

MONTHLY

ISSN 2309-6578

ENERGY UPDATE

DEBTS ENVIRONMENT DOWN
BUREAUCRACY WATER CRISIS
ENEMIES BAD GOVERNANCE
CORRUPTION
FEDERATION GAS PETROL CRISIS
TERRORISM GOV
HEALTH WOMEN ENERGY
RELIEF EMPLOYMENT
INTERNATIONAL PRESSURE
FINANCIAL LOSS
LOADSHEDDING YOUTH
DEBTS PROVINCES
EDUCATION CLIMATE CHANGE POLITICS
NO ECONOMY
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LOADSHEDDING YOUTH
DEBTS PROVINCES
EDUCATION CLIMATE CHANGE



**Deteriorating national economy
Hopes are alive on
74th Independence Day**

**Exclusive Interviews of Top
Management, Professionals
& Experts**

**24 wind power projects yield
1233 MW to national grid**

Dealing with the KE muddle



Being mindful of its responsibility towards the people of the Valley, S K Hydro organizes drawing

competition and speech competition for schools in the valley to encourage the youth of the region.



884 MW SUKI KINARI HYDROPOWER PROJECT



884 MW Suki Kinari Hydropower Project, being developed by SK Hydro (Private) Limited, is one of the largest private sector hydropower initiatives in Pakistan. A run-of-the-river project located in Kaghan valley of Khyber Pakhtunkhwa, it is listed as one of the highest priority 'Early Harvest Projects' in the strategic China Pakistan Economic Corridor (CPEC).

Upon achieving Financial Close, SK Hydro became the largest private sector hydropower project in Pakistan and first hydropower project in CPEC to achieve this milestone bringing in the largest Chinese project based financing into the country.

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Modular Type	Diverse Communication Support	Slim Size	Max. I/O Modules	Push-In Connection	Hot-Swap	Status LED	Dedicated Software

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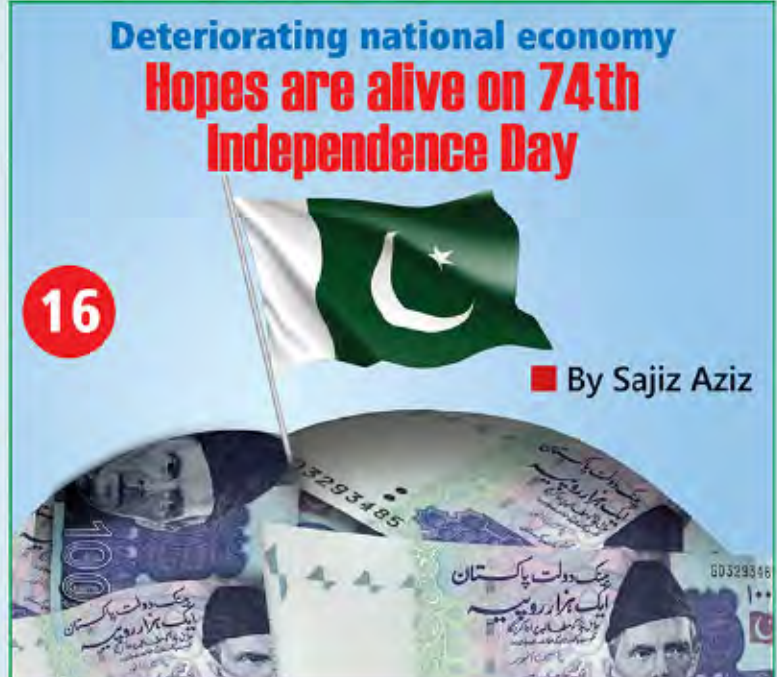
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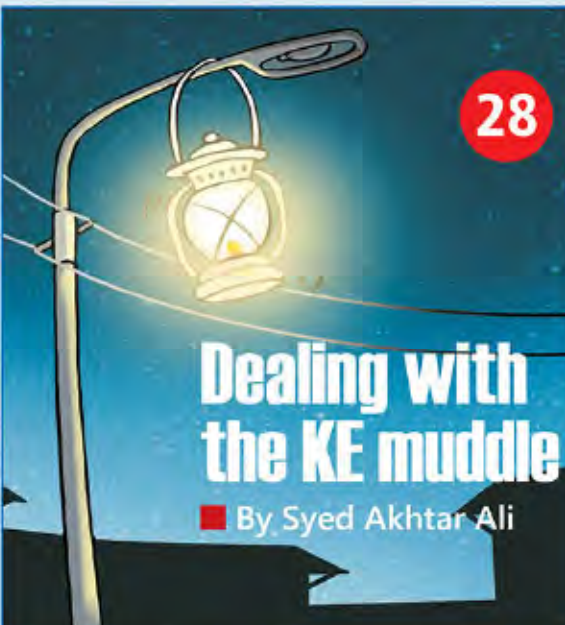
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Exclusive Interviews of Top Management, Experts & Professionals



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Mirza**
MD, PPIB



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GE Pakistan



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From the editor's desk...

27-year power generation plan unrealistic

The energy experts have declared that the present government like other sectors, is unable to even draw out a proper plan for power generation, transmission and distribution, as provinces and experts have termed the Integrated Generation Capacity Expansion Plan (IGCEP 2020-2047) unrealistic and the National Electric Power Regulatory Authority (Nepra) has to constitute a technical committee to address the serious objections raised during a public hearing. On the IGCEP 2020-47, the provinces, Azad Jammu and Kashmir (AJK), key public and private sector stakeholders and experts raised objection over the proposed plan and termed it unrealistic and overambitious as it undermined the indigenous energy resources and demanded changes to the plan.

The Sindh government alleged that the National Transmission and Despatch Company (NTDC) did not take the province on board while drawing up the policy.

The IGCEP 2020-47 is a policy document prepared by the NTDC under which the future generation capacity expansion should take place in various fuel and technology categories on the basic principle of least cost. The regulator, after detailed deliberations on the main features and observations/input from the stakeholders and experts, decided to constitute a committee comprising officials of the NTDC, Central Power Purchasing Agency-Guarantee (CPPA-G), Nepra and other experts of the power sector to further improve and finalise the IGCEP by mid-August, 2020.

As per the IGCEP, a total of 148,074 megawatts of electricity will be added to the national grid by 2047.

This includes 45,929 MW hydel-based electricity, 32,697 MW local coal-based energy, 27,090 MW based on re-gasified liquefied natural gas, 26,522 MW solar, 9,241 MW wind, 3,300 MW nuclear, 1,620 MW based on imported coal, 1,000 MW from across the border and 655 MW bagasse-based.

In its comment, Korea Hydro and Nuclear Power Co Ltd (KHNP), which is a partner of the K-P government in a hydroelectric power project, termed the plan of allocating capacity development unrealistic. Besides, the company also raised questions over making the WAPDA a major stakeholder in hydroelectric power production for developing 33,765 MW of the total planned capacity.

As per concerns raised by AJK, the timeframe for its projects has been pushed back by almost 25 years and they will be considered for development in 2040-2045. It said investors were reluctant to invest due to the IGCEP and requested Nepra to direct NTDC to reconsider and revise the proposed plan. Similarly Punjab Sindh governments were of the view that an important aspect for the addition of captive power plants (CPP), net metering by residential, commercial, agriculture and industrial consumers was not accounted for by the IGCEP and that would surely have an impact on short, medium and long-term planning.



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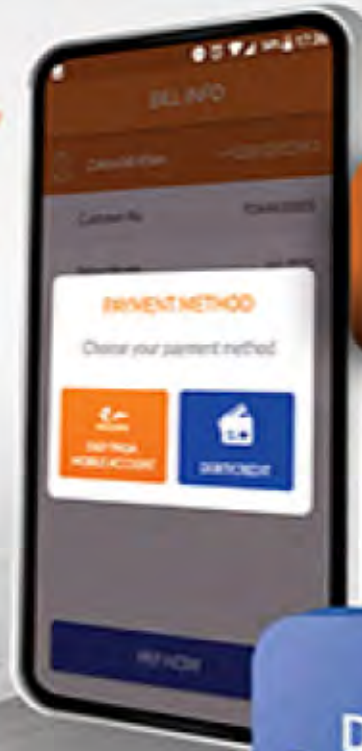
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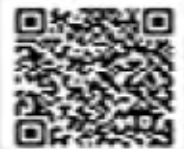
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Messages on 74th Independence Day of Pakistan

James Rockall CEO & Managing Director WLPGA

Congratulations to the people of the Islamic Republic of Pakistan as you celebrate your 74th Independence Day. As a key South Asian nation, and as one of the most populous countries in the world, with a high proportion of youth, Pakistan is poised for development. Economic growth will see an increase in demand for energy, and it is important to ensure that future energy supplies are both low carbon and low emissions, but also practical and available. To help meet this, the role of LPG in Pakistan, whether for transport, as a domestic fuel or as a commercial energy source, should increase; providing clean, accessible and affordable energy for all. On behalf of the global LPG industry I wish you a very happy independence day and I look forward to a vibrant, healthy and low carbon future, supporting economic growth in Pakistan for the next 73 years. ■



Stefan Gsanger Secretary General World Wind Energy Association

Dear friends in Pakistan, Independence is a crucial, a very important moment for every country as it implies democracy, autonomy and self-determination.

How suitable is it before this background that the Government of Pakistan has just approved to go for a renewable future! This decision is in accordance with both aspects, national autonomy and independence as well as international, human solidarity!

In this sense: Let me wish your wonderful country all the very best on the occasion of your Independence Day! And as a human world family, we will overcome all challenges jointly and create a better, a renewable world for all of us! ■



Tauseef H. Farooqi Chairman NEPRA

I extend my heartiest felicitations to all Pakistanis on our 74th Jashn-e-Azadi, with a message that we, at NEPRA, do not see the COVID-19 pandemic and power crisis as a weakness but as our greatest strength. It is only by working together that we can build a "Naya" and "Resilient" Pakistan, free from the issues of affordability and reliability of electricity. With a variety of indigenous resources, a progressive and focused mindset, and successful implementation of our plans, I can assure that we can grow our power industry into the World's finest and take our Motherland to the heights we always dream it to reach. ■



Waseem Qureshi CEO, WRL Technologies

On this 74th Independence Day of Pakistan, I take the opportunity to extend to all Pakistanis my heartiest felicitations. Today we celebrate our Independence Day with patriotic zeal and fervor and applaud our progress. With hard work and passion, Pakistan is on the path to economic and social prosperity as it establishes its place in the world as one of the world's most dynamic nations. Pakistan Zindabad!! ■



Shaaf Mehboob CEO, Adaptive Technologies

Always a pleasure to read through energy Update. Kudos to Naeem Qureshi Sb and his team for always putting together an up to date and well documented edition of the magazine that covers all sectors of the energy portfolio comprehensively. ■



Zeeshan Tayyeb Chief Operating Officer Gas & Oil Pakistan Limited (GO)

Congratulations to the editorial team of the "Energy Update Magazine"

My heartfelt congratulations on 14 years since the foundation of the "Energy Update Magazine".

Over the years, your publication has forged an impressive path, attaining widespread recognition and becoming an authoritative forum for the first publication dedicated to the energy, engineering, oil and gas, HVACR, Renewable Energy, Power generation and environment sector in Pakistan.

On behalf of the Gas & Oil Pakistan Limited (GO), I offer you my best wishes for a most memorable anniversary and for every success in the future. ■



Our main focus is on Indigenous resources including Clean and Green Hydropower: Shah Jahan Mirza

Exclusive Interview of Managing Director Private Power & Infrastructure Board (PPIB) Shah Jahan Mirza

Our main focus is to develop indigenous resources including hydro in the country".

This was stated by Managing Director, Private Power & Infrastructure Board (PPIB), Shah Jahan Mirza during an exclusive interview session with the Energy Update. Following are the important excerpts of his interview for our readers:

Energy Update: Tell our readers about the background history of the PPIB as how it came into existence?

Shah Jahan Mirza (SJM): PPIB was created in August 1994 as a one-window facility of Government of Pakistan (GoP) to promote, encourage, facilitate and safeguard private investment in Power Sector. The organization assists GoP in formulation of Power Policies and facilitates investors in development of Power Generation (IPPs) and related Infrastructure Projects under long term Concession Agreements pursuant to GoP Power Policies. PPIB approves project proposals, issues Letter of Interest (LOI), Letter of Support (LOS), executes Implementation Agreement (IA) and issue GoP's guarantee to Sponsors against payment obligations of Power Purchaser. In order to implement WAPDA Strategic Plan 1992 related to unbundling of WAPDA and market liberalization, it was felt necessary to have a dedicated entity

■ By Halima Khan



to attract private investment for setting-up new power generation facilities in the country. Accordingly with the objective of doing business and facilitate investors, a one window operation was started through creation of PPIB. In order to have expeditious decision making with the consensus of all federal and provincial stakeholders, PPIB Board is governed through high powered Board chaired by Federal Minister for Energy (Power Division) having secretary level representation from federal and provincial governments, Azad Jammu and Kashmir (AJ&K) and Gilgit Baltistan (GB). The organization obtained statutory status in March 2012 through Act of Parliament. Later on in November 2015, specified public sector power projects to be implemented in IPPs framework were also included in PPIB's mandate through amendment in its Act.

EU: Tell our readers about the Contribution of PPIB in the Power Sector till date?

SJM: I feel great honour to express that PPIB has been making major contribution in economic development of the country by adding reliable power generation to the national grid through both private and public sector's investment. It has been successfully attracting and facilitating foreign direct (FDI) and local investments in Pakistan's power sector. The organization is currently administering Forty (40) multiple fuel based commissioned private power projects with a cumulative capacity of 17,551 MW with investment of around US\$ 20 billion, which is more than 50% of country's total generating capacity of the country. There are times when these IPPs have been contributing to the grid up to 70 % of the electricity being supplied to the consumers in Pakistan. In addition to these commissioned projects, currently PPIB is handling portfolio of twenty five (25) new multiple fuel (coal, hydro, R-LNG/Gas) based IPPs with cumulative capacity of around 12,464 MW worth multi billion dollars. These projects are at different stages of implementation. It is expected that ten projects of 5,470 MW will be commissioned by Year end 2022

Further PPIB is acting as front line institution of Government in implementing Flagship CPEC Program by processing major chunk of Power Sector's projects under the auspices of CPEC. PPIB's Current Portfolio has thirteen CPEC Power Projects of 11,634 MW worth 18.5 Billion US\$. Out of these,



four coal based projects of 4,620 MW have already been completed and supplying reliable electricity to the national grid whereas other projects are at different stages of implementation. I would like to mention for the interest of readers that PPIB is also handling 880km long, 4,000 MW capacity, ±660 kV Matiari-Lahore HVDC (High Voltage Direct Current) Transmission Line Project, first ever transmission line project of the country in private sector, being sponsored by State Grid Corporation of China. The project is at advanced stage of construction and expected to be completed by March 2021.

EU: Tell our readers about the efforts of PPIB to facilitate the development of hydroelectricity sector in Pakistan?

SJM: : In the hydro generation, I would say that the process was slightly slow due to various associated technical, strategic, locational, transmission inter-connection and legal complexities, e.g. as per the constitution of Pakistan, consultation with the provinces for constructing hydro power projects is required as it is a provincial resource which takes time and efforts. A major part of the hydro resources are located in the AJ&K where there is an entirely different legal regime and government setup. The process regarding development of hydro-power projects in private sector was started with the announcement of 1995 hydro power policy, where government announced upfront tariff but for certain reason the government withdrew that decision and the policy was not success-

ful. However with tireless efforts of GoP and PPIB, the first project that saw light of the day was 84 MWs Laraib Energy that was commissioned in July 2013. Thereafter, 147 MW Star hydropower and then recently 102 MW Gulpur have been commissioned. These first three projects are located in AJ&K and sponsored by renowned international investors and lenders which clearly show the confidence of investors' and lenders community in Government Policies, Security Package Agreements and PPIB's facilitation.

Now we can claim with confidence that hydropower development through private sector participation has picked up the pace and PPIB being a central organization has crucial and leading role in development of hydropower projects in country, currently managing 16 under process Hydro IPPs of 6,448 MW (52% of PPIB's current under process projects portfolio) including four CPEC Hydro IPPs of 3,414 MW. These projects are at various stages of development with commissioning time lines upto year 2028 and beyond. We have a security package and agreement structure that is not only acceptable to the local investors and local banks but also acceptable to the international investors and lenders. All these projects are being financed by the international banks while some of them have also international sponsors

It is important to express that two CPEC Projects of 1,590 MW including 720 MW Karot and 870 MW Suki Kinari have achieved significant progress in construction and expected to be completed by December 2021 and

December 2022 respectively. The two other CPEC Projects of 1,824 MW including Kohala 1124 MW and Azad Pattan 700 MW are under Financial Close stage. Security Agreements of these two projects have been executed last month in the presence of Honorable Prime-minister of Pakistan which is a land-mark step towards clean and green energy. It is worth mentioning that Kohala Project is a single largest investment in private sector worth 2.4 billion US\$ whereas Azad Pattan will bring investment of 1.6 billion US\$ to the country. These projects are expected to achieve financial closure by early to mid of next year.

EU: Tell our readers any new initiative of PPIB in the hydro-electricity sector?

SJM: PPIB has been working on number of initiatives which have been started with the objectives to exploit the hydro resource of the country to increase the share of indigenous and green energy. With the same objective PPIB has not only been playing leading role in development of Hydropower Projects in country ranging from small to large scale hydro projects under 1995, 2002 and 2015 Power Generation Policies but also providing its full support to provincial governments on various policy and technical matters related to tapping hydro potential at provincial level.

Pursuant to Power Generation Policy 2015, PPIB has started implementation of Tripartite Letter of Support Regime where provinces can develop hydropower projects in close collaboration with PPIB under Tripartite Letter of Support Regime. In this regard, Punjab and KPK have Facilitation Agreement with PPIB to get support at Federal level to harness the province's hydro potential.

A recent initiative started by the PPIB is related to Small Hydro Power Projects (SHPPs) for which LOIs have been issued by the provinces and AJK but they have been stuck-up for last many years. Some of them have been pending for last seven to 10 years as there was no way forward for them. So last year it was decided to do these projects under the 2015 power policy. Accordingly PPIB has been processing SHPPs under Tripartite Letter of Support Regime in close collaboration with provinces and AJ&K governments. First two letters of support have been issued to two SHPPs (total 15 MWs) to be developed in AJ&K and numbers of other SHPPs are in pipeline. The initiative has opened another door in the arena of hydroelectricity to be produced by the private sector. The development of SHPPs

have numbers of associated benefits including helping in local development, evacuation at lower voltage level of 11 KV and 132 KV with less transmission cost and low transmission losses and reducing load on national grid.

EU: Is there is any policy shift with regard to the PPIB to do these Small Hydropower Projects?

SJM: Historically SHPPs were included in Renewable Energy Policy 2006 administrated by AEDB and above 50 MW were under 2002 Policy administrated by PPIB. However this divided regime could not get success due to multiple reasons and not a single SHPP could be developed. Finally the Ministry of Energy (Power Division) after detailed deliberation with all stakeholders including AJ&K and provincial governments in order to expedite the development of SHPPs decided to give the mandate of processing of SHPPs to PPIB having demonstrated experience and expertise in the field under the Power Generation Policy 2015. The 2015 Policy is approved by the Council of Common Interests and doesn't distinguish on the basis of size of the hydropower projects making PPIB fully empowered to process SHPPs and these SHPPs are eligible to get the same concessions as available to the large hydropower projects under the Policy. Currently PPIB is working on development of Security Package for SHPPs and it is expected with the finalization of Security Package, the Implementation, Power Purchase and Water Use Agreements for these two SHPPs having LOS from PPIB will be executed without any delay.

EU: Do tell our readers about the major issues prospective private sectors investors and companies face in launching new energy projects in Pakistan and the efforts of the PPIB to resolve them?

SJM: Project developers face number of issues in pre-development, development and operational phases including land acquisition, environmental approvals, right of way for transmission projects, tariff approval, import duties & taxes, delays in completion of interconnection and transmission facilities, State Bank of Pakistan approval's, delays in Payment by Power Purchaser, Fuel Supplies, tax issues etc. PPIB stands side by side with the Project Sponsors to resolve these issues for the timely completion of projects. We as one window facility rigorously follow up these issues with the concerned authorities, arrange meetings

and use all available resources for amicable resolution of these issues.

EU: Do tell our readers the efforts in general by the PPIB to promote use of indigenously available resources of energy for cheap electricity production in Pakistan?

SJM: I would like to say that number of initiatives have been taken and completed by PPIB to bring the sustainability and affordability in the Power Sector by reducing dependence on imported fuel and increasing share of indigenous resources, which make history in Pakistan Power Sector that's include development of Hydro Power Projects, development of huge Thar Coal reservoir and power projects which can change the energy destiny of Pakistan, implementation of SHPPs and induction of first ever Private Sector & first ever HVDC Transmission Line Project of Country, 878 KM long, 4000 MW Capacity, ±660 kV Matiari-Lahore Project. Further to protect the environment, all Power Projects are being developed in strict compliance with the National and International environmental/emissions standards of World Bank/IFC, etc.■



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Deteriorating national economy

Hopes are alive on 74th Independence Day

By Sajid Aziz

Many people in Pakistan and abroad are still optimistic about the future of the national economy as the nation is celebrating 74th year of independence. Despite the fact that all indicators are showing dismal results after 2-year rule of PTI there is no end to the optimism and positivity while the situation started deteriorating immediately after the present regime has taken over. Right from the devaluation of Pakistani rupee against the US dollar in the domestic market. Subsequently, a sudden surge in oil prices by 9.5%, which caused uproar within the nation. According to economic experts, the present regime having no escape from the worsening situation started defending themselves by putting the entire blame on the previous governments, many people are concerned about how Pakistan will run in the future

and what steps should be taken to improve this economic plight. Pakistani rupee has been

devaluing since December 2017 and has lost almost 13.7% of its value as of now. In December, the value of rupee per US dollar was almost 105 but it observed a steep rise reaching 119.84 in June 2018. This was a great shock to the macro-economic situation as it gave rise to many more problems our economy is currently facing. According to data combined by Bloomberg, the Pakistani rupee was Asia's worst-performing currency this year. Some analysts expect the currency to drop further. Standard Chartered PLC predicts that the rupee will fall even beyond Rs170 per dollar by the end of the year as pressure from IMF International to further weaken is still mounting. Currency devaluation has further speculated that the country might need support from the IMF as reported by the organization itself according to which Pakistan's external debt is expected to climb to a



stan's external debt is expected to climb to a dangerous level. Pakistan's public debt would remain higher than the limit prescribed in the revised Fiscal Responsibility and Debt Limitation Act. CPEC related outflows have elevated current account deficit and risen external debt servicing and this may lead to higher external financing needs in the future. All this has led to growing challenges to arrange foreign loans. The IMF also said that "While the level of external debt has remained moderate, continued mobilization of external financing at favorable rates could become more challenging in the period ahead against the background of rising international interest rates and increasing financing needs".

