers in any corner of the country at a reasonable price.

Shyan Rahman in his reaction assured that LPG will play a vital role in the future energy mix of Bangladesh and its use will be extended from cooking gas and autogas to marine fuel and captive power generation.

EP

## AFD, EU to Finance Digitization of Bangladesh Electricity Grid

**T**he French Development Agency (AFD) will provide a loan of 100 million euro to Bangladesh to reinforce its role as an active participant in the search for and use of advanced digital solutions in power and energy sector in Bangladesh.

This support comes via AFD's concessional sovereign loan and will go towards financing project titled Construction and Augmentation of Substation and Installation of the Capacitor Bank in Power System under DPDC' said a press release.

A credit facility agreement from AFD worth 100 million euros was signed recently.

Ms. Fatima Yasmin, Secretary of Economic Relations Division, and Mr. Benoit Chassatte, AFD Country Director for Bangladesh, and Mr. Jean-Marine Schuh, Ambassador of France to Bangladesh, signed the deal.

In addition to that a Grant Facility Agreement for a delegated grant from the EU-AIF

pared for the future.

Moreover, by integrating digital technology in our projects, we speed up the adoption of renewable energies and thus contribute towards achieving the country's Sustainable Development Goals (SDGs).

The additional 12 million euro grant will support for piloting the smart grid project in 5 substations in Dhaka. The smart grid gives shape to this transformation, by making the grid more effective and efficient.

A total of 1,141,000 people will benefit from a significant improvement in the quality of electricity service through the project and it helps fight climate change by preventing an accumulated 104,000 tons of CO2 emissions per year.

Present in Bangladesh since 2012, AFD supports projects in urban development and infrastructure, as well as in the power & green energy



worth 12 million euros would be signed in the beginning of 2021.

AFD's loan aims to equip existing infrastructure with these new, innovative and reliable technologies in order to ensure services are pre-

sectors. In addition, AFD also focusses on corporate and social responsibility.

As of 2020, AFD has committed 910 million euros to Bangladesh including 24 million euros in the form of grants.

EP

## Bangladesh to Join WANO



**B**angladesh will become a member of World Association of Nuclear Operators (WANO) to ensure safety and secure operation and maintenance of the country's maiden nuclear power plant at Rooppur in Pabna.

Chaired by Science and Technology Minister Architect Yeafesh Osman, an inter-ministerial meeting has taken the decision last month.

The Nuclear Power Plant Company Ltd Bangladesh (NPPCLB) will be the member of WANO on behalf of Bangladesh.

Bangladesh will have to pay 30,000 Euro for enrollment fees annually, reliable sources said.

For the world's nuclear oper-

ators, it ended any illusions that they could work solely within the confines of their companies or countries.

Chernobyl nuclear accident in 1986 made it clear that an event at one plant impacted every plant and that nuclear safety was everyone's business.

Faced with this reality, the leaders of every commercial nuclear reactor in the world set aside their competitive and regional differences and came together in 1989 to create the World Association of Nuclear Operators (WANO), said the objective of the organization.

To maximize the safety and reliability of nuclear power plants worldwide by working together to assess, benchmark and improve performance through mutual support, exchange of information and emulation of best practices. **EP**

## EPGL Eyes to Expand Its Diesel Generator, Vehicles Market

**E**nergypac Power Generation Ltd. or EPGL, one of the leading power engineering companies in the country, is eyeing to expand its market share of diesel generators and commercial vehicles, among other products.

The company is also paying more attention to add more values locally to its own generator brand 'GLAD' and JAC commercial vehicles, assembled at Energypac industrial park at Sreepur in Gazipur district, its officials said.

They said, Energypac, which

also exports electro mechanical equipment to many countries in the world, including India, Sri Lanka and some African countries, will expand its export basket and roll out more products for local markets provided it got policy support by the government.

During a media visit to the industrial complex recently, top officials of the EPGL said, once an importer, the company is now manufacturing a wide range of high value products maintaining world class standard. **EP**

## 1,200 Acres Land Sought for Future Expansion of RNPP

**T**he Ministry of Science and Technology (MoST) is seeking additional 1200 acres of land for future expansion of the Rooppur Nuclear Power Plant, reliable sources said.

The country's first-ever nuclear power plant will have the capacity to produce 2400MW of electricity. The two units of the plant having the capacity of 1200MW each is expected to start electricity generation in early 2024.

The proposed expansion will soar the capacity of the nuclear power plant to 4800MW.

The MoST has placed a pro-

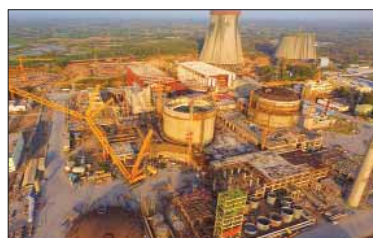
posal before a technical committee last month for allocation of the additional land. The technical committee comprises of 24 secretaries of different ministries.

"We are expecting to get the additional land for future expansion of the plant," an official concerned said on the condition of anonymity.

The government has already allocated 800 acres of land for the Rooppur Nuclear Power Plant.

Another 19 acres of land at Char RooppurMouja has also been acquired from landowners for the mega project.

The plant authorities have already allocated fund to acquire the land as the high-powered committee asked the deputy commissioner (DC) office of Pabna for providing compensation to the families affected, sources said. **EP**



## Coal-Fired Power Projects Behind Schedule

**A**ll the under-construction and proposed coal-fired power plant projects in the country are behind schedule, resulting in uncertainty over their completion on time.

It has been alleged that the delay in the project works is perplexing the government sorting out a proper plan for power generation in future.

Other fuel-run power plants especially oil-fired and gas-fired ones were well ahead of schedule and even some plants came online ahead of scheduled time, said a senior official at Power Division.

Sources said currently the country has a total of 23 coal-fired power plant proj-

ects including three that have already come online.

Work of the three plants-two at Barapukuria having a total capacity of 525 megawatts, or MW, and another 1,320 MW capacity plant of Bangladesh China Power Company Ltd, or BCPCL at Payra-was also completed behind scheduled timeline.

Among them, the latest one-the 1,320 MW capacity plant of the BCPCL, came online in the middle of this year, almost one year after its scheduled commissioning date.

