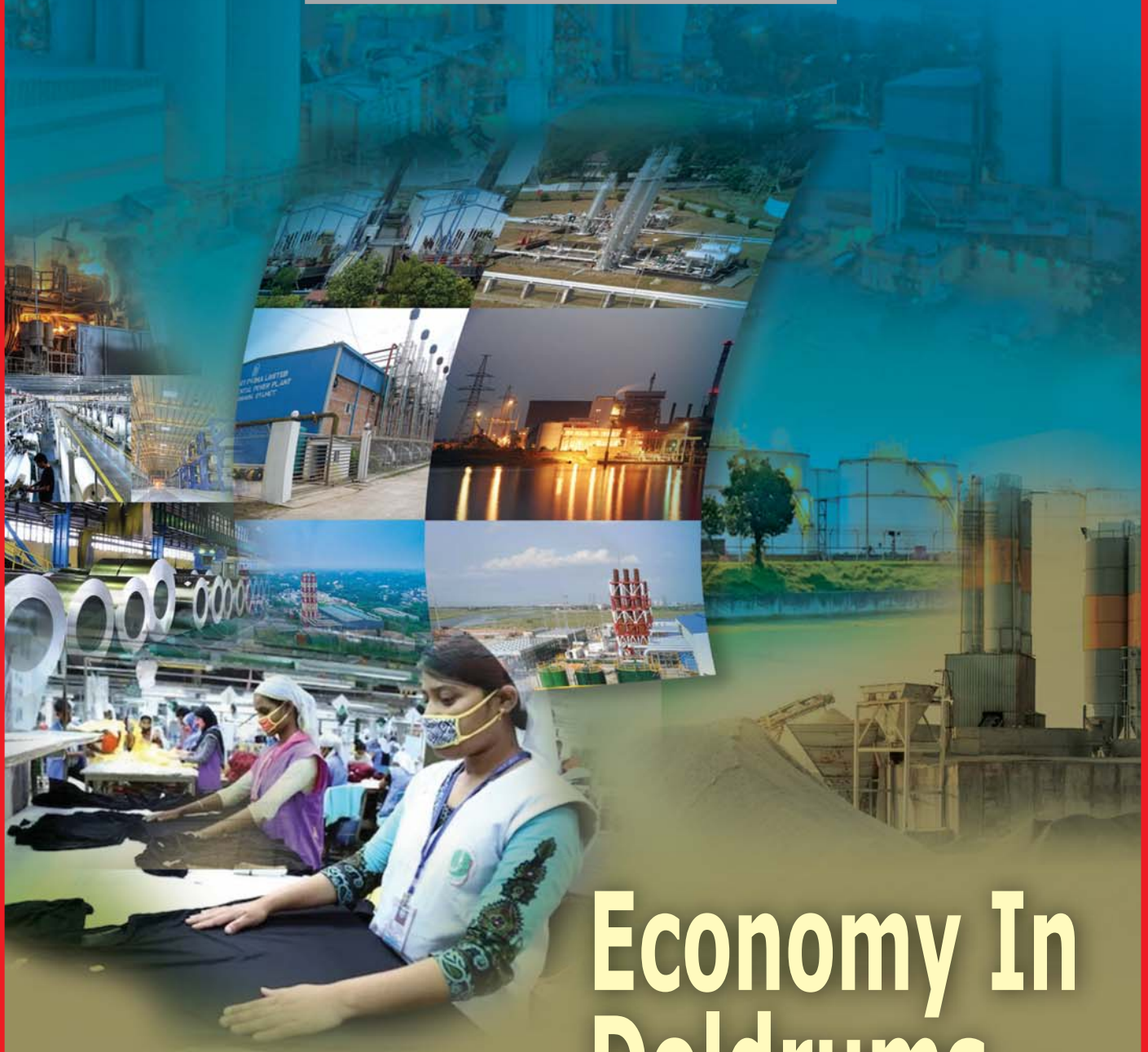


ENERGY & POWER



Economy In Doldrums

- IMF-WB Loan: Are We Losing The Plot?
- Sangu Offshore Platform Ideal for Converting into Barge FSRU
- Industries Can Earn 10 Times More Forex Than Spending on LNG Imports

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Phone: +88-02-43151995, +88-02-43150035, +88-02-43150036, Fax: +88-02-43151091, E-mail: info@lub-rref.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-rref.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
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Reporters
Arunima Hossain

Assistant Online Editor
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Photography
Bulbul Ahmed

Production
Mufazzal Hossain Joy

Computer Graphics
Md. Uzzal Hossain

Circulation Assistant
Khokan Chandra Das

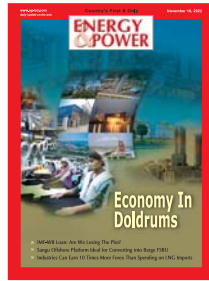
Editorial, News & Commercial

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

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EDITORIAL

Bangladesh's economy has achieved significant progress over the past years and the country is set to graduate from the least developed status. But now, at this juncture of graduation, the economy is passing through a critical situation like other economies of the world. It started turning around from the fallouts of the Covid-19 pandemic, but the Ukraine war and its consequences, particularly on the energy supplies and skyrocketing prices, have put a damper on the economic activities. The high prices have incapacitated the economy from importing the required energy for running the power plants up to their capacities. The industries, the backbone of the economy, are compelled to run at almost their half capacities for want of gas and electricity, resulting in huge job losses. Official statistics show export earnings declined in September and October last. Industrialists apprehend that it will decline further in November and December. Banks are not getting their money back from the cash-strapped industries. Despite their hectic parleys, trade bodies did not get any definite assurance from the government as to when the smooth and uninterrupted supply of energy could be ensured. Entrepreneurs are apprehending that unless the situation is urgently remedied, the buyers may shift to other sourcing destinations.

There is no doubt the economy will face even more serious setbacks in the days ahead unless the energy crunch can be resolved urgently.

h i g h l i g h t s

COVER



23



9



45

Industries assist the government in earning foreign exchange in two different ways. The ones that supply products to the local market save foreign exchange by acting as import substitute while the export-oriented ones are directly earning foreign exchange. If industries run smoothly, 10-12% foreign exchange of what is required for importing LNG can be earned. ...Md. Jashim Uddin Tells EP

Offshore platform Sangu remained abandoned over the past seven years, apart from the loss of usefulness, posing a threat to permanent damage. Though the gas field is shut down, a big amount of money is spent on its maintenance. So, the advice aims to show how we can revive such aquatic infrastructure through adaptive reuse as an alternative to demolishing... More in Special Article

Bangladesh is wading through a very critical phase in combating the chronic power and gas supply crisis. Leaders of trade organizations are not getting any definite pledge as to when a smooth gas supply and uninterrupted electricity supply will be possible. The gas and electricity crises severely impacting the operations of industries as well as the entire economy.



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Greenpage

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



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Turkey Starts Paying for Russian Gas in Roubles



Turkey has started paying for some its natural gas from Russia in roubles, Turkish Energy Minister Fatih Donmez said recently.

In an interview with

broadcaster TRT Haber, Donmez said that in the coming months the share of local currency payments in energy trade with Russia would increase.

Russia, hit by Western sanctions, is increasingly asking buyers of its energy to pay in roubles to help bolster its currency. Most international energy deals are settled in US dollars or euros.

Chevron Earnings of \$10.8b Almost Double Year-Ago Quarter

Chevron Corp. posted third-quarter 2022 adjusted earnings of \$10.8 billion compared with adjusted earnings of \$5.7 billion in third-quarter 2021.

US upstream operations earned \$3.4 billion in the quarter, compared with \$1.96 billion a year earlier. The improvement was primarily due to higher realizations and higher volumes, partially offset by the absence of third-quarter

2021 asset sale gains.

International upstream operations earned \$5.91 billion in the third quarter, compared with \$3.17 billion a year ago.

The increase in earnings was primarily due to higher realizations, partially offset by lower sales volumes. Foreign currency effects had a favorable impact on earnings of \$155 million compared to last year's third quarter.

German Gas Giant Uniper Posts Huge Loss on Russia Woes



Gas giant Uniper reported one of the biggest losses in German corporate history recently, weeks after reaching a

deal to be nationalized as Russia throttles energy supplies.

The net loss of 40 billion euros (\$39 billion) for the first nine months of the year came after the company had to pay sky-high gas prices following Moscow's closure of a key pipeline.

Excelerate Charters Excelsior FSRU to Germany

Excelerate Energy Inc. and the government of Germany have signed a 5-year contract to charter 5-billion cu m/year floating storage and regasification unit (FSRU), starting first-quarter 2023. The 138,000-cu m vessel will be berthed in the Port of Wilhelmshaven.



FSRU-based import terminal using an Excelerate vessel.

The FSRU will also accelerate development of TES's green hydrogen terminal at Wilhelmshaven, according to Excelerate.

Excelsior will go to drydock at the end of 2022 for scheduled maintenance before deployment to Germany. It has most recently been operating in Israel.

Saudi Aramco Registers \$42.4b Profit in Q3

Oil giant Saudi Aramco recently reported a \$42.4 billion profit in the third quarter of this year, a 39% bump buoyed by the higher global energy prices that have filled the kingdom's coffers but helped fuel inflation worldwide.



consumer's wallets.

Those tensions yet again have chilled relations between Riyadh and Washington before the Nov. 8 midterm elections. In a note to investors, the predominantly state-owned Saudi Arabian Oil Co. said its average barrel of crude sold for \$101.70 in the third quarter — up from \$72.80 at the same point last year.

BAPEX Holds 33rd AGM



The 33rd Annual General Meeting (AGM) of Bangladesh Petroleum

Exploration and Production Company Ltd. (BAPEX) was held at BAPEX Board Room in Dhaka recently, says a press release.

The Shareholders and the Members of Board of Directors of the company attended the meeting presided over by Md. Mahbub Hossain, Chairman of BAPEX Board and Senior Secretary, Energy and Mineral Resources Division.

The Audited Financial Statements for the fiscal year 2021-2022 of the company was approved by the Shareholders at the meeting.

During the financial year the total income and expenditure of the company was Tk. 669.55 crore and Tk. 485.01 crore respectively.

Company's profit before tax was Tk 184.54 crore and it was 626% higher than previous year. During the year, the company contributed Tk 243.23 crore to the government exchequer.

BAEC Bill Passed in Parliament



A bill titled Bangladesh Atomic Energy Commission (amendment) Bill 2022 was passed in the parliament recently.

The bill, which was moved by Science and Technology Minister Yeafesh Osman, landed in the parliament aiming to change names of two posts in the Bangladesh Atomic Energy Commission.

According to the bill, there are two posts in the Commission named Finance Advisor and Secretary where the Public Administration Ministry posted deputy secretary ranked employees.

As per a Cabinet Division directive on October 23, 2019 if there is any post called assistant secretary, deputy secretary, additional secretary and secretary in any office under any ministry or division, the name of the post has to be changed.

The bill states that the post of secretary will be named as working executive (admin) while finance advisor will be named as working executive (finance).

12kg LPG Price Hiked to Tk 1,251

Price of liquified petroleum gas (LPG) has increased by Tk 4.25 per kg to Tk 104.26 from previous rate of Tk 100.01 per kg as the Bangladesh Energy Regulatory



Commission (BERC) on 2 November 2022 announced the new value of the petroleum gas for the month of November.

As per the new price, a retail consumer will get a 12-kg LPG cylinder at Tk 1,251 instead of previous price of Tk 1,200.

The prices of LPG for other sizes of cylinders from 5.5 kg to 45 kg will go up rationally, said BERC chairman Abdul Jalil, who announced the new price at a virtual press briefing.

As per the announcement, the price of auto gas (LPG used for motor vehicles) was increased too to Tk 58.28 per liter from previous price of Tk 54.33 per liter, up by Tk 3.95 per liter.

Jalil informed that the US Dollar rate was considered at Tk 106.25 in re-fixing the price of the LPG as private operators import it from Middle East using foreign currency. He said though the LPG price has substantially come down in the global market, consumers are not getting full advantage of the downward trend due to the high dollar price in the local market.

Last month, the dollar exchange rate was considered at Tk 106.64. The price of LPG, marketed by state-owned LP Gas Company, will remain as usual as it is locally produced with a market share of less than 5%.

The LPG price went up to the highest Tk 1,439 (a 12kg cylinder) in the local market, following the start of the Russia-Ukraine war in February this year.

Titas Disconnects 10,000 Illegal Lines

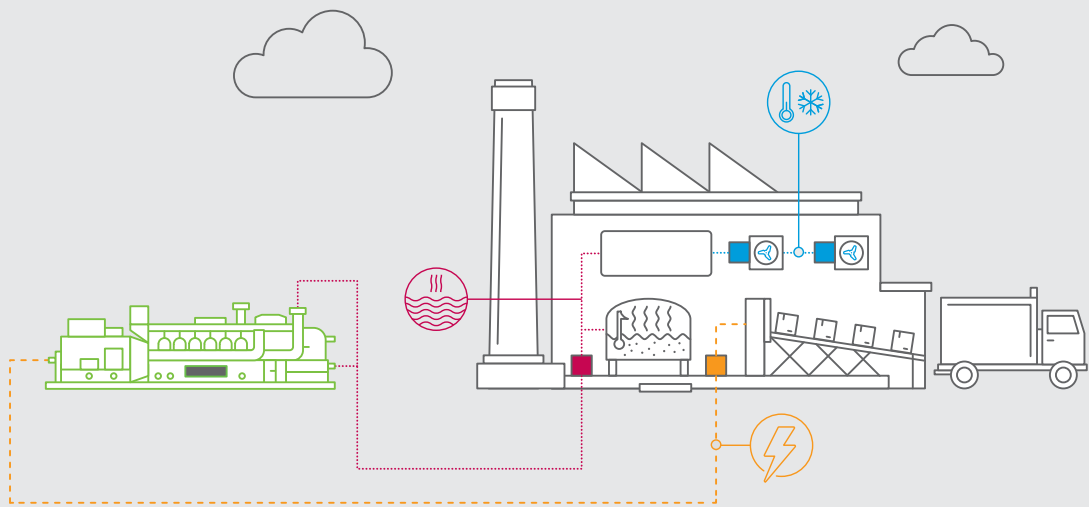
Titas Gas Transmission and Distribution Company Limited in a recent drive removed six-kilometer illegal gas pipelines, snapping about 10,000 gas connections at Gazaria upazila in Munshiganj.



A mobile court also fined an illegal consumer Tk 4,000 during the drive. Suruj Alam, deputy general manager of the Sonargaon regional marketing department of the company, said that illegal connections of Hossandi, Hossandi Bazar area, Bhabanipur, Lashkardi and Nazir Char were disconnected.

'We have heard that some illegal gas connections are still activated at the upazila. We will gradually disconnect those lines,' he added.

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Russia, Bangladesh Discussed Energy Cooperation



Russian Ambassador to Bangladesh Alexander Mantytskiy made a courtesy call on Prime Minister's Energy Advisor Dr. Tawfiq-e-Elahi Chowdhury recently and discussed

the prospects for the Russia-Bangladesh cooperation in the field of energy.

They also discussed expansion of renewable energy and about the changed global economic environment.

"The interlocutors discussed the prospects for the Russian-Bangladeshi cooperation in the energy field, including renewable energy, given the global economic environment," said a release. The Russia expressed in continuing joint work on the projects aimed at developing the national nuclear power sector and enhancing the potential of Bangladesh gas industry.

In this regard, the high level of cooperation between the Bangladeshi side and State Atomic Energy Corporation "Rosatom" as well as "Gazprom EP International B.V." was highlighted.