Moreover, our foreign exchange reserves are eroding. Foreign exchange reserves held by the State Bank of Pakistan were shrinking by 3pc on a weekly basis. The decrease in reserves was attributed to external debt servicing and other official payments. The nation's current-account deficit has become sizable and foreign debt repayment obligations are also rising. CPEC investments could accelerate the build-up of related external payment obligations, deteriorating Pakistan's capacity to repay at a faster pace. Furthermore, faster depletion of foreign exchange reserves will have adverse effects on economic growth. A further decline in rupee value now reached to an alarming level of Rs168 against a dollar while experts have predicted no end to it even after borrowing another \$2.5 billion.

The World Bank states that Pakistan's inflation had climbed significantly during the fiscal year 2018-2019 and will remain high till the end 2020. The outcome of the devaluation of Pakistan rupee against the US dollar in the domestic market incidentally coincided with a rise in the crude oil prices in the global market resulting in an upward trend in oil prices since January 2018. The trend has caused a big damage to the manufacturing sector and transportation cost resulting in price hike of all the commodities produced locally.

Apart from this, the country's economy is facing a sizable increase in current account deficit and fiscal deficit. The IMF states "In the absence of strong consolidation measures, the fiscal deficit is expected to further elevate due to COVID 19, and debt level will go beyond control. The influx of foreign shipments, however, remains on the higher side due to heavy imports of machinery and other construction material for multi-billion dollar projects under CPEC. On the other hand, balance of payments issue may pose very serious risks to the economy during the next fiscal year, mostly because of ballooning deficits and erosion in foreign exchange reserves down the line. Keeping in view the liquidity position, the government may be left with no choice but to cut its non-development and administrative expenditures to reduce fiscal deficit. The State Bank predicts that external and fiscal accounts will remain under pressure because of an increase in import demand and public spending

by provincial governments to complete development projects before the upcoming general elections. Pakistan is also facing extremely low level of foreign direct investment in days to come.

However, there is no major change in extreme issues like electricity and gas shortage, unemployment and poverty. The supply of power to industrial and residential consumers was expected to improve considerably with new power plants likely to become operational early 2020, however, the situation in the largest industrial city has gone even worse due to brutal K Electric. Import of liquefied natural gas (LNG) to improve the shortage of gas for the industrial sector and the addition of a second LNG terminal at Port Qasim would go a long way in boosting the economy. Furthermore, recent economic developments have helped the country's GDP growth by 0.8 percentage points over the previous year.

Thus the issue of primary importance to be addressed by the government is to take Pakistan out of this vicious circle but it seems that Imran Khan sticks to his point agenda of seeking more and more loans from the IMF or knocking the other doors to run the country's economy.

In spite of all the alarming factors including pandemic and debts reaching to history's worst ever level, the present regime has not done even a single effort to plug unnecessary and wasteful expenditures and it seems that another independence day leaving us in a state of despair. ■

Groundbreaking ceremony of 1 MW solar plant held at UET

University of Engineering and Technology (UET) Lahore organized a groundbreaking ceremony of Installation of 1MWp Solar Plant at UET, Lahore under ESCO model in cooperation with Punjab Energy Efficiency & Conservation Agency (PEECA). Punjab Minister for Energy Dr. Muhammad Akhter Malik participated as chief guest. He along with worthy Vice Chancellor UET Lahore Prof. Dr. Syed Mansoor Sarwar laid the foundation of this project.

The generating capacity of the project is 1MWp while after the completion of this project the university will get an annual benefit of Rs. 17 crores. After the groundbreaking ceremony, the Punjab Energy Minister talked to the media and highlighted the importance of solar energy in the province. He said, this project is the first major step towards clean and green Pakistan. We will extend this project of solarization to all other universities in Punjab. According to the minister, So far, several MoUs have been signed to shift 11 universities of Punjab to solar, while the Punjab government has not spent a single rupee on these projects. He said that he was getting full support from Punjab Chief Minister Sardar Usman Buzdar for this project and they are making untiring efforts to provide affordable and environment friendly energy in line with Prime Minister Imran Khan's vision. At this occasion Vice Chancellor Dr. Mansoor Sarwar thanked the Minister. He said that clean and green energy has become the need of the whole world. UET will save millions of rupees and will spend it on research projects. However, this project of solarization will be completed by September 15, 2020 approximately 9-10 weeks. ■



Exceptional opportunities ahead for Pakistan in infrastructure sector – Masroor Mahmud

Exclusive interview of President and CEO, GE Pakistan

As Pakistan celebrates its 74th Independence Day, GE is highlighting its prominent role in supporting the nation to build a world-class infrastructure in key areas including energy, transportation, healthcare and aviation. For more than 55 years, the company, with a team of dedicated experts, has played an instrumental role in shaping the nation's core economic sectors. Through collaborations with the government and the private sector, GE has built a strong footprint in Pakistan – with the primary goal of supporting the nation and its people. In an exclusive interview Masroor Mahmud, CEO of GE Pakistan, shares insights on the company's operations in the country.

EU: In what areas GE has been providing services in Pakistan?

Masroor Mehmood: GE has been a long-term partner in supporting Pakistan's infrastructure development. With over 55 years of operational presence in the country, we have delivered our technology, resources and on-site support to develop critical sectors including energy, healthcare, railway and aviation. Over the years, we have built a strong footprint in the country with offices in Karachi, Lahore and Islamabad, and have a local team of over 400 Pakistanis working across the different business sectors.

To give a snapshot of our presence in the country, GE-built technologies can generate the equivalent power needed to supply up to 30% of the country's electricity. We are also

By Mustafa Tahir

collaborating with public and private sector partners to unlock the power of digital technologies, and bring efficient power generation solutions that run on natural gas, coal including Thar local coal, wind, waste biogas, domestic lignite and other fuels to help meet the Government's goal to increase people's access to reliable, affordable electricity.

EU: What is the volume of work and investment of GE to help Pakistan in overcoming its energy shortfall?

MM: The power sector is one of the key areas where GE has a growing presence and collaborations in the country. We understand and support the government's emphasis on ensuring cleaner, reliable, uninterrupted power supplies, while keeping environmental aspects as part of this strategy. Historically, we installed our first steam turbine in the country in 1964, the first gas turbine in 1968, the first hydro unit in 1980, the first combined cycle power plant in 1984, and our H-class gas turbines – which have helped to set two world records for combined cycle efficiency – power the Bhikki, Haveli Bahadur Shah and Balloki Power Plants. These three facilities are among the most efficient combined cycle power plants in the world today, adding a total of up to 3,600 megawatts (MW) to Pakistan's national grid. Efficiency matters as each point of efficiency can generate millions of dollars in fuel savings over the lifetime of a 1,000 MW power plant. In 2019, our steam power technology enabled

Pakistan to generate electricity from its local Thar lignite for the first time, and we are currently working on Pakistan's first ultra-supercritical steam power plant.

In a demonstration of our steam power capabilities, Engro Powergen Thar Private Limited (EPTL) has reached commercial operations last year, enabling Pakistan to use its local lignite for power generation for the very first time. This fuel was considered very challenging to burn because of its high moisture content, but GE's advanced boiler technology has been designed to handle even the most challenging fuels. This is an important step that supports Pakistan's strategy towards greater

energy security and greater independence from fuel imports. Further steps in this direction are Thar Energy Limited (TEL) and Thalnova projects which are to achieve COD in 2021.

Also last year, the 1320MW CPHGCL Power Plant has reached commercial operation using GE's steam turbines, generators and boilers.

We also provide advanced boiler and steam turbine technology to Lucky Electric Power Company 660MW power plant. It is going to be Pakistan's first ultra-supercritical power plant in Deh Ghangiaro, Bin Qasim. The project will add up to 660 MW of electricity to the national grid. The power plant will be constructed by SEPCOIII and is planned to commence commercial operations in 2021.

The 1,292 MW Hub Power Plant is Pakistan's first independent power plant operating since 1997. HUBCO has launched a project to enhance the efficiency and lifecycle of the facility through retrofit works that replace the old existing turbine rotor and inner cylinder assemblies with advanced GE steam turbine technology within the old existing turbine casing. GE's technology has given this plant significant efficiency gains and proves our service capabilities on Other OEM technologies.

EU: In what manner could GE help Pakistan in its drive to generate clean electricity through its renewable energy resources?

MM: We understand the importance of renewable energy in the total energy mix of the country and have actively supported the development of Pakistan's wind and hydro power sectors. Other than supplying wind turbines that can generate up to ~500 MW, we are also collaborating with WAPDA and the Ministry of Water Resources on the Mangla refurbishment project.

With the recently announced Alternative & Renewable Energy Policy, we are aligned with the government's initiative of driving towards a sustainable and affordable energy transition. That is why in another milestone project, we have provided six new hydropower Francis turbines and generators for the Dasu Hydropower Plant to support the country's power infrastructure.

The 2.2 gigawatts (GW) Dasu hydropower project is one of the most important power generation projects in the country. The plant will help generate clean electricity, supporting socio-economic development in remote areas. The first stage of the project consists of

installing a 2,160 MW hydropower plant on the Indus River, which could be expanded to 4,320 MW in a second phase. Once commissioned in 2026.

EU: What are the technological interventions and projects undertaken by GE, which are going to ensure reliable, sustainable electric supply?

MM: We bring not only the best-in-class technology to equip highly efficient new power plants but also upgrade solutions to enhance the performance of existing power plants.

For example, GE's H-class gas turbines are an industry-leader and we are honoured that Pakistan was the first country in South Asia to adopt the technology. We have already secured up to 105 orders for the H-class turbines of which 75 have been shipped and 44 are already in operation, with over 630,000 operating hours. Our HA technology has helped deliver two world records - one for powering the world's most efficient combined cycle power plant, by achieving 63.08% gross efficiency at Chubu Electric Nishi-Nagoya Power Plant Block-1 in Japan and the second, for enabling EDF's Bouchain Power Plant achieve 62.22% net combined cycle efficiency in France. This means we are bringing the best to Pakistan. As mentioned earlier, the H-class turbines are now deployed at Haveli Bahadur Shah, Bhikki and Balloki power plants.

EU: What are the major problems of the energy system of Pakistan and their possible solution with the use of modern and efficient technology?

MM: Pakistan needs efficient, reliable, uninterrupted, affordable and cleaner power, and the country has a clear vision to achieve these goals. We believe that introducing world-class technology that is efficient and reliable; in addition to localizing talent and developing human capital for operation and maintenance services will help the people and business for the country to prosper. From generation standpoint, our best-in-class gas turbines that can be used to set up highly efficient new power plants; innovative solutions to upgrade existing power plants; and ability to harness diverse sources of energy, especially wind, hydro and indigenous coal, are critical for the nation.

Moreover, Asset Performance Management (APM) solutions powered by GE Digital are key as the transmission and distribution network in the country

continues to be challenged. As a long-term partner, we deliver cutting edge solutions and on-site support, including long-term service and maintenance, to enable the country to address its energy-sector development goals.

EU: What are the other major projects of the GE in Pakistan besides energy sector?

MM: In the healthcare sector, we have close to three decades of partnerships in the country, and more than 70% of large Pakistani hospitals (those with over 300 beds) are equipped with GE healthcare technologies. We also collaborate with multiple healthcare providers in Pakistan such as recent engagements with Pakistan Airforce Hospitals, Shaukat Khanum Hospital, Indus Hospital, etc. to bring the latest technology and build capabilities to battle cardiovascular, cancer and other diseases.

At the Nuclear Medicine, Oncology and Radiotherapy Institute (NORI), our Single Photon Emission Computed Tomography (SPECT) system contributes to a reduction in cancer-related mortality. Most recently, during the COVID crisis, our technology and services support staff have been working around the clock to partner with healthcare institutions and professionals across the country to ensure the reliability and availability of the product installed base. We have nearly 50 years of collaborations with the country's national carrier, Pakistan International Airlines, and more than 60% of the country's commercial carriers are powered by GE and partner engines.

EU: What are the future plans of the GE in Pakistan?

MM: We are committed to support the government in achieving its development goals and will work to identify potential sources of funding and explore investment opportunities in all core sectors, such as energy, aviation and healthcare.

With Pakistan's infrastructure needs continuing to grow, we will need a holistic mix of advanced technologies, maintenance services and modernization works to better position the country to meet future infrastructure challenges. We will continue to support the country's strategy through more collaborations, industry-leading technologies, advanced digitization and enhanced localization by creating new job opportunities for talented Pakistani professionals. We see exceptional opportunity for growth in Pakistan as a partner in the progress of the nation. ■



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24 wind power projects yield 1233 MW to national grid

Alternative Energy Development Board (AEDB) has been promoting and facilitating the development and deployment of alternative and renewable energy technologies in the country. The development of renewable energy based power generation projects is being pursued on IPP mode through private sector investors. The status of RE power projects include: 24 wind power projects making a cumulative capacity of 1233 MW are operational and providing electricity to the national grid, 6 solar projects making a cumulative capacity of 430 MW are operational, 8 sugar mills based bagasse cogeneration projects are producing cumulative capacity of 259.1 MW.

Several ARE projects initiated under the RE Policy 2006 were not able to proceed with their development due to restrictions imposed through decisions taken by CCOE dated 12th December, 2017. Under the vision of the current government to exploit clean energy resources and increase the share of ARE in the energy mix, the CCOE vide its decisions in case No. CCE-12/04/2019(V) dated February 27, 2019 allowed implementation of projects that had already achieved significant milestones of project development by placing them into three categories.

Category-I: 19 projects of 531 MW that have already been issued Letter of Support (LOS) are placed under this Category and are allowed to proceed further on cost-plus/ upfront tariff determined by NEPRA subject to revision of tariff in case-tariff determination has been done since more than one year or if the tariff validity period has lapsed. Category-II: 24 projects of 1339 MW that have acquired tariff and generation license are placed under this Category and are allowed to proceed further on cost-plus/ upfront tariff determined by NEPRA subject to revision of tariff in case tariff determination has been done since more than one year or if the tariff validity period has lapsed. Category-III: 110 projects of 6707 MW capacity hold-

ing LOIs are placed under this category and are allowed to proceed ahead after becoming successful in a competitive bidding to be undertaken as per demand communicated by NTDCL.

In compliance of the CCoE's decision, AEDB has actively been facilitating the said projects as per the criterion set by the CCoE. Twelve (12) wind power projects falling under Category-II with a cumulative capacity of 610 MW have been facilitated to successfully achieve Financial Closing in November, 2019. S# Name Capacity (MW) location expected COD. Master Green Energy Ltd. 50 Jhampir, Thatta Nov, 2020, Tricom Wind Power Pvt. Ltd 50 Jhampir, Thatta Feb, 2021. Lakeside Energy Pvt. Ltd 50 Jhampir, Thatta Dec, 2021, Artistic Wind Power Pvt. Ltd. 50 Jhampir, Thatta Dec, 2021, Liberty Wind Power 1 Pvt. Ltd 50 Jhampir, Thatta Dec, 2021, Indus Wind Energy Ltd 50 Jhampir, Thatta Dec, 2021, ACT2 Wind Pvt. Ltd 50 Jhampir, Thatta Dec, 2021, Liberty Wind Power 2 Pvt. Ltd 50 Jhampir, Thatta Dec, 2021, Metro Wind Power Ltd. 60 Jhampir, Thatta Dec, 2021, Nasda Green Energy Pvt. Ltd 50 Jhampir, Thatta Dec, 2021, DIN Energy Ltd 50 Jhampir, Thatta Dec, 2021, Gul Ahmed Electric Ltd 50 Jhampir, Thatta Dec, 2021.

Further, AEDB has prepared the RFP package for carrying out competitive bidding for wind and solar projects falling under category-III. The RFP package has been submitted to NEPRA for approval. AEDB will carry out the competitive bidding once the RFP package is approved by NEPRA and quantum for bidding is communicated by NTDCL.

In order to ensure sustainable supplies and energy security, the Government is focusing on exploiting the abundant potential of wind, solar and other ARE resources for power generation whilst benefiting from the declining prices of RE technologies through optimum mode of development. AEDB has formulated a new Alternative and Renewable Energy Policy (ARE Policy 2019) consequent to expiry of RE Policy 2006 in March, 2018. The policy aims at creating

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a conducive environment supported by a robust framework for the sustainable growth of the ARE Sector in Pakistan. The GOP's strategic objectives of affordability of electricity, energy security, availability for all, environmental protection, sustainable development, social equity and mitigation of climate change will further be harnessed under the ARE Policy 2019. Salient features of the new ARE Policy 2019 are as follows: the policy has an expanded scope encompassing all alternative and renewable energy sources, competitive procurement and addresses areas like distributed generation systems, off-grid solutions, B2B methodologies and rural energy services, the ARE Policy 2019 is target oriented and sets a target of achieving 20% capacity from ARE technologies by 2025 and 30% capacity by 2030. the ARE Policy 2019 envisages development of large scale ARE projects in all parts of the country through active participation of the provinces, provinces are also part of the Steering Committee envisaged in the policy that will be carrying out the planning of ARE induction. Provincial energy departments will be carrying out a competitive bidding process as per the annual ARE procurement plan approved by the AEDB Board on recommendations of the Steering Committee, the most significant feature of the policy is that it makes a transition from the traditional methods of procurement based on cost plus and upfront tariffs to competitive bidding, all new ARE projects specifically wind and solar power projects will be developed through competitive bidding, promotion of local manufacturing through active coordination between concerned public sector stakeholders.

In order to maximize the utilization of ARE technologies, NEPRA had announced NEPRA (Alternative & Renewable Energy) Distributed Generation and Net Metering Regulations, 2015 on Sep-

tember 1, 2015. These regulations provide the framework for implementing net-metering installations using solar and wind generation of up to 1 MW capacity. The first net-metering system of 1 MW capacity was installed at the Parliament House, Islamabad which has opened the door for net-metering based systems in all parts of the country. AEDB has initiated certification of service providers / vendors / installers of solar net metering systems under AEDB (Certification) Regulations, 2018 in order to facilitate the consumers and DISCOs and at the same time ensure quality of service and equipment. Applications of several companies were processed for registration under the said regulations. AEDB also carried out workshops and training sessions for capacity building of DISCOs on net-metering. For the purpose of easing the net metering business and streamlining activities for net metering connection, AEDB developed an online net metering module for automating the whole net metering process. As of June, 2020 more than 4500 solar installations with a cumulative capacity exceeding 62 MW (including the 1000 kW solar system at Parliament House) have been approved by NEPRA for net-metering.

AEDB undertook a number of supportive measures in order to promote ARE technologies and to attract private sector investments. Some of the supportive measures taken by AEDB are as follows: AEDB assisted State Bank of Pakistan in revision of SBP's Financing Scheme for Renewable Energy in order to make financing available for broader consumer categories and swift implementation. The facility has been extended till June, 2022. So far, six commercial banks namely JS Bank, Bank of Khyber, Habib Bank, Faysal Bank, Meezan Bank and Bank Alfalah have already announced their products under the SBP facility. AEDB proactively facilitated the RE power projects in achieving their project milestones and resolution of issues and impediments faced by the project sponsors from different public sector entities. Assisted World Bank in study for analyzing the integration of variable renewable energy in the national grid with the objective of increasing the share of renewable energy in the energy mix of the country. AEDB assisted the Ministry of Science & Technology and Ministry of Commerce on development of mechanisms for enforcement of the solar quality standards through announcement of SRO 604(I)/2019 requiring pre-shipment inspection (PSI) of solar

panels and related equipment consignments imported into the country. AEDB has engaged the World Bank for developing strategy for implementation of new ARE Policy 2019 and undertaking competitive bidding for renewable power generation including localization of the manufacturing technology and advanced R&D. Continued collaboration with UNIDO in promoting biomass technologies, cluster development for promotion of biomass in industries, energy management practices in industries, mapping potential for utilizing renewable energy applications in major export oriented industries and imparting training to energy managers. Siemens, with support of AEDB organized a workshop in November, 2019 on hybrid solutions and virtual power plant and power management manifesting advanced renewable technologies and solutions to the audience.

Twenty Four (24) wind power projects making a cumulative capacity of 1233 MW have achieved Commercial Operation and are supplying electricity to National Grid i.e. FC Energy Limited 49.5 Jhampir, Dist. Thatta 16 May, 2013, Zorlu Enerji Pakistan (Pvt.) Ltd 56.4 Jhampir, Dist. Thatta 26 Jul, 2013, Three Gorges First Wind Farm Pakistan (Pvt.) Limited 49.5 Jhampir, Dist. Thatta 25 Nov, 2014, Foundation Wind Energy - II Ltd. 50 Gharo, Dist. Thatta 10 Dec, 2014, Foundation Wind Energy - I Ltd. 50 Gharo, Dist. Thatta 11 Apr, 2015, Sapphire Wind Power Company Ltd 52.8 Jhampir, Dist. Thatta 22 Nov, 2015, Yunus Energy Ltd. 50 Jhampir, Dist. Thatta 16 Sep, 2016, Metro Power Company Ltd. 50 Jhampir, Dist. Thatta 16 Sep, 2016, Tapal Wind Energy Pvt. Ltd. 30 Jhampir, Dist. Thatta 7 Oct, 2016, Tenaga Generasi Ltd. 49.5 Gharo, Dist. Thatta 11 Oct, 2016, Master Wind Energy Pvt. Ltd. 52.8 Jhampir, Dist. Thatta 14 Oct, 2016, Gul Wind Energy Ltd 50 Jhampir, Dist.