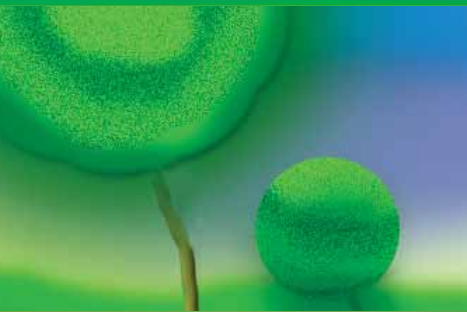
Seven government, private and joint venture coal-fired power plants are at under-construction stage and running much behind of their planned work. **EP**



# supplying ever-cleaner energy for Bangladesh

At Chevron, our people are our greatest asset. Our workforce in Bangladesh, which is approximately 95 percent Bangladeshis, has been delivering affordable, reliable and ever-cleaner energy for more than 25 years.

Learn more at <https://bangladesh.chevron.com/>



# Greenpage

## ADB Proposes \$1.6bn Solar Irrigation Roadmap



**T**he Asian Development Bank (ADB) has placed a \$1.59 billion solar irrigation roadmap for Bangladesh to help replace diesel-fired irrigation system with that run by renewable energy.

The ADB submitted the draft proposal before Power Division last month and suggested that the cost may be met from national sources like Nationally Determined Contributions (NDC) and from the money being spent on diesel import together with grants and loans from foreign sources.

At a recent meeting, a representative from ADB delivered a presentation on key issues of the roadmap.

In the roadmap, ADB proposed the following three different components for installing solar irrigation pumps: Replacing diesel pumps with solar pumps, hybridization of grid-connected pumps by incorporating solar panels, decentralizing ground mounted SPV systems on agricultural land.

A portion of the cost is also to be met by farmers and sponsors in the form of equity and debt, it said.

In case of component, financing has been proposed to be 50 percent of total cost during the initial period.

In case of second component, 30 percent of grant financing has been proposed during pilot phase. For the last component, it has been suggested that 20 percent grant financing may be considered for farmers in order to promote uptake.

Power Cell Director General Mohammad Hossain, who attended the meeting, said that the farmers in Bangladesh have a tariff slot.

At the current slab, they are availing a tariff that is the lowest in the country, he said.

“Anything beyond that will make them uncomfortable in spite of the grant portion. As we have a national policy and according to that policy, the farmers are availing the lowest tariff, we may rethink the model keeping this tariff unchanged.”

Whatever grant is required, we will have to make it available for them in order to keep the tariff unchanged, he pointed out.

At this point, REB Chairman Major General (Retd) Moin Uddin, said that pumps operated by diesel are mostly in remote areas, where there is no electricity connection.

“So, it would not be possible to feed the extra electricity into the grid,” he said.

EP

## Demand for Green Building Solutions Grows

**D**anish Embassy in Dhaka has begun an exhibition on “Smart Cities and Green Liveability” to promote human centric approach towards urban planning, architecture and functional designs that work for people and the environment.

Inaugurating the exhibition recently, Ambassador of Denmark to Bangladesh Winnie Petersen highlighted Danish creativity in regard to contemporary design and planning that enable the move towards more sustainable living.

She said in Denmark, architects, urban planners and engineers shifted their focus on liveability, which all knows is an important conversation for stakeholders involved in urbanization. “For a densely populated city like Dhaka, this conversation is quintessential and urgent,” she added.

“We want to share these transferable ideas with our community in Bangladesh. As we live in Dhaka, we also experience the challenges of rapid urbanization ourselves,” Ambassador Winnie said.

According to official figure, currently there are 426 buildings in Bangladesh certified by the US Green Building Council LEED (for Building Design and Construction).

Bangladesh has also the highest number of 91 LEED-certified green garment factories, which is the highest in the world as of September 2019.

The inaugural session was addressed, among others, by Sultana Afroz, Secretary to the Government and CEO of Public Private Partnership Authority (PPPA) at the Prime Minister’s Office, Commercial Counsellor at the Danish Embassy Ali Mushtaq Butt and Kim Hor Toh, Chief Architect of Singapore-based Surbana Jurong Infrastructure.

EP

## New Electric Car Plants to Get Land Free-of-Cost

Bangladesh will offer land for free to electric car producers as this has huge economic opportunities, PM's private sector industry and investment adviser Salman F Rahman said recently.

"We'll offer free-of-cost land to the investors who will produce electric cars in Bangladesh," he told a webinar, recalling a recent meeting with German automaker Volkswagen.

He was speaking as chief guest at the event styled 'Car market in Bangladesh: Challenges and prospects' hosted by the Policy Research Institute of Bangladesh (PRI).

Mr Rahman said during his discussion with Volkswagen had invited the German carmaker to set up an electric car-manufacturing unit in Bangladesh.

Bangladesh should leapfrog in the next-generation car-making, not traditional

fossil fuel-based car plants, he felt.

He said there will be no conflict of interest if such plants are established in Bangladesh where there are no traditional automobile production units.

"We should go for new technologies which will create new opportunities as the traditional petrol pumps will turn into charging stations let alone the employment."

Economists, businessmen, car importers, researchers, government high-ups and policy-makers joined the event, moderated by Dr Zahid Hussain, former lead economist at the World Bank.

Echoing Mr Rahman, Dr Ahsan H Mansur, PRI executive director and the keynote speaker at the webinar, said solar- and power-based auto-manufacturing plants need to be set up in Bangladesh.

"Currently, in the automobile industry, we have almost nothing. But we have the potential to make it a very good sector for our economy." "We can set up manufacturing plants with new technologies," Dr Mansur mentioned.

EP



## MBL Holds Workshop on Green Financing

Mercantile Bank Ltd (MBL) held a virtual workshop on 'Sustainable Finance under Green Banking' recently. A total of 81 officials including branch heads, officials from concerned divisions of head office and six entrepreneurs of the bank attended the online programme, says a press release.

Md. Quamrul Islam Chowdhury, Managing Director and CEO of the bank in-

augurated the virtual workshop.

In his address Md. Quamrul Islam Chowdhury advised the participants to strictly adhere with the sustainable finance policy guidelines of central bank.

Mati UL Hasan, Additional Managing Director and CRO also addressed at the virtual session.

EP

## Transition to RE May Help Durable Economic Recovery

The transition to renewable heating and cooling worldwide can attract investment and create millions of new jobs, according to the joint report by the International Renewable Energy Agency (IRENA), the International Energy Agency (IEA) and the Renewable Energy Network for the 21st Century (REN21)

The transition to cleaner, more sustainable heating and cooling solutions can help to drive a durable economic recovery in the wake of the global Covid-19 crisis, says a new study by leading energy organizations.

It can attract investment and create millions of new jobs, according to the joint report by the International Renewable Energy Agency (IRENA), the International Energy Agency (IEA) and the Renewable Energy Network for the 21st Century (REN21).