Asif Chowdhury Elected WFC Vice President



Asif A. Chowdhury, Honorary Consul for Chile in Bangladesh, Managing Director of CHOWDHURY GROUP, a renowned businessman, former President of Japan-Bangladesh Chamber of Commerce & Industry (JBCCI) was elected as Vice President of World Federation of Consuls (FICAC)-Board of

Directors for next three years term 2022-2025 unanimously among its 90 members.

He is the first ever Vice President elected from the Asia region in the FICAC. The voting took place at the 13 th World Congress of Consuls organized in Limassol, Cyprus on 7 th November 2022 by FICAC, said a press release.

Mr. Chowdhury, also past President and founder Secretary General of Consular Corps in Bangladesh (CCB), held the post of Director of FICAC since 2015.

35th AGM of RPGCL

The 35th Annual General Meeting of Rupantarita Prakritik Gas Company Ltd (RPGCL) of Bangladesh Oil, Gas and Mineral Resources Corporation (Petrobangla) was held in Dhaka recently.



Petrobangla Chairman Nazmul Ahsan, Shareholders and Board of Directors attended in the meeting.

United Power Sees 8pc Fall in Profit

United Power Generation logged an 8 per cent year-on-year fall in profits in 2021-22 fiscal year due to the devaluation of the local currency against the greenback.

The power generation company's profits fell to around Tk 997 crore in the recently ended financial year.

In a recent disclosure, the company said its profit decreased due to an increase in the fuel oil price in the international market. The Russia-Ukraine war has caused global economic uncertainty, energy supply shortage and significant price volatility.

As a result, United Power's spending rose significantly for oil purchase due to the rapid devaluation of the local currency, the company said in a disclosure published on the website of Dhaka Stock Exchange (DSE).

On the other hand, the company's net operating cash flow per share has decreased to Tk 1.89 compared to the previous year's Tk 27.17 due to a significant increase in trade receivable for the delay in payment of revenue bills by the Bangladesh Power Development Board.

Depending on the profits, the board of directors of the company declared a 170 per cent cash dividend for its shareholders.

and Purchase Agreement (MSPG) for procuring LNG from the spot market.

Under the proposal moved by the Petrobangla under the Energy and Mineral Resources Division, MSPA will be signed with eight more firms.

These are: LNG Japan Corporation, Japan; Socar Trading UK Ltd.; POSCO International Corporation, Korea; Qatar Energy Trading LLC; Inpex Corporation, Japan; Pavilion Energy Trading & Supply Pte Ltd. Singapore; PetroChina International Pte Ltd. Singapore; and PTT International Trading Pte Ltd, Singapore.

The approval came from the 24th meeting of the Cabinet Committee on Economic Affairs (CCEA) in this year held today virtually with Finance Minister AHM Mustafa Kamal in the chair.

Govt Approves Proposal to Increase Signatory Firms for Procuring LNG

The government recently approved a proposal in principle for increasing the number of signatory firms under the Master Sale

Economy In Doldrums

Mollah Amzad Hossain



Bangladesh is wading through a very critical phase in combating the chronic power and gas supply crisis. The operation of industries is severely impacted by a huge deficit of gas availability. Many gas-based power plants cannot generate for the non-availability of gas. Government sources stated the export earnings declined in September and October. Industrialists apprehend that it will decline further in November and December.



25 YEARS

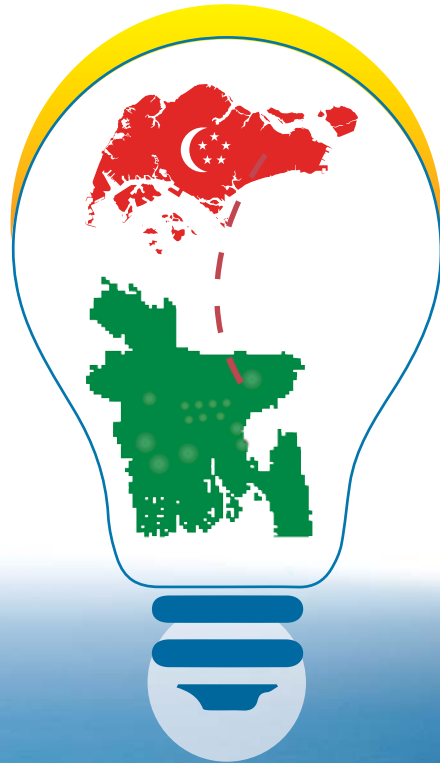
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Leaders of the two major export-oriented industries, RMG and Textiles, claimed that the situation emanated from the unavailability of quality gas supply per demand. Grid electricity which can be an alternative to gas is also not available. Leaders of trade organizations despite their hectic parleys with policymakers did not even get any definite pledge as to when a smooth gas supply and uninterrupted electricity supply will be possible. News of gas and electricity crises impacting the operations of industries are appearing in print and electronic media almost every day. Even the major buyers of RMG and Textiles are losing confidence in the competitiveness of Bangladesh's export ability emanating from the diabolic gas supply situation. Entrepreneurs are apprehending that unless the situation is urgently remedied buyers may seek other sources of supply soon.

It is not that the energy crisis is experienced for the first time in 51 years since the independence of Bangladesh. The first oil shock due to the Arab-Israel war immediately after the liberation war in 1973 made the father of the nation conscious about the exploitation of the country's primary fuel resources for retrieving a war-ravaged economy. He inspired Bangladesh by launching an initiative for offshore exploration of oil, conducting feasibility studies for exploring coal and mineral resources and taking over ownership of discovered gas fields from international oil companies. History evidence that the journey towards self-reliance for achieving sustainable energy security took off for the brave initiative of Bangabandhu. Unfortunately, his great initiative got interrupted by his gruesome murder by the heinous conspiracy in August 1975. The journey towards achieving self-reliance for energy security through exploration and exploitation of own primary fuel was grossly neglected since then during military rules and even at times of regulated democratic government. Stagnation was created in the operation of industries relying exclusively on grid power supply during the 1990s. After



returning to state power in 1996, the Awami League-led government started giving various incentives to industrial entrepreneurs in addition to initiating actions for increasing power generation. Gradually the industries started turning around. The availability of surplus gas facilitated the government to let industries use the energy for captive power generation for its reliable availability for the operation of industries. Such a situation continued till 2007. But the gas supply deficit started surfacing due to the major growth of gas-based power generation both in the private and public sectors. The discovery of Bibiyana, Shangu, Jalalabad and Moulavibazar gas fields in the 1990s was major milestone in the gas sector of Bangladesh. These fields coming into operation one by one created great enthusiasm for gas-based industry development.

On review of data and information, it appears that Bangladesh ran into major power supply crises three times. Between 2007 to 2013 sometimes providing power and sometimes gas connections were kept partially or completely suspended. Even now without special consideration gas connections are not being given to any user. Even though the government brought the entire country under the power supply, PBSs around Dhaka megacity cannot ensure quality power supply on an uninterruptible basis to industries. Failure in proper utilization

of own primary fuel resources accounted for the present gas and power crisis like that happened in the past. As a remedial measure, government action for increasing reliance on imported fuel over the past five years also contributed to the compounding crisis. The reliance on imported fuel increased from 22% in 2017 to a staggering 48% in 2021.

Over the past few years, the recovery of the economy from COVID impacts, the ongoing Russia-Ukraine war, and the consequent Western embargo on Russia have added new dimensions to the global energy crisis. Like other countries, the devaluation of the Bangladesh taka against the US dollar has dealt another decisive blow. Bangladesh has suspended the purchase of LNG from the spot market for its skyrocketing price spiral. On the other hand, the local production of gas depleted from 2750 MMCFD to 2300 MMCFD in over two years. The lack of capability for buying LNG from the spot market has reduced imported LNG use below 500 MMCFD. The crisis deepened in October 2022. According to long-term contracts of LNG purchases from Qatar and Oman Bangladesh gets one less cargo every month during October and November. Hence RLNG supply has been reduced by another 100 MMCFD. On 9 November local production was 2208 MMCFD and RLNG addition was 380.20 MMCFD. That means total gas

availability in the national gas grid was 2588.20 MMCFD. From December again 500 MMCFD LNG under a long-term contract will be available. The gas availability will marginally increase by 100 MMCFD from the present level. There is no possibility for any major increase in gas production from own fields in the next 6 months.

According to the Petrobangla forecast, the gas supply is estimated to be 4000 MMCFD now. The deficit is 1412 MMCFD. A minimum of 1200 MMCFD is required for keeping the gas-based power plants in operation. On 9 November, the gas supply to grid power generation was 827 MMCFD. According to a study by Dr. Prof Ijaz Hossain, the gas demand of industries now is 950 MMCFD. But the present supply is about 50% of the demand. He observed that industries need at least 400 MMCFD of more gas. For ensuring, this there is no option now than importing this volume of LNG from the spot market. According to his study, the cost of LNG import will be US\$ 360 million, US\$420 million, and US\$480 million considering LNG prices at US\$ 30, US\$35 and US\$40 per MMBTU respectively. Dr. Zaidi Sattar of the Policy Research Institute observed that Bangladesh has the capability to absorb this financial involvement for LNG import for saving the industries. But negating these observations Dr. Tawfiq E Elahi Chowdhury BB, Energy Advisor to the Prime Minister, said that the Bangladesh economy cannot afford to import LNG from the spot market at this moment. In the wake of repeated protests from industrial entrepreneurs, he said gas to industries can be supplied if required through rationing supply during the day time.

The impacts of the gas crisis on industry operations have been mentioned already. The furnace oil-based generators also cannot be operated to full capacity. IPPs are running at less than designed capacity as BPDB has not paid their bills for the last 5 months. This deepened the power supply crisis further. However, with the advent of winter, the demand reduced and the



deficit started easing a bit. But the crisis may reach crescendo again if, by March 2023, Payra, Rampal and Adani Group of India cannot start supplying power as scheduled. Gas for 11,000 MW of power generation cannot be supplied now. By 2023, another 2500 MW gas-based power plants are due to be ready for operation. BPDB has to account for capacity charges if gas as per demand cannot be supplied. That will further increase the average cost of generation.

Trade organizations including FBCCI, DCCI, BCI, BTMA, and BGMEA claim that production declined from 20% to 60% because of the power and energy crisis in industries. It is being claimed that the decline of production in steel mills is 20-50%, cement and ceramics 30-50%, and the textile sector is 30-60%. The crisis of industries not relying on captive generation is no less acute than those having captive generation. They are not getting a quality supply of grid power. Shahedul Islam Helal, Senior Vice President of BCI, while talking to EP said their losses could be minimized if the utilities stick to their planned loadshedding. But that did not happen. The crisis in PBSs franchise outside DPDC and DESCO is far more acute. The situation is truly diabolic. In some command areas of PBSs, new industries are waiting anxiously for getting power connections. The PBSs cannot provide connections for a lack of capacity.

Former President of FBCCI A K Azad

while discussing these mentioned that industries will have to seriously consider closing business operations if the present situation persists for another two months. Md. Jashim Uddin, President of FBCCI, told the EP that the policymakers should bear in mind that every US dollar spent in importing LNG for industries can earn US\$10-12 by adding value to the products. Industries will shut down if the government fails to do that. A huge number of workers will become jobless. Banks will be liquidated failing to recover the loans. For this, we urged the government to withdraw tax and vat from imported LNG/gas. We have also informed policymakers that industries will be ready to accept an affordable increase in gas price if quality supply on an uninterrupted basis can be ensured.

In a recent press briefing Mohammad Ali Khokon, President of BTMA, stated about the truly alarming situation of textile industries for gas supply crisis. He also informed the EP about the probable price impact of imported LNG. He said that they are ready to pay TK 22.00/cubic meter of gas for captive power which is now Tk 16.00/cubic meter. But quality uninterrupted gas supply has to be ensured. Otherwise, industries will not survive.

Energy and Mineral Resources Division (EMRD) sources informed the EP that they are exploring all possible options for increasing the gas supply. Different LNG suppliers are submitting

unsolicited offers for LNG supply. Concluding agreements for 2023-2025 for importing are under active consideration. A Standard Purchase and Sales document is about to be finalized for this. LNG purchase may be possible after this document is approved. Even then it will take at least 5-6 months for starting LNG supply under new agreements. Works are underway for increasing supply from local sources by 618 MMCFD by 2025. The EMRD sounded optimistic about it. Another source claimed that LNG purchase from the spot market is under active consideration from December 2022.

It has been mentioned earlier that LNG purchases ran into risks of skyrocketing price hikes in the global market. The gap between the spot market price and local gas price is enormous. The fragile economy of Bangladesh cannot absorb the huge subsidy required for this. Stress upon foreign exchange reserves is another element of concern. Analysts stated that the spot market price of LNG has now reduced from US\$60-62



/MMBTU to US\$ 30-35 / MMBTU. Bangladesh can consider purchasing LNG from the spot market if the price stays around US\$30.00/MMBTU. Many believe that Bangladesh must consider importing LNG even absorbing the price shock for saving industries as this is the major foreign exchange earner. Withdrawal of tax and vat on LNG and adjusting gas prices marginally can

bring ultimate benefit to the economy. There is no semblance of doubt that the economy will get a decisive knockout punch if the buyers go back from our export-oriented industries. It will deliver an irreversible loss to the economy. Failure to take decisions in LNG import now considering the wartime situation will cause much more harm than good without any semblance of doubt. **EP**



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সম্প্রতি দেশের বিভিন্ন স্থানে মানুষের মধ্যে ঘুড়ি উড়ানোর প্রবণতা লক্ষ্য করা যাচ্ছে। বড়-ছোট বিভিন্ন আকৃতির এসব ঘুড়ি সমূহ অনেক সময় সুতা হতে ছিড়ে গিয়ে অথবা উড়ানোর সময়ই বিদ্যুতের সুউচ্চ টাওয়ার এবং তারের মধ্যে আটকে যায়। দেশের বিভিন্ন প্রান্তে বিস্তৃত ৪০০ কেভি, ২৩০ কেভি এবং ১৩২ কেভি সঞ্চালন লাইনে আটকে থাকা ঘুড়ি/মোটা সুতা ঝড়বৃষ্টিতে ভিজে শর্ট সার্কিট হয়ে বিদ্যুৎ বিভ্রাট ঘটতে পারে। এছাড়াও ভেজা অবস্থায় মোটা সুতা বিদ্যুতের তারের সংস্পর্শে থাকলে এবং সেই সুতা জনবসতি এলাকায় পড়ে থাকলে বিদ্যুতায়িত হয়ে জানমালের অনাকাঙ্ক্ষিত ক্ষতির আশংকা রয়েছে। সারাদেশে চলমান কালবৈশাখী/ঝড়বৃষ্টি মৌসুমে এ আশংকা ক্রমশ বাড়ছে।

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Crisis in Industries and Possible Remedies

Saleque Sufi

Industries in Bangladesh especially export-oriented industries including textiles and readymade garments (RMG) are now in dire all-round crisis. CORONA and Ukraine War impacts have caused industrial raw materials prices to skyrocket. The devaluation of the taka against dollars has stressed industry owners in importing raw materials. On top of that chronic power and gas supply shortage has already made most industries sick. Some small and medium industries have already closed down. Many others are struggling to survive. Many export-oriented industries are struggling in meeting their export commitments. Major importers are reviewing their import orders. Bangladesh industry owners are losing competitiveness in the export market. Industry owners and trade bodies are making parleys with policymakers for improving the power and energy supply situation, and reviewing fiscal incentives. BPDB and Petrobangla are also

trying to improve the supply of power and gas to industries by implementing austerity in use for other users. This write-up will endeavor to assess the depth and diversity of issues those industries are encountering and also possible remedial measures.