Thatta 18 Oct, 2016, Hydro China Dawood Power Pvt. Ltd. (CPEC) 49.5 Gharo, Dist. Thatta 5 Apr, 2017, Sachal Energy Development Pvt. Ltd. (CPEC) 49.5 Jhampir, Dist. Thatta 18 Apr, 2017, United Energy Pakistan Pvt. Ltd (CPEC) 99 Jhampir, Dist. Thatta 16 Jun, 2017, Hawa Energy Pvt. Limited 49.735 Jhampir, Dist. Thatta 15 Mar, 2018, Jhampir Wind Power Limited 49.735 Jhampir, Dist. Thatta 16 Mar, 2018, Artistic Energy Pvt. Ltd. (formerly Hartford Energy Pvt. Limited) 49.3 Jhampir, Dist. Thatta 16 Mar, 2018, Three Gorges Second Wind Farm Pvt. Ltd. (CPEC) 49.5 Jhampir, Dist. Thatta 30th Jun, 2018, Three Gorges Third

Wind Farm Pvt. Ltd. (CPEC) 49.5 Jhampir, Dist. Thatta 9th Jul, 2018, Tricon Boston Consulting Corporation Pvt. Limited (A) 49.6 Jhampir, Dist. Thatta 16 Aug, 2018, Tricon Boston Consulting Corporation Pvt. Limited (B) 49.6 Jhampir, Dist. Thatta 14 Sep, 2018, Tricon Boston Consulting Corporation Pvt. Limited (C) 49.6 Jhampir, Dist. Thatta 11 Sep, 2018, Zephyr Power (Pvt.) Ltd 48.3 Gharo, Dist. Thatta 27 Mar, 2019.

Following twelve (12) wind projects with a cumulative capacity of 610 MW have achieved Financial Closing and are under construction, they are as follows with completion date: Master Green Energy Ltd. 50 Jhampir, Dist. Thatta Nov, 2020, Tricom Wind Power Pvt. Ltd 50 Jhampir, Dist. Thatta Feb, 2021, lakeside Energy Pvt. Ltd 50 Jhampir, Dist. Thatta Dec, 2021, Artistic Wind Power Pvt. Ltd. 50 Jhampir, Dist. Thatta Dec, 2021, Liberty Wind Power 1 Pvt. Ltd 50 Jhampir, Dist. Thatta Dec, 2021, Indus Wind Energy Ltd 50 Jhampir, Dist. Thatta Dec, 2021ACT2 Wind Pvt. Ltd 50 Jhampir, Dist. Thatta Dec, 2021, Liberty Wind Power 2 Pvt. Ltd 50 Jhampir, Dist. Thatta Dec, 2021, Metro Wind Power Ltd. 60 Jhampir, Dist. Thatta Dec, 2021, Nasda Green Energy Pvt. Ltd 50 Jhampir, Dist. Thatta Dec, 2021, DIN Energy Ltd 50 Jhampir, Dist. Thatta Dec, 2021, nd Gul Ahmed Electric Ltd 50 Jhampir, Dist. Thatta Dec, 2021.

The following Six (06) solar power projects of 418 MW capacity are operational: Q.A Solar Pvt. Ltd. (CPEC) 100 Quaid e Azam Solar Park, Bahawalpur 15 Jul, 2015, Appolo Solar Pakistan 100 Quaid-e-Azam Solar 31 May, 2016, Crest Energy Pakistan Ltd. (CPEC) 100 Quaid-e-Azam Solar Park, Bahawalpur 31 Jul, 2016, Best Green Energy Pakistan Ltd. (CPEC) 100 Quaid-e-Azam Solar Park, Bahawalpur 31 Jul, 2016, Harappa Solar Pvt. Ltd 18 Sahiwal 14 Oct, 2017 and AJ Power Pvt. Ltd. 12 Pind Dadan Khan 13 Dec, 2017.

The following eight companies / sugar mills having a cumulative capacity of 259.1 MW have achieved Commercial Operations Date (COD) and are operational: JDW Sugar Mills (Unit-II) 26.35 Rahim Yar Khan 12 Jun 2014, JDW Sugar Mills (Unit-III) 26.35 Ghotiki 3 Oct 2014, RYK Mills Limited 30 Rahim Yar Khan 24 Mar 2015, Chiniot Power Ltd. 62.4 Chiniot 28 Nov 2015, Hamza Sugar Mill Limited. 15 Rahim Yar Khan 10 Mar 2017, Layyah Sugar Mills 41 District Layyah 1 Dec 2017, Almoiz Industries Ltd. 36 District Mianwali 4 Jan, 2019 and One Chanar Energy Limited 22 Faisalabad 15 Feb, 2019. ■

**By effectively reducing circular debt, lowering power cost, increasing power demand & reducing forex drain we can make our power sector competitive:
Ahsan Zafar Syed**

*Exclusive interview of CEO,
Engro Energy Limited*

■ By Engr. Nadeem Ashraf

E U: How and when the Engro Energy came into existence and what are its basic aims and objectives?

Ahsan Zafar Syed: Engro Energy Limited's story goes back to 2008, when a fully owned subsidiary was incorporated by Engro Corporation – one of the largest conglomerates in the country – to develop power projects in Pakistan. Our first intervention in the energy sphere was launched in the form of Engro Powergen Qadirpur Limited (EPQL), which owns and operates a state of the art 217 MW power plant in Qadirpur and runs on permeate gas which was previously being flared. This unique aspect makes the Engro Powergen Qadirpur plant one of the few green power plants in Pakistan. Engro Energy formed the Sindh Engro Coal Mining Company (SECMC) in collaboration with the Government of Sindh and other corporate partners to unearth and mine the 7th largest lignite coal reserves in the world. With an estimated reserve of 175 billion tons, Thar coal has the energy potential equivalent to combined oil reserves of Saudi Arabia and Iran. Developing and unearthing these reserves in Thar are a first for the country with EEL becoming one of the only private sector entity with the engineering capability, capacity and expertise to operate and optimize an open-pit mine.

Soon after commencing work on the Thar coal mine, the Company ventured into establishment of 2x330 MW mine-mouth power plant in Tharparkar





through a dedicated subsidiary, Engro Powergen Thar Private Limited (EPTL) which successfully demonstrated proof of concept and realized the dream of Thar coal by injecting 660MW of electricity in July 2019. In addition, Engro Energy also owns Engro Energy Services Limited (EESL) which manages two 50MW wind power projects at Gharo, Sindh.

EU: How was the experience of Engro Energy to do the project of Thar coal for the first time for power generation?

AZY: For Engro Energy, the Thar coal mining and power projects have been in the making for almost a decade and there are very few private sector organizations which have the patience and the bench-strength to develop such mega-scale, multi-billion dollar projects over such time periods. When we first started the Thar coal power and mine projects, we took a leap of faith and embarked on developing this indigenous resource whilst taking on the burden of hope of the nation. This was a unique and never-been-done before project and hence had a number of risks and unknowns associated with it.

Government of Sindh played a catalytic role in the development of the project by providing all necessary support for the execution of the project including provision of infrastructure and ancillary services such as road network; water schemes; and airport amongst others. Similarly, the Federal Government also extended support for the project to ensure that it reached its successful culmination.

The reason why these projects are important for the entire country is primarily because the Thar coal mining and

power projects have the potential to produce affordable, low-cost and economical energy for the country. Since its commercial operations date (COD) on July 2019, Sindh Engro Coal Mining Company (SECMC) – a majority owned Company of Government of Sindh and managed by Engro Energy – unearthed and supplied a total of approximately 4 million tons of coal to Engro Powergen Thar Limited (EPTL) which generated approximately 4,305 GWh of electricity powering 1 million households and benefitting around 7 million Pakistanis across the country. In addition, if you compare it with RLNG and imported coal, the project has resulted in saving approximately USD 142 million and approx. USD 90 million respectively. However, the aspect that sets the Thar coal project apart from similar scale projects is its inherent focus on social work and inclu-

sive development. Throughout the project the Thari community has been kept at the centre of project planning, where meaningful initiatives and interventions that offer increased and better socio-economic opportunities to the Thari communities have been implemented. These interventions have been undertaken by SECMC through its CSR wing – the Thar Foundation – a dedicated foundation to help and improve the communities in Thar. The Foundation works in line with the United Nation's Sustainable Development Goals Framework (SDG) and has been operational since before commencement of commercial work on the project. By focusing on high impact areas – such as education, health, livelihood opportunities, drinking water availability – Thari communities continue to flourish with access to improved quality of life based on fundamentals of self-reliance and self-empowerment.

EU: What is your viewpoint as to how the energy sector can be revived and the government's focus areas in this regime?

AZY: Engro Energy has a deep domain expertise in the energy vertical and we have leveraged this competency to develop insights and recommendations on how to improve the performance of Pakistan's energy sector. At the forefront, there is a critical need to relook and re-evaluate decade long policies and decisions that have impacted our energy sector overall and a careful analysis tells us that there are five core challenges that the industry faces. These include circular debt, excess capacity, low demand, high





cost, and forex drain.

However, of all these issues currently faced by the sector, circular debt remains a chronic problem and a critical challenge for the entire sector. To give you an understanding the circular debt as of June 30, 2018 was Rs1.2 billion which has increased to Rs. 2.2 billion as of June 10, 2020. It is important to understand that circular debt grows because of four root causes, the most critical of which is DISCO (distribution companies) inefficiency. Other factors that compound this issue includes the time-lag taken in tariff adjustments, failure of the government to timely disburse subsidies, and the high servicing costs of existing debt and late payments. Given that the DISCOs continue to lose substantially more power than their tariffs allow, they result in loss-making institutions for the government, thereby adding on to the overall stock of circular debt. Infact, if DISCO operations are not improved the inefficiencies will add an additional PKR 1.5 trillion to the stock by 2025 – taking the total circular debt to approximately PKR 4 trillion by 2025. However, we can turn this around by focusing on key fundamentals such as involving the provinces in the turnaround process and in DISCO ownership & management; investing in infrastructure; improving technical and organizational capabilities and lastly providing regulatory support.

The second critical challenge faced by the power sector is that of excess capacity. Even if Pakistan was to witness reasonable growth rates in the next few years, we have adequate supply present till at least 2025. Given the deflated demand in the country, the economy will remain relatively depressed through the years and consequently, the electricity demand to GDP would also remain low

thereby causing excess capacity. This issue stems directly from lack of proper and independent power planning which should focus on both the supply-side and demand-side parameters which unfortunately in our case has not been done effectively.

This brings us to the third challenge of the sector which is somewhat linked to excess capacity – the issue of low demand. The demand of power in Pakistan has lagged behind the GDP growth rate, whereas it is supposed to be the other way round. In our case the growth in electricity demand has come primarily from household consumption and increased activity of the services (tertiary) sector – unlike the growth in industrial activity. Consequently, the increased demand, led by sluggish growth in industrial sector, and followed by a significant captive generation base (almost 50% of the total industrial demand) in the large manufacturing industries in the country have not induced the required growth in our power demand – further deteriorating the issue of excess capacity. Therefore, the need of the hour is to shift industrial captive power generation to the grid; encourage gas-to-electricity substitution for non-industrial heating segment; and take measures to increase industrialization so we can stimulate growth in electricity demand.

The fourth issue faced by the sector is the high cost of electricity. Electricity prices in Pakistan are the highest driven primarily due to capacity payments. Therefore, to safeguard against uncontrolled increases in the power tariffs, we recommend that the IPP debt should be restructured from 10 to 20 years followed by ensuring competitive bidding for all future projects.

Lastly, it is important for Pakistan to make use of its indigenous resources and renewables to diversify its energy mix and reduce forex drain. Going forward, it is recommended that the government evaluates using Thar coal blend with imported coal to increase indigenization and all future capacity additions should also be based exclusively on indigenous fuel and renewable energy.

By working on these areas and the recommendations, I just highlighted I am confident that we can execute a turnaround in the energy sector. By effectively and efficiently working on reduction in circular debt, lowering power cost, increasing power demand and reducing the forex drain we can ensure that the power industry becomes competitive and plays an effective role in the growth of the country and its citizens.

EU: What are the plans of Engro Energy to explore the option of renewable energy production in Pakistan?

AZY: As I mentioned earlier Engro Energy is focused on providing effective solutions to the energy vertical of the country and through its services arm already manages two 50MW wind power projects at Gharo, Sindh.

However, in the field of renewables, we feel that Balochistan is the next big frontier and will be the energy capital for renewables in the country. The provinces' coastal belts along with its solar and wind corridors provide a sizable renewable generation potential to Pakistan. According to experts Balochistan houses three of the world's best wind corridors in the world alongwith 04 of the world's best sites for solar radiation including Kuchlak, Panjgur, Khuzdar and Chagai.

Given this abundant potential, Engro Energy continues to scope and seek out opportunities in the renewables domain with a specific focus in Balochistan. To this effect, EEL had earlier secured LOIs for a 500MW wind power farm in Balochistan and we have already initiated wind data collection for the development of the 500 MW wind power project with two wind masts currently commissioned in Chagai, Balochistan. Similarly, LOIs have also been secured for 350MW solar power projects in Balochistan. Going forward we will continue to maintain focus and evaluate the renewables sector to make investments whenever and wherever feasible. ■

First ever hydro power project under CPEC is near completion - Deng Siwen

*Exclusive Interview with CEO & Chairman,
S K Hydro Pvt Ltd*

8 84 MW Suki Kinari Hydropower Project is run-of-the-river hydro-power project located in District Mansehra, Khyber Pakhtunkhwa. This is one of the largest hydropower projects in the private sector in Pakistan and has China Gezhouba Group Company (CGGC) as its main sponsor and lead investor. This project also listed as one of the highest priority 'Early Harvest Projects' in the strategic China Pakistan Economic Corridor (CPEC). Recently, Energy Update had an interview with the CEO and Chairman of SK Hydro, Deng Siwen

■ By Halima Khan

EU: What are the details of first ever hydro power project SK Hydro Project?

Deng Siwen: SK Hydro (Private) Limited is a special purpose company formed to develop, construct, own, operate and transfer the 884 MW Suki Kinari Hydropower Project under the Government of Pakistan's Power Policy 2002. SK Hydro's Main Sponsor and Lead Investor is China Gezhouba Company Limited with Co-Sponsors M/s Haseeb Khan (Private) Limited. SK Hydro completed all formalities and achieved financial close on December 31, 2016 becoming the largest private sector hydropower project in Pakistan and the first hydropower project in CPEC to achieve this important milestone. Since then, the project is under construction and after 30 years of operation, we will transfer the project to the Government of Khyber Pakhtunkhwa.

The Project is a Run-of-the-River project based on the Kunhar River in District Mansehra of Khyber Pakhtunkhwa with an installed capacity of 884MW. It is envisaged to have 4 turbine units with a capacity of 221 MW each, expecting to generate a total of 3,129 GWh of annual energy. This is a high head project with a head race tunnel of 22.6 km. The construction period was envisaged to be 6 years.

EU: Is your company investing in other projects in Pakistan as well?

DS: China Gezhouba Group Company is based out of Wuhan



in Hubei Province of China and started as a construction contracting company. CGGC specializes in hydropower projects and has worked on the construction of many mega projects in China and abroad including the Three Gorges Dam, the largest hydropower Project in the world. Suki Kinari is CGGC's first investment project in Pakistan wherein it intends to invest approximately \$500 million. CGGC is also the lead investor and major shareholder of 700 MW Azad Patan Hydropower Project in Azad Jammu & Kashmir which is expected to achieve financial close by the end of this year.



EU: How the construction activities are progressing?

DS: Construction activities were progressing well and we have completed about 50% of the Project already. The work on the underground cavern for the powerhouse is complete and the work on the head race tunnel is underway. But, as you know, due to the outbreak of Covid-19, the progress has slowed down recently.

EU: What has been the effect of Covid-19 on the project progress?

DS: As you may be aware, the spread of Covid-19 had severely disrupted the supply networks around the world and upset schedules not only for our project but almost all private and public sector entities around the world. In Pakistan, we have to deal with long quarantine times and shortage of labour and mandatory social distancing. While this has affected our work progress, we are committed to follow all national and international SOPs to combat the spread of the virus and have relevant measures in place at our work sites. We are working hard to mitigate these effects but since this situation is ongoing, the final affect remains to be seen.

EU: Does SK Hydro perform any community activities?

DS: Yes, we are very keen to have a

good impact on the community in which we operate. We always endeavor to promote our local communities and encourage them to be successful. The project construction has brought a lot of positive economic development in the area including hiring of thousands of local labour, lease of local land, general procurement from local vendors etc. Additionally, we have been active in promoting the youth in our community wherein we have organized a drawing and speech competitions for schools in the valley. Children were asked to create original drawings and prepare English language speeches wherein more than a hundred children participated and win-

ners were awarded prizes which were distributed by distinguished local leaders.

EU: How is your personal experience of working in Pakistan?

DS: My experience has been very good indeed. I have been personally working with CGGC in various positions for the last 12 years in Pakistan but in my capacity as the CEO of SK Hydro, have really come to appreciate the people of Pakistan, both in the public and private sector. The brotherly relations between the Governments of Pakistan & China is evidence in the working relation between our Chinese team and Pakistani team working for the Project. ■





Dealing with the KE muddle

By Syed Akhtar Ali

Karachi is passing through one of the worst power crises in its history. People are now demanding that the KE contract either be revoked or amended so as to correct the situation. In the minds of many people, KE has a long history of profit maximization at the expense of consumers. Nepra had faced difficulty with it in making it utilize its furnace oil power plants which it has used only reluctantly, causing hardship to consumers. Nepra has fined it on this issue earlier too. And KE has managed to create a furnace oil issue again which was resolved by the government.

There are plans to privatize other DISCOs in the country. In addition to relieving the government from the financial burden of DISCOs, the expectation is higher efficiency and service level and consumer satisfaction and not otherwise; unfortunately, KE's performance does not present a good example. What are the other options to bring about a workable solution of the KE problem other than discontinuing its contract as has been demanded by the general public. Let us examine what can be done in this respect.

Load shedding in such hot and humid weather is highly painful in addition to causing economic losses of industry shutdowns. It is not a result of any accident and so cannot be condoned or

ignored. It is either dereliction of duty on the part of the managers of KE, lack of required management skills, result of uncertainties in KE or an act to force the government to accept whatever concessions may be in the process of negotiations. It may be all of this. In most countries, utilities are fined heavily and consumers are monetarily compensated. In our case, Nepra does this sparingly and pockets the income itself (although for understandable reasons).

Unlike the other DISCOs in the country, KE is a vertically integrated company meaning that it has all three functions combined - generation, transmission and distribution. And it is independent and almost isolated from the country's larger NTDC system. This problem of KE has to be resolved before any improvement is possible. Accepting and keeping the current status of KE is negating what the government of Pakistan has been doing with the power sector for the last more than two decades. The monolith of Wapda has been fragmented into separate organizations, separating generation, transmission and distribution functions. Separation of these functions has been accepted as the cornerstone of energy reforms in most countries of the world. It may be wasteful to try to prove in this short space the benefits and rationale of separation of the three functions.

KE was privatized hastily in special

circumstances when its distribution losses reached an unimaginable level of 40 percent. The government of the time thought it appropriate to privatize it immediately without first restructuring it. Special circumstances have occurred again. Abraaj and its founder chairman who legally control and manage KE are under bankruptcy and facing legal charges which could lead to their liquidation. This may have consequences for KE and a risk that KE may go into unknown hands. However, there is an offer from Shanghai Electric for purchasing majority shares of KE and controlling and managing it.

The fatal mistake of not restructuring KE must be repeated again. The contender for the KE take-over has strong backing. The take-over deal could not go through due to receivables and other financial issues that could not be sorted out yet; otherwise, it would have been implemented a long time back. Now legal issues of liquidation proceedings may delay it further. This gives time for the government to think through the problem and sort out its issues before handing it over to its new owners.

Karachi has a complicated political profile. Distribution companies come in close contact with pressure groups and factions which may create a very difficult situation. It is hoped that the government has adequately considered and weighed

the options. In any case, why would we need foreign investment in DISCOs (and restructured KE), anyway? Profits are taken away and we are faced with a current account deficit. Local investors should be capable of handling these companies - including KE.

While the whole country has power surplus, Karachi is in deficit. At some point in time, the people of Karachi and their politicians may bring up a political issue. Do they have rights in the resources and development of the country, the legal issues of KE's responsibilities apart? Political mantras can be created among common people who do not know and understand the problems and the legalities. All they know is that they are suffering under load shedding while the country is flush with electricity. However, the fact is that the government has done

Restructuring does not mean confiscation of any sort. The proposed formula is that KE separates its generation facilities into a separate company and starts acting as an independent IPP with all the benefits and consequences that an IPP have. It loses monopoly in generation but may continue to get preference in installing generation facilities. The transmission system may be bought out by NTDC or STDC under arrangement of KE receivables. Separation of the three functions is feasible and must be initiated without losing further time.

There are other proposals and options, some radical and some not so radical, pertaining to eliminating KE's monopoly as consumers in Karachi are fed up; geographical splitting to consumer choice, wheeling and retail competition. Geographical splitting of DISCOs

and transmission cooperatives. Electric Cooperatives' contributions to the American GDP are \$88 billion and they contribute \$22 billion in taxes. In a no-owner and liquidating situation, the cooperative option deserves serious consideration.

It would be important here to remind policymakers that these issues should be sorted out before the handover of KE to a foreign party which may oppose later-day changes in the electricity regime, and legal complications may emerge causing political repercussions with important friends of Pakistan. The buyer should also be informed of the possible and potential changes that may occur in the electricity regime. ■

The writer is a former member of the Energy Planning Commission and author of 'Pakistan's Energy Issues: Success and Challenges



all that was possible. It has allocated electricity for KE but it cannot take it due to the lack of transmission facilities that KE had to establish. KE has a vested interest in keeping itself isolated from the national grid in order to be able to install its own generation. There are formal and informal gains in installing new projects. KE has, therefore, all kinds of generation proposals involving coal and LNG.

How are generation, transmission and distribution to be separated? There are complications of KE's investment in generation, whatever, little it may be. And there is a special tariff formula which combines the three functions. Fortunately, the arrangement is ending in 2022 and by 2023 a new system may have to be negotiated. Thus, this is the right time to restructure KE.

is among the policy proposals at Pakistan's level, although KE has not been considered for this. Consumer choice and retail competition is part of the proposed CTBCM (Competitive Trading Bilateral Contracts Markets). There are some unresolved issues in it and it may take some time, however, for its finalization and implementation.

If nothing else, a cooperative may also be considered, giving the people of Karachi space to participate in KE management, and share profits. There are many cooperative models working efficiently in the US; in fact, five percent of the electricity in the US is generated by co-ops and have 13 percent market share in electricity sales. Forty-two percent of electric distribution lines in the US are owned by cooperatives; there are 831 distribution cooperatives and 62 gener-

Who Says Retirees are not Naughty! ??