The report highlights the benefits, identifies investment barriers, as well as the policies to drive faster uptake of renewable heating and cooling worldwide, says a press release.

Renewable Energy Policies in a Time of Transition: Heating and Cooling describes five possible transformation pathways, encompassing renewables-based electrification, renewable gases, sustainable biomass, and direct uses of solar thermal and geothermal heat.

Transitioning to renewable sources will help to increase access to clean, affordable and reliable heating and cooling services, even on remote islands and in some of the least-developed countries of Africa and Asia.

At the same time, renewable heating and cooling can create new jobs, stimulate local economies, and improve people's livelihoods, while strengthening countries' energy security and independence, the report notes.

EP

## 55MW Wind Power Project Wins Cabinet Body Approval

was the lone bidder to participate in the tender process invited for the project,

The Cabinet Committee on Public Purchase recently approved the proposal of a Chinese-Bangladeshi consortium to set up a 55 MW wind power plant on build-own-operate basis at Mongla in Bagerhat.

As per the proposal, the Consortium of Envision Energy, (Jiangsu) Co. Ltd., China, SQ Trading and Engineering, Bangladesh and Envision Renewable Energy Limited, Hong Kong will set up the plant under a 20- year contract with Bangladesh Power Development Board (BPDB).

State-owned BPDB will purchase the electricity from the plant at a levelized tariff of US\$ 13.20 Cents, equivalent to Tk 10.56 per kilowatt hour (each unit) over the period of 20 years.

The government will pay a total of Tk 2035.12 crore for the entire contract period against its purchase of electricity from the maiden private wind power project, said Saleh Ahmed, additional secretary of the Cabinet Division, while briefing reporters on the cabinet body meeting.

The Chinese-Bangladeshi consortium

said a BPDB official.

According to the Sustainable and Renewable Energy Development Authority (Sreda), only three small wind energy plants, having a total capacity of 2.9 MW, have been installed by the Bangladesh Power Development Board (BPDB) so far against its target of setting up wind power projects having total capacity of 1152 MW by 2020.

Earlier, BPDB signed a contract in March, 2015 to award a 60 MW wind power project to US-DK Green Energy (BD), a joint venture between Taylor Engineering Group of USA, ph-consulting group of Denmark and Multiplex Green Energy of Bangladesh, to set up the plant at Kurushkul, southeast of Moheshkhali river in Cox's Bazar.

But the sponsor failed to implement the project in the last 5 years.

Mongla 55MW wind power project is one of the three similar projects undertaken by the BPDB in recent years. The other two projects were planned for Chandpur and Inani beach in Cox's Bazar.

EP



## Vietnam Activates RE Development Spree: GlobalData

The Vietnamese renewables industry has been gaining traction lately as the country considers renewable energy to play a pivotal role in achieving the optimistic Power Development Plan (PDP).

The PDP is envisaged to improve electricity infrastructure and expand renewables in the power mix to accelerate decarbonization.

Against this backdrop, solar PV and wind are expected to steer the Vietnamese power sector decarbonization and bring down the cost of solar PV systems by about 25% and wind projects by 17% by 2030, says GlobalData, a leading data and analytics company.

Ankit Mathur, Practice Head of Power at GlobalData, comments: "Vietnam's installed power capacity is likely to reach approximately 135GW, growing by more than two folds from 55GW by the end of 2019. The renewable sources (including hydropower) are likely to fuel about half of the new overall capacity built of estimated 80GW by 2030. Solar PV and wind are likely to be the renewable flag bearers with more than 80% of the anticipated renewable capacity to be dominated by these two technologies. Solar PV has witnessed a staggering growth of about 1,000 times from a meagre 7.4 MW to an estimated 7,000 GW+ by the end of 2020."

The country has revealed a clear roadmap that has attracted the investors' interest and boosted the confidence enabling the future assurance of an attractive and sizeable renewable market among the Southeast Asian counterparts.

EP

## Fostering a Blue Economy: Offshore Renewable Energy

Offshore renewable energy – including offshore wind and solar power, as well as emerging ocean energy technologies – could support sustainable long-term development and drive a vibrant blue economy.

For countries and communities around the world, offshore renewables can provide reliable, stable electricity, as well as support water desalination and aquaculture.

This report from the International Renewable Energy Agency (IRENA) considers the status and prospects of offshore renewable sources and recommends key actions to accelerate their uptake.

The development of renewable sources and technologies at sea promises to spur new industries and create jobs in line with the global energy transition. Offshore wind towers, with either fixed or floating foundations, and floating solar photovoltaic (PV) arrays offer clear technological and logistical synergies with the existing offshore oil and gas industry.

Offshore renewables could provide clean power and ensure energy security for small island developing states (SIDS) and many of the least-developed countries (LDCs).

EP

# Mobil™

100 years of  
science goes  
into your  
commute.



[mobilbd.com](http://mobilbd.com)  
[f/MobilBangladesh](https://www.facebook.com/MobilBangladesh)

**MJL Bangladesh Limited**



## Climate Vulnerability

# Covid and Implementation of SDG

Md. Abul Kalam Azad

**B**angladesh has made significant progress in expanding financial services across the country even in the remote, rural, and hard to reach areas by making banking accessible to the general people through mobile financial services and special accounts. The unbanked population of the country including farmers, the hard-core poor, freedom fighters, people affected by natural disasters and beneficiaries under social safety net programs – can now open a bank account by depositing just taka 10. In the meantime, about 1 million such bank accounts have been opened and operated across the country.

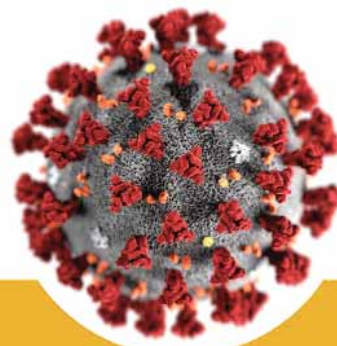
To decentralize the delivery of public services and take them to the doorsteps of millions of underserved citizens, the government through Access to Information (a2i) has established 5,286 one-stop information and service delivery outlets known as Union Digital Centres (UDCs) supported by one male and one female local entrepreneur in all Union Parishads. UDCs ensure that all the underserved regardless of their literacy and ICT literacy - can access vital information and 112 types of public and private services all over the country with a target to add more necessary services. In addition, 8,500 post offices have been converted to a

post-e-centre to provide all digital services mentioned above along with distribution of Social Safety Net allowances. These are some important steps to ensure 'leave no one behind'.