Millennium Challenge Corporation (MCC), a US survey organization, in its latest survey carried out by a third party has termed 17 out of 20 development indices of Bangladesh as going down to the Red (danger) zone. This puts Bangladesh in a serious spot of bother for keeping its economic development going. Bangladesh can not afford its industries to remain in an energy and price crisis for an indefinite period. It will adversely impact foreign currency reserves. If industries cannot operate smoothly, people will lose their jobs. Investors will lose incentives for investment in Bangladesh. Bangladesh will struggle from 2026 when it will reach a stage of a developing nation. The vision

2041 of a developing nation will be extremely difficult to achieve.

Depth and Diversity of Energy Crisis of Industries

Bangladesh recorded impressive growth consistently over the past decade mainly due to the phenomenal growth of export-oriented industries. Some contingency measures of increasing power supply through setting up of liquid fuel-based power plants and letting industries set up captive power plants ensured the smooth operation of industries. Industries especially RMG, Textiles, Pharmaceutical force, and less than the economic price of fuel ensured the competitiveness of Bangladeshi products in the global market. But these also acted as a deterrent. Many energy-intensive sunset industries from China, Korea, and Japan mushroomed in energy-congested corridors having constraints of gas and electricity supply. The gas and electricity utilities failed in keeping pace with demand. The exploitation of coal resources got strangled in a political quagmire. Governments failed miserably in carrying out the required exploration for expanding proven reserves of gas. From 2000-2022 only a little over 3 Tcf of new gas could be added while demand growing exponentially consumed 14 Tcf from proven resources. Despite proven challenges of fuel import from volatile global markets and other challenges of setting up import infrastructure at shallow coastal areas, the government preferred import over its own fuel resources development. The present crisis is the consequence of all



the above failures and flawed planning.

The government claims to have achieved 25,730 MW power generation capacity which includes 2800 MW captive generation and 414 MW off-grid renewable energy. But due to the fuel supply constraints, transmission, and distribution bottlenecks, the power sector is struggling in managing even 12,000 MW grid power generation.

The present production of own natural gas is 2300 MMCFD against coincident peak demand of 4500 MMCFD. About 750-800 MMCFD LNG imports using two FRSUs were supplementing the gas supply. Bangladesh imports about 600 MMCFD equivalent LNG from Qatar and Oman under long-term LNG supply. About 300 MMCFD LNG used to be imported from the spot market. The Ukraine war and the consequent US and EU embargo created skyrocketing prices of LNG on the spot leading Bangladesh to suspend LNG import from the spot market. About 300 MMCFD loss of gas supply rocked the energy supply of Bangladesh. Arguably the worst-ever fuel supply crisis since the liberation of Bangladesh has impacted power generation and smooth functioning of all end users in fertilizer, industries, CNG, domestic and commercial. In some places in Bangladesh, 4-6 hours of power loadshedding is now a regular phenomenon. BPDB mostly blames gas supply shortage as one of the main reasons. Most people of Bangladesh through regular extensive coverage in print and electronic media are aware of the reasons for such a diabolic energy and power supply situation.

Bangladesh's annual gas demand is now 994.4 billion cubic feet. 46% is supplied for grid power, 15% for captive power generation, 13% for industries, 5% for fertilizer, 4% for CNG, 1% for commercial users, and about 0.10% for tea gardens. Power generation has options for using coal and liquid fuel while domestic consumers can use LPG or electricity. CNG can be gradually replaced with autogas. But industries must be supplied with quality gas on an



uninterrupted basis for smooth operation. Some industries need 24/7 for their nature of the operation. Following the suspension of LNG imports from the spot market, the government initiated various austerity measures for saving gas and diverting this as much as possible to industries. But visits to industrial zones at Gazipur, Mawna, Ashulia, Narayanganj, Tongi, during the day peak evidenced very poor quality gas supply. Large industries were seen using diesel-fired standby generators. Many industries have been forced to limit the operation to two shifts. Even then the situation has not improved. Industries desperately need 250-300 MMCFD additional gas supply for keeping their operations going.

FBCCI, BCI, BGMEA, BTMA, and other chambers have reported grave situations in respective areas. Experts were alerting the government about such a situation for a while. They were suggesting taking political decisions for exploiting coal and expediting petroleum exploration. There were suggestions for eliminating system loss and limiting wastage. But incompetent Petrobangla companies could do very little. The present situation desperately needs to ensure at least 300 MMCFD gas from somewhere through import from the spot market and take stringent measures to eliminate system loss.

In a recent seminar of FBCCI in presence of senior policymakers, all the above were discussed. The seminar

among others suggested system loss reduction from a staggering 10% now to 4% within 6 months with the collaborative approach of all stakeholders. Some experts believe that about 100-150 MMCFD gas can be saved from leakages and inefficient use. A major drive against system leakage is also essential now. This gas, if saved, can be diverted for industries.

Bangladesh can never grow big in LNG import for price uncertainty and supply chain management challenges. There must be a special 10 years program with a budgetary provision of US\$ 1.0 billion for carrying out 10 exploration well drilling each year in Bangladesh onshore. IOCs with the right incentives in PSC should be engaged onshore alongside BAPEX.

Government must also set priority for gas use. For food security gas supply to industries cannot be intercepted. The power system can use mostly alternate fuel for a while which they are doing now. One major coal plant is under operation and a few more will come into operation soon. Government and industries must cooperate in a way that gas to captive generation can be reduced progressively with industries using more and more grid power. For this dedicated power distribution lines to most industrial hubs must be constructed on a priority basis. Gas saved in the process should be diverted for industrial use.

Domestic consumers use about 13% of

the total gas. We are unsure about the exact usage as many consumers are not metered and there exist many unauthorized connections. The disconnection of unauthorized users has become a huge challenge. It is advisable to phase out the supply of gas for domestic use replacing this with LPG in a planned manner. The gas can be used with more value addition in industries.

Finally, as a contingency measure, the government should import LNG from the spot market or conclude agreements with suppliers proposing a 3-4 years short-term contract at US\$25/MMBTU. Importing LNG for industries through ensuring smooth operation will ensure export earnings remain at the present level or grow higher. At the same time, the government should relieve LNG imports from tax and vat. Industries should also pay a higher price for gas reducing the stress of subsidy required in the process.

Here are some of the recommendations that came up in the BCI seminar:

- Gas utilization policy needs to be made consistent with present-day reality (LNG import)
- Power sector must reduce its gas demand and prepare for paying higher gas prices, otherwise the government will have to provide huge subsidies because cross-subsidy will not work when the total supply comes from imported LNG
- Fertilizer sector – whether it is better to import fertilizer or produce it domestically. If for reasons of food security, the government wants to continue producing fertilizers, it must provide the required subsidy for the gas consumed by fertilizers plants.
- Industry sector should consider using alternative fuels – Coal, LPG, Oil, Firewood, and Agricultural Residue.
- Domestic and Commercial sectors have good alternative fuels like LPG.
- In the transport sector, there should be open competition between – Gasoline, Diesel, CNG, LPG, and electricity.

- It is extremely important to monitor and check all gas misuse and pilferage. If the high system loss continues, then consumers, who pay their bills in full, would be the biggest sufferers.

- Conservation and Energy Efficiency must be pursued with utmost seriousness in all sectors.

Conclusion

Industries are the lifeline of Bangladesh's economy. They must get a sustainable supply of quality power and fuel on an uninterrupted basis for smooth operation. They are major export earners and employers. Even those industries feeding the local market are saving foreign exchange by acting as import substitutes. The world community is now aware of the diabolic power and energy crisis existing in Bangladesh. The buyers may turn their back at any time if the present situation persists. Once they turn back the present declining trend of export earnings cannot be retrieved. The vision of 2041 for graduating to a developed economy may blow with the wind.

The authorities must realize that opting for imported fuel and neglecting their own fuel was like committing suicide. Government can atone for its flawed planning in the energy and power sector, and mismanagement by taking comprehensive action plans for increasing fuel supply to industries by eliminating losses and pilferages, and adopting pragmatic fuel utilization plans. Some brave decisions of imitating coal extraction and going for offshore exploration may be taken for mid to long-term energy security.

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COP27: Priorities on Climate Adaptation and Mitigation

Concerning Bangladesh NDC Action Plan

AKM Monowar Hossain Akhand



COP27 is already at a fever pitch with multiple challenges. The world climate leaders gathered this year at the UN Climate Change Conference, COP27 in Sharm-El-Sheikh, Egypt, from 6 to 18 November 2022. It is the 27th session of the Conference of the Parties of the UNFCCC. The government of Egypt is the host of this conference, and greenhouse gas emissions reductions, climate action, climate finance, fossil fuel emissions, fossil fuel subsidies, loss and damage, and climate solutions adaptation and mitigation are the major agenda of COP27.

The present situation has happened a lot with extreme weather, economic inflation, the Ukraine-Russia war and the energy crisis, gripping rich and emerging countries alike. With all else happening in the world, climate change may be taking a backseat. This, however, hasn't stopped several developing nations from banding together to call-upon rich countries to cough-up loss and damage payments for climate change impacts.

The rich countries have failed to provide a promised US\$100 billion annually from 2010 to 2021 for poorer nations to help them adapt to climate change, trying to squeeze, which become challenging now to COP27. The social and financial impacts of climate change that cannot be avoided are referred to as 'loss and damage',

the consequences of climate that go beyond what people can adapt to, or alternative options exist, resulting from the present disasters phenomenon in the affected nations (e.g. Bangladesh).

Climate Plans Remain Insufficient - Need for More Ambitious Actions:

A new report from UN Climate Change shows countries are bending the curve of global greenhouse gas emissions downward but underlines that these efforts remain insufficient to limit global temperature rise to 1.5°C. The combined climate pledges of 193 Parties under the Paris Agreement could put the world on track for around 2.5°C of warming, where current commitments will increase emissions by 10.6% by 2030, compared to 2010 levels, and CO₂ emissions needed to be cut 45% by 2030, compared to 2010 levels.

The Second UN Climate Change report on long-term low-emission development strategies looked at countries' plans to transition to Net-zero emissions by or around mid-century, indicating that these countries' greenhouse gas

emissions could be roughly 68% lower in 2050 than in 2020, a strong signal that the world is starting to aim for Net-zero emissions. The report notes that many net-zero targets remain uncertain and postpone the future critical action that needs to take place now. Ambitious climate action before 2030 is urgently needed to achieve the long-term goals of the Paris Agreement.

The Global NDC Situation:

UN Climate Change analyzed the climate action plans- known as nationally determined contributions (NDCs) of 193 Parties to the Paris Agreement, 166 are available, including 24 updated or new NDCs submitted after the UN Climate Change Conference in Glasgow (COP26) up-until 23 September 2022. Taken together, the plans cover 94.9% of total global greenhouse gas emissions in 2020. The available NDCs taken together, a sizable increase of about 13.7%, in global GHG emissions in 2030 compared to 2010 is anticipated. The IPCC has estimated that limiting global average temperature increases to 1.5°C requires a reduction of CO₂ emissions of 45% in 2030 or a 25% reduction by 2030 to limit warming to 2.0°C.

The Broken \$100-billion Promises of Climate Finance:

At the UN climate summit in Copenhagen 12 years ago, rich nations made a significant pledge. They promised to provide US\$100 bil



lion a year to less wealthy nations, to help them adapt to climate change and mitigate further temperature rises. The promise was broken and the fund target was out of reach. Frustrations at this failure are rising tensions ahead of the next COP27.

The USA has fallen far short and should contribute 40-47% of the US\$100 billion, depending on whether the calculation takes into account wealth, past emissions, or population. But contribution was only around US\$7.6 billion in 2016-2018. Australia, Canada and Greece also fell far short of what they should have contributed. Japan and France, on the other hand, have transferred more than their “fair share”. The UN estimates that developing countries need US\$70 billion per year to cover adaptation costs, and will need US\$300 billion in 2030, and US\$ 500 billion in 2050. The UN IPCC estimates that US\$1.6 trillion to US\$3.8 trillion is required annually to avoid warming exceeding 1.5°C.

COP27 Priorities- Climate Adaptation and Mitigation:

Mitigation is critical to minimize the risk of climate change’s worst impacts, but failing to fund adaptation will take a toll on the most vulnerable. Both aspects should be priorities for COP27. In light of the war in Ukraine, the looming economic crisis and the climate disasters worldwide, COP27 priorities are well and truly diverse. However, one of the first things on the agenda of global leaders at the UN Climate Change Conference- COP27 will be climate change adaptation and mitigation- the topic that was in the spotlight at COP26 but, at the same time, one that is still fails to attract the needed attention. COP26 declared the countries’ 2030 global emissions reduction targets will cause at least 2.5°C by 2100 and limit the rise to around 1.9°C by 2050. Presently, the IPCC considers a 1.5°C target as being on “life support”.

The IPCC report that was dedicated to assessing the climate impacts, adaptation and vulnerability warned that climate change is impacting the world in a way faster than anticipated. Further-

Summary of Global NDC Situation:

Emission Status	Estimates in Giga-tonnes of carbon dioxide equivalent (Gt CO₂ eq)	Change compared to 2010, average (%)
Total global GHG emissions in 2030	53.8 (50.8–56.9)	+ 13.7
Total GHG emissions in 2030 for the 151 Parties, new or updated NDCs	40.4 (38.5–42.2)	+ 5.9
Total GHG emissions in 2030 for 74 Parties with long-term mitigation, visions, strategies and targets	29.7 (29.0 to 30.4)	- 5.2

more, it points out that even if we successfully limit global warming to 1.5°C, we won’t be able to avert losses to nature, societies or economies entirely. The best-case scenario is to reduce them substantially. The world is now to increase climate change mitigation and adaptation efforts, and governments to take adequate climate adaptation and mitigation measures that can ensure benefits, and cost ratios ranging from 2:1 to 10:1 or even higher.

The COP27 is the perfect stage for global leaders to demonstrate climate ambitions by fulfilling their financing commitments to support the most vulnerable regions, laying the foundation for an accelerated energy transition and ensuring a short-term fossil fuel phase-out. Most developing countries, like Bangladesh, can’t fight global warming independently and need international cooperation and financial support. The cost of climate change is natural disasters, incomparable to the cost of ensuring proper adaptation and mitigation measures.

Global climate finance is to be used for climate change mitigation purposes, while presently spending on adaptation is much smaller than needed, that is only 4% to 8% of finance goes to adaptation efforts. The most effective adaptation measures cannot prevent all losses, which are a present-day reality, especially for vulnerable regions. Considering financial support for mitigation is much greater than adaptation, nations also agreed to double adaptation funds. Some of the world’s leading banks and asset managers are committed to accelerating the transition to a Net-zero emissions economy.

Extreme Weather in Asia - Bangladesh Badly Suffers from Disasters:

High temperatures, frequent droughts, torrential rains, floods, tropical storms, heat waves, and other extreme weather events have throttled Asia in the last summer, the lives with all business activities forced to shut down, slowed global economic activities, disrupted business production, food supplies.

Bangladesh badly suffers from climate change impacts, creating extreme weather, torrential rains, flood, drought, river erosion, sea-level rises with human displacement phenomenon, and severe cyclones almost round the year. Bangladesh was badly affected by the recent cyclone Sitrang which hit on 25 October 2022 across the coast and affected 2.4 million people, 20 people died, around 10,000 houses were damaged, and 1.2 million people took shelter in 6,925 cyclone shelters.

Bangladesh Climate Mitigation Plan:

Bangladesh has prepared its updated National Determined Contributions (NDC) and submitted it to the UNFCCC last 26 August 2021 undertaking a progressive approach to develop its economy on a low-carbon pathway. In the NDC, Bangladesh committed to reducing GHG emissions in the power, industrial and transport sectors of 12 MTCO₂e or 5% below ‘business-as-usual’ with domestic resources by 2030 as unconditional and 36 MTCO₂e or 15% below ‘business-as-usual’ with foreign technology support within 2030 as a conditional contribution.