One Whatsapp Retirees group decided to meet over lunch.

All 15 of them met and had good food, drinks and dessert. Then the bill arrived.

All 15 of them rushed to grab the bill for payment.

There was a scene with everyone fighting to take the bill.

The Hotel Manager saw this and appreciated the love and good intention of each to pay the bill.

Finally one among the 15 said : *The bill has to be paid, but everyone wants to pay it. No one wants the other to pay. So we shall organize a race. All must take a round of hotel premises and whoever comes first to the counter, shall pay the bill.*

The manager was amazed to see such a decent and generous group wanting to pay the bill.

Manager said he can blow the whistle and all can run around hotel. Whoever comes first shall pay the Bill.

Today is the 3rd day and no one has reached the counter yet !

Dedicated to All The Retired Friends |

Fate of Renewables and the RE Policy 2019

While the new RE Policy has finally seen the light of the day, the fate of the renewable energy sector has been hanging since so long in this country and has still to see the same. All the hopes should be kept alive on the eve of the approval of RE Policy 2019 by Council of Common Interests (CCI), however a cautious sip of rationale combined with the perceived apprehensions underneath will definitely help us keeping our feet on ground amidst our great expectations. The Policy document at the very onset is covered by a beautiful wrapper of anticipated targets i.e. 20% share of RE in the electricity mix by 2025 and 30% by 2030, which deserves appreciation. But in order to understand the crux of the story, the reader of the policy document has to undergo a complex web of verbosity and serpentine twists and turns of the policy provisions. While leaving everything upon our valued readers to decide about the prospects of RE Policy 2019, it will be appropriate to highlight some of the key facts surrounding as well as contained within this policy document.

As a matter of fact, the term of the previous RE Policy 2006 has never been fixed at the time of its approval by ECC and in the same year. It was not until year 2013, when ECC while approving the Framework for Power Cogeneration 2013 (Bagasse/Biomass) as an addendum to the RE Policy 2006 extended the RE Policy 2006 for additional five years from the date of the decision, i.e. till 8th March, 2018. Such a controversial decision has been unprecedented, rather unreasonable vis-a-vis the history and logic of policy making; fixing the validity of policy for five years ahead when such fixation of the term has never been demanded by the parent organization i.e. AEDB (Alternative Energy Development Board). How come the approving body can straight away predict the obsolescence of the policy after the next five years? In the absence of logic and technical sense, such master strokes of disconformity and confusion appear to lay the foundation of forthcoming flawed decisions which are truly regretful.

The above is the anomalous background of the decision for converging towards New Re Policy 2019. Quite interestingly, the decision to rescind the previous policy and to move for the new one has neither been proposed from the top side of the incumbent government nor from the AEDB and this shift is broad-

By Amjad Ali Awan



ly devoid of any technical analysis and due validation on record. Under a normal mode of policy making, certain policy actually evolves through a well-structured process of chipping off the undesirable provisions and so on the inclusion of the desired ones during different intervals of time. A shift towards new policy becomes only inevitable when the previous totally falls short towards achieving the desired ends and it becomes extremely necessary to change the course. This has never been the case with the previous RE Policy 2006, which was already on its way of achieving the yardsticks of desired outcomes and targets successfully.

The most mentionable provision of the RE Policy 2019 that actually differentiates it from its previous counterpart is the introduction of the blockade of all tariff options i.e. Feed in tariff (FIT) and Cost Plus Tariff for RE projects, leaving only the path of auctions or bidding for these. However, the same pathway of auctions and competitive bidding was already well enumerated within the RE Policy 2006 in the form of 'Solicited Projects', which altogether defies the need for RE Policy 2019 and exposes the weakness within policy making process.

The RE Policy 2019 vindicates only the pathway of auctions for the mature RE Technologies i.e. Wind, Solar, Bagasse etc. On most of the accounts, the auction

mode of procurement suits the interconnection of the big chunks of power capacity within the system, whereas the prevalent COVID-19 crisis has caused an unparalleled suppression of the energy demand for the foreseeable future and we are already undergoing a surplus capacity mode. Secondly, accounting to COVID-19 pandemic, the economy is already undergoing a record plummeted phase, whereas the IGCEP (Indicative Generation Capacity Expansion Plan) of NTDC (National Transmission and Dispatch Company) shows positive growth rates of economy i.e. 4.5, 5.5 and 7 for the low, normal and high projections, which are unrealistic in the given situation. This clearly shows that the flickering wrapper of the RE Policy 2019 i.e. the target of 30% renewable in the system seems hard to be attained and the above figures are surely to be revisited and reviewed by NEPRA. Under these circumstances of low economic growth and suppressed energy demand, how come the exclusive option of auctions and its carrier RE Policy 2019 fits into the jigsaw of ground realities?

Moreover, the specific availability of cost plus tariff mode only for the Government to Government (G to G) procurement of projects not only defies the norms of fair-play, rather seems to evaporate the trust of investors blatantly. With the visible and standing primacy of G to G arrangement in the RE Policy document, any unforeseen political bargain if strikes with any country may ultimately seal the fate of open market investment prospects; especially under the suppressed demand situation. While adding insult to injury, the tenure of the Energy Purchase Agreement (EPA), the continuation of fiscal incentives for investors and the simplicity of the procurement process have been significantly put on uncertain and unpredictable grounds, that leaves nothing but the bleak horizons for the uplift of the RE sector in the country. Furthermore, the stakeholders of RE sector in Pakistan will be justified if they question the exclusivity of the blocked tariff options only for RE projects and not for other fossil fuel based thermal projects. In nutshell, although the RE Policy document seems to exhort the preeminence of renewable energy in Pakistan, however a convoluted web of ifs and buts as well its irrelevance with the ground realities seems to ruin this delectable narrative. ■



"Bridging Energy Needs for Sustainable Development of Pakistan"

PGNiG, also known as Polish Oil and Gas Company (POGC) operates in Pakistan as a branch office of PGNiG Group Poland, which has a majority shareholding of the Polish Government.

The Company's core business includes exploration and production of natural gas and oil and their import, storage, sale and distribution as well as generation of electricity and concentrated on exploration projects carried out in Poland and abroad. Polish Oil and Gas Company is a leading, state-owned company, one of the biggest multi energy company in Poland.



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We are focusing on increasing hydrocarbon reserves in Pakistan - Tomasz Nalecz

Exclusive Interview of Managing Director, PGNiG Pakistan Branch

By M. Naeem Qureshi

Polish Oil and Gas Company (PGNiG) Pakistan Branch is striving hard to operate as a project-oriented entity aiming at becoming progressive organization while adjusting to business environment in Pakistan. In near future our focus in upstream business is to increase hydrocarbon reserves in Pakistan. We are committed to acquire new blocks and licenses in Pakistan, this was stated by the Managing Director of PGNiG Pakistan Branch, Tomasz Nalecz while talking to Energy Update in an exclusive interview recently. He continues to say that...

EU: Please share a prelude to your company and yourself

Tomasz Nalecz: I currently live in Islamabad and work at Polish Oil and Gas Company (PGNiG) Pakistan branch as managing director.

The Company's core business includes exploration and production of natural gas and oil and their import, storage, sale and distribution as well as generation of electricity. It is concentrated on exploration projects carried out in Poland and abroad.



EU: How do you elaborate your personal leadership secrets for leading a team?

TN: A leader must know when to be decisive, and when to take a step back. I am confident that I can navigate my team's abilities through establishing trust within my team. I always give my team stretched targets to enable them to perform out of their comfort zones. I believe true leaders are visible and approachable to their teams and bring the best out of their teams.

EU: Where exactly does Pakistan need PGNiG? Any new trends in the oil sector you can see after COVID 19?

TN: Oil market is gaining its momentum back after witnessing a dip in its cycle both after the crash of the oil market and Covid 19 pandemic spread. This feel-good factor seems to have returned and is bringing a lot of competition globally as well. Particularly, in case of Pakistan, we are looking forward to play-

ing our role towards major contributions in the energy sector. Recent speedy developments in CPEC are opening new avenues for investment. We are constantly keeping an eye on these shifting trends and will shape our organizational strategy for widening our portfolio accordingly.

EU: How strictly do you manage risk management and especially how do you prepare your team for this crucial task?

TN: We consider all risk factors internally and externally while devising our business plan or strategy. Furthermore, we maintain our risk registry as well with methodologies to mitigate these risks. Risk management is part of project management in PGNiG and our team easily identifies, quantifies and has the risks under control.

EU: Please enlighten our readers about PGNiG research and development initiative?

TN: As part of PGNiG Group 2017-

2022 strategy, the company will spend a significant amount on research, development and innovation. Some of those projects are already under way with focus on building an efficient organizational and management model across the highly complex structure of the PGNiG Group. These projects will include optimization of the Group's operating model and rollout of an efficient management system.

EU: How do you forecast PGNiG business growth in emerging market of Pakistan?

A: In line with Group's strategy, PGNiG Pakistan Branch strives to operate as a project-oriented entity aiming at becoming progressive organization while keeping control of the volatile situation in Pakistan. In near future our focus in upstream business is to increase hydrocarbon reserves in Pakistan. To achieve this we will be devising a very aggressive strategy of acquiring new blocks and licenses in Pakistan. We are looking for opportunities on a government-to-government basis as PGNiG is a state-owned company and the government of Pakistan does offer potential blocks for exploration on a G to G basis. PGNiG Pakistan Branch is also looking for growth opportunities to farm



with Pakistani state owned companies.

EU: What are the key elements needed to make a successful organization as per your vision?

TN: Strategic planning is the most important element of making a successful organization and this planning should be holistic including all the aspects from people to processes and to product. However, speaking honestly, corporate culture is more important than strategy. Because if organizational culture is not driven by organization values, all strategies would fail. As they say - culture eats strategy for breakfast.

EU: How do you face the challenges and transform them into opportunities?

TN: As I already mentioned we operate in an uncertain world and challenges are not a new thing for companies. I personally take challenges as motivation since these give us a chance to reflect upon whether we need to stick to our basics or need to re-strategize. We periodically run SWOT and PEST analysis to assess internal and external environments. I believe that a great leader faces challenges and navigates the ship, even when the skies darken. ■

Advancing the development of small hydropower projects

PPIB is focussing on developing small hydropower projects (SHPPs) after delivering various success stories in materializing larger hydropower projects as well as other technologies. This corresponds with the resolve of the government to concentrate on clean, green and affordable energy. This was stated by Managing Director PPIB, Shah Jahan Mirza while chairing a meeting attended by all key players of the federal and provincial/AJ&K governments including Central Power Purchasing Agency Guarantee Limited (CPPA-G), National Transmission and despatch Company (NTDC), relevant Distribution Companies (LESCO, FESCO, GEPCO, and PESCO), Pakhtunkhwa Energy Development Board (PEDO), AJ&K Private Power Cell (AJK-PPC), Punjab Power Development Board (PPDB) along with the sponsors of various SHPPs. The main agenda of the meeting was to review the progress of Small Hydropower Projects (SHPPs) being developed in Pakistan/AJ&K through provincial/AJ&K governments with private sector financing and devise mechanisms to remove any bottlenecks and delays.

Previously a major breakthrough was

achieved at the end of last year for the long stalled SHPPs when PPIB Board which is chaired by the Federal Minister for Power Omar Ayub Khan approved a transparent mechanism for processing of these projects and issuance of Letters of Support by PPIB with the consensus of CPPA, NTDC and Provincial/AJ&K representatives. Accordingly, PPIB has issued Letters of Support (LOS) to the first two projects in AJ&K namely 7.05 MW Rialil and 8.0 Kathai. Both these projects are under financial closing phase and progressing satisfactorily, which is a good beginning for harnessing hydropower potential at smaller sites. Other SHPPs were discussed with the relevant project sponsors to enquire of any bottlenecks being faced by them so that they could be immediately resolved. As a process, the sponsors have to fulfil certain prerequisites at CPPA-G, DISCOs, NTDC and NEPRA levels before issuance of Letter of Support by PPIB. However, the sponsors reported that there are some issues in processing of proposals before reaching PPIB. These issues were discussed threadbare and need was felt for the DISCOs, NTDC and CPPAG to streamline

their processes for expeditious approvals. The representatives of CPPA-G, NTDC and various DISCOs assured to extend their full cooperation and disposal of the cases of sponsors of SHPPs in a timely manner. MD PPIB stated that all the processes at PPIB are fully streamlined and PPIB processes all project proposals without any delays.

Shah Jahan Mirza said that PPIB, being a one stop organization for facilitating investments in the power sector, is currently handling a portfolio of 12476 MW, out of which hydropower projects are of around 6500MW, with the largest being 1124 MW. From these hydropower projects, 3 projects of 333 MW are already commissioned while 2 projects of 1504 MW are under construction and 2 projects of 1824 MW are under Financial Closing. The progress being made in development of SHPPs which will be up to 50 MW will help in facilitating the local and small investors while contributing to the economic development of remote areas. Further, these projects will be connected in DISCOs network thus saving huge cost on construction of long transmission lines ■

PGNiG pursuing to increase its footprint in the Pakistani upstream sector

PGNiG, also known as Polish Oil and Gas Company (POGC) operates in Pakistan as a branch office of PGNiG Group, which has a majority shareholding of the Polish Government. PGNiG began its operations in Pakistan in May 1997 and has been conducting petroleum exploration and production activities as an Operator since then. Before acquiring the current Kirthar Concession (Block No. 2667-7), PGNiG operated and carried out exploration activities in four other Concessions namely Khanpur West, Sabzal, Mekhtar and Sabzal South. PGNiG has also held a 40% Working Interest in an exploration block in Nawabshah, Sindh as a Non-Operating Partner. PGNiG acquired the Kirthar Block, located in District Dadu (Sindh), as Operator in 2005 and Pakistan Petroleum Limited (PPL) farmed-in the Block



as a Joint Venture Partner in 2006. PGNiG made the discovery of Rehman-1 well in 2009 and started extended well test (EWT) production from it in 2013 hence, becoming the first "Tight Gas" producer in Pakistan. The appraisal phase for Rehman gas field was successfully concluded in August, 2015 whereby commerciality of the field was declared. The Government of Pakistan awarded a Development and Production Lease over Rehman field in 2017 for a period of 25 years.

In 2015, PGNiG made a second discovery by drilling Rizq-1 well in the Kirthar Block. This year also earmarks the commissioning of the Rehman Production Facility (RPF) which was constructed to process the produced gas from Rehman and Rizq fields. The facility was inaugurated by the then minister for petroleum and natural resources on November 17, 2015.

PGNiG more than doubled its production from the Kirthar Block when gas from Rizq field was added to the national grid in November 2016. In 2017, processing capacity of RPF was enhanced from 15 to 40 mmscfd to incorporate the anticipated production from Rizq field.

Appraisal program of the Rizq field was completed in 2018 following the declaration of commerciality and grant of D&PL over Rizq field for a period of 25 years.

Until now, PGNiG has drilled 12 wells in Kirthar Block comprising 3 exploratory, 3 appraisal and 6 development wells. PGNiG has thus far invested ~US\$280 million in Pakistan in exploration and production activities in all of its existing and previously held concessions. Out of this, ~US\$235 million have been invested in Kirthar Block mainly on exploration, drilling of the wells, construction of Rehman Production Facility & its augmentation and ~50 km of sales gas transport pipeline. The current production from the Block stands at ~ 55-60 MMScfd which is planned to be increased in the first stage up to ~ 80 MMScfd with continued development of existing fields and other exploratory prospects in the Kirthar Block. The RPF was augmented in September 2019 to cater for the processing and dehydration requirements of the increased production.

PGNiG is actively pursuing development plans for the Rehman and Rizq fields in Kirthar Block and aims at increasing its footprint in the Pakistani upstream sector. PGNiG hopes that the investment climate in Pakistan to be more conducive for business and is committed to contribute to its energy security. ■



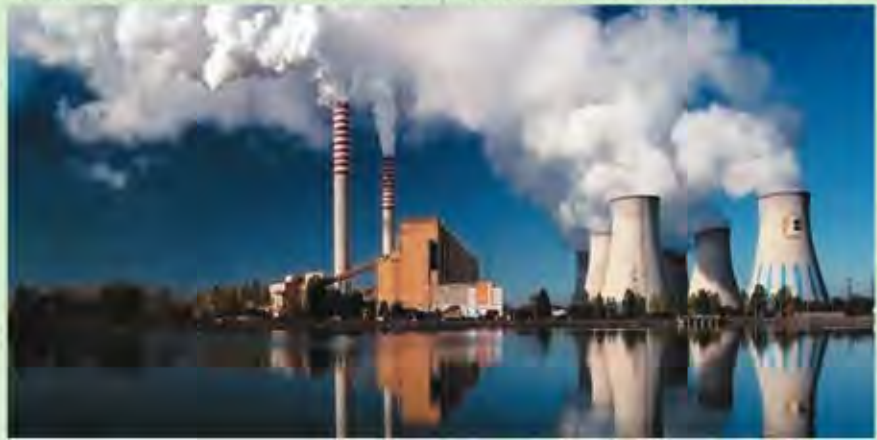
Pak roadmap for next 3 years - explosion in industrialization, jobs

Energy is one important in EEEE (education, economy, energy, environment). It is the lifeline of any country. Needless to say, energy sufficient countries have been able to be in the category of welfare states and able to provide prosperous life to their commoners with high per capita energy consumption. A few countries have all going in their favor when it comes to EEEE; and Pakistan is one of them. Pakistan has staggering resources of energy such as hydro 60,000 MW, solar 150,000 MW, crude oil 27 billion barrels, gas 700 trillion cubic feet, LPG 150 million tons, coal 185 billion tons, wind 10,000 MW, enabling policies, young strong human resources and competent technical human resources. Self-sufficiency is not just a slogan but a way to change by the government, thus reducing input cost to the manufacturing & services sectors, explosion in job creation, industrialization and exports, built up of FEX, reduction in inflations and dollar rate; Real ease of business, rationalizing electricity and gas tariff for the industrial and services sectors with a whopping 40% reduction, KIBOR at 2% for industrial and services sectors, removal of upfront GST on diesel, electricity, Sui Gas, RLNG for the export industry, R&D funding tax deduction to the HEC universities, PIDE and think tanks to be 1.5 times and reduction in income tax by 10%.

The country needs to move on to Pak

By Razi Raziuddin

rupee tagged infrastructure fee/IRR for IPPs whether hydro, coal or RLNG based, oil and gas exploration and production, refining, port terminals, cross country pipelines, transmission lines or on-shore terminals. The reason Pakistan based



IPPs in 1990 on dollar with WB guarantees was that Pakistan needed a confidence build up for private sector equity and debt, likewise other infrastructures needed foreign expertise. 30 years are enough to change the gears from dollar to PKR. For a few foreign investors (mostly off-shore companies or Pakistani origin and Pakistani diaspora), the economy cannot be kept hostage to dollar. The government needs to give local engineers and engineering firms a chance. The public sector needs to rationalize technical qualification criteria for awarding contracts to consultants and contractors; a separate PPRA rules need to be newly drafted for the public sector commercial enterprises (PSE) from the present ones, as the present ones are meant for ministries, divisions, departments and never for commercial enterprises. NITB (National IT Board) needs to play a vital role in IT upgradation of all the public sector entities to bring much needed time saving in the industrial and services sectors. Due to Covid-19 much of the government has been on standstill; which cannot continue any more. Pakistan Bureau of Statistics needs to bring out massive data hidden in the public and private sector for better planning, monitoring

and sectoral efficiency to reduce energy intensity.

A number of plants, equipment and machinery which are input in determining IRR for infrastructure by NEPRA, OGRA and DG Oil offices. Pakistan's engineering and manufacturing sectors have been stagnant due to braking clauses by FBR, SECP, SBP, NEPRA, OGRA, PPRA, Pakistan Engineering Council PEC

and hefty fee structures. These organizations are not profit centers but service providers; one regulator entity had a profit after tax of around Rs180 million in one FY; why? A number of public sector organizations don't even publish their annual accounts on their websites for public scrutiny, while a number of major public sector companies are delinquent as their annual accounts having either not been made or approved by AGMs for ages; a sorry affair because their BODs are heavily paid and have heavy personalities. The government through CCP and EDB needs to perform quick studies to identify why a profit after tax of around Rs180 million in one FY; why? A number of public sector organizations don't even publish their annual accounts on their websites for public scrutiny, while a number of major public sector companies are delinquent as their annual accounts having either not been made or approved by AGMs for ages; a sorry affair because their BODs are heavily paid and have heavy personalities. The government through CCP and EDB needs to perform quick studies to identify why the road to indigenous engineering design and manufacturing is bumpy? ■

We spend billions of dollars to find life on other planets



...and trillions of dollars killing the life on this one

Govt failed to provide guidelines to oil refineries - Adil Khattak

An interview with Chief Executive Officer of Attock Refinery Limited

■ By Halima Khan

Adil Khattak, Chief Executive Officer of Attock Refinery Limited (ARL) since 2005 has been associated with the Attock Oil Group for the last 44 years. Mr. Khattak has extensive experience in engineering, maintenance, human resource management, project management and marketing. Khattak also holds the positions of Chief Executive Officer of Attock Gen Limited (AGL), Attock Hospital (Pvt.) Ltd. (AHL) and National Cleaner Production Centre (NCPC). He is Director on the Board of Petroleum Institute of Pakistan (PIP). He is also a Member on the Boards of Governors of Lahore University of Management Sciences (LUMS), Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (GIKI) and Sustainable Development Policy Institute (SDPI). Mr. Khattak is President of Attock Sahara Foundation (ASF) an NGO working for the poor and needy people of Morgah and its surrounding areas. Mr. Khattak holds a master's degree in engineering from Texas Tech University, USA and has attended many technical, financial and management programs in institutions of international repute in Pakistan, USA, Europe and Japan. During an interview on various issues of the energy sector, he says that.....

EU: What is the current situation of Pakistan's refining sector?

Adil Khattak: Pakistan's refining sector has been struggling for their survival due to various policy issues over the last two decades. Unfortunately some quarters with vested interests have made concerted efforts in the media to malign the refineries as "Mafias" advocating to shut them down without realizing the grave consequences to the country. While the facts are entirely different, this continuous one-sided tirade has created a negative perception in the government and



public circles especially about the concept of "Deemed Duty" which had been provided to refineries to sustain operations. Local refineries are intrinsically connected to defense and energy security needs and blind reliance on imported fuels increases the risk with disastrous consequences. Unfortunately Pakistan's refining sector is now being expected to operate purely on a commercial basis ignoring that it is highly regulated.