The government has approved National Social Security Strategy (SSNP) in 2015 with a view to addressing poverty, inequality, risk and vulnerability in the country. Distressed people particularly women, children and disabled persons have been given priority under SSNP, which is designed to be implemented gradually addressing the lifecycle risks; all programmes will be consolidated to get better synergies and healthier results. In addition to the earlier mentioned programs under social protection, education stipends, adult allowances, maternal al-

lowances, allowances for the widow, deserted and destitute women, My Home My Farm project, Ashrayan project, Food for Work Programme, life enhancement programs of Vedas and the disadvantaged population, lifelong development programs of the hijra people, Vulnerable Group Development (VGD), Char livelihood programme are being implemented. Currently, 28.7% of the family enjoy the benefits of the government's social safety net programs; the government's plan is to expand it to 40 percent of the poor families by 2030. The government spends 15 percent of its budget on social security activities, which are planned to be maintained by 2030. Apart from allowance, people are being engaged in vocational education and income generating activities. The government is in the process of finalizing National Household Database (NHD) to establish more transparent selection process of beneficiaries of different social protection programmes.

The national development strategies, i.e. the 7th and 8th Five Year Plan has been well aligned with the goals of the agenda 2030. A platform has been developed to engage all relevant stakeholders and to listen their voices up to Upazila level for preparing and implementing actions related to sustainable development goals.



**COVID 19**



Bangladesh is now considered a 'role model' in respect to its women empowerment. According to the Global Gender Gap report of World Economic Forum (WEF) in 2020 Bangladesh ranked 50th out of 153 countries because of political empowerment of women. The government has been allocating 27% of national budget equivalent to 5% of GDP on average over the last eight years to the gender responsive budget. Special allocations are given to different marginalized groups like transgender, tea garden labor, bade & disadvantage community, beggars, street children, people of special areas, cleaners, people of char areas, special needs children etc. There is no denying the fact that marginalized people like dalits of Bangladesh doesn't suffer severely from caste problem like some of the neighbouring countries, as caste problem is virtually absent in this country. Cater to the special needs of hilly regions, the dedicated Ministry of Chittagong Hill Tracts (CHT) Affairs are taking dif-

ferent projects and programmes for social and economic development of those regions. The Prime Minister's Office has special programmes for the betterment of other ethnic people.

Leaving no one behind requires the transformation of deeply rooted systems — economic, social and political, governance structures and business models at all levels. The voices of different stakeholders must be heard, and their active participation as agents of change needs to be promoted.

Unlike other countries Bangladesh also facing Covid crisis which dragged a huge number of marginalized people into hard core poverty. Government declared different types of incentive package amounting to more than 12 billion USD for payment of wages in the private sector, investment in micro, small and medium enterprise, job creation, supporting the vulnerable families with cash transfer which kept the GDP growth in a positive direction surpassing so many de-

veloped and emerging countries. We know hard hit Amphan along with flood and river erosion this year added huge number of hard to reach vulnerable and people who usually left behind into a great misery. With very negligible additional support from the Development Partners Bangladesh with its own resources, not only facing these unusual covid, Amphan and flood but with a strong political will and leadership also showing an exemplary resilience, all positive social and economic indicators which made Bangladesh again a 'Teacher to combat climate vulnerability' according to Ban ki Moon the 8th Secretary General of UN. Antonio Guterres, the present Secretary General of UN in his recent statement said 'Everything we do during and after this crisis (Covid) must be with a strong focus on building more equal, inclusive and sustainable economics and societies that are more resilient in the face of pandemic, climate change, and the many other global challenges we face'.

We all know that rising inequalities and discrimination are not inevitable, rather they are the result of decades of policies and dynamics that have undercut equality and rolled back efforts to build better lives for all. Hence, the Government of Bangladesh headed by Hon'ble Prime Minister Sheikh Hasina is politically committed to implementing the SDGs in a whole-of-society approach to address the root causes of deprivation, marginalization, exclusion and other human rights.

EP

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

## Hasina for Decisive Global Action to Save Planet



Prime Minister Sheikh Hasina recently stressed the need for robust international climate coalitions to reduce the carbon emission effectively and save the future generations.

"I would like to underscore the significance of positive and robust international climate coalitions that can reduce the global carbon emission effectively to move towards carbon neutrality before the mid-century. So, I call for your urgent and decisive action to save our future generations," she said.

The prime minister made the call in a virtual speech at the 'Thimphu Ambition Summit' arranged by the government of Bhutan, the Chair of the LDC Group in the UNFCCC, on the occasion of the 5th anniversary of the Paris Agreement.

Sheikh Hasina, in her pre-recorded speech, said the Covid-19 pandemic has shown how quickly a pandemic can turn into a catastrophic global crisis. "It has also taught us that the only way to combat a global crisis is through strong collective response."

"We must admit that our current efforts to achieve that target are highly inadequate. As such, we need forceful, dynamic and rapid action plan to limit the global greenhouse gas emission to save us and our planet," the prime minister said.

Mentioning that South Asia is the most vulnerable region to climate-induced natural disasters, she said millions of people will become climate refugees in coastal and small island countries if sea level rises by a meter. Though Bangladesh has no contribution to global warming, it is one of the most vulnerable countries for its limited coping capacities and specific geographical features, Hasina said.

As per ADB's prediction, Bangladesh would face annual economic cost equivalent to 2 percent of her GDP by 2050 and up to 9.4 percent by 2100 if current emissions continue. "I'm sure that it's true for all other LDCs and climate vulnerable countries."

EP

## Carbon Capture a Tool in Climate Fight, But at What Cost?

Technology for capturing carbon from industrial emissions and storing it may still be in its early stages, but proponents believe it can become a major tool in the fight against climate change.

For its methods to rollout on a scale large enough to make a difference, though, experts and critics say carbon capture and storage (CCS) still has to overcome a host of logistical and financial hurdles.

CCS techniques are designed to capture and store carbon dioxide generated by power stations using fossil fuels as well as industrial plants from steelmakers to refineries and petrochemical plants.

Supporters see the technology has great potential to reduce greenhouse gas emissions from power production, industry in general and fossil fuel refining.

The captured CO<sub>2</sub> is transported and reinjected into hermetically sealed geological reservoirs -- for example, in former oilfields -- for permanent storage.

A portion can be reused mean-

while, a process known as carbon capture, utilization, and storage (CCUS).

The procedure is not new, with the first site set up in Texas in the early 1970s.