Bangladesh has covered its NDC with the Energy (Power, transport, energy use

in industry, residential, commercial, agriculture and brick manufacturing), Industrial Processes and Product Use (IPPU), Agriculture, Forestry and other Land-use (AFOLU) and Waste sectors according to IPCC guidelines. The updated NDC tries to represent an economy-wide GHG emission reduction, an implementation Roadmap to manage growing emissions to play its role in global efforts to limit temperature within 1.5°C.

Bangladesh contributes only 0.3 tons of annual carbon emissions (0.36% of the global carbon emissions), while developed nations contribute about 20 tonnes. Bangladesh is the 7th most affected country of the world due to adverse impacts of climate change, ranks 152 out of 188 countries in world GHG emission, 33rd most vulnerable country, and 25th least-ready country (meaning that it is highly vulnerable, not ready to prevent or reduce climate change effects).

Carbon Emissions Scenario 2022-30:

Bangladesh's total GHG emission is found to be increased from 169.05 MT CO₂e in 2012 to 409.4 MT CO₂e in 2030 under the Business as Usual (BAU) scenario with an increase of 2.4 times than base year (2012). The sector-wise emissions under the BAU scenario by 2030 are 312.54 MT CO₂e (76.34% of total) in Energy, 10.97 MT CO₂e (2.68% of total) in IPPU, 55.01 MT CO₂e (13.44% of total) in AFOLU and 30.89 MT CO₂e (7.55% of total) in Waste Sector. The highest contribution (24.91% of the total) of GHG emission is found in the Industry (energy) sub-sector followed by Power (23.24%) and Transport (8.86%) under the energy sector.

Mitigation Action Plan: 2022-30:

The mitigation scenario is achievable but ambitious unconditional and conditional GHG mitigation measures by 2030 for the updated NDC have been prepared. In the unconditional part of NDC, only mitigation measures are considered which would be implemented based on current local-level capacity and financed through internal resources. The conditional emission reduction will

be implemented through international funding and technological support. The contributions are:

Unconditional Contribution: The GHG emissions would be reduced by 27.56 MT CO₂e (6.73%) below BAU in 2030, where 26.3 MT CO₂e (95.4%) emission reduction will from the energy sector while 0.64 (2.3%) and 0.6 (2.2%) MT CO₂e reduction will from AFOLU (agriculture) and waste sector respectively.

Conditional Contribution: The GHG emissions would be reduced by 61.9 MT CO₂e (15.12%) below BAU in 2030 in the respective sectors. This reduction is proposed in an unconditional scenario. The conditional mitigation measures will be implemented by Bangladesh if there is external financial/technology support. The conditional scenario is 59.7 MT CO₂e (96.46%), emission reduction from the Energy sector, while 0.4 (0.65%) and 1.84 (2.97%) MT CO₂e reduction will be from AFOLU (agriculture) and Waste Sector respectively.

Conclusions:

The COP27 shouldn't be another conference for promises and targets since the climate leaders have put humanity on track 'towards an unlivable world', instead, be the place where countries present the meaningful progress they have achieved over the past year, and needs to focus on climate finance US\$100 billion per year for the affected countries. The goal is to help developing countries face the harshest consequences of rising temperatures, something that they are already struggling to do. The issue with climate financing isn't just the numbers. The problem is more complex, and mitigation and adaptation efforts will remain insufficient without addressing the accompanying challenges. The current commitments are far below the real needs of the most vulnerable nations.

Climate Leaders can take the stress of accountability by implementing the Paris Agreement. Developed nations and the international community should lead vulnerable countries on

the road to net zero by demonstrating ambition and tangible results in accelerating the energy transition, reducing greenhouse emissions, phasing fossil fuels out, and going beyond their existing, but not fulfilled financial commitments. The world's 46 least-developed countries produce just 1% of the world's annual CO₂ emissions. COP27 is taking place in a continent where climate change will push 40 million people into extreme poverty by 2030. "Adaptation saves lives. As climate impacts worsen, they will scale up investments for survival where delay means death (UN Secretary-General Antonio Guterres)".

Bangladesh's NDC has an adaptation component that describes what is already done and what are the priorities for the future long-term vision for adaptation keeping collaborations with mitigation actions. The National Adaptation Plan is underway and hopes to communicate adaptation communication inputs from the NAP process in the coming years.

Bangladesh has emphasized the "mitigation" and "adaptation" programs for NDC, which co-exist, for the long-term vision. Bangladesh currently spends US\$ 2 billion per year, around 6-7% of its annual budget on climate change adaptation, of which 75% money comes from the government, while the rest comes from international development partners including bilateral, multilateral and private funding. It is estimated that the country would need US\$ 5.7 billion as adaptation finance by 2050. The decisions of COP27 are important to Bangladesh's perspective and would be an opportunity to outline how world countries contribute to stronger climate ambition.

(Sources: IPCC-2022, Bangladesh NDC-2021, UNFCCC-2022, WRI-2022, Energy Tracker Asia-2022)

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AKM Monowar Hossain Akhand,
Former Additional Secretary, BERC, &
Ministry of Public Administration,
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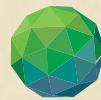
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Sangu Offshore Platform Ideal for Converting into Barge FSRU

Zainul Abedin P. Eng.



Introduction

Sangu is Bangladesh's first offshore gas rig project, which is 40-50km off the Salimpur coast, Chattogram. Built by Petrobangla in 1998 with the help of international companies – Cairns and Santos – it initially produced 50 mmcf of gas before increasing it to 180 mmcf. Finally, the production dropped to 18 mmcf in 2011. It was declared abandoned when production dropped to 2.0-3.0 mmcf at the end of 2013.

The offshore platform Sangu remained abandoned over the past seven years, apart from the loss of usefulness, posing a threat to permanent damage. Though the gas field is shut down, a big amount of money is spent on its maintenance. So, the advice aims to show how we can revive such aquatic infrastructure through adaptive reuse as an alternative to demolishing.

Petrobangla, the owner of the platform, can modify it and use it as a gateway to import LNG, store, regasify and supply gas to the national grid through a seabed pipeline to existing facilities.

Sangu facilities include:

- Platform in the Bay of Bengal
- Onshore gas process plant
- 50-kilometer, 20-inch diameter subsea pipeline from the platform to the onshore plant.

The onshore gas process plant is located at Fouzdarhat in the south-eastern Chattogram district.

FSRU: Floating Storage Regasification Unit. FSRU is used to supply LNG to the NG transmission pipeline. Normally, LNG carriers visit these FSRUs periodically to

provide. LNG is stored in floating LNG carrier (ship) storage tanks and later liquid fuel is regasified by regasification units. It will increase the delivery pressure of gaseous fuel so that it can be transported through subsea pipeline systems to the NG transmission grid.

Barge FSRU LNG Terminal: LNG from carrier (ship) offloaded to flatbed Barge LNG tanks.

- The BFSRU tanks: Tanks are designed to store LNG at a very low temperature (around -160 c) and insulation is specially designed to protect against any spill and to reduce brittleness.
- Loading and unloading systems: Unloads LNG from carrier to barge LNG storage tanks.
- Regasification System: Regasify LNG to NG to export regasified fuel to the national grid.
- Power Generation: BFSRU uses boil-off LNG for power and doesn't need other fuels.
- Mooring systems: Designed for a permanent basis are for a continuous supply of natural gas to the grid with design life ranging from 15 to 25 years.

A Large-Scale FSRU on Barge

A large-scale FSRU is a fit-for-purpose facility designed with practical operation considerations. It features scalable storage capacity from 150,000 cu m to 265,000 cu m and a base case design of 750 million standard cubic feet per day regasification capacity expandable to fit the needs.

BFSRU is designed for near-shore or offshore with a single-point mooring system. The full-size floating BFSRU LNG terminal anchored to an offshore plat-

form, offers an economical alternative to the conventional LNG FSRU, especially for markets with long-term demand.

The barge design lowers initial capital investments by an estimated 20-30 % compared with FSRU of equivalent size as well as O&M costs, while enabling uninterrupted service throughout the project lifecycle. A comprehensive range of FSRU will cater to LNG import markets with various scales of demand. BFSRU integrates the functions of LNG loading, storage, and regasification.

BFSRU is designed for the storage of LNG on non-propelled barges with a regasification capacity of 750 MMscfd. By adopting a modularization strategy, tanks and regasification modules can be fabricated simultaneously, which not only reduces the risks of safety but also improves construction quality.

The unit will be connected to the Sangu fixed offshore platform. The platform-based BFSRU will be engineered and developed to facilitate LNG import and Regasification as a fixed-floating terminal.

The platform-based BFSRU consists of multiple barges forming a bridge platform-connected to offshore platforms capable of receiving un-loaded LNG from the tanker, storage, and regasification. Existing utilities and accommodations facilities in the offshore platform can be used. Platform-based BFSRU concept is an alternative to onshore LNG import terminals or FSRU.

Platform-Based BFSRU Solution

The offshore-fix platform is connected to floating barge-bridge LNG unloading, storage and regasification facilities connected to the onshore national grid pipeline via a seabed pipeline. The off

shore structures are coupled with LNG regasification and storage barges. The concept relies on conventional jacket solutions for shallow water to water depths of up to 60m. It is principally designed to address offshore import terminals at locations between near-shore and deepwater.

Key enablers for the development include the fit-for-purpose structural design of the fixed platforms. The floating barge platforms are engineered to support substantial loads of BFSRU with a regasification unit at full capacity. Advances in the flat-panel barge LNG storage system have facilitated the evolution of the Platform based BFSRU solution.

Completed concept development requires pre-FEED feasibility studies for the Sangu Offshore Platform. The pre-FEED includes optimization of the general design concept and harmonization with safety and environmental regulations. The installation strategies should be based on the initial design of the Sangu Platform as a terminal, which is capable of integrating with the BFSRU processing facility. Two BFSRUs are to be installed and anchored to the platform tied to the seabed pipeline.

Comparing Alternatives: Alternate to the BFSRU has the following characteristics:

- FLNG vessels are considered best suited for deepwater offshore applications, typically for accessing stranded LNG Imports. However, they require significant capital investment.
- Onshore LNG terminals have a significant construction risk, with a large percentage of contracts either delayed or over-budgeted.
- FSRU: Current LNG FSRU regasification of Excelerate Energy and Summit Group at Moheshkhali Island in the Bay of Bengal were disrupted several times due to rough seas. It is a natural disruption and will repeat during the annual monsoon windy and storm season.

Advantages of Sangu Platform-Based BFSRU

Location

Sangu platform is located at calm sea

Preliminary Barge Design (Concept)

Full-scale, Multi-purpose BFSRU LNG Receiving Terminal

Key Features	
20% lower CAPEX than LNG-RV	20 years of continuous operation
Nearshore and offshore deployment	without dry docking
Regasification capacity up to 1,500MMSCFD	Storage 150,000 – 265,000m3
Functionality	
Regional LNG hub	LNG to shore
Gas to shore	Off-grid power
Bunkering terminal	
Main Dimensions	
Length overall	228.00m
Breadth	48.00m
Depth at side	29.50m
Design draught	10.50m
Machinery	
Generators: 4 x 4,400 kW - dual fuel	
Emergency generator: 1 x ~900 kW - diesel	
Cargo Equipment	
Cargo pumps	2 x 500m3
Performance	
BOG handling equipment	
BOG compressor & heater	
Manifolds 4 x 16" liquid + 1 x 16" vapor return	
LNG transfer system Cryogenic flexible hoses	
NG transfer manifold 1 x 12" with flexible hose	
Regasification rate 300 to 1,500mmcsfd	
Send out pressure 50 to 105bar	
Capacities	
LNG 170,000m3	
MDO ~700m3	
Ballast water 33,000m3	
Accommodation	
Complement 26 persons	
Classification	
Bureau Veritas	
Cargo Transfer	
Loading rate 10,000m3/h	

near the gas processing terminal near Chittagong port at Silimpur, which is free from sea turmoil. Unlike the country's two operational FSRUs, it has the advantage to be functional even during peak monsoon season without interruption

After giving due consideration to site-specific bathymetry and geotechnical/geophysical conditions, the BFSRU solution was found suitable and can be easily deployed on the Sangu Platform. The existing offshore site provides a fixed anchor for Barge LNG storage and enhanced online regasification, with fewer weather-related interruptions, and eliminated port congestion and terminal maintenance.

BFSRU vs Onshore LNG Terminal:

Onshore LNG terminals are predominantly developed for baseload (large-scale) capacities. A Platform based BFSRU terminal can be designed in incremental intervals for capacities to

meet small, mid-, and large-scale demands, as required.

Platform-Based BFSRU concept is considered favorable for the incremental small, mid or large-scale LNG segment as a viable alternative to either onshore or offshore FSRU. The capacity of near-shore FLNG, or FSRU, could be widely constrained if rigorous regasification requirements are needed as limited by the available deck space for a given hull size. Whereas the modularized BFSRU has no such constraint due to the construction of stackable levels and/or additional Barge platforms to meet such requirements.

Storage: Another parameter regarding terminal capacity is the size and type of LNG storage. An onshore terminal is for large storage. Of the offshore alternatives, the BFSRU is the most flexible, and storage barges can be added and tailored for project volume requirements.

Alternate to a barge LNG tank is a bullet-type tank design on a barge incorporating several elements that differentiate it. These include a lower construction cost for equivalent tanks for most sizes, and the ability to be fabricated in parallel with the barge bridge to shorten the critical path.

Water depth: Water depth is very relevant to all offshore solutions. Therefore, water depths are dictated by the design draft requirements of the LNG carrier fleet visiting the BFSRU unit for unloading. So, site weather conditions (i.e., storms and hurricanes) can play a decisive role in the configuration. The FSRU solution is involved significantly with higher loads on mooring systems than fix Platform BFSRU locations, making the mooring system more complicated.

BFSRU solution overcomes space limitations of the FSRU and water depths and site conditions. The SANGU offshore structure is constructed with deep support piles penetrating the seabed, allowing for greater stability, simpler mooring, and increased terminal utilization rates.

Cost considerations

Onshore LNG terminals, especially greenfield projects in remote locations can involve high costs, long schedules, and complex execution plans, making them cost-prohibitive, particularly for small and mid-scale LNG projects.

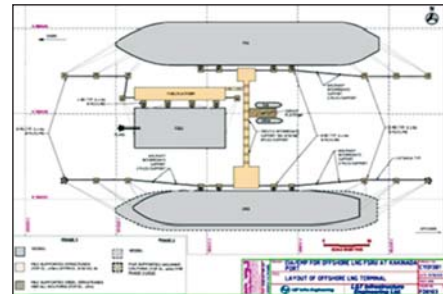
FLNG or FSRU solutions requiring sophisticated, high-technology designs of offshore components tend to involve similar drawbacks.

Platform-based BFSRU terminals are being developed as alternatives to offset

Sangu Offshore Gas Platform Abandoned Seven Years Ago



Abandoned Sangu Platform



Modification to Platform-based FSRU (Concept)

these cost impacts with various drivers including relatively simpler system components, and parallel construction strategies which are faster and less expensive to develop.

The BFSRU concept utilizes proven topsides equipment, including Regasification technologies, LNG storage tanks and standard LNG unloading arms widely used in onshore, near-shore FLNG, and FSRU applications. Reliance on less sophisticated equipment helps reduce the overall project costs. The use of fixed platforms BFSRU for LNG unloading greatly simplifies the configuration as compared to FLNG and FSRU.