EU: What is your market share now?

AK: ARL is 12% of total crude refining capacity of Pakistan (2.43/20.2 million tons per annum).

EU: What challenges are you facing post COVID-19, impacts in your company and in the refinery sector?

AK: The first challenge was the safety of the staff while endeavoring to keep the refinery operational. ARL adopted many strategies including work from home, minimizing social contact by meetings via videocon, physical distancing and use of masks etc. In the refining sector the impact had been huge due to the volatile demand and unpredictable prices of products leading to extraordinary inventory and operational losses. Cumulative losses of all refineries (excluding PARCO) for the period July 2018 to March 2020 was Rs47 billion. ARL loss for the same period was Rs8.9 billion).

EU: What is the timeframe envisaged for the refineries for recovery of their business affected due to lockdown?

AK: Refineries are presently faced with an existential crisis. It will take several years to cope-up with the losses of the last two years. This is especially hard since refineries such as ARL are still in the process of debt repayment from their last project. The government needs to give a bailout package to the refineries to keep them sustainable which is essential for the country's energy security and protection of oil supply chain.

EU: Why refinery sector is reluctant to import or produce Euro-V Standards fuel?

AK: Refining sector is not against the import of Euro-V product. Refineries have generally followed GOP directives and have invested heavily to meet product specification targets specified



by GOP for local production. Introduction of unleaded gasoline, increase in gasoline RON from 87 to 90, reduction of sulphur in diesel from 10,000 ppm to 500 ppm. Government needs to understand that refineries need time (3 to 5 years) to upgrade and require massive investments for any change. For decades refineries have requested GOP to provide planned timelines and incentives required for producing environment friendly fuels but unfortunately that was never done.

EU: According to your viewpoint, what are the major impediments that restricted the progress of the refining sector of Pakistan?

AK: The main reason is absence of a comprehensive Downstream Petroleum Policy which takes into account country requirements for fuels, investment and time frame required, incentives for reasonable rate of return for investor and environmental considerations. "Indian Hydrocarbon Vision-2025" initiated in 1999 transformed the oil sector in India in just two decades because while fostering competition, linkage of energy security and industrial development was

kept in focus. At the outset, investment amount required for the refining sector in 25 years was identified and it was acknowledged that protective tariffs and appropriate pricing mechanism would be necessary to achieve their objectives.

EU: What are your suggestions to enable investments in the existing refining sector?

AK: Lots of petroleum products. However, the scale of the investment needs to be kept in perspective that it took all of Government of Pakistan's best efforts and assurances to secure a \$6 billion loan from IMF while five local refinery companies, that are currently sustaining unbearable losses, will have to manage this on their own. Therefore, these commitments can only be realized if the refineries start generating profits to undertake such a huge investment target. It is imperative that upfront support is provided to manage operations for next five years and to generate enough finances to sustain the new investments/operations post projects. This could be done through a minimum guaranteed return formula in the lines of previous 10-40 Formula or some other fair mechanism.

EU: What are your future plans to expand your refining capacity?

AK: At present ARL's capacity is optimum according to the crude availability in the North and further enhancement of capacity would depend on new oil discoveries. ARL is planning to invest in upgradation with the view to improve specifications of products to Euro V and further value addition by processing of furnace fuel oil.

EU: ARL being one of the finest petroleum companies, what CSR activities ARL is involved in and how do you see the future of ARL's CSR in betterment of Pakistan?

AK: As a responsible corporate citizen, ARL believes in sustainable community development and has sizable contribution in the projects of environment, health, provision of clean drinking water to the union councils of Morgah and Kotha Kalan, poverty alleviation, women development and capacity building. Four government schools in ARL premises are being given administrative support and free utilities worth millions of rupees every year. Education and skills development has always remained top priority of CSR activities at ARL. ■

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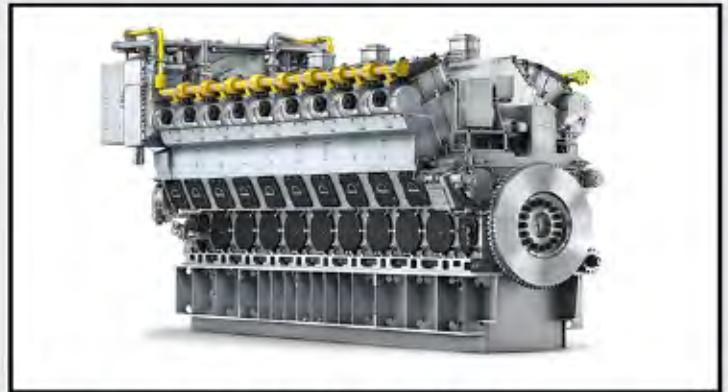
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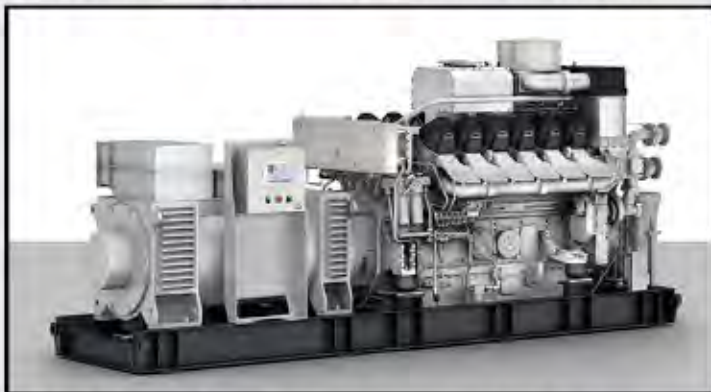
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The tangled knot of power sector

By Khaleeq Kiani

The power sector has been a major drag on Pakistan's economy over the past couple of decades. High system losses, poor recoveries and the struggling governance structure have hampered critical investments for its turnaround, resulting in unaffordable tariffs and repeated injections from public money. It is in this background that the Auditor General of Pakistan (AGP) in its latest audit report for 2018-19 has concluded that the power division has not been able to deliver on its medium-term goal of developing an efficient and consumer-centric

eration system that could meet the needs of the population and boost the economy sustainably and affordably.

It has asked the government to move swiftly towards making the power market more competitive by providing an enabling environment, improving policy making and enacting progressive laws and regulations to attract major international players. The AGP has concluded the performance of the power division has remained unsatisfactory in planning, effective implementation and optimum use of resources.

The AGP has pointed out the ad hoc mechanism in dealing with the power sector debt and payment of liabilities to the independent power producers (IPPs). These loans and its financial charges are an extra uncovered cost related to the purchase of financing worth Rs200 billion raised through the issuance of sukuk to partially settle the circular debt of the energy sector. About 70 properties of power companies were

sold and leased back from Meezan Bank Ltd (head of a consortium of banks) along with the issuance of sukuk bonds.

"This implies that power sector government properties could face a risk of en-masse sale/transfer out to private bodies on account of default in any principal re-payments".

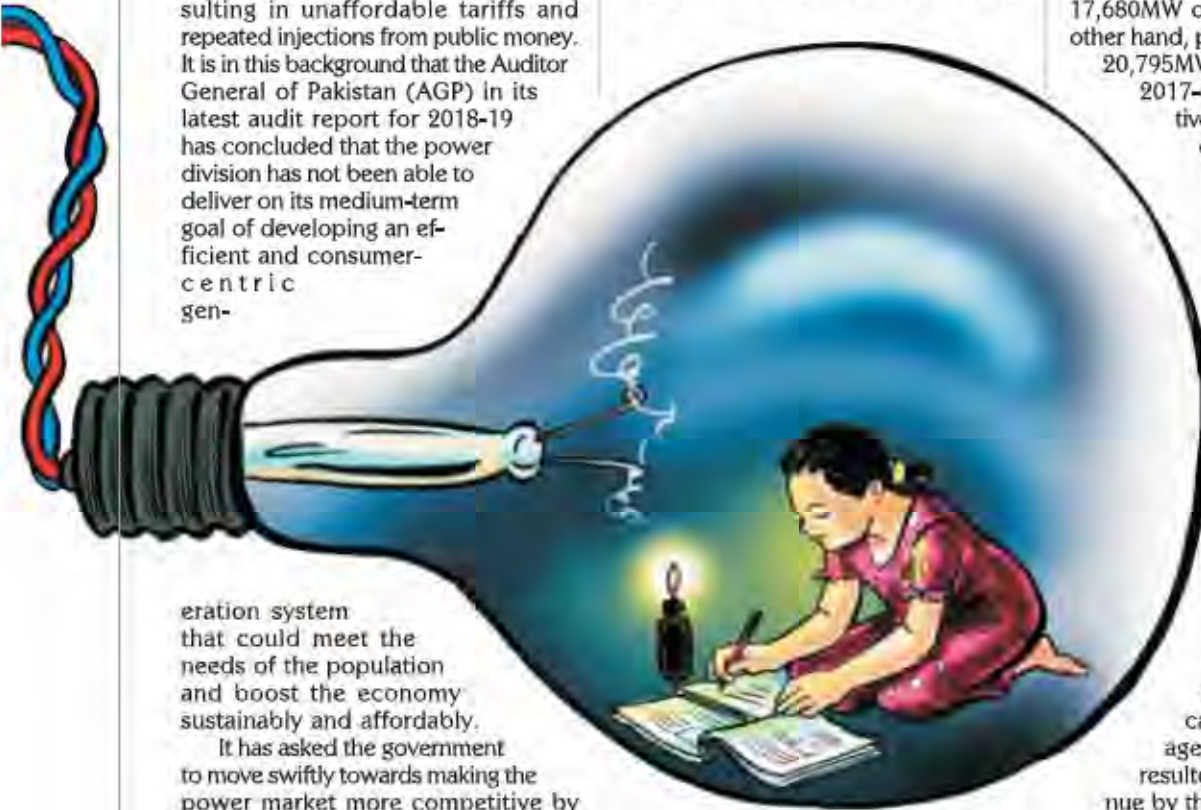
The energy mix is the most vital factor in the power sector that determines the cost of energy. As on June 30, 2019, the national installed energy capacity stood at 32,809 MW and derated energy capacity was 29,763 MW. "Only 25.20 per cent of energy was being produced from cheap hydel-resources and 5.46% from renewable sources whereas the remaining 4.18% from nuclear and 65.16% was from other expensive thermal sources. This reflects that the energy mix is highly skewed towards expensive fuel constituents".

The country's top constitutional auditor noted that Pakistan now has at its disposal excess energy capacity significantly more than the current or short term expected demand. The available power generation capacity in 2018-19 stood at 31,986 MW including 17,680MW of private power. On the other hand, peak demand remained at 20,795MW and 21,425MW during 2017-18 and 2018-19 respectively, implying that excessive capacity payments are being made to the IPPs as per binding agreements without the purchase of energy. Moreover, new IPPs with 7500MW capacity are due to be made part of the national grid in the coming 3-4 years.

The distribution companies (Discos) are facing revenue shortfalls. In 2018-19, about 93,887 million units worth Rs1.342 trillion were billed to consumers against which recovery of Rs1.061tr was made indicating a recovery percentage of 79.06%. The shortfall resulted in less receipt of revenue by the Discos, showing "managerial inefficiencies and policy bottlenecks constraining the Central Power Purchasing Agency (CPPA) to pay-off its energy procurement liabilities.

Compared with the last financial year, there was an improvement of 1% in revenue recovery. Still, the recovery shortfall of 21% posed a significant operational challenge for Discos. Recovery in Hyderabad, Tribal, Quetta and Sukkur companies was 54.17%, 18.92%, 24.29% and 38.54% respectively only in 2018-19. Major policy interventions are needed to save these Discos from practical solvency.

Moreover, the National Electric Power Regulatory Authority (Nepra) has determined a certain percentage of admissible transmission and distribution (T&D) losses for Discos that are built



in the tariff. Losses beyond the limit set by Nepra meant financial losses for the company as well as a cyclic increase in the CPPA receivable amounts pertaining to Discos. The rest of T&D losses in Discos and the financial impact thereof amounted to Rs37.5bn and Rs35.8 billion in 2017-18 and 2018-19.

This implies that the performance of Discos in reducing T&D losses remained unsatisfactory. Moreover, it also shows that the development initiatives being made in these companies for enhancing the power transmission and distribution system are yet to make any appreciable impact. Huge receivables from running and dead defaulters remained another major challenge. Over the years the volume of receivables from running and dead energy defaulters have increased significantly and it has become an important cause for power sector debt accumulation. As of June 2019, the total receivables from running and dead defaulters amounted to Rs572.179 billion. Of this, Rs476.932 billion pertained to running defaulters and Rs95.247 billion to dead defaulters. Such a huge amount of receivables has added to the financial crunch in the power sector that demands immediate consideration and intervention. Due to late payment of government subsidies like tariff differential subsidy, agricultural subsidy for tube-wells, other provincial government subsidies, subsidy to Azad Jammu and Kashmir government and outstanding payments from K-Electric, Rs.549.2 billion were held up as of June 2019. These receivables are adding up into the overall circular debt of the power sector. As on June 30, 2019, the total amount of circular debt stood at Rs.1.517tr including Power Holding Private Limited loans of Rs809.840 billion from Rs1.160 trillion in 2017-18, registering an increase of Rs357.378 or 31% in the one financial year.

A major objective of foreign-funded projects had been the enhancement and strengthening of the power sector at both distribution and transmission levels. However, five Asian Development Bank Efficiency and Distribution Enhancement Investment Programmes were closed during 2018-19. The projects against these loans had been started for enhancement of transmission lines, construction of grids etc. with total funding of \$684.20 billion but despite revision of closing dates from June 30, 2018, to September 16, 2019, the \$188 million loan i.e. 27% remained unutilised. ■

Super Six projects to power 650,000 houses



The wind turbines at the Gul Ahmed Group's two wind plants in Pakistan are generating more than just power in a country facing high demand for energy. The Jhimpir wind corridor, in Sindh province in south east Pakistan, was a deserted patch of barren land until a decade ago. Nomadic tribes traversed it but never stayed. It is a vast stretch of saline land, with winds unsuitable for agriculture. The stretch of land was identified as an area with potential to generate more than 11 gigawatts of power. Now dotted with mammoth sized wind turbines, it has become home to Pakistan's clean energy. We have learned that the Jhimpir wind corridor is one of the better places for renewable energy. The region is flat, there is no hindrance, and it is also close to a port to bring equipment. Installation of wind plants in the Jhimpir wind corridor has created more than 1,000 permanent jobs.

Thanks to those wind farms that came online in 2016, the region now has roads, drinking water, a clinic, and four schools for 14 communities. With solar panels, residents are able to use LED light bulbs and fans, and also charge their cell phones. The construction attracted some 3,000 workers and created over 1,000 permanent jobs. Moreover, investments in the wind farms have brought drinking water, roads, and schools to the region.

Pakistan's heavy reliance on fossil fuel imports has resulted in high cost of electricity generation and contributed to greenhouse emissions. Oil imports account for nearly 29 percent of all imports. Demand for energy is high. About 50 million people-nearly half of the population in Pakistan's rural areas-has no electricity, and blackouts of up to 10 hours were rampant in urban areas until two years ago. The availability and reliability of electricity is rated among the worst in the world according to the World Economic Forum's 2019 Global Competitiveness Report. Now Pakistan aims to increase its share of renewable energy with wind and solar from 4 percent to 20 percent by 2025. It's a welcome move for the Gul Ahmed Group, one of the companies in Pakistan behind a first of its kind program for six wind power projects in the Jhimpir corridor. The program, supported by IFC, is known as the Super Six projects.

The Super Six projects will help meet growing demand and reduce reliance on highly polluting imported fuel. They are also expected to contribute to a reduction in carbon dioxide emissions of about 650,000 tons a year. Energy currently accounts for the largest share of greenhouse emissions in Pakistan. It's highly significant that these Super Six projects will deliver among the cheapest cost for power generation in the country to date as well as generate enough to power 450,000 homes according to IFC. The cost of energy generated by the Super Six projects is expected to be at least 40 percent lower than the cost of existing power generation-a move that could spur more wind power projects in the country. ■

A Woman Sends a Text to Her Husband

"Honey, don't forget to buy bread when you come home from work and your girlfriend Valerie greets you."

Husband: Who is Valerie? Wife: Nobody, I just wanted you to answer, to have confirmation that you saw my text.

Husband: But I'm with Valerie right now, I thought you saw me?

Wife: What??! Where are you? Husband: Near the neighborhood bakery.

Wife: Wait, I'm coming right now! After 5 minutes, his wife sends a message:

Wife: I'm at the bakery, where are you?

Husband: I'm at work. Now that you're at the bakery, buy the bread!



Hitachi-ABB striving hard for renewable energy in Pakistan - Najeeb Ahmad

Exclusive interview of Managing Director, Hitachi ABB Power Grids Pakistan

Najeeb Ahmad was appointed as Country Managing Director (CMD) of Hitachi ABB Power Grids Pakistan in December 2019 following creation of Hitachi-ABB Power Grids joint venture globally. Previously Najeeb was responsible for ABB operations all over Pakistan as Country Managing Director of ABB for 06 years from 2014 to 2019. He joined ABB as a service engineer in ABB Saudi Arabia Service organization in 1998 and was responsible as lead commissioning engineer before moving to UAE in 2004. In UAE, Najeeb served for almost 10 years in various management positions in project management, operations management, contracts management and OPEX management for power system division in Southern Gulf & Pakistan. Before joining ABB, Najeeb also served in leading consultant organization NESPAK for more than 04 years and was responsible as senior engineer substation in power and mechanical division. Najeeb has over 27 years of proven management and leadership experience which he gained while working in Gulf countries including Saudi Arabia and UAE before and Pakistan including 22 years with ABB. Najeeb has a bachelor's degree in Engineering from University of Engineering & Technology Lahore, Pakistan, Executive MBA degree from SZABIST Dubai, Master's certificate in Project Management from George Washington University School of business and PMP certified from PMI USA.

EU: What are the engagements and projects being undertaken by your company in the energy sector of Pakistan?

Najeeb Ahmad: Hitachi ABB Power Grids is a global technology leader that serves utility, industry and infrastructure customers across the value chain, and emerging areas like sustainable mobility, smart cities, energy storage and data centers. Hitachi ABB Power Grids has a proven track record, global footprint and unparalleled installed base. With almost

■ By Mustafa Tahir



250 years of combined experience, a comprehensive portfolio and global reach, it's well positioned to create new opportunities for customers, employees and all other stakeholders. In Pakistan, we have been serving our customers in all verticals for more than 28 years including key customers like NTDC, K-Electric, WAPDA, IPPs, etc. One of our recent success stories and ongoing projects include CASA 1000 HVDC link (from Tajikistan to Pakistan).

EU: How do you rate the nationwide electricity transmission system of Pakistan in comparison with the national grids of the developed and regional countries?

NA: Transmission system of Pakistan is one of the most

complex and dynamic systems currently being operated by any Transmission company across the globe. From the development and upgradation standpoint in NTDC, KE and DISCOs comparing other similar utilities, there is still a lot to do when it comes to Operational Technology (OT) and Information Technology (IT) as well as investment in knowledge base of the operators who play a key role to operate and maintain the system. In view of recent developments in NTDC such as deployment of Flexible AC Transmission System (FACTS) including Static Var compensation (SVC) as well as ongoing HVDC and 765kV projects, it's even more crucial to adopt the latest / state of the art technologies such as modern SCADA system, Substation Automation Systems and even digital sub stations which are already opted by other T&D utilities for stronger, smarter and greener grids.

EU: To what extent could your company be helpful in overcoming constraints and defects of the national grid of Pakistan?

NA: Hitachi ABB Power Grids is founded by two iconic companies with a combined pioneering technology heritage of almost 250 years. Hitachi ABB Power Grids is one of the leading fore-runners involved in the end to end value chain of the Transmission & Distribution system with a prime focus on digitaliza-

tion. During these challenging times, we have been able to implement the system which is involved in the deployment of HVDC, FACTS, BESS, Substation Automation Systems, SCADA and IEC 61850-9-2 driven digital substations for all of our valued customers by virtue. These solutions can overcome problems of evacuation congestion, higher stability and real time monitoring of their assets and to implement the concept of asset performance management under digitalization, on-line remote condition monitoring of power and distribution transformers using our state of art digital CoreTec™ and CoreSense™ technologies, etc.

EU: What is your viewpoint about the issues related to evacuation of electricity from renewable energy projects in Pakistan at its Gharo-Jhimpir wind corridor?

NA: Renewable energy mix is one of the key priorities in Pakistan where they plan to have a minimum 30% energy mix by 2030. Jhampir and Gharo are two major clusters to collect and evacuate both wind and solar power from remote areas and deliver it to the load center via NTDC network. Keeping in view the dynamic and intermittent nature of renewable energy Hitachi-ABBenergy, its pertinent to strengthen the ability of these networks both in terms of its capacity, controllability and resilience. We can

offer latest technologies such as deployment of digital substation including IEC 61850 SAS, BESS (Battery Energy Storage System), Containerized GIS Substations, FACTs (both Static Var and Series Compensation to increase the evacuation and stability of existing transmission system. We're excited to be at the forefront of sustainable energy innovation. We believe that enabling a stronger, smarter and greener power grid can drive progress for a sustainable energy future.

EU: Do tell our readers about the future plans of your company in Pakistan?

NA: Pakistan is the land of opportunity especially when it comes to the energy and transmission sector. The recent Joint Venture between Hitachi & ABB Power Grids is ideally positioned in terms of their rich experience, portfolio diversification and digitalization initiatives to serve its customers not only enabling them to exploit existing infrastructure for deployment of SMART systems (using digitally enabled products and solutions,) however also to upgrade their assets to cater for the future demands which will evolve in power systems such EV Charging, energy mix shift to renewable energy, digitalization and distributed generation, etc. Powering good for a sustainable energy future-creating value by harmonizing social, environmental and economic values. ■

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Engro Elengy In quest to overcome energy crisis in Pakistan

By Sajid Aziz

In the late 2000s, Pakistan was in the middle of a severe energy crisis as power shortages reached over 8500 MW or more than 40% of the national demand. One of the contributing factors for energy shortfall was the country's depleting indigenous gas reserves amidst increasing gas demand. As a result of the energy shortages, many towns and cities faced around 12 hours of load shedding, capacity utilization in key industries fell to 50%, export orders worth over USD 1 billion were cancelled each year and millions of jobs were at risk as Pakistan became uncompetitive in the global economy. On the whole, it is estimated that Pakistan was losing around 2% of GDP annually (\$ 5-6 billion) due to energy shortages.