Despite growing interest in the technology, however, to date only about 20 sites exist worldwide, according to the Global CSS Institute, as it fights popular suspicion that CCS distracts from the goal of moving away from fossil fuels.

The International Energy Agency says the technology has enormous potential and that it may play a 'critical' role in helping to smooth the path to achieving net zero emissions.

'After years of slow progress, new investment incentives and strengthened climate goals are building new momentum behind CCUS,' the IEA said in a September report, pointing to 30 projects that have come on stream in the last three years.

The IEA maintains that CCUS has a positive role to play in sectors whose carbon footprint is hard to reduce significantly, such as cement production.

EP

## Nestle to Invest 3.2b Sfr to Cut Carbon Emissions

Nestle said recently it plans to invest 3.2 billion Swiss francs (\$3.58 billion) over the next five years to reduce its climate impact and help it get to net zero emissions by 2050.

The world's biggest food company said it would work with farmers and suppliers to promote regenerative agriculture, plant hundreds of millions of trees, and switch

to renewable electricity for all its power by 2025.

The maker of KitKat chocolate bars and Nescafe coffee, which produced 92 million tonnes of greenhouse gases in 2018, said it would finance these investments primarily through operational and structural efficiencies to keep this initiative earnings neutral.

EP



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



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

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

- \* গ্রিড উপকেন্দ্র, গ্রিড লাইন ও টাওয়ার জাতীয় সম্পদ, তা রক্ষা করা সকলের দায়িত্ব।
- \* গ্রিড উপকেন্দ্র, সঞ্চালন লাইন ও বৈদ্যুতিক টাওয়ারের গুরুত্বপূর্ণ যন্ত্রাংশ চুরি প্রতিরোধে সহায়তা করুন, বিদ্যুৎ বিপর্যয় থেকে দেশকে বাঁচান।
- \* উচ্চ ভোল্টেজের বৈদ্যুতিক টাওয়ার ও লাইন হতে নিরাপদ দূরত্ব বজায় রাখুন।
- \* বিদ্যুতের গ্রিড লাইন ও টাওয়ার হতে নিরাপদ দূরত্বে স্থাপনা নির্মাণ করুন।
- \* বৃক্ষ রোপনে গ্রিড লাইন ও টাওয়ার হতে নিরাপদ দূরত্বে স্থান নির্বাচন করুন।
- \* বিদ্যুৎ ব্যবহারে সাশ্রয়ী হোন। আপনি বিদ্যুৎ সাশ্রয় করলে তা অন্য একজন ব্যবহার করতে পারে। এমনকি সাশ্রয়কৃত বিদ্যুৎ গুরুতর অসুস্থ কারও জীবন বাঁচানোর কাজে লাগতে পারে।
- \* বিদ্যুৎ অপচয় রোধে সচেতনভাবে ফ্যান, বাতি ও অন্যান্য বৈদ্যুতিক যন্ত্রপাতি ব্যবহার করুন।
- \* বিদ্যুৎ সাশ্রয়ী (LED/CFL/T5) বাল্ব ব্যবহার করুন।
- \* যথাসম্ভব দিনের আলো ব্যবহার করুন।
- \* বিকাল ৫:০০ টা হতে রাত ১১:০০ টা পর্যন্ত সময়ে বিদ্যুতের চাহিদা বেশী থাকে। এ সময় দোকান, শপিংমল, বাসা-বাড়ীতে আলোকসজ্জা হতে বিরত থাকুন।



## Climate Goals Need 6pc Yearly Fossil Fuel Cuts: UN

Oil, gas and coal production must fall six percent a year in order to limit catastrophic global warming, the United Nations warned recently, even as high-polluting nations bank on fossil fuels to drive their Covid-19 recoveries.

The UN's annual Production Gap assessment measures the difference between the Paris Agreement climate goals and nations' planned production of fossil fuels.

The edition found that despite this year's dip in production due to the pandemic, that gap remains large: countries plan a two-percent annual increase through 2030.

This is equivalent to more than double the fossil fuel production that would be consistent with the Paris deal's more ambitious goal of limiting warming to 1.5C (2.7 Fahrenheit) above pre-industrial levels.

The assessment comes at a critical juncture in humanity's battle to stave off the worst effects of climate change, with several major polluters including China and Japan having pledged to reach net-zero emissions within decades.

But the report authors stressed that emissions need lowering immediately, and that the Covid-19 pandemic offered governments a golden opportunity to rebuild their economies without relying on polluting fuels.

"The research is abundantly clear that we face severe climate disruption if countries continue to produce fossil fuels at current levels, let alone at their planned increases," said Michael Lazarus, lead author and director of the Stockholm Environment Institute's US Center.

EP

## Aker, MAN Form Carbon Capture Co-operation

Aker Carbon Capture and MAN Energy Solutions have agreed to co-operate on development of energy-efficient compression solutions for carbon capture and storage (CCS) applications with heat recovery.

Their joint target is to reduce the cost of removing CO2 emissions from industrial plants worldwide.

MAN brings experience in compressor technology, integration of system components and their design and delivery,

while Aker Carbon Capture provides its proprietary amine technology and carbon-capture process design.

The two companies aim to develop carbon capture solutions that require less energy. Transfer of heat is said to be key for improved power consumption at carbon capture plants. MAN can recover heat from its compression systems, and the steam generated should cover almost half the power demand at Aker's capture plant.

EP

## IDCOL Seeks to Mobilize Funds for Developing Coastal Forests

The Infrastructure Development Company Limited (IDCOL) seeks to mobilize \$80 million for implementing a project to develop climate-resilient forests in coastal areas of Bangladesh.

The non-bank financial institution will seek \$60 million from the Green Climate Fund (GCF) while the remaining \$20 million will come from the Bangladesh government co-financing.

To this effect, a national stakeholder consultation workshop was held virtually recently to assess risks associated with the proposed project titled 'Climate resilient sustainable coastal forestry in Bangladesh', according to a statement.

The Bangladesh Forest Department (BFD) in partnership with IDCOL, and with the support

from the Centre for Climate Change and Environmental Research (C3ER), BRAC University, are jointly developing the project.

IDCOL is the national Direct Access Entity (DAE) to Green Climate Fund (GCF), a mechanism established within the framework of the United Nations' environmental treaty to assist developing countries in adaptation and mitigation practices to counter climate change.

Ziaul Hasan, secretary to the Ministry of Environment, Forest and Climate Change, joined the inaugural ceremony of the workshop as the chief guest, while Dr. Nahid Rashid, wing chief (UN) at the Economic Relations Division, and Md Mizanul Hoque Chowdhury, additional secretary to the ministry, were special guests at the event.