Safety

BFSRU solution is less complex as separate terminal components are in their own fixed barges allowing for “plug-and-play” flexibility and scalability. The risk of hazards is manageable and is inherently safer design eliminates risks through spacing.

To promote positive safety assurance, the BFSRU layout configurations are developed and modified such that:

- Separation distances between LNG

gasification and storage provide a safeguard from potential leakages and dispersion to live equipment.

- The marine docking arrangements are set downstream of the prevailing wind and current, so LNG carriers can drift away in case of mooring failure.
- For personnel safety, the accommodations will remain on the offshore platform.
- The BFSRU terminal orientation, loading, and berthing arrangements are configured to facilitate the approach of LNG carriers relative to established shipping routes.

It is of high importance to have urgent government action to use the Sangu platform with its seabed pipeline before it's damaged. As millions of dollars were invested there, the government can allow a private company in PPP form to engineer, procure, and install platform-based Barge FSRU Terminal and supply regasified LNG to end-users through the existing pipeline on a BOO basis.

Conclusion

The platform-based BFSRU concept excels as an alternative for mid-scale LNG developments in 60 m or less water depth near-shore locations. The concept is flexible and scalable, accommodating additional capacity as necessary. The Platform based BFSRU concept is suitable as an alternative where an onshore LNG facility may be cost-prohibitive, or site constrained. The BFSRU is cost-effective, fast to construct, and less complex to execute than other LNG infrastructure solutions.



Zainul Abedin P. Eng.
Specialist and Consultant on
Energy and Power

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Modification of the SANGU Platform

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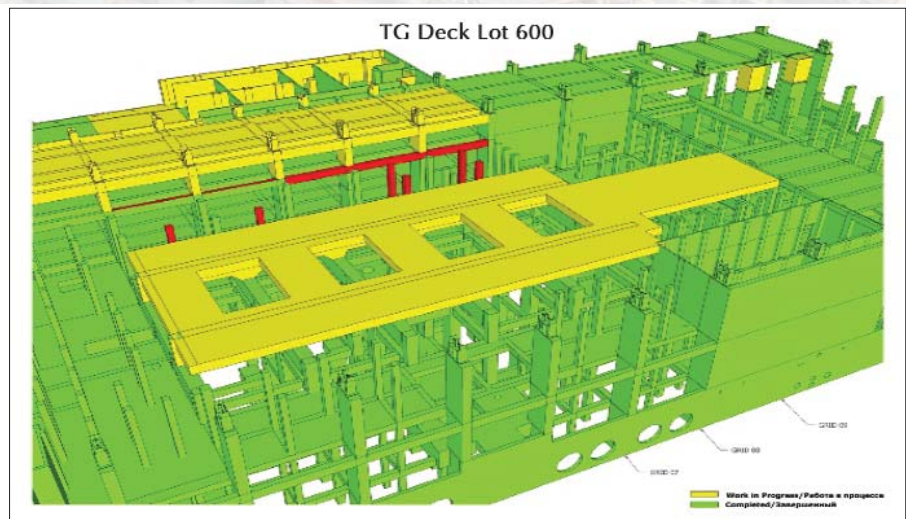
RNPP Turbine Deck Foundation

Ultimate Facilitator of Turbo-Generator System

Sujan Kumar Das, Irtiaz Mahmud and Mohammad Shariful Islam

Introduction: In a modern nuclear power plant territory, just after the Reactor Building, the most important premise is the Turbine Hall. This massive structure facilitates the Turbo-Generator Units which engenders huge electric energy output i.e. 1200MW for RNPP. The turbo-generator unit is supported by a turbine deck foundation, a very complex, critical, and most important structural part of the Turbine Hall. The self-weight of the turbine deck foundation is around 4500 tonnes and it bears 2500 tonnes imposed load of the turbo-generator unit from the design to construction, a turbine deck foundation requires an excellent and special form of knowledge as well as experience. However, the successful completion of the turbine building depends on the success of the construction of the turbine deck foundation.

For the instance of the Turbine Hall of RNPP, the turbine deck foundation is 72m in length and 13m in width in the turbine zone while 8m in the generator zone. This deck, a variable depth from 3.6m to 4.3m, is separated from the main building slabs and oil channel by 50mm to avoid the transfer of vibration to the floor. The deck has been designed in such a way that it will be supported by 94 Vibro-isolator springs to alleviate the massive vibratory and impact load from the turbo-generator set. After installation of the Vibro-isolators, installation of the bottom formworks, reinforcements, and embedded parts are completed sequentially. The concreting is done in a single pouring without allowing any construction joint. Immediately after completion of concreting, the curing



3D model of TG Deck

ing of concrete is done following the stipulated methodology.

Construction Methodology: The detailed, very complex work of the construction of the turbine deck foundation has been stipulated in Work Execution Plans (WEP), followed by Working Drawings (WD). As previously mentioned this 4.3m depth of TG deck starts from elevation +12.800 and it goes up to +17.180. Turbo-generator set, linking with con-

denser units from the bottom of the TG deck at the low-pressure cylinder unit, has limited access to getting support from the foundation slab. So, to provide load-bearing support, a temporary steel framing has been introduced at the elevation of +12.400. Formwork of bottom parts is started immediately after the installation and commissioning of the Vibro-isolating springs. Later, reinforcements along with embedded parts and all other elements were installed on the bottom firm platform. Concreting was finished through continuous pouring following a proper concrete pouring plan. Finally, just after finishing concrete work, thermal curing started and the concrete temperature was periodically inspected.

Construction Complexity: Construction of turbine deck foundation is a very complex and critical work as it allows very small deviation in dimension, and again, limited access



Vibro-isolator Spring

for the support structure renders it more complex. Firstly, the TG construction requires a temporary steel structure on which it will rest during the construction phases. The very first challenge for the executor of the work is to create a 10.2m span of a steel frame. Another fundamental work is the installation and commissioning of 94 Vibro-isolating springs that require a high level of engineering excellency. From reinforcement work to installation of pipe penetration for turbo-generator sets all are undoubtedly an assiduous job, less allowable deviation makes it so. Finally, the most tedious and complex job is finishing this massive structure in a single concrete pour; no vertical and horizontal construction joint is allowed for any stage of concrete.

Construction Sequences: The turbine sets the lower foundation, starting from elevation -7.250 and ending at the crossbeam at elevation +12.400, which is conventional construction. These crossbeams (10 Nos.) support the whole TG deck foundation and span 24m where the maximum spacing is 10.2m. After the completion of these crossbeams, the top surfaces were prepared for Vibro-isolator springs installation.

- **Temporary Steel Support Installation:** 200 tonnes of temporary steel supports were installed around the whole TG area. These elements consist of I-beam, C-Channels, and Box sections that were prefabricated. The primary function of this frame is to provide support to the bottom part of the formworks and give simultaneous access to the below part for installation of the condenser upper part.

- **Vibro-isolator Springs Installation:** The Vibro-isolators were supplied, installed and commissioned by renowned German company GERB GmbH. These dampers sit on the cross beams of elevation +12.400 with rubber gasket pads. There were types of



Temporary Steel Support Installation

Vibro-isolators installed, one TN series, and another of TVN series, which were installed according to the instruction of WEP and the installation manual from the GERB.

The maximum allowable deviation for these dampers was +5mm and -2mm, so special care was taken during the installation of these Vibro-isolators. After completion of installation, these items were covered with a polyethylene bag for protection from any loose concrete or dust coming to it.

- **Bottom Formwork Installation:** Immediately after the commissioning of Vibro-isolators, the erection of bottom formworks on the previously installed steel support was started.

20mm thick ply boards were used to serve this purpose as the load coming from fresh concrete is very high for con-

ventional 10mm ply boards. Following the work execution plan, for a reasonable settlement, these plies were set at +10mm higher elevation which might be compensated by the load coming from freshly laid concrete. An executive scheme was done and inspected just after the completion of the bottom formwork installation.

- **Reinforcement and Embedded Part Installation:** Another tedious job of the scope of TG deck construction is to install reinforcement and embedded parts. A total of 260

tonnes of rebar and 50 tonnes of embedded parts were designed to be installed for the TG deck. The maximum diameter of the rebar was 40mm whereas the minimum was 16mm. The rebar size 20mm or higher was connected with specific couplers. There were 130 pieces of pipe sleeves that engulfed the bolts coming with a turbo-generator set. As the maximum deviation of these pipes was +2mm, it was also very critical work to be executed. There were a number of running embedded parts throughout the whole TG deck to make the installation easier, the designer considered fabricating the embedded part in pieces and connecting through designed welding.

- **Close Circuit Grounding Grid:** All the rebar and embedded parts of the TG deck was designed to connect each other to make a close-circuit grounding grid (CCGG).

- **Vertical Formwork Installation and Concreting:** After completion of rebar, embedded parts and CCGG work, the whole skeleton was covered up with side formworks, there were a total of 1810 square meters of formworks used in the TG deck. The formworks were properly aligned and allowed proper clear cover. The ultimate challenge for the execution of turbine deck construction is concreting this huge structure in a single pouring segment. A specific concrete pouring plan was



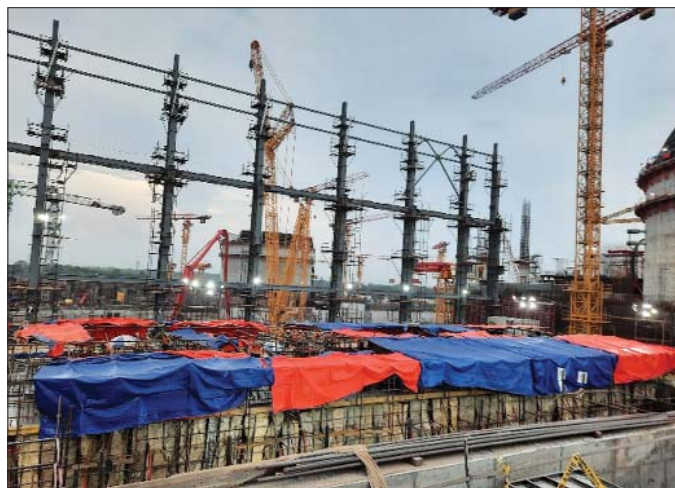
Concreting Work

developed, and the manpower and other resources were properly allocated.

Vibratory, normal B30 w6 concrete was replaced with self-consolidating concrete (SCC) to avoid complexity during concreting. Having restriction of free fall height of SCC concrete within 0.5, tremie pipes were used. For the continuous and seamless flow of concrete, a total of 6 Nos. (5 running, 1 stand-by) of the volume of concrete for 1st stage was 1412 cubic meters, and it took 24 hours to complete the pouring. There were 36 pouring points throughout the whole TG deck. Before pouring to the site, fresh concrete was periodically monitored to inspect its quality i.e. flow ability L box, V funnel test. The whole turbine deck area was covered up with temporary sheds so that it could serve the uninterrupted pouring in case of rain.

- **Post-Concreting Management:** The concrete of the turbine deck foundation went through a thermal curing process. Just after finishing the concrete pouring works, the deck was covered up with mineral rock wool to control the skipping of heat from the surface.

There were 88 temperature inspection points and a group of specialists was engaged to monitor the temperature periodically. The temperature difference between core and surface was allowed within 15 degrees Celsius, so special care was taken



Curing by insulation

to control the temperature gradient. The removal of formwork was allowed only when the temperature difference between the surface of concrete and the ambient went below 5 degrees Celsius.

After the removal of formworks, several joint inspections were conducted for the surface quality of concrete.

Quality Control of TG Deck Construction:

The detailed Quality control plan and the program have been stipulated in the quality assurance program for the construction of the turbine building and in the Work Execution Plan for the construction of the turbine deck foundation. Both visual and measuring controls were performed during quality and acceptance control. Before coming to the construction site for execution, all construction material had to go through intensive incoming control. From the very beginning of reinforcement installation to the post-concrete acceptance, every stage of construction had some hold point to check the quality of the work for acceptance. During the inspection of reinforcement, the coupling joint, diameter, spacing and surface of the rebar were inspected properly. As-built schemes for all installed embedded parts were arranged and inspected. After formwork installation, all geometrical parameters including concrete cover and cleanliness were checked jointly. With a view to checking the parameters of fresh concrete (i.e. Flow ability

L box, V funnel test) several concrete monitoring teams were formed. Besides checking the quality of fresh concrete, the teams monitored the concrete pouring rate. After design age (i.e. 28 days) NDT tests were performed with the participation of the CRNPP quality control team to monitor the concrete strength in the field.

Conclusion: The construction of the turbine deck foundation was planned for 90 days of time exposure and the concreting was finished within this time period. All the supervisors from the sub-contractor, general

contractor and customer did their job fantastically to make the work fruitful. This 24 hours of concreting was monitored by the CRNPP personnel through a roster duty. Right now, the concreting of the 2nd stage has been completed and prepared for the installation of the turbine set is in the progress.

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EP

Sujan Kumar Das,

Engineer, CRNPP,

Email:sujan.kumar149@rooppurnpp.gov.bd

Irtiaz Mahmud,

Principal Engineer, CRNPP,

Email:irtiaz.mahmud542@rooppurnpp.gov.bd &

Shariful Islam,

Principal Engineer, CRNPP,

Email:shariful.islam222@rooppurnpp.gov.bd



TG Deck after 1st stage of concreting

নর্থ-ওয়েস্ট পাওয়ার জেনারেশন কোম্পানি লিমিটেড

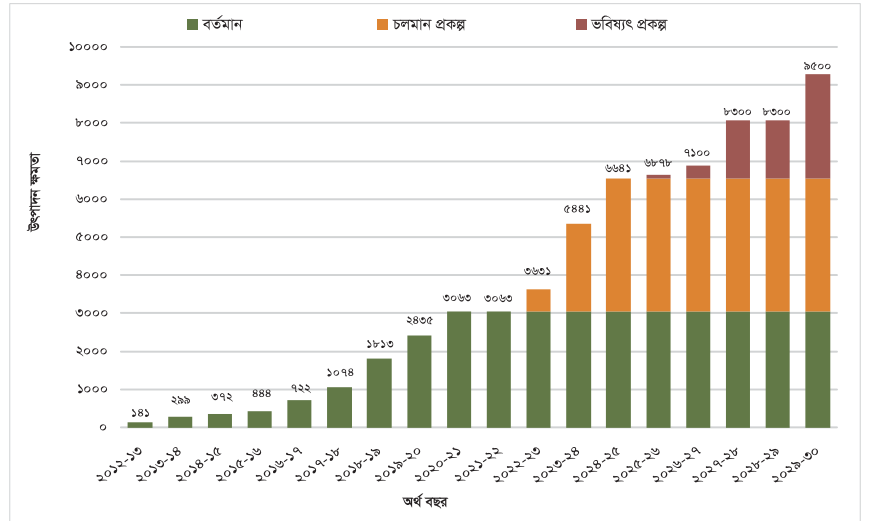
দেশের উন্নয়ন অগ্রযাত্রায় গর্বিত অংশীদার



দ্রুত বিদ্যুৎ উৎপাদন
বৃদ্ধির স্বীকৃতি স্বরূপ
মাননীয় প্রধানমন্ত্রী
শেখ হাসিনার
হাত থেকে
পুরস্কার
গ্রহণ করছেন
নর্থ - ওয়েস্ট
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কোম্পানি লিমিটেড
এর প্রধান নির্বাহী
কর্মকর্তা প্রকৌঃ
এ.এম. খোরশেদুল আলম

এক নজরে কোম্পানির সার্বিক চিত্র

- মোট বিদ্যুৎ কেন্দ্র - ৯ টি
- বিদ্যুৎ উৎপাদন ক্ষমতা - ৩০৬৩ মেঃ ওঃ
- বাস্তবায়নধীন প্রকল্প - ৩৫৮২ মেঃ ওঃ
- পরিকল্পনাধীন প্রকল্প - ২৮৫৫ মেঃ ওঃ
- ২০৩০ সাল নাগাদ বিদ্যুৎ উৎপাদন লক্ষ্যমাত্রা - ৯৫০০ মেঃ ওঃ



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 : ৮৮১২২১১৭-১৮, Website : www.nwpgcl.gov.bd

PMO Directs Resuming LNG Import, Disciplining Dollar Rate

Industries have to pay higher to get gas



Import being further tightened as 340 products up for higher duties to save forex
Subsidy in current FY may cross Tk 1.0 trillion
BB has to make sure no grain-import LC faces delays
BCI chief praises move, seeks single dollar rate in banks

A move finally comes to manage fuel dearth and dollar disarray as the government high-ups instructed giving gas to industries even through importing costly LNG and synchronizing multiple rates of the greenback, sources say.