To overcome this crisis, Pakistan had primarily four options - develop transnational pipeline projects, import LNG, increase indigenous gas production or build large-scale hydel power projects. In this scenario, LNG import was the fastest solution as the other options faced complex geo-political challenges, high financing requirements and longer completion timelines.

Considering Pakistan's acute gas shortage, the government launched an LNG Policy in 2006 but faced a chicken and egg situation to start the LNG import supply chain. The LNG suppliers were

not ready to sign a contract because there was no LNG infrastructure in the country, while the LNG infrastructure developers were not ready to put up projects as there was no surety of LNG supply. Since 2006, multiple attempts were made to start an LNG supply chain in Pakistan, however, these efforts proved futile.

Given Engro's forte as an experienced project developer with more than 50-year footprint in Pakistan, a Special Purpose Vehicle (SPV) was setup to allow it to solely focus on developing the LNG sector in line with the LNG Policy. As this was Pakistan's first LNG terminal, there was no precedence of the magnitude of challenges that could be faced in this project. When Engro Elengy Terminal Pvt. Limited (EETPL) undertook the LNG project, no bank was willing to

finance it on account of excessive project risk as this project was the first of its kind in Pakistan. There were no established duty and taxation regime, LNG supply contracts, and the local market lacked experience in Engineering Procurement and Construction and Operations & Maintenance for LNG projects. Further, lack of clarity on gas transmission pipeline capacity and port readiness to handle LNG carriers also posed challenges in setting up the terminal. Engro financed the project with 100% equity and fully assumed the project risk. The financial close of the project happened after its commercial operations.

Despite these challenges, EETPL was built in a world record time of 330 days to put Pakistan on the global map of LNG trade. It is recognized as one of the most utilized regasification terminals in the world with an availability factor of ~98% to ensure consistent gas supply. Today,



EETPL has handled more than 19 million tonnes (MT) of LNG and re-gasified more than 940 billion cubic feet (BCF) of gas since its commissioning, which has curtailed the gas shortfall by up to 15%. It also holds the record for one of the fastest 300 ship-to-ship transfers. Pakistan has saved approximately \$3 billion since the start of the LNG project, replacing the import of more expensive furnace oil with LNG.

EETPL's aim is to provide Pakistan with a sustainable and affordable energy solution that helps open the LNG market for further development. This would lead to greater investments and efficiency in the LNG sector so that energy security for Pakistan is prioritized to fuel its progress.

To imagine the impact of LNG, it should be comprehended that EETPL is today Pakistan's largest gas field (630 mmscfd), compared to the largest indigenous gas field of Mari (450 mmscfd, adjusted for calorific value). LNG has played an integral role in meeting Pakistan's gas demand and today contributes around 20% to the gas supply mix. LNG has brought online RLNG-dedicated powerplants with a capacity of 3.6 GW and is used as mixed fuel in other powerplants with around 3.5 GW capacity. Any interruption in the LNG terminals capacity/performance would adversely impact electricity generation by power plants and lead to gas shortages in the industrial, fertilizer and CNG sectors.

EETPL was the first to expand and increase its terminal capacity from 3 to 4.5 million tonnes per annum (MTPA) to continue to meet the nation's growing gas demand. As a pioneer in the LNG

sector, EETPL has also been able to successfully forge global partnerships and bring foreign investment into the economy. Towards the end of 2018, Engro's long-term partner Royal Vopak acquired 44% shareholding in the company. This investment displays immense confidence by Royal Vopak in the country's future and strength of EETPL business operations. Based on global experience, the two partners are now committed to set up Pakistan's first Onshore LNG terminal.

EETPL is also working on another expansion of its terminal under Third Party Access to private market, which will lower the burden on national exchequer and increase pricing competition for the consumers. It is substituting the current floating storage and regasification unit (FSRU) "Exquisite" with a larger "Excelerate Sequoia" vessel. This would increase the terminal capacity from 4.5 to 5.5 MTPA and storage capacity from around 150,000 cubic meters to nearly 170,000 cubic meters, cumulatively saving up to \$21 million for the national exchequer.

Going forward, Pakistan needs to ensure that additional capacity of LNG handling and storage comes online in the quickest way possible through the expansion of existing LNG terminals. Expansion

of the LNG terminals would mean that there is capacity available to benefit from the currently cheap LNG available in the spot market.

Opening the LNG market to private players is key for the development of this sector. The government is already focusing on two areas - establishment of Third-Party Access and onshore LNG terminals. The establishment of Third-Party Access would allow private players to acquire capacity in the existing and future terminals. As a result, there will be greater efficiency in the overall LNG supply chain, competition to procure cheaper LNG through spot/term contracts and sharing of responsibility by the private sector players as well to ensure consistent gas supply. Further, this will encourage greater foreign investment in the LNG infrastructure and marketing services.

Secondly, a shift from FSRU-based terminals towards Onshore LNG terminal will ensure energy security by building a strategic national asset. These onshore terminals would result in reduced foreign exchange outflow compared to FSRUs and create greater competition as multiple players would be allowed to acquire capacity in the terminal, based on Open Access regime. Further, it would make larger capacity available which shall be developed in a phased-approach in view of the gas demand for uninterrupted supplies. The large capacity and inventory management capabilities of Onshore terminals can also help optimize LNG supply chain, while also offering additional proposition of breakbulk, transshipment, bunkering services and LNG trucking.

The government should also focus on increasing pipeline capacity to the north of the country and creating an enabling environment to attract foreign investment in the LNG sector. ■

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Only 5% consumers in Karachi use solar option - M. Zakir Ali

Exclusive interview of CEO Inverex Solar Energy



Only five per cent of power consumers in Karachi use the solar option while in comparison the use of solar technology has been much more common in other cities and towns of Sindh.”, CEO Inverex Solar Energy, the leading solar-based company in Pakistan-M. Zakir Ali stated this during an exclusive interview session for the Energy Update. Following are the important excerpts of his interview for our readers:

■ By Mustafa Tahir

Energy Update: When your company commenced the operation?

M. Zakir Ali (MZA): We started the company in 2007. Initially, we were dealing in stabilizers. Then we ventured into the business of UPS. Finally, we started the business of solar inverters. The solar inverters are similar to UPS as the latter also required an off-grid system and a back-up. We also deal in batteries, solar panels, solar street lights and recently we have also launched home appliances such as refrigerators, air conditioners, deep freezers and others.

EU: How much market share your company has captured so far?

Mr. Ali: According to market survey as God willing the results will definitely show that we are the leading brand in the solar industry of Pakistan. Like each passing day, we have been increasing the import of our products owing to constant rise in demand in the market. This is because we have always introduced the best solar products in the Pakistani market that proved to be innovative and trendsetter for our competitors. All over Pakistan we have 29 service centres, which have been providing services related to our solar products.

EU: What are your plans to use local technology in your products?

Mr. Ali: Our products are fully based on imported technology as there is no local component. God willing we will give you news quite soon that we are going to start local manufacturing as that is also our present target. The engineering universities in Pakistan produce nearly 100,000 engineering graduates every year. But these newly qualified engineers don't have any scope with regard to their profession. Our budding engineers are very much talented but they lacked guidance about their profession. The graduating engineers mostly do their



100,000 engineering graduates every year. But these newly qualified engineers don't have any scope with regard to their profession. Our budding engineers are very much talented but they lacked guidance about their profession. The graduating engineers mostly do their first job with a meagre per month salary of Rs 15,000-20,000 as this is no future for them especially when you have graduated from a private university where your parents pay hefty tuition fees. So we are going to establish a small manufacturing unit for producing UPS and solar inverters. We are also working to manufacture solar panels but it is a difficult task as its technology changes very fast.

EU: What is the future of the solar industry in Pakistan?

Mr. Ali: Solar industry has a very bright future in Pakistan. One thing I know with certainty is that the solar industry will boom whenever the government increases electricity rates of the power utilities. There has been a massive switch over to solar energy in developed countries like the UK, USA, Germany, and Australia. This conversion is taking place because all these countries need green energy. The power plants established in the country, which consume fossil fuel cause pollution while their cost is also almost double as compared to the option of solar energy. We have 90 per cent availability of sun but it is quite unfortunate that we don't use it even 05 per cent. The policy of the government should be made more conducive for encouraging more utilization of solar energy in the country.

EU: What should be the policy of the government regarding solar energy?

Mr. Ali: The policy of the government should be such that there should be a ban on importing garbage (substandard solar panels) from all over the world as standards should be maintained in this regard. The importers have to pay extra 800 US Dollars to get the CoC/PSI quality testing of their products but even then substandard solar panels are brought into the country. The government should do something to check this practice. The government should run awareness programmes. The awareness will motivate people to install a solar panel on the rooftop of every house. The policy of government should be clear in this

regard. The government should allow the option of reverse metering on single phase as afterwards we will not be required to install the grid system.

EU: Tell us about your viewpoint regarding the power crisis in Karachi?

Mr. Ali: There has been immense economic hardship in Karachi. Only %5 per cent consumers in Karachi have been using the option of solar energy. We have very good business in cities outside Karachi like in Hyderabad, Nawabshah, Sukkur, Larkana, and Khairpur. Then going forward we have very good business in cities of South Punjab like Rahim Yar Khan and Bhawalpur. As these cities offer us business, which is not available elsewhere in Pakistan. This shows that people in these relatively smaller cities have much better understanding and awareness about the solar technology as compared to the residents of Karachi.

EU: Is there any option available to the consumers to install solar systems on easy instalments?

Mr. Ali: Banks have been doing this sort of financing but their documentation requirements have been massive as prospective buyers of the solar system are mostly unable to fulfill them.

EU: Are you planning to run any awareness campaign regarding the solar industry on your own?

Mr. Ali: We are planning to go to the association programmes of trade and industry and chambers of commerce and industry to make their members aware about the utility and benefits of the solar option. These sessions will not be

conducted for selling any product as they are meant only to raise awareness among the industrialists about the option of solar energy. Obviously the industry people have the resources and capacity to install the solar energy option for their massive energy needs.

EU: Is there any programme to train the technicians of the solar industry?

Mr. Ali: One of the big reasons that we are unable to provide service to our customers in an adequate manner is that we don't have properly qualified technicians and fitters of solar technology. For this purpose, we want to assemble all the technicians and fitters of the industry on one platform for their proper training so as to later award them certification of the industry.

EU: What is your message regarding our native country?

Mr. Ali: Solar option is a necessity for our country as it is not at all a luxury for our countrymen. For other countries it might be a luxury but it is a necessity for all of us given the massive and persisting energy shortfall in the country. All our work is aimed at achieving the dream of a "Roshan Pakistan". We have been working to achieve our vision of a "Roshan rahay Pakistan". We want that "Made in Pakistan" products are not only produced here but we will also be able to export them for achieving our vision of a "Roshan Pakistan" for the rest of the world. The manufacturing and international selling of "Made in Pakistan" products will be fully in accordance with the aim of the government to increase exports from Pakistan for its name and fame and also for economic prosperity of the country.■

Corruption in CPEC projects?

The political economy influences decision-making, which undermines the performance of the economy and results in politicising of the economic priorities.

Although all sectors of the economy are bearing the brunt of this situation, the energy sector has been impacted the most. The story of politicising the energy sector started after a World Bank report in the 1960s, which emphasised the need for building dams including the Kalabagh dam well before the end of 1990s. It was deemed necessary to meet the water and energy needs of the country.

Regrettably, Pakistan did not pay much attention, except for building a few small dams. A lack of seriousness resulted in load-shedding in the 1980s and the 1990s, which compelled Pakistan to look for immediate solutions. The political economy again came into play and caused the wrong turn, and the state started to invest in fossil fuels. The Power Policy of 1994 provided an opportunity to the private sector to earn enormous profits in the most favourable conditions for investment. As a result, Pakistan got entangled in problems like import of fossil fuels and ignorance of renewable energy, especially the hydroelectric power. The Alternative Energy Policy 2006 tried to make up for the loss but without much success.

Politics around the energy sector once again pushed Pakistan to an era of load-shedding in the late 2000s. The cost of load-shedding jumped, both at the societal and economic levels, at the beginning of the second decade of the 21st Century. In 2013, the supply of electricity stood at 14,835 megawatts against demand for 20,695MW. The annual cost was estimated at \$4-5 billion on the economic front (Vision 2025). The social cost was hidden as there was no mechanism in Pakistan to measure the psychological impact and its relevance for mental health. Pakistan had no resources to combat the challenge and no country was ready to invest in this country due to terrorism. Pakistan was scrambling to find investment to overcome power blackouts. In this situation, China put trust in Pakistan and began to invest in the energy sector. It took the risk against all odds to help



Pakistan during those testing times. In the meantime, many Chinese workers were targeted and some of them were killed. For private companies, it was risky to put resources in a terrorism-hit country, but Beijing and its companies continued to support Pakistan and introduced the China-Pakistan Economic Corridor (CPEC).

CPEC's investment not only helped to manage load-shedding but it also contributed to job creation. It created about 23,000 jobs in different phases, especially in the most backward areas of Pakistan like Tharparkar. Thar, once the talking point of hunger and high children mortality rate due to malnutrition, is turning into an energy hub. Another success story in Thar is the inclusion of women in livelihood opportunities. This was not in the interest of the rivals of Pakistan and some international players. They launched a smear campaign against CPEC, more specifically against energy projects.

The favourite propaganda was against the adverse impact of coal power plants, loans and corruption. First, they targeted the coal power plants, arguing that Pakistan was disturbing the global greenhouse gas (GHG) emissions balance through its investment in coal, which constituted only 13% of the energy mix. Disappointingly, they still insist that Pakistan should immediately stop investing in coal without realising the need and poor development status of the country.

It seems foreign countries and com-

panies are not interested in understanding the domestic dynamics. Thus, they are at the forefront of running a slanderous campaign against CPEC. They provide the required fuel to ignite the propaganda and spread it. Critics of CPEC projects conveniently ignore two facts. First, they purposefully overlook or try to undermine the investment in renewables under the CPEC umbrella.

CPEC is building a good number of wind, solar and hydroelectric power projects and many of them are already operational. Hydroelectric power projects of 1,590 megawatts will start functioning in the next two years. Kohala and Azad Pattan dams are other projects agreements for which have been signed only a few days ago. It is heartening to note that both China and Pakistan are working to find new opportunities of investment in hydroelectric power and other renewable energy projects. Apart from energy, Pakistan is also heavily investing in tree plantation. The introduction of electric vehicle policy and support to the sector is another significant move to promote the green development agenda.

Simultaneously, Pakistan will retire 11,511MW of fossil fuel-based energy plants by 2047. It is more than the investment in coal-based energy, leave alone other investments in renewables, plantations, electric cars and other initiatives. These all actions will help to offset the GHG emissions. Secondly, they forget to mention the consumption of coal-based electricity by the devel-

oped countries and regions like the US, EU and many others. For instance, the US - the most developed country - produces 23.5% of electricity from coal. BBC reported in January 2020 that Germany produced 35.4% of its electricity from coal. Although it is planning to phase out coal energy but gradually and in a wise manner till 2038 by providing a hefty package of 40 billion euros.

In the EU, coal has a 14% share in electricity production. EU member states are now trying to phase out coal but it will take a long time. They can afford it as they have immensely benefited and earned the resources to do so. Though they can do it immediately as they have resources but still they are insisting on phasing out in a systematic manner. However, they pressurise Pakistan to do it immediately, which is odd. Emerging economies are also following in the footsteps of developed countries. For example, India is producing 77% of electricity from coal and now PM Modi has announced the opening of new coal mines.

According to 2017 data, South Korea produced 44% of electricity from coal, South Africa 88% and Indonesia 58%. Russia, Japan and Turkey also feature among top 10 coal-based electricity producers. Another point raised is corruption to malign CPEC. Unfortunately, the fuel to the campaign was provided by an incomplete assessment report, which was leaked by some vested interest groups. Although rules and regulations based on which these projects were negotiated were already in place under the Power Policy 1994, still Chinese companies were being criticised. Chinese companies are availing facilities, which are already being offered in Pakistan.

Moreover, if there is any incident of corruption, Pakistan's government should talk to the Chinese government directly. It would be more useful as Beijing has zero tolerance for corruption, which is clear from the anti-corruption campaign, led by President Xi Jinping. If any Chinese company is found to be involved in corruption, China will make an example out of it, for other companies. To summarise, it is pertinent to mention that the smear campaign will continue as it is in the interest of opponents of CPEC. Pakistan and China should not be worried about it but they should put the right instruments in place to counter it like a well-designed engagement strategy. ■

The writer is the Director of Asia Study Centre, Sustainable Development Policy Institute

PIA is planting 50,000 trees across country in current year

The Pakistan International Airlines while actively contributing in the Clean and Green Pakistan initiative of the government is planting 50,000 trees in the current year alone across its different stations in the country.

This was disclosed by Muhammad Shoaib, company secretary PIA, while speaking at a tree plantation ceremony at PIA Township to mark the 74 Independence Day of Pakistan. The tree plantation ceremony at PIA Model Secondary School was jointly organized by the Federation of Pakistan Chambers of Commerce & Industry, PIA, and National Forum for Environment and Health (NFEH).



A special 74 metres long flag of Pakistan was unfurled on the occasion by the teachers and students of the PIA Model Secondary School in connection with the 74th Independence Day of Pakistan.

Convener FPCCI Standing Committee on Environment & NFEH President Naem Qureshi was the chief guest on the occasion whereas Muhammad Shoaib, company secretary PIA, Sohaib Dhari, GM Welfare of PIA, noted cricketers Shoaib Muhammad, Moin Khan, and other distinguished guests from various walks of life attended the event and took part in the tree plantation activity at and in surroundings of the PIA Model School. ■



Govt proposes more powers to CPEC Authority



EU Report

The federal government has proposed to give more administrative, financial and punitive powers to the China-Pakistan Economic Corridor (CPEC) Authority. A draft prepared by the government in this regard also lays out the role of the prime minister in the authority's affairs. Planning Commission Deputy Chairman Dr Jehanzeb Khan has recently held the first meeting of all government stakeholders to review the proposed CPEC Authority Bill 2020. They said the Foreign Office representative raised the issue of implications of the changes for the CPEC framework agreement, signed between the two countries over five years back.

But the changes have been proposed to make the CPEC Authority more effective in execution of the multibillion-dollar projects. In a major change, it has been proposed to remove the minister for planning, development and reform as co-chairman of the Joint Cooperation Committee of the CPEC - the strategic body responsible for decision-making of the CPEC. Instead of the planning minister, the CPEC Authority chairman will be the co-chair of the JCC along with the vice chairman of the National Development and Reform Commission (NDRC) of China.

The sources said the meeting participants suggested that Pakistan needed to take China into confidence first before making such a big change. It has also

been proposed to appoint a chief of staff of the CPEC Authority, who will assist the CPEC Authority chairman - a concept that is alien in the civilian set-up. The CPEC Authority Bill 2020 proposes to eliminate the role of the planning ministry as an administrative division and the authority is proposed to be placed directly under the supervision of the prime minister. As against its existing role of coordination, the government has proposed to give powers of conceiving, planning and execution of CPEC to the authority, showed the draft bill seen by The Express Tribune. The prime minister's powers will only be limited to the ones defined in the CPEC bill.

In case a public office holder does not cooperate with the CPEC Authority, the chairman will have the power to order an investigation against the public office holder, according to the draft bill. The CPEC Authority, set up over nine months back, hangs in the air after the CPEC Authority Ordinance 2019 lapsed about one and a half months ago. The chief executive officer who attended the meeting on Monday did not respond to the request for comments. The Planning Commission deputy chairman also did not respond to the request for a comment. The government has proposed eight new sections in the CPEC Bill as compared to 23 total sections of the CPEC Ordinance 2019. The authority shall carry out its functions, in accor-

dance with the provisions of this act under the direct supervision of the prime minister, according to the proposed draft. Currently, the CPEC Authority chairman is answerable to the planning minister and the authority works under the Planning, Development and Reform Division under the Rules of Business 1973. But this has been omitted in the proposed bill.

"The authority shall be under an obligation to comply with the directives and policy guidelines issued by the prime minister, to the extent that these are not inconsistent with the provisions of this act," according to another proposal that limits the role of the premier in the authority's affairs. A new post of chief of staff is being proposed in the bill and the position of CEO is proposed to be abolished. Currently, the CEO is a Grade-20 officer from the bureaucracy. The two positions of executive directors are proposed to be abolished. The planning minister is proposed to be removed as co-chair of the JCC and CPEC Authority chairman will be the co-chair of the JCC.

"The 'Joint Cooperation Committee' means that the committee [is] jointly headed by the chairperson of the authority and the vice chairperson of the National Development and Reforms Commission of the People's Republic of China," reads the proposed bill. As against the lapsed law that allowed to set up a head office of the authority in

Islamabad, the government has now proposed that the authority may establish regional and local offices, as deemed appropriate throughout Pakistan.

But the sources said that the provincial representative objected to this and said that they would not like to see a parallel set-up in the provinces. Currently, the authority consists of the chairperson, chief executive officer, executive director (operations), executive director research and six members. It has now been proposed that the authority shall consist of the chairperson, chief of staff and six members. The chairperson is proposed to be the convener and head of the authority. It is proposed that "an officer of the authority, so nominated by it, shall act as secretary to the authority. The secretary shall be the custodian of the common seal of the authority". Currently, a Grade-20 officer is the CEO.

In a major change, the powers of hiring people have been vested with the authority instead of the ministry. "The authority may, whenever deem appro-

priate, employ officers, staff experts, consultants, advisers, public servants, or other employees, on such terms and conditions as may be determined by the authority, from time to time." The PM will appoint the chairman for four years, and the period can be extended for four more years. The members will be appointed for three years.

At present, the authority is responsible for coordination, monitoring and evaluation to ensure implementation of CPEC-related activities. "The authority shall be responsible for conceiving, implementing, expanding, enforcing, controlling, regulating, coordinating, monitoring, evaluating and carrying out all activities related to the CPEC," according to the proposed bill.