EP

## New Zealand's Ardern Declares 'Climate Emergency'

New Zealand Prime Minister Jacinda Ardern declared a "climate emergency" recently, telling parliament that urgent action was needed for the sake of future generations.

Ardern said the science on climate change was clear and New Zealand had to acknowledge the threat.

The centre-left leader said the challenges posed by global warming meant parliament's declaration -- an act undertaken by more than a dozen other countries -- was warranted.

"In those cases where we do

issue declarations, it is often where there is a threat to life, a threat to property, and civil defence emergencies," she told parliament.

"If we do not respond to climate change, we will continue to have these emergencies on our shores."

Lawmakers passed the largely symbolic emergency declaration by 76 votes to 43 after Ardern urged them to back the move.

"Vote in favour of this declaration, be on the right side of history, be part of the solution we must collectively deliver for the next generation," she said.

EP

# ১২ বছরে ডিপিডিসি



শেখ হামিনার  
উদ্যোগ  
যয়ে যয়ে বিদ্যুৎ

■ গ্রাহক সংখ্যা ৬ লাখ থেকে ১৪ লাখে উন্নীত

■ অনলাইনে বিদ্যুৎ সংযোগের আবেদন গ্রহণ

■ ৭ দিনের মধ্যে আবাসিক সংযোগ প্রদান

■ অনলাইনে বিদ্যুৎ বিল গ্রহণ

■ সিস্টেম লস ১৮.১৮% থেকে ৬.৫৮%-এ হ্রাস

■ মোবাইল অ্যাপস এর মাধ্যমে মিটার  
রিডিং সংগ্রহ

■ Kiosk মেশিনের মাধ্যমে গ্রাহক সেবা প্রদান

■ এসএমএস-এর মাধ্যমে গ্রাহককে বিদ্যুৎ  
সংক্রান্ত তথ্য প্রদান

■ অনলাইনে গ্রাহক অভিযোগ নিষ্পত্তি

■ বিতরণ লাইন ৩,৭০০ কিলোমিটার থেকে  
৫,৭৪১ কিলোমিটারে উন্নীত

■ বিদ্যুৎ চাহিদা ৯৫৭ মেগাওয়াট থেকে ১৬৭১  
মেগাওয়াটে উন্নীত

■ ৫ লক্ষ ৩ হাজার প্রি-পেইড মিটার স্থাপন

## সম্মানিত গ্রাহকদের প্রতি অনুরোধ

■ পিক আওয়ারে (বিকাল ৫টা থেকে রাত ১১টা) এসি  
ইঞ্জি,মাইক্রো ওভেন, পানির পাম্প ব্যবহারে বিরত থাকুন

■ বিদ্যুৎ সশ্রয়ী LED বাল্ব ব্যবহার করুন

■ অপ্রয়োজনীয় বাতি, ফ্যান ও সুইচ বন্ধ রাখুন

■ নিয়মিত বিদ্যুৎ বিল পরিশোধ করুন

■ রুফটপ সোলার ব্যবহার করুন বিদ্যুৎ খরচ সশ্রয় করুন

■ প্রি-পেইড মিটার ব্যবহার করুন

বিদ্যুৎ বিলের ঝামেলা থেকে মুক্ত থাকুন

■ বিদ্যুৎ লাইন থেকে নিরাপদ দূরত্বে থাকুন

■ বৈদ্যুতিক কাজে কেবলমাত্র লাইসেন্সপ্রাপ্ত বা সনদপ্রাপ্ত  
কর্মী নিয়োজিত করুন।

■ বাড়িতে বা আঙিনায় পর্যাপ্ত আর্থিং স্থাপন নিশ্চিত করুন।

■ মিটারিং সরঞ্জামগুলোর সুরক্ষা সিলে অবৈধ হস্তক্ষেপের  
আলামত থাকলে অতি দ্রুত তা ডিপিডিসিকে অবহিত করুন।

■ বিল্ডিং নির্মাণের সময় বিল্ডিং থেকে উচ্চ-চাপ/নিম্ন-চাপ  
লাইনগুলি হতে পর্যাপ্ত নিরাপদ দূরত্ব বজায় রাখুন।

■ অনুমোদিত লোড ও তারের বিদ্যুৎ পরিবহন ক্ষমতার অতিরিক্ত  
কোনো শীতাতপ নিয়ন্ত্রণ যন্ত্র বা বৈদ্যুতিক সরঞ্জাম ব্যবহার করা  
থেকে বিরত থাকুন।

■ দুর্ঘটনা বা প্রাণহানী এড়াতে বাসা/কর্মস্থলের ওয়ারিং  
নির্দিষ্ট সময় পরপর পরীক্ষা করানোর ব্যবস্থা নিন।

যেকোনো অভিযোগ, সেবা বা তথ্যের জন্য ডিপিডিসি'র কল সেন্টার ১৬১১৬ অথবা সংশ্লিষ্ট বিদ্যুৎ অফিসে যোগাযোগ করুন।



ঢাকা পাওয়ার ডিস্ট্রিবিউশন কোম্পানি লিমিটেড (ডিপিডিসি)

DHAKA POWER DISTRIBUTION COMPANY LIMITED (DPDC)

(An Enterprise of the Government of the People's Republic of Bangladesh)

Website : [www.dpdc.gov.bd](http://www.dpdc.gov.bd)

# Excelerate Energy Sees Bright Future for LNG, NG in Bangladesh

In the fall of 2018, Bangladesh's first LNG facility - the Moheshkhali Floating LNG terminal - was brought online, and Bangladesh became the 40th country to enter the prestigious LNG importers club. Two years have since passed, and today Bangladesh finds itself as an established and significant player in the global LNG marketplace. During this time, the country has made tremendous progress towards expanding its LNG importing capabilities – having delivered over 130 cargoes sourced from 10 countries while doubling the nation's aggregate import capacity to 1.0 billion cubic feet per day. Most importantly, Petrobangla has successfully distributed this vital fuel to customers across the eastern and central parts of Bangladesh.

Excelerate Energy L.P. (Excelerate), the US energy firm which led the development of Bangladesh's first LNG project and currently owns and operates the two Floating Storage and Regasification Units (FSRUs) in Moheshkhali, has long believed in the important role of having access to clean, abundant, and reliable fuel supply to meet Bangladesh's long term development goals.