In the wake of irregular and inadequate supply of the primary energy to domestic mills and factories, Bangladesh's business bodies have urged the government to import gas from the

overheated global market and that they are ready to pay higher for the fuel for the sake of keeping the wheel of production rolling.

Prime Minister Sheikh Hasina in a recent meeting with the secretaries of different ministries at her residence at Ganabhaban gave the direction while reviewing the country's overall economic situation and the related issues, they added.

Also, the secretaries concerned have been asked to further tighten import of unnecessary items to lower spending of the foreign currency as the forex reserves are gradually going down for outgoings far outstripping the external incomes. **EP**

Generator Stator Installed at RNPP Unit 2



The generator stator has been installed in the design position in the turbine hall of unit 2 of the under-construction Rooppur Nuclear Power Plant.

Recently, the reactor pressure vessel for the unit 2 of the project was installed.

According to Rosatom, the Russian contractor of the Rooppur NPP, installation works have been performed

by specialists of the VdMU Branch, part of the Rosatom Engineering Division.

"The stator converts mechanical energy generated by the rotation of the turbine into electrical energy," said Alexei Deriy, vice-president of ASE and director of the Rooppur NPP construction project.

Besides, it is the heaviest element among the power units equipped with a weight of over 440 tonnes. That is why the installation of the generator stator into the design position is extremely important, he added. **EP**

BB Relaxes Rules for Funding Coal-Fired Power Plants



Bangladesh Bank recently relaxed its rules to facilitate lending for the establishment of coal-based power plants and buying the dirty fuel to generate electricity.

As per the central bank guidelines, lenders cannot disburse more than 25 percent of their capital.

Now though, the upper limit will not be applicable for the next five years for financing coal-fired power plants, Bangladesh Bank said in a notification.

However, the central bank will determine the upper ceiling beyond 25 percent for this period, it added.

A senior official of Bangladesh Bank said it has relaxed the rule as coal-fired power plants require large amounts of finance.

As such, the limit has been relaxed, he added while declining to comment further.

The move comes at a time

when Bangladesh is producing just half of its 25,700-megawatt (MW) electricity generation capacity due to gas shortages, leading to load-shedding.

At present, two coal-based power plants are in operation while one unit of the 1,320 MW Maitree super thermal power project at Rampal in the southwest division of Khulna is expected to start operations this year.

Besides, public sector power companies are establishing three more coal-based power plants with a combined capacity of 3,840 MW in Patuakhai, Matarbari and Chattogram.

In addition, a 1,320 MW capacity coal-fired plant is being constructed by S Alam Group's SS Power in a joint venture. **EP**

US Companies Interested to Invest in Energy Sector: Envoy

United States ambassador to Bangladesh Peter Haas recently said that the US companies having expertise in the energy sector were interested in investing here that would help the country develop further.

"There are lots of opportunities to increase sales of US goods and services here in Bangladesh, especially in emerging sectors such as renewable energy and digital economy, which will help

the country to increase and improve its already impressive economic development," he said at a press conference on the 28th US Trade Show 2022 that began in Dhaka on October 27.

The US envoy said that they were already large suppliers of power turbines, soybeans, dredging equipment, and other heavy machinery and looked forward to supporting more US companies to navigate the Bangladesh market. **EP**

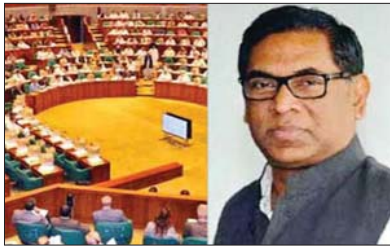


We turn great ideas into real energy.

Supplying natural gas to Bangladesh's growing economy.

From Boston to Bangladesh, Excelerate Energy is transforming markets with clean energy. Since 2018, our LNG import terminals in the Bay of Bengal have helped increase the country's natural gas supply by approximately 25% – helping to bolster the economy with reliable energy. By expanding access to diverse and abundant sources of natural gas supply, we can fuel Bangladesh's economic growth engine for years to come. Together, we're delivering real energy.

Open Pit Coal Mining Possible at Phulbari: Nasrul



State Minister for Power, Energy & Mineral resources Nasrul Hamid has said open pit coal mining is only possible at Phulbari Coal reserve.

He was responding to a series of questions on power & energy at the national parliament recently.

Referring local coal extraction posed by Member of Parliament (MP) of Constituency Dinajpur-6 Mr. Shibli Sadiq the state minister stated in his response that, coal reserve in Dighipara mine can be extracted through underground mining.

Earlier honorable Speaker Shirin

Sharmin Chaudhury asked Mr. Sibli Sadiq for raising his supplementary question in question-and-answer session in the National Parliament.

Raising the question Mr. Sibli Sadiq MP said while we are struggling to run many of our power plants due to fuel crisis, the Dighipara coal field that has been discovered in my constituency could have been a blessing for the country.

Asia Energy Corporation, an Australia British owned multinational company, has done detail feasibility study and environmental and social impact assessment on Phulbari under a contract. The Study found the scientific solutions to environment, agriculture, water, bio diversity and rehabilitation issues and now waiting review and final node. **EP**

Power Sector Needs Tk 480b Subsidy for Fuel Purchase

Due to rising fuel costs, the government will require Tk 480 billion in subsidies in the power sector this year.

Power Division Secretary Md Habibur Rahman informed IMF mission Chief Rahul Anand about the subsidy volume at the Bangladesh Secretariat recently when the team had a question concerning the volume of subsidies in the power sector.

As part of its ongoing reform proposals to provide Bangladesh with \$4.5 billion, the IMF team visited the power division. The power division also informed the IMF that the subsidy may be raised if fuel prices increase.

As a result of the lack of natural gas, 27 percent, or 5000MW, of electricity generation comes from oil, against 21,710MW of the country's electricity generation capacity.

"The IMF team was also interested in knowing about the current power situation, electricity capacity payments and fuel use at power stations," an official attending the meeting said. According to the official, the Power Division pays capacity payments to power plants whose tenure continues until the end of the contract.

The mission also met with the Bangladesh Power Development Board (BPDB) regarding the same issues. **EP**

First Jet Fuel Plant Goes into Operation

Partex Petro Ltd, an oil refinery, has started production and marketing of aviation fuel, becoming the first company in Bangladesh to manufacture the finished product for the growing air transport market.



of Partex Group.

Partex Group has invested Tk 1,400 crore to set up the facility, which, at its peak, will produce 14,000 barrels of petrol, octane, and diesel per day, including 2,800 barrels of jet fuel.

"We are able to meet one-third of the demand for jet fuel in the country and save \$300 million in foreign currencies," said Rubel Aziz, managing director

Bangladesh needs more than 9,000 barrels of jet fuel a day.

According to Aziz, Partex Petro's value addition is around \$50 per barrel as it imports base oil.

"If the government imports finished oil, it has to spend \$159 per barrel. We are helping the government mitigate the dollar crisis." **EP**

ConocoPhillips Joins Offshore Qatar North Field South Development

QatarEnergy has named ConocoPhillips its third and final international partner in Qatar's North Field South (NFS) expansion project.



This will deliver gas to two new LNG trains with a combined capacity of 16 MMt/year. ConocoPhillips will have participating interest of 6.25%, with QatarEnergy operating the project with 75%. The other international partners are TotalEnergies and Shell.

The North Field Expansion developments (NFS and the North Field East [NFE] expansion) are due to start production in 2026, raising Qatar's LNG

production capacity to 126 MMt/year.

In late September TotalEnergies was named the first international partner in the NFS LNG project, and in late October QatarEnergy appointed Shell as its second international partner in the NFS expansion project.

As for NFE, in June, QatarEnergy selected ConocoPhillips as a partner in the NFE expansion project, which QatarEnergy boasts is the largest LNG project to date. **EP**

IDCOL Extends BDT 270 Crore Loan to Crown Cement PLC



Infrastructure Development Company Limited (IDCOL) extended BDT 270 crore long-term loan to Crown Cement PLC. In this regard, a loan agreement has been inked between IDCOL and Crown Cement in Dhaka recently.

Under this facility, IDCOL is providing a concessional loan to establish the 6th manufacturing unit of Crown Cement. This new unit will integrate Vertical Roller Mill (VRM) technology which happens to be the most energy efficient technology in the cement manufacturing industry.

The VRM is expected to save 163 GWh energy compared to traditional ball mills over

the loan tenure. IDCOL has so far extended financing worth BDT 1,370 crore to various industrial sectors for promoting different energy efficient initiatives.

The signing ceremony was attended, among others, by Mohammed Jahangir Alam, Chairman, Crown Cement; Molla Mohammad Majnu, Managing Director, Crown Cement; Monira Sultana, Chairman, SREDA; Zaki Md. Ziaul Islam, Senior Program Manager, JICA Bangladesh Office, Alamgir Morshed, Executive Director and CEO, IDCOL, and Nazmul Haque, Chief Investment Officer, IDCOL.

EP

JS Passes Oil, Gas and Mineral Corporation Bill, 2022



The Bangladesh Oil, Gas and Mineral Corporation Bill, 2022 was passed in Parliament to expedite exploration of oil, gas and mineral resources in the country.

The new law will replace the Bangladesh Oil, Gas and Mineral Corporation Ordinance, 1985 that is declared void by the court as it was promulgated during the regime of a military dictator.

State Minister for Power, Energy and Mineral Resources Nasrul Hamid moved the Bill and it was passed by voice vote.

As per the Bill, a Corporation will be established titled the Bangladesh Oil, Gas and Mineral Corporation for carrying out the purposes of this Bill. The Corporation may also be called PETROBANGLA.

The main office of the corporation will be established in Dhaka whereas, if necessary, its offices can be set up in any place in and outside the country taking prior permission from the government.

'Work on RNPP Delayed for Ukraine War'

Science and Technology Minister Yeafesh Osman has said the government is trying to complete the construction works of the Rooppur Nuclear Power Plant project within the stipulated timeframe.



"Due to the Russia-Ukraine war and subsequent dollar crisis, the work of the project has been delayed to some extent", he said while briefing reporters after a joint meeting of his ministry with the Power Division recently at Bidduyt Bhaban in the city.

State Minister for Power, Energy and Mineral Resources Nasrul Hamid was also present at the meeting that was convened to discuss the progress of the construction of a power transmission line to be used to evacuate electricity from the nuclear power project.

This will be a body corporate, having perpetual succession and a common seal with power to acquire, hold and dispose of property, both movable and immovable, and shall by the said name sue and be sued.

The authorized capital of the Corporation shall be Tk 10,000 crore, which was Tk 200 crore, while the paid-up capital will be Tk 200 crore.

The Board shall consist of a Chairman to be appointed by the government, an officer not below the rank of a Joint Secretary of the Ministry or

The 2400 MW Ruupor NPP project, having two units, each 1200 MW generation capacity, was undertaken in 2010.

A target was set by the government to complete the construction of the first unit in 2022 and second unit in 2023.

But later the target was reset for first unit to complete by June 2024 and second unit by June 2025. But officials involved in the project believe the project may miss the new timeline again.

EP

Division dealing with energy and mineral resources to be nominated by that Ministry or Division, an officer not below the rank of a Joint Secretary of the Ministry or Division dealing with finance to be nominated by that Ministry or Division, an officer not below the rank of a Joint Secretary of the Ministry or Division dealing with planning to be nominated by that Ministry or Division and five directors to be appointed by the government.

Chairman of the Corporation shall be appointed from the Additional Secretaries of the government.

As per the Bill, it can deposit its fund in any scheduled bank as term deposit or invest in any government approved securities.

EP

Bangladesh Could Use Saudi Help to Meet Energy Needs



Momen made the call when Saudi Ambassador to Bangladesh, Essa Yousef Alduhailan, called on him at the foreign ministry.

Foreign Minister AK Abdul Momen on 26 October said Bangladesh needs a brotherly gesture from Saudi Arabia in meeting its energy needs amid supply disruptions and hike in fuel prices amid Russia-Ukraine war.

He urged Saudi Arabia to look into the possible Saudi investment in the LNG sector.

In response, the Saudi envoy said he would take up the issue with the concerned Saudi stakeholders.

During the meeting, they discussed and reviewed various issues of the existing and prospective investment initiatives, including power and renewable energy, and new proposals under consideration from Saudi Arabia to Bangladesh. **EP**

IMF Calls for Fuel Pricing Formula by 2024

The visiting mission of the International Monetary Fund has called for a pricing formula for fuel, fertilizer, electricity and gas by next fiscal year and cut back on subsidy spending to efficient budget financing.

The 10-member mission was in Dhaka on a 15-day visit to decide on the conditions for the \$4.5 billion loan, and held a meeting with finance division recently.

For long, the government has been subsidizing the prices of fuel, fertilizer, electricity and gas -- an unsustainable practice that benefits both the poor and wealthy alike.

Thanks to the Ukraine war, the prices of fuel, fertilizer and gas shot up, prompting the government to hike their prices at home, in what felt like a jolt to the poor and

the fixed-income earners.

Adopting a pricing mechanism that is tagged with the prices in the global market then would prevent such price shocks and help the government accommodate additional social spending.

The Washington-based multilateral lender called for a timebound plan on the pricing mechanism and pushed for its implementation by the next fiscal year.

In response, the ministry officials said they are working on it but it is unlikely that the government would agree to introduce the formula before 2026.

"This is a transition period and hence not the right time for such moves," said an official familiar with the discussions. **EP**

Local Scientific Evidence Stressed to Get Climate Fund

Green activists at a discussion recently stressed collecting local scientific evidence relating to climate change impacts for better negotiation with the developed countries to get climate fund and other assistance.

They also urged the government to redouble efforts to include migration and human mobility in climate change discussion at all platforms.

The Bangladesh Parliamentary Caucus on Migration and Development, International Organization for Migration in Bangladesh and WARBE Development Foundation organized the discussion titled 'Pre-COP27 National Consultations on Climate and Human Mobility in

Bangladesh' at the Parliament Members' Club in the city.

The caucus chairperson, Shameem Haider Patwary, said that climate and migration were inter-linked as climate change had been leading to migration but there was no scientific evidence of it.

'We don't have scientific evidence of climate change impacts on our country. We should start advanced research to come up with findings so we can negotiate for climate fund based on evidence,' he added.

According to the speakers, climate change and its impact were major drivers for both internal and international migration and displacement in Bangladesh. **EP**

World in First Truly Global Energy Crisis: IEA

Tightening markets for liquefied natural gas (LNG) worldwide and major oil producers cutting supply have put the world in the middle of "the first truly global energy crisis", the head of the International Energy Agency (IEA) said recently.

Rising imports of LNG to Europe amid the Ukraine crisis and a potential rebound in Chinese appetite for the fuel will tighten the market as only 20 billion cubic meters of new LNG capacity will come to market next year, IEA Executive Director Fatih Birol said during the Singapore International Energy Week.