What appears to be sweeping punitive powers, the government has proposed that "the authority shall issue directions, instructions, or specified orders to a holder of public office, or any other person who may be directly or indirectly engaged or associated with the CPEC-

related activities". The authority shall "impose penalties, or refer investigation(s) and inquiries to concerned agencies, against such persons, including public office holders, who willfully defy the directions, instructions, or specified orders of the authority".

It has also expanded the scope of channels that will contribute to the CPEC Fund that will be at the disposal of the authority, which include "fees, charges, levies, rentals and fines collected by the authority, funds from floating bonds, shares, debentures, certificates or other securities issued by the authority".

The statement of objects and reasons does not have a name of the signatory, unlike the lapsed ordinance when the statement had been given by the minister for planning, development and reform. The sources said that the final bill may be different from the proposed bill, as the stakeholders have proposed to omit all those clauses that are not in sync with the Rules of Business 1973 of the federal government. ■

Power plants under CPEC need to be completed earnestly

The energy extends under CPEC will be built by private Independent Power Producers (IPPs) as opposed to by the legislatures of either China or Pakistan. The Exim Bank of China will fund these private ventures at 5-6% loan fees, while the administration of Pakistan will be authoritatively obliged to buy power from those organizations at pre-arranged rates. In April 2020, hit by the COVID-19 pandemic, Pakistan requested that China ease reimbursement terms on \$30 billion worth of intensity ventures. S.K Hydro Consortium is developing the 870 MW Suki Kinari Hydropower Project in the Kaghan Valley of Pakistan's Khyber Pakhtunkhwa region at an expense of \$1.8 billion, SK Hydro will build the venture with financing by China's EXIM bank. The \$1.6 billion 720 MW Karot Dam which is under development is a piece of the CPEC plan, yet is to be financed independently by China's Silk Road Fund. Pakistan and China have additionally talked about the consideration of the 4,500 MW \$14 billion Diamer-Bhasha Dam as a major aspect of the CPEC venture, however as of December 2015, no firm choice has been made - however Pakistani authorities stay idealistic at its possible incorporation. On 14 November 2017, Pakistan dropped its offer to have Diamer-Bhasha Dam financed under the CPEC system. Pakistan expects to create 25% of its power prerequisites by sustainable power source assets by 2030. China's Zonery

organization will finish development on the world's biggest sun based force plant - the 6,500 section of land Quaid-e-Azam Solar Park close to the city of Bahawalpur with an expected limit of 1000 MW is required to be finished in December 2016. The main period of the undertaking has been finished by Xinjiang SunOasis, and has a creating limit of 100 MW. The 900 MW limit will be introduced by Zonery under CPEC.

In spite of a few sustainable power sources extending, the main part of the new vitality age limit under CPEC will be coal-based plants, with \$5.8 billion worth of coal power ventures expected to be finished by mid-2019 as a major aspect of the CPEC's "Initial Harvest" ventures. It was in the light on May 26 that a transmission line of 660 KV would be laid among Matiari and Lahore. The power would be delivered from coal-based force plants at Thar, Port Qasim and Hub. It would have the ability to gracefully 2000 MW with 10 percent over-burden capacity for 2 hours. The \$589 million venture to build up a coal mineshaft and a moderately little 300 MW coal power plant to be worked in the town of Pind Dadan Khan by China Machinery Engineering Corporation in Punjab's Salt Range. Pakistan's NEPRA has been censured for thinking about a moderately high levy of 11.57 US pennies/kWh proposed by the Chinese firm, which had at first concurred at 8.25 US pennies/kWh

in 2014. Resulting stages will in the end create an extra 3,960 MW of power through the span of ten years. As a major aspect of foundation required for power dispersion from the Thar I and II Projects, the \$2.1 billion Matiari to Lahore Transmission Line, and \$1.5 billion in Matiari to Faisalabad transmission line are likewise to be worked as a feature of the CPEC venture. The 1,223 MW Balloki Power Plant is as of now under development close to Kasur and is being built by China's Harbin Electric Company with financing from China's EXIM bank, is one such model. In October 2015, Prime Minister, Nawaz Sharif additionally initiated development of the 1,180 MW Bhikhi Power Plant close Sheikhpura, which is to be mutually built by China's Harbin Electric Company and General Electric from the United States. Pakistan's NEPRA has been scrutinized for thinking about a generally high tax of 11.57 US pennies/kWh proposed by the Chinese firm, which had at first concurred at 8.25 US pennies/kWh in 2014. The Chinese firm contended that coal transportation costs had enormously expanded because of the non-availability of coal from close by mines which had at first been viewed as the essential coal hotspot for the venture. The organization contended that coal would rather be moved from inaccessible Sindh territory, which alongside wasteful aspects in mining methods, expanded the expense of fuel by 30.5%. ■

HSR believe Pakistan is a promising country with huge potential - DR Li Xin

Exclusive interview of Chief Executive Officer, Huaneng Shandong Ruyi Energy, Pakistan

■ By Mustafa Tahir

Dr. Li Xin is CEO of Huaneng Shandong Ruyi Energy Pakistan which owns 1320 MW Sahiwal Coal-Fired Power Project. He has vast experience of over 20 years in energy sector. He joined China Huaneng Group in 1998 and served in 5 power plants in 3 countries. He has worked in each role from basic level to headquarter level in IPPs. Additionally, he bears very strong educational background with having 4 professional degrees, including 1 PHD, 2 Masters Degrees and 1 bachelor degree, in the field of Electrical Engineering, Computer Science and Management. In an interview with Energy Update, he says that.....



EU: What is the contribution of your company in the energy sector of Pakistan?

Dr. Li Xin: Huaneng Shandong Ruyi (Pakistan) Energy Pvt. Limited (HSRE) has installed two state-of-the-art units of 660MW each based on Coal-fired Supercritical technology in Sahiwal District. This Project is one of the Phase-1 projects of China-Pak Economic Corridor, and also the milestone project depicting the important beginning of the Pakistan Government's efforts to actively develop policies and attract foreign investors to develop energy projects in Pakistan and strengthen friendship between China and Pakistan. It is the flagship project of CPEC with the first power project to become operational under Belt & Road Initiative.

On October 28, 2017, the Sahiwal Power Plant was put into commercial operation, becoming the first large-scale coal-fired power station under CPEC. The power plant has been in continuous safe production for 1,150 days, with a total generating capacity of 26 billion kWh till July 31, 2020.

EU: What are the plans of your company to do more investment in the energy sector of Pakistan?

LX: Sahiwal Power Plant is the first CPEC power project and it's one of the most important overseas power projects of China Huaneng Group, which was ranked 286 in the world's top 500 companies by Fortune Magazine. We have accomplished the feasibility studies on Thar opencast mine and a captive power plant for Special Economic Zones (SEZs), CPEC. Furthermore we are also looking into the renewable power potential in Pakistan. We believe Pakistan is a promising country with huge potential.

EU: What type of technology and system installed for power generation at the Sahiwal Coal Power Plant?

LX: Sahiwal Power Plant is Pakistan's first supercritical coal-fired power plant consisting of two 660 MW units as mentioned above. The plant operates at steam parameters above the critical point (a state beyond which there is no distinction between liquid and gaseous phases) which offers greater efficiency than older power plants based on sub-critical technology, and most importantly, very limited emissions. We hired the world's best thermodynamic team and used the most advanced tools to design this power plant. The equipment used in our power plant has been manufactured in top Chinese engineering compa-

nies like Shanghai Electric and Harbin Boiler Company. The construction quality of the project can be judged from the fact that our project was awarded the highest achievement award named as China National Quality Engineering Gold Award for the year 2018, as I mentioned above.

EU: What is your viewpoint regarding efforts being made in Pakistan for consuming indigenously produced coal in Thar for electricity production?

LX: Pakistan has huge coal reserves, more than 95% of which are in Sindh. These reserves have the potential to become a source of Pakistan's development by providing cheap and efficient energy. With the application of advanced coal-fired technology, Thar coal can even become a cleaner resource than natural gas. It is possible to integrate the use of Thar coal with the technology that we have at Sahiwal Power Plant. We believe that there are at least the following benefits of using Thar coal: reduction in demand for imported fuel which drains the foreign exchange reserves of Pakistan, development of underdeveloped areas, Increased employment opportunities generating revenue for economic development and poverty elimination.

EU: What is your own experience so far while working in the energy sector of Pakistan?

LX: I have the experience of working in five power plants in three countries around the world. Since the year 2017 I have spent a big part of my life in Pakistan. Pakistan has become my second home now. I have been working in various capacities within the company performing different roles that required a lot of travelling majorly between Sahiwal, Lahore, Islamabad and Karachi for business activities related to fuel supply, commercial operations and preliminary planning for new investments. The amount of love and warmth that I have received during my professional journey has and will always be a part of me. In a professional capacity working in the energy sector of Pakistan has been a unique experience.

EU: What are the major issues and problems in your own viewpoint of the energy sector of Pakistan and efforts of the Pakistani government to resolve them?

LX: The circular debt will not just trigger the default of incumbent power plants, but will also greatly destroy the

confidence of investors as well as banks and insurance companies. And the latter will have long-term implications on this nation. Another problem that I think indirectly effects the power sector negatively is the dubious and misleading information that circulates on print and social media about CPEC projects, especially the power projects. It is also generally believed that CPEC power plants are very lucrative and that certain companies take unfair advantage out of it. However in reality, the time at which these investments were made, the energy sector was going through a severe power shortage and the investment environment was not safe. Even though the investment opportunity was open for all, no one was up for investment in the said sector. In those crucial times, Chinese companies took the initiative and stepped in under the banner of CPEC. However, the actual returns and benefits of these investments are far less than what was promised.

EU: Do rate the electricity transmission and distribution system of Pakistan?

LX: According to me the current network of Pakistan's transmission system is coping up well with an increased generation capacity, the National Transmission and Dispatch Company is doing a good job to maintain and balance the current carrying capacity of existing lines. The ongoing construction of HVDC Matari Lahore line under the banner of CPEC is a well timely addition to the network. However in recent past distribution networks were facing some difficulties to maintain adequate voltage, to minimize line losses and power theft, I am sure distribution companies are doing well within resources to overcome such shortcomings.

EU: Do tell our readers about special efforts made by your company to safeguard the environment from the adverse impacts and effects of the Sahiwal Coal Power Plant?

LX: World's best Environment Protection Technologies have been installed to ensure that all the pollutants are removed to levels way below NEQS, World Bank and European Standards. Process Water is continuously recycled and reused after treatment. 4 types of different wastewater treatment systems are used to treat all types of wastewater to bring the parameters way below NEQS. An independent EPA-Certified Third Party monitors all types of emissions and its reports are submitted to various Government Departments every month. ■

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Due to govt incompetencies, pandemic impact would be severe - Malik Naeem Azam

Interview of Managing Director, Deugro Projects & Logistics Pakistan (Pvt) Ltd.

Supply chain disruptions and the lockdowns are already affecting logistics companies.

The impact is severe for small players: Small trucking businesses are being severely hit because they tend not to have any backup, recovery plan, or intermittent operation plan, lack of technology, as well as tools to follow health guidelines (for example, disinfecting, deliveries), further complicate their response. Top players are experiencing a strong impact", says the Managing Director, Deugro Projects & Logistics Pakistan (Pvt) Limited in an exclusive interview to Energy Update recently.

He continues to say that.....

■ **By Mustafa Tahir**

EU: Details of your career, education and experience?

Malik Naeem Azam: I am a logistics and shipping professional with 25 years of experience for coordinating and executing strongly with a competitive markets' service record, I am serving Deugro Projects & Logistics Pakistan (Pvt) Limited as Managing Director Pakistan & Afghanistan.

EU: What is the nature and scope of your business?

MNA: There is no universally agreed definition for logistics services, and the role may be interpreted in very different ways across the region.

Summarizes the results of the desk research on logistics definitions, based on various national and international publications, including various national laws and regulations and reports by the United Nations Conference on Trade and Development (UNCTAD), the United Nations Economic Commission for Europe (UNECE), the European Commission, the International Federation of Freight Forwarders Associations (FIATA), the World Bank, the Organisation for Economic Co-operation and Development (OECD).

EU: What could be the adverse effects of the anti-coronavirus lockdown inside and outside Pakistan on the business of your company?

MNA: The Impact of COVID-19 on Logistics' firms which are involved in the movement, storage, and flow of goods, have been directly affected by the COVID-19 pandemic. There is no good sentiment in the air on the trading floor of Pakistan Stock Exchange. Insufficient cash flow as a result of slowing demand up and down the country with 12.50% central bank's policy rate will make it hard for the businesses to 'breathe' normally having Chinese Virus around. Almost 60pc of all that Pakistan exports is textile. The problem this sector is currently facing is that the majority of the raw material –dyes & chemicals–

Talk on Logistics Sector

that is required to produce textile is imported from China. The textile industry has already been suffering from the liquidity shortages as the highly incompetent Imran Khan government after ending zero-rated status of the important export-based industries, failed to refund the sales tax proceeds and customs duty rebates of these firms. The last quarter of the ongoing fiscal year and the first two quarters of the upcoming fiscal year FY21 would bring unprecedented levels of cash-shortage problems as the investors have started investing in safe-haven stocks, gold and dollars. Cash is everything as we move through one of the worst recessionary intervals.

The situation would get much more difficult for Pakistani exporters. Shortage of truck drivers and crane operators will reduce the operations at the ports. One of the major 'deficit-powerhouses' of Pakistan is its national flag-carrier Pakistan International Airlines (PIA) that has been running a net operating loss for quite some decades now will end up furloughing the workers if the situation persists for the next two to three months. The airline will keep running a loss of about \$63 million a month if its operation would remain suspended for next 25-35 days.

EU: What are the overall effects of the lockdown on the logistics sector the world over:

A: Logistics firms, which are involved



in the movement, storage, and flow of goods, have been directly affected by the COVID-19 pandemic. As an integral part of value chains, both within and across international borders, logistics firms facilitate trade and commerce and help businesses get their products to customers. Supply chain disruptions to the sector caused by the pandemic could, therefore, impact competitiveness, economic growth, and job creation. Supply chain disruptions and the lockdowns are already affecting logistics companies.

The impact is severe for small players:

Small trucking businesses are being severely hit because they tend not to have any backup, recovery plan, or intermittent operation plan. Lack of technology, as well as tools to follow health guidelines (for example, disinfecting, deliveries), further complicate their response. Top players are experiencing a strong impact. In April, both DHL and CEVA Logistics declared Force Majeure—a clause that allows contracts to be declared null and void due to acts of God or other unexpected circumstances—on all their contracts due to COVID-19. ■



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Melting Glaciers of the 3rd Pole

Pakistan has glaciers more than anywhere except in the polar region (North and South Pole). The country's northern part Gilgit Baltistan (GB) is known as the Land of Glaciers. However, a dramatic change in environment is eating up the iced mountains in the Karakorum and the Hindu Kush Range - it is increasing risk to lives, species, resources, etc. downstream.

GB is part of the family of global mountainous regions where climate changes rapidly through elevation over relatively short horizontal distances. As a result, the hydrology, vegetation, ecological conditions, and socio-economic settings also change rapidly.

Due to meteorological abnormality glacier meltdown is surging day by day at the fastest rate. More than a hundred ton of ice and robust debris are dropping down valleys ten times more than the average rate. As a result, large glacial lakes are formed -there are risks such glacial lakes would burst through banks and create deadly flash floods downstream. Manzoor Hussain, a resident of Hunza Valley, reported an incident that happened recently. According to him, water from glaciers started to dribble down with a loud grumble of rocks. Villagers left their houses and ran away to secure their lives. The rumbling started on May 30 at noon. It wasn't new for the villagers, but this time the floodwater raised quickly with an estimated count of four meters per day. It led to the evacuation of villagers from their homes to save their lives. A UNDP report says till 2018 there were about 3000 lakes formed worldwide by melting glaciers, among them thirty-three were declared deadly lakes, risking the lives of more than seven

million people.

Half of all humankind directly depends on resources from the mountain, primarily water. Mountains also support 25% of world's terrestrial biodiversity and include nearly half of the world's biodiversity 'hotspots'. Of the 20 plant species that supply 80% of the world's food, six of those (apples, barley, maize, potatoes, sorghum and tomatoes) originated in mountains. In humid parts of the world, mountains provide 30-60% of the fresh water downstream; and in semi-arid and arid environments, they provide 70-95%. Mountains also provide goods and services of global significance in the form of water, hydroelectricity, timber, biodiversity and niche products, mineral resources, recreation, and flood management.

Pakistan has received warnings about devastating flood conditions and disasters, which can happen because of the glacier meltdown -in between 2018 and 2022. An analyst says there's "a clear and present threat to water security specially to countries like Pakistan who are dependent on these glaciers for year-long supply of fresh water exists". Pakistan may not be ready for the melting glaciers challenges, even though it is aware of the situation, some experts say. When glaciers melt, diseases like viral, bacteria, fossils and other biological species wake up which could be harmful for humans. What about the region as a whole, as the Hindu Kush range travels east-west meandering into Karakorum and the Himalayan range. "Unfortunately we will not be able to do much about it; it needs global effort or at least a regional approach," the analyst says.

"Local conservation efforts will still

be applicable but will not change the melting phenomenon." China, India and Pakistan will have to come together, but the current and emerging situation makes chances of such a cooperation remote, the analyst adds. According to the UNDP-Pakistan, glacier meltdown isn't just melting of ice, but it brings boulders and debris along with the large amount of sand that fills the river and causes a flood. The fall out of the recent Shishper glacier rushed beyond the expected path. The whole nation relies on the Indus River as it is a primary source of irrigation all across Pakistan. The dripping of glaciers with boulders destroyed the apricot, walnut and cherries on which many families were depending. Millions of lives are in danger due to abnormal melting of glaciers.

According to the Hindu-Kush Himalaya Assessment Report, the third pole glaciers will vanish entirely by 2100. And by 2025, the nation will face the scarcity of water: the changing water level and abnormal melting patterns in the Indus River impose threat of water war between nuclear states India and Pakistan as the Indus River connects both states. What about the quantum rise in water flow as melting glaciers flood. Pakistan is building two main dams to harness the water and produce hydropower. These will help somewhat in flood control, says Khan Hasham Bin Saddiq, a former head of a think tank in Islamabad.

Downstream, the Indus River could remain in the threat zone due to the changes. "We need to take a holistic view of the Indus Basin and manage it as one single breathing system," the analyst says. ■

Power privatization stalls as IPP talks drag

Two of the parties that remained interested in the privatisation of two RLNG-based power plants have signaled their refusal to place any equity bids for the projects at the moment. They have told the government that they are watching the ongoing tariff renegotiations with the independent power producers (IPPs) that were launched shortly after the release of the inquiry report on the IPPs. At issue are two power plants - Haveli Bahadur Shah and Balloki, both in Punjab - owned by the federal government. Both plants were built with government money with the intention to privatise them soon after they began commercial operations which happened in the middle of 2018.

In September last year, Adviser to the Prime Minister on Finance Dr Hafeez Shaikh said he was expecting to raise Rs300 billion from the sale of these two plants which, according to him, should happen by December 2020. However, in budget documents, the government has budgeted Rs100bn from privatisation proceeds. The privatisation programme has been troubled for a long time now. The government appointed Credit Suisse as its sell side adviser in March 2019, and its first attempt to invite expressions of interest (EOIs) in November 2019 met with a tepid response. The deadline was extended, and finally EOIs from 12 parties were received in January 2020. But with the onset of uncertainties from Covid-19, that number dwindled to three.

One of these consortia is led by the Qatar Investment Authority, with Nebras Power, Mitsui & Marubeni from Japan

as partners. The other is led by Edra Power Holdings, a Malaysian power company owned by the China General Nuclear Power Corporation, in partnership with the Thailand-based Global Power Synergy Corporation. In a recent online meeting attended by the privatisation minister and secretary, as well as the prime minister's special assistant Nadeem Babar, among others, both consortia told the government they would not be submitting any equity bids for the projects until the outcome of the tariff renegotiations with 13 IPPs became clear. Those talks were launched after the release of the inquiry commission report on the IPPs.

The consortium also said they were unable to secure commitments from international lenders for long-term financing for the projects because of the ongoing talks, according to multiple participants of the meeting that Dawn spoke with. "International lenders are now in a bit of a conundrum" regarding this transaction, one senior banker with deep familiarity of matter. "International consortia bring the lenders with them, but in this case the lenders can't figure out how to model this asset" considering its tariff could end up being renegotiated down the road. In its public messaging, the Privatisation Commission has hinted at the challenges it is facing in helping prospective bidders arrange long-term financing for these projects. On July 23, for example, days after the two consortia told them of their difficulties, the privatisation minister flew to Karachi and met the presidents of large local banks along with officials from the power regulator. The meeting was held at the State Bank. ■

Largest solar wall being built at UET

After the mega launch of Pakistan's biggest solar wall at CERAD in Kala Shah Kaku Campus of UET Lahore, the same kind of



solar wall is being constructed near the admin block in the main campus of the university in Lahore. The wall manufacturing and installation work is being done speedily.

A Research team along with engineers and technicians has been deployed there who have been equipped with the wall construction passionately. Like its predecessor, this new wall too is unique in its kind, functions and nature. Total size of this system is 148 kilo watts. The ongrid system of this wall will generate around 210,000 units per annum. As per the estimates, return on investment will be grabbed in approximately 4 years and 6 months. The life of this system will be more than 25 years. With this solar wall, the maximum peak demand of the university will be reduced. By using this wall, voltage dropping will be quite less - voltage drop problem will be mitigated due to energy injection, 120 tons of CO2 will be avoided per annum. This will reduce the CO2 footprint of the building. ■

Governments don't want an intelligent population because people who can think critically can't be ruled.

They want a public just smart enough to pay taxes and dumb enough to keep voting.



Sardar gets sms from bank: "Your credit card bill payments are outstanding"

Sardar replies to sms: "Thanks for the compliment"



Shahid Mahmood Khan appoints PARCO MD

Opposing the recommendations of the Petroleum Division, the federal cabinet has approved the appointment of Shahid Mahmood Khan as the Managing Director of Pak Arab Refinery Limited (PARCO).

Shahid Mahmood Khan is a Chartered Accountant with an experience of around 30 years in the fields of finance, general management, supply chain, government liaison, corporate planning, business development in petroleum, automobile and accountancy services.