Ramon Wangdi, Managing Director of Excelerate Energy Bangladesh Ltd. (Excelerate's local subsidiary), made the observation in an exclusive interview with Energy & Power Editor **Mollah Amzad Hossain**. He also elaborated on Excelerate's existing activities and his views on the vital role that LNG will play in shaping Bangladesh's future energy system.

*With Excelerate Energy having just completed its 4th year in Bangladesh and two years of LNG operations at Moheshkhali under its belt, could you give us an overview of your experience in Bangladesh and an update on the existing state of LNG adoption in the country?*

We first began investing in developing LNG solutions for Bangladesh in 2012, and it's been quite a journey since then. Internationally, Bangladesh has established quite a stellar reputation of having a friendly business climate for foreign investment, and our experience has absolutely reflected this reality. From the incorporation of Excelerate's local company in 2016 to the construction and commissioning of the country's first LNG import terminal, Excelerate has continued to work lockstep alongside its partners in Petrobangla and the government to implement LNG imports in the country successfully.

Today the FSRU terminals in Moheshkhali make considerable contributions to the total gas supply in Bangladesh. These reliable operations have played a vital role in stabilizing the country's energy supply, especially within the southeastern regions of Chattogram and surrounding markets.

LNG adoption has not been without its challenges – from overcoming cyclonic weather events (such as cyclone Fani in 2019) to the challenges of the global pandemic – but Bangladesh's resilience in the face of this adversity has allowed for the continuous growth of LNG adoption, and we are incredibly pleased with the results.



**Ramon Wangdi**

*Following Bangladesh's successful entry into the LNG marketplace, Texas-based Excelerate Energy sees the vast potential to expand LNG's reach in-country through continued investment in robust technologies and distribution solutions ... Mr. Wangdi tells EP*

*You mentioned about the pandemic. Could you explain how COVID-19 has affected Excelerate's business and your thoughts on the recovery efforts in Bangladesh?*

COVID-19 and the resulting lockdown around the world have left no individual, business or country untouched. On the one hand, the pandemic resulted in the temporary but widespread reduction of energy demand across the globe – something that all markets and businesses in the sector have had to adjust to. However, the opposite effect from

this same event has been the further exacerbation of an already favorable price environment for fuel imports such as LNG – a trend that we believe will remain for some time and heavily favors rapidly growing energy markets such as Bangladesh.

For a global business like Excelerate, the early months of COVID-19 created enormous disruptions to our typical operational supply chains. The ability to freely transport goods and personnel across borders became extremely prohibitive, and we had to think “outside of the box” to provide continuous operations. These events in 2020 truly drove home the benefits of engaging with international companies with a large-scale operational foundation while at the same time having a local operational presence – our Bangladeshi cadets, pilots, and personnel were critical throughout the year.

Now that we have been navigating in these unprecedented conditions for many months, we are happy to conclude the year having continuously operated our FSRUs in Moheshkhali throughout 2020 without any disruption. Much of this credit belongs to our friends at Petrobangla and RPGCL – these achievements quite simply would not have been possible without their strong support, flexibility, and resiliency throughout the year. These strong interpersonal working relationships have also proven themselves invaluable during the pandemic.

Looking ahead, as Bangladesh continues its recovery efforts along with the rest of the world, it is worth highlighting that this same resilience has allowed Bangladesh’s economy to fare relatively well (still posting GDP growth) in comparison to other economies in the region. In our view, at the conclusion of the auspicious Mujib Year, 2021 is posed to be one unlike any other for Bangladesh – a year marked by unprecedented growth, as the country’s economic engine fully restarts to reach levels above what it saw before the pandemic.

***Bangladesh is the 40th country in the world to become an LNG im-***

***porter. With Excelerate having operated in 13 other countries, how would you compare the adoption of LNG in Bangladesh versus other markets?***

Prior to LNG, the government had a long-standing track record of project execution – especially in the field of energy infrastructure. This approach has allowed Bangladesh to achieve feats in a short period of time, seldom seen in

***LNG adoption has not been without its challenges – from overcoming cyclonic weather events (such as cyclone Fani in 2019) to the challenges of the global pandemic – but Bangladesh’s resilience in the face of this adversity has allowed for the continuous growth of LNG adoption, and we are extremely pleased with the results.***

other emerging markets – from doubling the country’s installed power generation capacity to expanding the percentage of its population with access to electricity from 45% in 2009 to over 98% today. This same inclusive philosophy and goal-oriented mentality were directly applied towards the implementation and adoption of LNG, and it allowed Bangladesh to rapidly ramp up natural gas distribution far faster than other countries in the region.

For example, deliveries into other major LNG importing nations in South Asia have historically been restricted due to poor planning and bottlenecks in the countries’ gas infrastructure. This has been where Bangladesh’s extensive history in the usage of natural gas has been

an enormous benefit for the quick adoption of LNG, as a substantial portion of the country’s gas infrastructure – from pipelines to power plants – is already well built. Furthermore, any gap in infrastructure which needs to be built, such as connecting transmission infrastructure, has been planned in concurrence with LNG terminals themselves. As a result, in the span of 2 years, Bangladesh is already able to import about 4.5 million tonnes of LNG per annum, and we fully expect this number to grow shortly to nearly 7 million tonnes as Petrobangla expands its LNG purchases from the spot market and the economic recovery from the pandemic continues. This growth is remarkably steep when compared to other new markets in the region and is a testament to the thousands of skilled Bangladeshis in the country who have collectively developed the ability to handle this new fuel.

***As we look towards the future and Bangladesh’s Vision 2041 goals, what are your views on the long-term prospects of LNG in Bangladesh, and what policies are necessary to drive further investment in the space?***

Since the turn of this century, Bangladesh has continuously surpassed the ambitious targets which it has set for itself. This was absolutely the case with the government’s Vision 2021 goals, and we fully expect the roadmap for Vision 2041 to follow a similar path. However, the private and public sectors will need to collaborate closely to achieve the ultimate goal of this program – for Bangladesh to become a middle-income and developed country.

As a part of this effort, the continued expansion of Bangladesh’s energy ecosystem will be necessary across all aspects of the value chain – from fuel supply, power generation, transmission and distribution solutions to ensure all communities enjoy equally the benefits which unfettered reliable access to the sustainable clean energy brings. We strongly believe LNG will play a pivotal role in making this future a reality.

Given the abundant supply, LNG



allows for gas-dependent industries and communities downstream to flourish and grow, which in turn creates an environment for increased investment towards exploration and production of domestic resources. Furthermore, the recent announcements by the government to reconsider its plans for expanding its coal power program in favor of renewables and LNG has been commended by many around the world as it reaffirms Bangladesh's leadership on the international stage in our joint global push towards decarbonization and taking action on climate change.