At the same time the recent decision by the Organization of the Petroleum Exporting Countries (OPEC) and its allies, known as OPEC+, to cut 2 million barrels



per day (bpd) of output is a "risky" decision as the IEA sees global oil demand growth of close to 2 million bpd this year, Birol said.

"(It is) especially risky as several economies around the world are on the brink of a recession, if that we are talking about the global recession...I found this decision really unfortunate," he said.

But Birol also said the current energy crisis could be a turning point in the history of energy for accelerating clean energy sources and for forming a sustainable and secured energy system. **EP**



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



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

মানসম্পন্ন বিদ্যুৎ নিরবচ্ছিন্নভাবে দেশের সকল মানুষের নিকট পৌঁছে দেয়াই আমাদের অঙ্গীকার

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





Genex Infrastructure to Develop Buet Solar Power System



Additionally, Genex will extend financing to Energy Performance Contracting (EPC), a form of creative financing for capital improvement which allows funding for cost-effective energy upgrades, under Buet's supervision.

Genex Infrastructure has recently linked a deal with the Bangladesh University of Engineering and Technology (Buet).

Under this agreement, Genex will deliver roof-top solar panel systems as an alternative source of power to 24 buildings out of the 100 structures of the top engineering institution in the country, thus generating a maximum of 3-megawatt power, reads a press release.

Buet will use the electricity and pay the bill at a pre-agreed tariff which will be less than the current DPDC tariff to Genex infrastructure under a power purchase agreement for the next 25 years.

Pro Vice-Chancellor Professor of Buet Dr Abdul Jabbar Khan and Genex Infrastructure Managing Director Mohammed Tanzidul Alam expressed gratitude to the government for introducing net metering guidelines to flourish solar technology in Bangladesh. **EP**

Bangladesh to Implement 'Hydrogen Policy': Nasrul



State Minister for Power, Energy and Mineral Resources Nasrul Hamid recently said Bangladesh is going to

follow the 'Hydrogen Policy' to tackle the power problem which is prevailing in the country.

"The policy-making process (regarding 'Hydrogen Policy') has already started," he said in a press conference here.

He said that the power department has formulated the EV (Electronic Vehicle) Policy for moving into more convenient transport services as soon as possible.

"We have issued gazette in this regard. Now it depends on people how they will buy electronic vehicles," Hamid added. **EP**

Final Draft on Review of RE Policy Submitted

The consultant of the Sustainable and Renewable Energy Development Authority (Sreda) has submitted its final draft on reviewing the "Renewable Energy Policy of Bangladesh 2008" to make it more effective in the changed energy and power sector perspectives.

"We submitted the final draft prepared to revisit the renewable energy policy recently," an official of the consultant firm Development Technical Consultants Pvt. Ltd (DTCL) said.

Experts engaged in the review said the most emphasis was put on revisiting the existing policy targeting the government's goal for 40 percent of electricity from renewable and clean sources by 2041.

"Against the backdrop of land scarcity, use of rooftop of industries and urban establishments for solar power, solar-run irrigation pumps, floating solar, use of non-agricultural land, wind power potentials, biomass plants received the highest priority in the draft," said an expert involved in the process of the draft preparation.

"Hydrogen energy, net metering system, use of Opex and Capex models for large-scale solar plants are also the areas, which received important focus in the review of the policy", he added. **EP**



JOULES POWER LIMITED (JPL)

Joules Power Limited (JPL) is A Privately Owned Renewable Energy Company Operating in The Power Sector of Bangladesh. JPL Has Been Formed With A Fundamental Core Value Towards Sustainability and is Committed to The Country's Nationally Determined Sustainability Targets. Through Our Presence in The Power Sector We Not Only Strive to Achieve A Greener and More Sustainable Future for Bangladesh, But We Also Hope That JPL's Contribution Towards The Country's Green Infrastructure Will Lead to A Brighter, More Prosperous and Sustainable Future.



Joules Power Limited - Future Enabled

Current Portfolio

- 20MW Solar Ground Mounted Project IPP Basis
- 3.23MWp Rooftop Solar project in OPEX Model
- 1.7MWp Rooftop Solar Project in OPEX Model
- 0.325MWp Rooftop Solar Project in OPEX Model
- 2.00MWp Rooftop Solar Project in OPEX Mode

German Parliamentary Delegation Visits IDCOL RE Project



directors of GIZ & KfW participated in the site visit.

Alamgir Morshed, Executive Director & CEO, S. M. Monirul Islam, Deputy CEO & CFO and other officials of IDCOL accompanied the team in this visit.

A German Delegation Team headed by the Parliamentary State Secretary of the German Federal Ministry for Economic Cooperation and Development Dr. Bärbel Kofler recently visited projects funded by KfW through IDCOL in Jashore & Khulna.

Several Member of Parliament (MP) of The National Parliament of the Federal Republic of Germany, senior officials of German Federal Ministry for Economic Cooperation and Development & German Embassy of Bangladesh and

Alamgir Morshed thanked the German delegation for their visit to the site in rural Bangladesh. He quoted "German Economic Cooperation and Development through KfW has always shown great dedication and commitment to the overall development of Bangladesh, especially the renewable energy sector.

The delegation visited Solar Irrigation Pump at Bagherpara, Jashore where IDCOL provided financing & technical support for the project.

EP

Huawei Partners with BGMEA on RE



BGMEA will work together to support the garment factories to become green or environment friendly.

Huawei will be setting up solar power plants at the BGMEA enlisted factories following two models – Opex and Capex. In the Opex model, factory owners will enjoy less tariff

than grid electricity. Under the Capex model (1), Factory owners will make a long-term payment agreement with the investors. After payment is completed, the solar panel system will belong to the factory owner.

There will also be another arrangement (Capex model 2), where factory owners will invest by themselves to set up rooftop solar systems and can save electricity consumption by using solar energy.

In both cases, BGMEA will regulate the processes and bridge the communication between Huawei and factories.

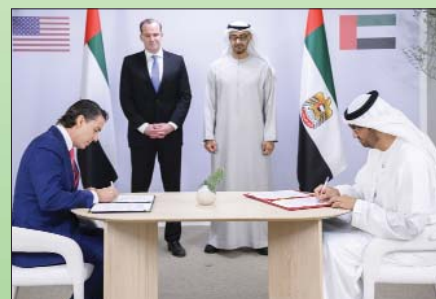
EP

Greenpage

US, UAE Sign Partnership for Accelerating Clean Energy

The United States and the United Arab Emirates have signed in Abu Dhabi a major new clean energy framework – the "Partnership for Accelerating Clean Energy" (PACE).

This memorandum of understanding is an important step forward in joint efforts



to accelerate our collective movement toward clean energy.

It will catalyze \$100 billion in the financing, investment, and other support, allowing us to accelerate toward a goal of deploying 100 gigawatts of clean energy by 2035.

PACE further deepens our strategic relationship with the UAE and reflects the broader U.S. commitment to promoting economic prosperity, security, and stability in the region.

The new partnership builds upon our existing wide-ranging cooperation, led by Special Presidential Envoy for Climate John Kerry and UAE Special Envoy for Climate Dr. Sultan Ahmed Al Jaber, to enhance global climate action and accelerate the clean energy transition, including through our cooperation on the first comprehensive Middle East climate and clean energy summit in Abu Dhabi last year, shared 2050 net zero goals, and joint founding and leadership of the Agriculture Innovation Mission for Climate, among other important efforts.

EP

First Turbine of 60MW Wind Power Project Installed



Installation of the first turbine at the country's largest 60 MW wind energy project, under construction at Khurushkul in Cox's Bazar, has been successfully completed.

State Minister for Power, Energy and Mineral Resources Nasrul Hamid recently disclosed the development through a Facebook post.

"We expect power generation [from the project] will start from May-June 2023," Hamid said, adding that this project will show Bangladesh a new path to producing environmentally-friendly renewable energy through clean sources.

Earlier on 31 March this year, Nasrul Hamid had formally laid the foundation stone of the project. However, the implementation of the project started in 2014.

US-DK Green Energy (BD), a private firm that is part of the SQ Group of Companies, is setting up the country's first independent power producer (IPP) fueled by wind energy, from which the state-owned Bangladesh Power Development Board (BPDB) will buy electricity. **EP**

Oil-Rich Saudi Launches First EV Company

Saudi Arabia announced recently the launch of its first brand of electric vehicles, part of a broader push to diversify the economy of the world's biggest oil exporter.

The company, known as Ceer, "will contribute to Saudi Arabia's efforts towards carbon emissions reduction and driving sustainability to address the impact of climate change," the official Saudi Press Agency said.

It is a partnership with Foxconn, China's biggest private sector employer, which "will develop the electrical architecture of the vehicles", SPA said.

Ceer "will design, manufacture and sell a range of vehicles for consumers in Saudi Arabia and the MENA region, including sedans and sports utility vehicles," it said, adding the company was expected to create "30,000 direct and indirect jobs".

Ceer vehicles "are scheduled to be available in 2025", SPA said. **EP**

IDCOL to Finance GPH Ispat for 3.9MWp Rooftop Solar



Infrastructure Development Company Limited (IDCOL) signed a facility agreement with GPH Renewable Energy Ltd. to finance their first rooftop solar project recently.

Under the Project, GPH will install 3.90 MWp solar PV systems on the factory rooftops of GPH Ispat Ltd. located at Chattogram and 2.15 MWp on the rooftop of Eco Ceramics Industries Ltd. at Munshiganj.

Electricity produced from this project will not only reduce the electricity bills of GPH but also reduce diesel consumption during loadshedding.

In addition, the project owners can export unutilized electricity generated from the project to national grid through Net Metering Guideline 2018.

Under this facility agreement, IDCOL will provide concessional loan up to 80% of the project cost. Alamgir Morshed, Executive Director & CEO, IDCOL and Md. Jahangir Alam, Chairman of GPH Group signed the agreement on behalf of their respective organizations. **EP**

Greenpage

EIB Boosts Clean Energy Financing

The European Investment Bank Group (EIB Group) will support the REPowerEU Plan with an additional €30 billion in loans and equity financing over the next five years.

The additional funds from the EIB Group (European Investment Bank, European Investment Fund) will be directed to renewables, energy efficiency, grids and storage, electric-vehicle charging infrastructure, and breakthrough technologies, such as low-carbon hydrogen.



The package of new targeted financing approved by the EIB's Board of Directors is expected to mobilize up to €115 billion of new investment by 2027, thus making a substantial contribution to the REPowerEU objective of ending dependency on Russian fossil fuels.

It is a supplementary envelope, on top of the EIB Group's already robust support for the energy sector in the European Union, averaging around €10 billion per year over the past decade.

"This horrible war and Russia's blackmail over gas supplies affirmed that our dependency on fossil fuels is a critical security vulnerability," Werner Hoyer, President of the EIB Group said.

"It's about time we finally ended this dependency. The EIB is determined to mobilize the full scale of its financial resources in support of the joint effort, and work with the private sector to maximize the impact of our investment." **EP**

Govt Implementing Schemes to Save Sundarbans: Shahab Uddin



Environment, Forest and Climate Change Minister Md Shahab Uddin recently said the government is implementing multifaceted measures to deal with climate change risks in the Sundarbans region.

"To protect people's lives during the cyclone and water surge, the government is creating a green belt through massive afforestation along the coast. So far 2,277 square kilometers of char has been brought under afforestation coverage in the coastal area," he said while speaking at a

national dialogue at the Parliament Members Club auditorium of the Jatiya Sangsad here.

Addressing as the chief guest, he said 52 percent of the Sundarbans has been declared as a protected area and all types of forest resource extraction has been banned from it.

Shahab Uddin said various initiatives, including declaration of sanctuaries, have been taken to protect wildlife, including tigers, deer, dolphins and crocodiles, in the Sundarbans.

In addition, he said, schemes related to capacity building of local communities, poverty alleviation and human resource development have been undertaken. **EP**

Big Oil Must Pay for Climate Change as Poor Nations Demand at COP27



Leaders from poor countries criticized wealthy governments and oil companies for driving global warming, using their speeches at the COP27 climate summit in Egypt to demand that they pay up for damages being inflicted on their economies.

Small island states already buffeted by increasingly violent ocean storms and sea-level rise called on oil

companies to shell out some of their huge recent profits, while developing African states called for more international funds.

"The oil and gas industry continues to earn almost 3 billion United States dollars daily in profits," said Gaston Browne, Antigua's prime minister, speaking at the conference on behalf of the Alliance of Small Island States.

"It is about time that these companies are made to pay a global carbon tax on their profits as a source of funding for loss and damage," he said. "While they are profiting, the planet is burning." **EP**

Work Together or Face "Collective Suicide": UN Chief

UN chief Antonio Guterres warned world leaders at a climate summit in Egypt last week that humanity faces a stark choice between working together or "collective suicide" in the battle against global warming.

Nearly 100 heads of state and government are meeting for two days in the Red Sea resort of Sharm el-Sheikh, facing calls to deepen emissions cuts and financially back developing countries already devastated by the effects of rising temperatures.

"Humanity has a choice: co-operate or perish," Guterres told the UN COP27 summit.

"It is either a Climate Solidarity Pact or a Collective Suicide



Pact," Guterres said, urging richer polluting nations to come to the aid of poorer countries least responsible for the emission of heat-trapping gases.

Nations worldwide are coping with increasingly intense natural disasters that have taken thousands of lives this year alone and cost billions of dollars -- from devastating floods in Nigeria and Pakistan to droughts in the United States and Africa and unprecedented heatwaves across three continents. **EP**

Gates Foundation Gives \$1.4b Climate Help to Smallholder Farmers

The Bill & Melinda Gates Foundation has pledged \$1.4 billion to help smallholder farmers cope with the impacts of climate change, part of efforts at global climate talks in Egypt to scale up the supply of so-called adaptation finance.

The world is currently not doing enough to help poorer nations withstand the effects of global warming, the United Nations said recently. By 2030, the annual financing need will be \$340 billion, it added.

The Gates Foundation's commitment, announced at the COP27 conference in Sharm el-Sheikh, will help smallholder farmers in sub-Saharan Africa and South Asia build resilience into



their work practices and improve food security.

More than 2 billion people depend on smallholder farms for food and income, yet currently, less than 2 percent of global climate-related finance is devoted to helping them adapt to climate change, the foundation said.

"The climate crisis is causing enormous harm every day as it jeopardizes entire regions of people and economies," Bill Gates, co-chair of the Bill & Melinda Gates Foundation, said. **EP**

Bangladesh can Raise up to \$12.5b in Addl Financing for Climate Action: WB Report



Bangladesh can raise up to \$12.5 billion in additional financing in the medium term for climate action with financing options including budget prioritization, carbon taxation, external financing and private investment.

According to the World Bank Group's Country and Climate Development Report for Bangladesh released recently, Bangladesh continues to face severe and increasing climate risks, despite significant gains in reducing the human toll from climate disasters.

The report said without urgent action, including further adaptation and resilience measures, the country's strong growth potential could be at risk.

The report outlines priority actions and financing needs to help Bangladesh address the climate crisis. It recognizes Bangladesh's successful experience with locally-led climate adaptation and recommends investments

in infrastructure and services to strengthen climate resilience while supporting long-term growth.

Actions focused on improved agriculture productivity, energy and transport efficiency can lower future emissions while improving air, soil and water quality.

Climate change will hit poor and vulnerable people the hardest. Average tropical cyclones cost Bangladesh about \$1 billion annually. By 2050, a third of agricultural GDP could be lost and 13 million people could become internal climate migrants. In case of severe flooding, GDP could fall by as much as 9 percent.