On the policy front, I believe that in addition to the environmentally-conscious decisions stated above, initiatives such as "LNG Import Policy for Private Sector," which was passed in 2019, will be crucial to ensure the right balance between investment and innovation from the private sector is unlocked in conjunction with the continued close partnership and transfer of technical knowledge with the public sector. A great example of this in practice is what I am seeing take shape in Bangladesh's LNG to power programs, such as the LNG-based power plant in Payra being led by North West Power Generating Company Ltd., in partnership with Siemens Gas and Power, Germany.

### *So, what's next for Excelerate Bangladesh?*

Well, our experience from the moment we first began business has been nothing short of remarkable, and I couldn't be more excited about what the future has in store for Excelerate in Bangladesh.

Apart from the continued improvement in our operations to ensure that our FSRUs in Moheshkhali continues to provide essential fuel supply to Petrobangla and its customers seamlessly, Excelerate's engineers have been diligently working on developing a full suite of technology solutions which we believe will complement the growing needs of Bangladesh's energy industry. I strongly believe these innovative solutions, combined with proven operators, will be essential to building on the historical

success of Bangladesh in expanding energy access to the country in a prudent, environmentally conscious, and sustainable way.

One example of such an initiative is the LNG terminal we have been developing off the coast of Payra Port in the Patuakhali district of southwestern Bangladesh. As a part of this effort, Excelerate is currently completing a techno-economic feasibility study for an offshore LNG terminal delivering into Payra and has expressed its interest provide this fuel solution as a partner to the aforementioned LNG power plant based in Payra, led by North West Power and Siemens.

One might ask – why Payra? When looking at how our facilities at Moheshkhali successfully addressed the need for providing reliable gas supply to southeastern Bangladesh, Excelerate identified early on that the western half of the country – from Khulna to Rajshahi to Rangpur and areas in between – was also facing a similar dynamic of needing reliable gas supply solutions so these communities could keep enjoying the same growth and prosperity experienced across the rest of the country. This portion of the country was located farther from existing sources of gas – whether it be domestic gas from the northeast or LNG from Moheshkhali – and any plans for piped gas imports from neighboring countries was not economically practical, as this gas was ultimately also being sourced from LNG but having to be transported much longer distances (and higher costs) into Bangladesh through Khulna. The government also has ambitious plans to develop the Payra into an electricity-generating hub, which included plans for LNG-based power plants.

Payra's coastline has some unique characteristics and technical challenges – due to its shallow draft, conventional shore or land-based LNG solutions were not feasible. For these reasons, Excelerate began in 2018 to invest towards the development of a bespoke offshore LNG solution located off the coast of Patuakhali which could make landfall in Payra and would require minimal dredging work, through a specialized

construction methodology that allows for the laying of subsea pipeline in very shallow water depths. Along with detailed studies of the weather conditions coupled with Excelerate's decades long experience operating FSRUs in offshore conditions, we have concluded that a reliable offshore LNG terminal in Payra is absolutely viable when implemented by companies with the right experience. This facility could act as a gateway for delivering regasified LNG to power plants in Payra, customers in Khulna and be distributed further downstream from Khulna throughout the entire south western region of the country through Petrobangla's existing gas grid.

Over the long run, we believe an LNG access point at Payra will be valuable to Bangladesh as it provides the security of energy supply (by diversifying its gas sources to all corners of the country) and act as a foundation from which to distribute LNG to customers across the western half of the country, whether they are connected to the existing gas grid or are off-grid and need to be accessed through smaller-scale LNG solutions – such as LNG trucks.

Outside of LNG, we continue to invest in the communities in which we work actively and to support Bangladesh's push in meeting its UN sustainable development goals – whether that be through working with local schools in Moheshkhali Island to key sponsorships of new infectious disease centers (as a part of the pandemic recovery effort) in the Rohingya refugee camps, to the training of local cadets to operate on-board our vessels. One project which we are particularly excited about is the Solar Health Clinic – a solar-powered maternity clinic which will be deployed in Moheshkhali and be operated by a local NGO called the Hope Foundation, which is already quite active in the area. This project was delayed due to COVID-19, but we expect to have it operational by the end of 2021 to create a substantial positive impact on that community. Also, given that the clinic is fully powered by state-of-the-art renewable technologies, it will do so in a clean and sustainable manner.





**ORION** is one of the leading conglomerates in the country and a famous brand name in the business arena of Bangladesh with a highly diversified portfolio including Pharma & Healthcare, Power Generation and Energy, Infrastructure Development, Shipping, Cosmetics & Toiletries, High Tech Agro Products, Food & Restaurant Chain, Textiles & Garments and Consumer Goods sector. Orion in recent times has focused extensively on Power Generation & Energy, Hi-Tech Construction and Infrastructure Development. Orion has been consistently successful in all major investment undertakings so far and significantly contributing to country's economic growth and stability through adoption of appropriate business to business strategies. Orion always forged effective partnerships with government, foreign corporations and involved foreign technological expertise as and when required.



taking our NATION a step towards TOMORROW ...



Orion Infusion Ltd.



Orion Renal & General Hospital



Orion Pharma Ltd.



Orion Power Meghnaghat Ltd.



Digital Power & Associates Ltd.



Orion Infrastructure Ltd.



Orion Tea Company Ltd.



Orion Power Sonargaon Ltd.



Orion Power Rupsha Ltd.



City Center



Jafflong Tea Company Ltd.



Panbo Bangla Mushroom Ltd.



Fish & Co.



Orion Gas Ltd.



Dutch Bangla Power & Associates Ltd.



Orion Footwear Ltd.



Orion Knit Textiles Ltd.



Kohinoor Chemical (Bd) Ltd.



Orion Home Appliances Ltd.



Krispy Kreme



Orion Oil & Shipping Ltd.

**Corporate Office :** Orion House, 153-154 Tejgaon Industrial Area, Dhaka-1208, Bangladesh.

Tel : +88-02-8870133, Fax : +88-02-8870130

E-mail : orion@orion-group.net, Web : www.orion-group.net

মহাসড়ক দাপিয়ে বেড়ানো  
**মহারাজা**



**SIEMENS***Ingenuity for life*

For over 60 years, Siemens is working for the infrastructure development of Bangladesh. What Matters to Bangladesh Matters to Siemens.

[www.siemens.com.bd](http://www.siemens.com.bd)