"Bangladesh has led the way in adaptation and disaster risk management. Over the past 50 years, it has reduced cyclone-related deaths 100-fold. Other countries can learn from this," said Martin Raiser, World Bank Vice President for South Asia. **EP**

Global Warming Palpable for 96pc of Humans

Whether they realized it or not, some 7.6 billion people -- 96 percent of humanity -- felt global warming's impact on temperatures over the last 12 months, researchers have said.



But some regions felt it far more sharply and frequently than others, according to a report based on peer-reviewed methods from Climate Central, a climate science think tank.

People in tropical regions and on small islands surrounded by heat-absorbing oceans were disproportionately impacted by human-induced temperature increases to which they barely contributed.

Among the 1,021 cities analyzed between September 2021 and October 2022, the capitals of Samoa and Palau in the South Pacific have been experiencing the most discernible climate fingerprints, the researchers said in the report, released recently.

Spiking temperatures in these locations were commonly four to five times more likely to occur than in a hypothetical world in which global warming had never happened.

Lagos, Mexico City and Singapore were among the most highly exposed major cities, with human-induced heat increasing health risks to millions.

Researchers at Climate Central, led by chief scientist Ben Strauss, looked for a way to bridge the gap between planetary-scale global warming -- usually expressed as Earth's average surface temperature compared to an earlier reference period -- to people's day-to-day experience. **EP**

UN Calls on Nations to 'Urgently' Boost Climate Funds

Climate change impacts battering vulnerable countries threaten to outstrip efforts to adapt to global warming, the UN warned Thursday, with a "significant" amount of international funding help recycled from other purposes.

Many emerging economies, which are least to blame for the fossil-fuel gases that stoke global warming, are among the most exposed to climate impacts, such as worsening drought, floods and cyclones.

Funding to help them adapt to accelerating impacts and



curb emissions is one of the thorniest issues at UN climate negotiations, which begin their latest round in Egypt on Sunday.

Wealthy nations have failed to provide a pledged \$100 billion a year to developing nations, reaching just \$83 billion in 2020. Only a part of that -- \$29 billion -- was for adaptation. **EP**

UN, ADB Assure Bangladesh of Continuing Support in Climate Actions



The United Nations and the Asian Development Bank (ADB) have assured Bangladesh of providing all necessary assistance to cope with climate change impacts and implement the National Adaptation Plan (NAP).

The assurance came when United Nations Resident Coordinator in Bangladesh Gwyn Lewis and Asian Development Bank (ADB) Country Representative Edimon Ginting met Environment, Forest and Climate Minister Md Shahab

Uddin at separate meetings at the Secretariat recently.

Environment, Forest and Climate Change Secretary Dr Farhina Ahmed, Additional Secretary (Administration) Iqbal Abdullah Harun,

Additional Secretary (Development) Mizanul Hoque Chowdhury, Joint Secretary Zakia Afroz, ADB Country Specialist Soon Chang Hong, ADB External Affairs Team Leader Gobinda Bar and other senior officials of the ministry were present.

Shahab Uddin said Bangladesh needs US\$ 230 billion by 2030 to implement the NAP. "We expect the cooperation of international organizations like the United Nations and ADB in the NAP implementation," he said. **EP**

COP27: Discover UNESCO's Actions for Environment



As the Cop27 kicked off in Sharm El-Cheikh (Egypt), the need to protect our environment and living species has never been more important.

On this occasion, UNESCO has published a thematic press kit, "UNESCO's actions for Biodiversity: Making peace with Nature", to highlight some of the many ways in which we are working to restore the relationship between humans and nature.

This document is built around 3 central priorities: Protecting biodiversity and ecosystems, Restoring the relationship between humans and nature, and Advancing knowledge to find solutions.

It features key facts and figures about the projects led and supported by UNESCO, with specific examples of successful programs from every corner of the globe.

As the only United Nations organization with a mandate in education, sciences and culture, UNESCO is uniquely placed to develop and coordinate global standards and programs with an

Vulnerable Nations Need Global Support to Deal with Climate Change

Climate expert Professor Saleemul Huq says that the international community must act and support the worst affected and least responsible nations with 'funding and solutions' to deal with climate change impacts.

Climate change unequally impacts vulnerable nations and indiscriminately creates global crises causing chaos, new poverty and violation of human rights.

'COP27 must make good on this agenda,' said Professor Saleemul, chair of the Climate Vulnerable Forum expert advisory group, speaking at a report launching event recently.

The flagship report entitled Climate Vulnerability Monitor, 3rd Edition: A Planet on Fire, commissioned by the CVF and the Vulnerable Twenty Group of ministers of finance of the CVF presented stark proof that climate change impacts generate loss



and damage, globally creating crises for society, human health and development.

Professor Saleemul said the Climate Vulnerability Monitor provides them with the anatomy of the loss and damage the world now lives with because of decades of insufficient climate inaction by rich, powerful and responsible countries.

He said the detailed impact data and evidence presented by the CVM3 provide a sobering reading on just how bad the situation already is, and how much worse it will become with fast-rising global health risks, extreme heat events, and economic shocks, to name a few. **EP**

approach linking nature and culture to conserve and sustainably use biodiversity.

15,000 Killed by Hot Weather in Europe in 2022: WHO

At least 15,000 people have died in Europe because of hot weather in 2022 so far, the World Health Organization said recently, with Spain and Germany among the worst-affected countries.

The three months from June-August were the hottest in Europe since records began, and the exceptionally high temperatures led to the worst drought the continent has witnessed since the Middle Ages. "Based on country data

submitted so far, it is estimated that at least 15,000 people died specifically due to the heat in 2022," the WHO's Regional Director for Europe Hans Kluge said in a statement.

"Nearly 4,000 deaths in Spain, more than 1,000 in Portugal, more than 3,200 in the United Kingdom, and around 4,500 deaths in Germany were reported by health authorities during the 3 months of summer," he added.

"This estimate is expected to increase as more countries report on excess deaths due to heat," it said, highlighting the UN climate summit in Egypt and its calls for rapid action. **EP**

FOOD DISTRIBUTION AMONG PANDEMIC AFFECTED PEOPLE AT BARISAL SILO



Industries Can Earn 10 Times More Forex Than Spending on LNG Imports

The export earnings fell for two consecutive months September and October this year. The crisis will further intensify if quality power and gas cannot be supplied to industries. Workers will lose jobs and investors cannot give money back to the bank if industries continue to lose productivity. This will cast adverse impacts on the economy. Hence without wasting any more time, an uninterrupted supply of gas to industries must be ensured by importing LNG from the spot market. Industries can earn 10-12% times more foreign exchange through exports than what will be spent on importing LNG. We are ready to pay a higher price for gas if required. The government must launch the necessary initiatives right now.

Md. Jashim Uddin, President of the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI), observed in an exclusive interview with Energy & Power Editor **Mollah Amzad Hossain**.

The government claims that the sky-high prices have forced the government to suspend LNG purchases from the spot market. What are your observations?

High prices and stress on foreign exchange reserves cannot be denied. But there is no option but to ensure quality gas supply and ensuring uninterrupted power supply to industries as these are essential ingredients to operations. The cost of production has increased significantly for a major increase in industrial raw

materials from the impacts of COVID and the war in Ukraine. But the poor supply of gas and frequently interrupted power supply have created further headaches. Required uninterrupted gas supply to industries must be ensured on a priority basis if required through rationing supply to other sectors. On the other hand, an uninterrupted supply of quality power to industries needs ensuring if required through the construction of dedicated power lines.

The government claims that it is not possible now spending huge foreign exchange for importing LNG from the volatile global market. What are your views?

Please note that industries assist the government in earning foreign exchange in two different ways. There are three different categories of industries. Some are purely export-oriented, some do export and at the same time supply in the local market, and some supply only to the local market. Those that supply to the local market saves foreign exchange by acting as import substitute. Export-oriented ones are directly earning foreign exchange. If industries run smoothly, 10-12% foreign exchange of what is required for importing LNG can be earned. Hence the government must give priority to the import of fuel for the sake of industries.

You have requested the government for an additional 200 MMCFD gas supply to industries. For this, you requested the



Md. Jashim Uddin

The export earnings fell for two consecutive months September and October this year. The crisis will further intensify if quality power and gas cannot be supplied to industries. Workers will lose jobs and investors cannot give money back to the bank if industries continue to lose productivity. An uninterrupted supply of gas to industries must be ensured by importing LNG from the spot market.

government for importing LNG from the global market. For this government has to provide a sizable subsidy. What are your views?

After discussion with relevant experts, we are convinced that there will not be much stress on the government exchequer for importing LNG to industries. For the interim period, we have requested the withdrawal of tax and vat on imported LNG. We are even ready for paying a marginally increased price of gas on condition that an uninterrupted quality gas supply is ensured. Industries cannot be protected if government pays no heed to our request.

Export earnings recorded a decline in September and October. You are apprehending that these may further decline if the present situation of energy and power supply persists. BGMEA and BTMA observed that buyers may also turn their back in such a situation. What are the reasons behind such apprehensions?

Please note that there is turmoil all over the world. The cost of energy and food has also gone sky-high in America and Europe. These have cast impacts on RMG trade as well. Buyers are already aware of the energy crisis impacting our productivity. If we can not improve the energy supply situation, once buyers turn around from our industry it will be extremely challenging to bring them back. The situation of job loss and unemployment will grow acute. Banks will also suffer in getting their money back which they provided as loans to industries. In case of supply reduction of industrial products to local market acting as import substitute, stress will be created on foreign exchange reserve. Such a situation is not desirable at all.

You discussed the options for combatting the crisis with the government high-ups, including the State Minister for Energy, at BIDA. How much optimistic you are about the outcome of such discussions?

On behalf of the business community, we put forward the depth and diversity of the crisis to government representatives. Our suggestions and thoughts about ways in mitigating the crisis have been dully put forward. They have also informed us of their contingency plans. We also believe that it is not possible overcoming the crisis on a stand-alone basis. There has to be a comprehensive and coordinated action plan for increasing LNG import, optimistic about a positive outcome, arranging a foreign exchange for it, withdrawing tax and vat, and marginal adjustment of gas

price. The government has also realized the situation. We are optimistic about a positive outcome.

FBCCI recently organized a seminar on what requires doing for mitigating the energy crisis. Recommendations were made for exploiting its coal resources, expediting gas exploration, and eliminating system loss. Are you going to formally submit these recommendations to the government?

Government policymakers were there in our seminar. The suggestions and recommendations were made in their presence. We are working on formulations of reports for officially submitting these to the government. We firmly believe that there are no options but using coal as the preferred base load fuel for sustainable generation of electricity. Our neighbors India and China are keen on using coal till 2060 and 2070 for power generation. Power generation using imported coal has started already. Few more plants are nearing completion. But power from coal may not be cheaper as thought earlier as the price of coal like other fuels has also significantly increased in the global market. On these considerations, we believe our coal can be a better option for use in power generation. This will reduce stress on gas and the gas saved in that process can be used in industries.

Second: It is being thought that as a contingency measure system loss can be reduced from 10% to 4% in about 6 months. Government must take comprehensive measures for this. Government must also initiate an action plan for eliminating the system loss.

Third: Gas production from the proven recoverable gas reserve has increased by 1000 MMCFD over the past 14 years. But the addition to proven reserve through discovery is a bare minimum. BAPEX alone carried out exploration onshore. We believe

government must launch as 10 years of a special program for onshore exploration inclusive of potential gas structures in the Chittagong Hill Tracts region. For this government must ensure budgetary allocation for at least 10 exploration wells annually. IOC and BAPEX must be included in the venture. This program should continue for the next 10 years.

Fourth: Resolutions of the maritime boundary disputes with Myanmar and India were a significant achievement. But no success Bangladesh could achieve in exploiting maritime petroleum resources so far. Required initiatives must be taken on a top priority basis for attracting major IOCs in making investments in our offshore through making required changes in our PSC documents in line with documents of neighboring countries.

Fifth: Power Distribution utilities and Polly Bidyut Samities cannot cater to the demand of industries in the respective franchise for issues of distribution networks although Bangladesh possesses a huge generation capacity. Especially the PBSs around Dhaka city have the highest numbers of industries. A dedicated power supply line must be constructed in areas where the industry load is 80% or above in the feeder. In that case, industries can gradually come out of reliance on captive generation.

How optimistic are you about Bangladesh coming out of the present energy crisis soon?

The Prime Minister of Bangladesh is very committed and is giving all support to industries for industrial development towards the graduation of Bangladesh to a developed economy. She is aware that industries will create employment and earn foreign exchange required for achieving Vision 2041. We are optimistic that necessary policy directives will come from her soon for alleviating industries from the gas crisis.



IMF-WB LOAN

ARE WE LOSING THE PLOT?

Reverse Swing



Farid Hossain

When on November 10 Bangladesh finally clinched the IMF's \$4.5 billion loan deal the cheers had been muted. The loan – scheduled to be released in seven instalments over a period of 26 months – surely comes at a time when Dhaka needs it most. Bangladesh has now become the third South Asian country after Pakistan and Sri Lanka to borrow money from the Washington-based International Monetary Fund to weather economic difficulties which can be traced to global economic slowdown with the US and European countries fighting to stave off recession. Only a year ago Bangladesh had been well-off amid a robust economic growth making headlines for its “economic miracle.” Even the world's leading lending agencies like the World Bank and IMF were in praise of Bangladesh's transformation from what some US diplomats infamously called a ‘world's basket case’ to one of the ‘fast growing’ economies. Despite a setback in its readymade garment exports and tens of thousands of migrant workers' return home from their job-providing countries the Bangladesh economy was growing though at a slower pace.

What has happened now that the country of ‘economic miracle’ is now seeking loan from IMF and also from its sister concern the World Bank? Bangladesh's economy depends on three pillars: apparel exports (it's the world's second largest RMG exporter after China), remittance from its large diaspora and import of fuel to meet the country's electricity

requirements. All the three pillars have been jolted by external shocks, especially after the Russian invasion of Ukraine with consequent retaliatory Western sanctions against Moscow that also hit back with its weapon of gas supply to European countries. Record-high cost of living (inflation) in Europe and the US as well, a problem compounded by shortage of gas, are pushing some countries to the brink to recession. This is a bad news for Bangladesh as these countries are mostly the destination of its apparel exports that account for 80% of the country's export earnings. With the exports falling, the remittances are also on the decline. Even though Bangladesh has sent up to nine lakh workers abroad since the Covid-19 pandemic began easing the inflow of remittances into the country dropped in past two months. These two factors coupled with increased payment for import of fuel have dealt serious blow to the country's economy. We are spending more on imports than our earnings

from exports widening the gap in the balance of payments. Not that we are importing more items than before. The reason behind our fat import bills is the falling prices of taka against the US dollar. Bangladesh Bank is struggling with falling foreign currency reserves. The reserves are going down as import costs continue to increase due to high fuel costs. Over the months the reserves have slipped from over \$48 billion to gross amount of over \$36 billion and net at \$26 billion for so, according to news reports quoting IMF estimates. This has caused a sense of urgency in the policy circles. The shrinking reserves have to be replenished sooner than later. As this realization dawned on the policy makers they wasted no time in knocking on the doors of IMF with a request for \$4.5 billion in budget support. The goal has been achieved for now. With the IMF money in the pipeline, Bangladesh has stated negotiations with the World Bank for a possible \$2 billion loan. The WB vice-president for the South

Asia region is already in Dhaka for negotiating the deal. However, as did the IMF the World Bank team too is expected in its talks with the government leaders to reiterate their call for economic reforms. They will now ask to know more about government's economic and financial policies. This means the government will no longer be free enough to take certain steps without shutting its eyes on the lending agencies. Call we call it an erosion of free choices for the government at a time when a national election is approaching?

EP





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