Khan is currently engaged with PARCO Coastal Refinery (PCR) Ltd as its project director. PCR is a proposed Pakistani oil refinery situated at Khalifa Point in Lasbela, Balochistan. It was established by PARCO through a joint venture between the governments of Pakistan and Abu Dhabi.

Earlier, this scribe had learnt that the Petroleum Division had allegedly paved the way for the appointment of a "blue-eyed official" to the top position of PARCO. The Petroleum Division, in an apparent bid to declare favourite candidates "suitable" for PARCO's top slot, had also constituted a four-member committee, sources had informed.

"Ahsan Khan, a favourite candidate for the PARCO top slot, has relations with a federal minister and the Petroleum Division is going all out to ensure his appointment as next PARCO MD," said an official source on the condition of anonymity.



It may be noted that a consultancy firm, Sidat Hyder Morshed Associates (Pvt) Limited, had earlier placed the names of Ahsan Khan and two others in the "not considered suitable" category as per their own method for shortlisting candidates.

Regardless, sources said, the Petroleum Division had constituted a high-powered interview committee (HPIC), comprising Energy Minister Omar Ayub Khan as chairman and Special Assistant to PM on Petroleum as its member, to do the needful in this regard.

Sharing details of the federal cabinet meeting, sources said that the prime minister and cabinet members were not happy with the inclusion of "not suitable candidates" in the final list of shortlisted candidates, expressing their anger to the Petroleum Division officials. ■

Mari Petroleum appoints MD

Faheem Haider has been appointed as new managing director/CEO of Mari Petroleum Company Limited (MPCL). He



will assume his duties from August 12, 2020. Haider comes with a rich background and experience of exploration and production sector. In his illustrious career of over 27 years, he has held various leadership and staff positions with Union Texas Petroleum Inc Karachi, Nutricon Union Ltd Islamabad, OMV Exploration GmbH Islamabad, Helix RDS Ltd, Aberdeen BG Group, (Oman) and Neptune Energy (Cairo, Paris, London). He possesses sound knowledge and experience of exploration and production projects life cycle from both technical and commercial perspectives. Apart from handling core exploration and production operations in different parts of the world, he has hands on experience of joint venture management, business development, operational efficiency, cost leadership, stake holders' management and growth delivery. ■

Pakistan imports Euro-V standard fuel

Under the directives of Prime Minister Imran Khan and Federal Minister for Energy Omar Ayub Khan, the state-owned oil marketing company, Pakistan State Oil (PSO), has started import of Euro-V standard fuel in the country, said spokesperson of Petroleum Division. PSO was the first oil marketing company to initiate the process of importing Euro-V petrol. This move will enable the country to import better quality fuel and primarily aims to protect the environment from climate change and global warming, the statement added. He further added that the Petroleum Division had formulated policy guidelines for switching all kinds of petrol imports to Euro-V specifications from August 2020 onward to revolution-

ise the fuel mix of the country.

"In addition, all diesel imports of the country will conform to Euro-V standard by January 2021," he said. These policy guidelines have been shared with the Oil and Gas Regulatory Authority (Ogra) for implementation and to ensure import of Euro-V petrol and diesel in line with deadlines set by the federal government. He added that Euro-V petrol will help Pakistan cut down the sulphur content to avoid air pollution while it would also improve health of vehicles which have been affected by low-quality fuel.

Under the guidelines, the current mechanism for marketing of petrol and diesel with regard to pricing and components will remain in place. Ogra and

the Oil Companies Advisory Committee (OCAC) will take further necessary action accordingly. The prevailing pricing formula may continue i.e. average Gulf price for Euro-V diesel and five-day mean of Platts Arabian petrol plus premium, freight and incidental charges. The pricing benchmark and mechanism for local refineries, producing diesel and petrol, may be based on the actual landed import price of Euro-V diesel and petrol for Pakistan State Oil's (PSO). Ogra will make price calculations in consultation with the oil refineries and PSO, so that any undue advantage to the refineries producing fuel below Euro-V standard is avoided. ■

Sindh Govt urges corporate sector, multinationals to join its urban plantation campaign

The Sindh Government has invited the corporate sector including the multinationals to join its drive to grow and maintain urban forests in Karachi and other cities of the province as for the purpose it will provide land and all other technical assistance required to do the plantation.

The offer to this effect was made by Sindh Government Secretary for Forest and Wildlife Department Abdul Rahim Soomro at a consultative session held on monsoon plantation drive. The session was organized by Central Standing Committee on Environment of Federation of Pakistan Chambers of Commerce and Industry (FPCCI) whose majority of the participants joined the proceedings through video-link in view of Covid-19 restrictions.

Sindh Forest and Wildlife informed the meeting that plantation done along



the Lyari Expressway had emerged as the first major success story of developing urban forests in Karachi.

He said that in the next phases of the urban forest drive, the plantation would be grown all along the Lyari Expressway. He said that a site in Shah Faisal Colony no 2 had also been selected for developing urban forest along the Malir River

in the city.

He said that the Sindh Forest Department had been conducting an extensive mangrove plantation drive along the coastline of the province under which a record number of 2.1 billion mangroves had already been planted. He said that Sindh was also participating in the "Clean and Green Pakistan" initiative of the federal government as the province had got share of Rs 2.5 billion out of total Rs 125 billion budget of the programme.

A representative of Pakistan International Airlines Shoaib Dahri informed the meeting that the PIA had also been participating in the Clean and Green Pakistan programme of the government by planting 2,000 trees this year in collaboration with the Civil Aviation Authority.

Brig Qasim Changezi, Horticulture Director of Defence Housing Authority Karachi, DHA would plant 1,00,000 trees as its contribution in the Clean and Green Pakistan campaign as 75,000 trees had already been planted in the area for the purpose.

Noted industrialist Mian Zahid Husain said that the FPCCI would play its due role to promote greenery in the country and also to curb the harmful phenomenon of untreated discharge of the industrial effluents into the water bodies including the sea.

Convener of FPCCI Standing Committee on Environment Naeem Qureshi said that unchecked release of industrial waste had caused irreparable damage to the marine environment of the city as treatment plants should be established at the earliest to prevent this harmful activity. He said that his Standing Committee would act as a liaison between the corporate, industrial entities and Sindh Government Department's Forest Department to promote the urban plantation drive all over the province especially in Karachi. ■

FPCCI, NFEH backs PM's drive to plan 3.5m trees across country

The National Forum of Environment and Health (NFEH) and Federation of Pakistan Chambers of Commerce & Industry (FPCCI) has warmly welcomed the initiative of Prime Minister Imran Khan to start a massive tree plantation across the country while utilizing the newly formed Tiger Force under the auspices of the present federal government.

In a statement issued, NFEH President Naeem Qureshi, who also is the convener of the FPCCI Standing Committee on Environment, praised the initiative of the PM to plant 3.5 million tree saplings in one day to set a new world record.

He said that both the FPCCI and NFEH would fully back, in whatever manner they can do best, the PM's latest initiative to plant trees across the country. He said that availing the services of newly raised Tiger Force for a nationwide tree plantation campaign was the best utilization of the volunteers of the force for a noble national cause.

Mr. Qureshi hoped that the latest move of the PM would go a long way in increasing greenery in the country and reversing the alarming phenomenon of environmental degradation in the country. He said that the initiative would also further the drive of Clean and Green Pakistan and 10 billion Tree Tsunami Programme of the present government. He said that both the FPCCI and NFEH had been doing its best to promote tree plantation drive in the country.

The NFEH president said that in this regard the FPCCI's Standing Committee on Environment had been acting as a facilitator to assemble all the concerned government agencies, non-governmental organizations, industry, and corporate sector at a common platform to combine all of their resources to conduct tree plantation campaign across the country. In this regard, the current monsoon season is being utilized to increase the green cover in the country. ■



Govt, IPPs reach accord to 'slash energy cost'

Prime Minister Imran Khan announced that the government has signed a new agreement with the independent power producers (IPPs) whereby the cost of electricity generation would be brought down and circular debt reduced.

In a series of tweets, Premier Imran said, "I congratulate the nation because we are fixing the damaging structure we inherited in our power sector."

Minister for Information and Broadcasting Senator Shibli Faraz has said that provision of cheap electricity to consumers on a sustainable basis is the government's top priority.

Addressing a news conference along with Special Assistant to the Prime Minister on Power Shahzad Qasim, the minister said that as a first major step towards providing cheap electricity to consumers, the government signed a basic agreement with Independent Power Producers (IPPs).

The special assistant said the government was working to change the whole power purchase regime with the IPPs, as the current system guaranteed payment of electricity to the IPPs as per their installed capacity even if the actual purchase of electricity was much lower. "It will take between one and two years to devise a new power purchase regime," he added. ■



Lahore sets up underground Rainwater Storage System

The government has launched three dams in North of Pakistan, which besides water preservation and hydropower will provide flood management measures during monsoon. When heavy rain comes pouring down, Pakistan's urban areas are flooded with water, yet the country is facing a serious water crisis - mainly due to poor management rather than scarcity. To address the issue, the Lahore city management is all set to launch its first underground water storage system to collect rainwater for reuse and reduce flooding in the city of over 11 million. It will be the country's first city-based water conservation and underground water mitigation initiative.

The Lahore Development Authority (LDA), in collaboration with its subsidiary Water and Sanitation Agency (WASA), has developed the first rainwater storage in the city to recharge the depleting groundwater resources. The project "Monsoon Underground Water Reservoir" that started in May and will be operational this month will help store 1.4 million gallons of water (100 mm or 4 inches of rainwater). Built at a cost of about Rs150 million, the storage system is located near Lahore's Lawrence Road - one of the areas flooded during heavy rain. The city receives an average annual downpour of 628-670 mm (more than 24 inches).

According to WASA, in the first phase a 600-foot drain has been laid down connecting Lawrence Garden to the un-



derground water reservoir. But if the tank overflows in case it rains the whole day, there is a second outer surface reservoir to contain over 0.2 million gallons of water" and even if the second reservoir fills up, there is another system to channel the water. The agency is keen to replicate the system throughout the city if the government approves funding. Most of the collected water will be used to irrigate the Lahore city's gardens and parks. The project will also help recharge the irreplaceable groundwater in the capital city of Punjab, which is exhausting at a faster rate due to excessive pumping and massive urbanization.

The country's largest city Karachi -its economic powerhouse situated in the

south along Arabian Sea shoreline, is facing similar crisis. Up north the government has launched three dams which besides water preservation and hydro-power will provide flood management measures during monsoon. The South Asian country happens to be in the extremely high water stress region considered by some observers as one of the hot spots of climate change. Melting glaciers in the third pole (Himalayan and Hindukush ranges) pose water risk to 1.6 billion population in the area.

"We need to reduce wasting water, conserve, and reuse", says a water resource expert. That seems to have begun in Pakistan with Lahore taking the lead. "Hope Karachi follows", he said-(SA) ■

It's high time switch over to LPG - Azhar Rafiq

An intimate interview with Executive Director, Burhan Gas Company

The LPG sector of Pakistan has immense potential to grow and still a lot of opportunities are there to capture. Every year, many valuable and loved ones lose their lives and huge financial impact must occur on the economy just because of cylinder blast cases. Government institutions are doing their duties at their best to reduce and eliminate all the factors which are involved in these types of blasts. In this scenario, Burhan Gas Company (BGC) management came up with a solution in the shape of a composite cylinder, which is safer and environment friendly for people of Pakistan, this stated by the Executive Director, Burhan Gas Company (BGC), Azhar Rafiq in an interview with the Energy Update, he says that

The global composite cylinders market stood at \$601 million in 2018 and is projected to reach \$921 million by 2024, exhibiting a CAGR of over 7% during 2019-2024, owing to increasing demand for explosion proof, non-corrosive and lightweight LPG cylinders.

Born, raised and took earlier education in Gujranwala. Went to National Defense University for a Master in Business Administration.

After completing education, I joined my family business and served there as Director Marketing for a decade.

Burhan Gas Company (BGC) was established in 2018 and was placed as Executive director since then. BGC is a pioneer in manufacturing LPG composite cylinders.

The vision behind BGC establishment was to bring 4th



By M. Naeem Qureshi

Industrial revolution in the cylinder industry of Pakistan.

Most of you might be aware of what a composite cylinder is? A high-pressure vessel that is made of a composite-polymer material and placed in a plastic body. The technology of manufacturing a modern composite cylinder is a very complex and high-tech process, thus its cost is higher than the cost of a metal analogue. By briefly explaining the characteristics of a BGC composite cylinder, you will get a clear picture of it.

He says that When it comes to LPG cylinders, safety is of paramount importance. BGC cylinders are tried and tested and every cylinder has proven to be 100% explosion proof and safe even when engulfed in fire. Furthermore, BGC cylinders are user-friendly due to its structural design and

lightweight. These cylinders are almost half the weight of metal cylinders and come with specially designed handle rings that provide a firm grip. These cylinders come with a translucent body that enables you to accurately check the LPG level against light. The BGC cylinders do not corrode or rust unlike its metal equivalents and therefore there are less chances of leaving stains and marks.

The BGC cylinders can be customized as per your preferences and requirements. You can choose the color, ensure branding, etc. The cylinders also come in various sizes so you can pick the right one that fits your purpose. The outer and inner casing and the glass filament wound bottle is made by adding UV protective additives to withstand adverse weather conditions and prevent degradation. BGC cylinders are 100% eco-friendly as the composite glass fiber is used which comes from bottle and plastic waste. The high quality heavy-duty casing around the BGC cylinders is incredibly strong and durable thus making it low maintenance and cost-effective.

Azhar said that in the current world scenario, many countries have switched, and others have published their plan for full transformation to composite cylinders. Pakistan Government and officials concerned should also revise the LPG policy and incorporate all the necessary changes, which makes LPG sector more safer and environment friendly.

He stressed upon the countrymen that this is the right time to bring the change in LPG sector by transforming the public into more safer environment. ■



National output loss likely to be Rs891 billion to Rs1.6 trillion - Khurram Malik

Exclusive interview of President HVACR Society, Pakistan

EU: What are the fundamental reasons and causes behind establishing your Society?

Khurram Malik: Before the formation of Pakistan HVACR Society, HVACR activities were present in the country but the professionals working in the Industry did not have any a platform where all of them could sit together and share their ideas and experience for the growth and advancement of this vital Industry. The idea of HVACR representative body was conceived for the first time in 1993. At that time, National Institute of Technical Education (NITE) Islamabad - Ministry of Education, wanted to hold a national conference / workshop on air-conditioning and refrigeration technology. In June 1993, they approached leading manufacturers, contractors, engineers and consultants associated with the HVACR profession and industry.

EU: How your society helps out its members to adopt latest trends, innovations and best practices while serving their clients?

KM: Right from its inception, the Pakistan HVACR society has been heading forward in leaps and bounds and achieving its multidimensional and diversified objectives with a view to further the cause of HVACR profession and industry. Though the society has achieved big landmarks in a relatively short span of time but we are not content with our achievements. We have done a lot but much more has to be done. Surely our emphasis will be on augmentation of modern technology, innovations, developing our own technology and producing compatible products.

EU: What are the major activities and events held so far by your Society?

KM: This organization serves the profession, trade and industry through the experience & expertise of the professional elders and on the other hand it will also immensely help end users, manufacturers and all others related to this profession and industry. Pakistan HVACR industry is becoming a growing business



due to its continuing growing demand. From pharmaceutical industry to retail businesses, from shopping malls to high rise residential apartments all requiring HVAC system. This is the reason why investors like Emaar find unmatched return on investment by adding thermal comfort to its facilities and this trend start to catch up.

EU: In what manner your society contributes towards the goal of sustainable, inexpensive, and uninterrupted electric supply to consumers in Pakistan?

KM: The Society's vision and theme may be "Improvement of the Environments". It means how to improve "our work", "ourselves", "our community", "our country" & "our world". I would suggest the readers: let us work together on this mission for our next generations. We, as an individual and as a nation, are badly lacking on this side. Therefore, we are very much in favour of manufacturing our own products locally so as to reduce the import burden on the exchequer on one side and to promote the local industry on the other side; but unfortunately, the local industrialists appear to be very conservative.

EU: How the HVACR business was affected due to lockdown imposed due to pandemic?

KM: The past six to seven months witnessed the global economy grind to a halt as countries went into lockdown to contain further spread of Covid-19. The resulting impact dealt a devastating blow as supply chains were disrupted and businesses were forced to shut down. In Pakistan's case, the finance ministry said that so far the magnitude of decline in economic growth due to the pandemic remained uncertain while a new independent assessment put the national output losses in range of Rs891 billion to Rs1.6 trillion in fourth fiscal quarter alone.

EU: Tell us to what extent the HVACR companies in Pakistan have recovered from the adverse impacts of the lockdown?

KM: No, there are no signs of recovery so far. However, after the lockdown is fully lifted, it will take at least another six months or so for the market to enter into recovery phase.

EU: What are the major issues generally faced by the HVACR companies in Pakistan in its current business environment?

KM: Due to lockdown for the past three four months, there was no activity in the construction industry. No new buildings projects or private houses were being constructed. So there was almost zero demand for HVAC equipment and related installations. Now, after the resumption of constructions activities the demand may be revived in coming few months IA.

EU: What is the future of the HVACR firms in Pakistan?

KM: The future of Pakistan HVACR industry is quite prosperous. We have got quite favourable factors of production, skilled manpower and good metrological conditions. Further retake of economy, lower bank interest rate and other attractive terms offered by the government is inductive for production of compatible products. At the moment, various economic checks and different parameters exhibit revival of economy. ■

State Bank should finance renewable energy on priority basis - Sajjad Ahmad Sajid

Exclusive interview of Founder & CEO, Infra Energy Pvt. Ltd

■ By M. Naeem Qureshi

EU: What is your qualification, experience and attachment with the renewable energy sector?

Sajjad Ahmad Sajid: I graduated in Electrical Engineering from University of Engineering & Technology, Lahore in 1977. I have 44 years of practical experience on execution of energy projects, with 30 years in Saudi Arabia. I worked for 20 years with Siemens Ltd. Saudi Arabia, on project management of 380/132kV grid stations in all parts of Saudi Arabia including Holy places.

I was attached to the renewable energy sector after coming back to Pakistan from Saudi Arabia in 2013. I started working as manager projects with 100MW Quaid-e-Azam Solar Power (QASP) project, Pakistan's first utility scale, grid tied, pilot project located in Bahawalpur, South Punjab from September, 2014. After achieving timely completion of plant commercial operation Date (COD) on 15 July, 2015, I was promoted to the position of chief technical officer of company and worked further 5 years on solar plant O&M together with various studies on solar off-grid solutions in remote areas and O&M of existing hybrid plant (solar & wind). After concluding my contract with QASP by end April, 2020, I decided to serve further the Renewable Energy sector of Pakistan and launched Infra Energy Pvt. Ltd. Lahore, a renewable energy consultancy company as founder/CEO by June, 2020.

EU: What's your decision-making process to run your business?

SAS: Considering reduction in tariffs and LCoE of renewable energy projects, together with GHG emission reduction, global warming mitigation and decrease in dependency on fossil fuels, the first criteria is that Renewable Energy projects should be promoted in Pakistan. The 2nd criteria is decision making for selection of kind of renewable energy like solar, wind, biomass, smart grid etc. by reviewing various variables. The 3rd criteria require consideration of renewable energy resource data, geospatial data, cost-benefit analysis, technical, economic, regulatory, social and environmental aspects and grid integration to offer investors from site selection to project planning with sustainability, maximization of profits and minimization of risks.

These criteria cover the main decision-making process to run our business.

EU: What are the salient current and future projects of your company?

SAS: Infra Energy is a start-up and we are striving to work on planning, design and construction supervision of following future projects: solar on-grid/ off-grid /hybrid systems with net metering, hybrid wind/solar projects, smart grids, biomass / waste to energy projects, energy efficiency and environmental management, clean development mechanism, smart mechanized cleaning, solutions for PV modules for solar plant



yield improvement, technical and economical performance analysis of renewable assets and performance optimization and battery storage systems.

EU: What is the future of Renewable Energy sector in Pakistan? How can we convert all conventional plants to clean energy?

SAS: Renewable energy currently accounts for 5-6% of the energy mix of Pakistan. However, the government is taking steps to increase the share of renewable energy. As per ARET policy 2019, 25% of total generation capacity shall be from alternative and renewable energy technologies (solar, wind, geothermal and biomass as well as biogas, waste to energy, storage systems and their hybrids) and 30% by 2030. This shall result in a rough split of 30:30:30:10 between renewable energy,

hydropower, thermal power and nuclear power. The potential of wind power alone is 340 GW in Pakistan which should be further exploited. Also, the government envisages 30% from clean energy hydropower resulting in mostly environment friendly and affordable electrical mix. Pakistan has potential to produce 60,000 MW of hydropower, but currently produces just around 7000 MW.

By implementing ARET policy 2019, we can achieve 30% of installed generation capacity in future by 2030. We can convert all conventional energy sources (gas, oil, coal and nuclear) to clean energy by lowering dependence on fossil fuels (which shall tackle circular debt issue also) and increasing the use of renewable energy (like solar, wind, biomass/ biogas, fuel cells etc.) with following additional measures, together with ARET policy 2019: promote the role of energy efficiency in commercial and industrial sectors, increase the use of bioenergy and biofuels, employ off-shore wind projects, employ small small-scale run-of-river projects together with large hydro projects, prepare and implement integrated energy plan, diversify the investment in renewable energy resources, concentrated solar power (CSP) technology should also be

developed in Pakistan and consider large scale battery deployment until cost reductions make it more affordable. By adapting these measures, the fossil fuel-based electricity generation may become minimal beyond 2030.

EU: What reforms should urgently be introduced in the energy sector of Pakistan for its sustainability and to minimize financial losses of the sector?

SAS: The following reforms should be implemented urgently in the energy sector of Pakistan for its sustainability: attractive tariffs for wind and solar plants should be announced by NEPRA, encourage renewable energy zoning and competitive procurement to reduce overall system cost, devise policy and regulatory framework to facilitate private sector engagement in rural/ off-grid electrification in remote areas, develop transmission infrastructure by private sector to enhance grid capacity, exploit wind and solar resources which are cheapest sources of energy (as well as with faster construction time 18-24 months) in Pakistan and stress down the cost burden and increase energy security by increased utilization of abundant free solar and wind resources.

Also, to minimize financial losses to the RE sector, the following policies are suggested: increase transfer of technology, develop local manufacturing of solar energy components (PV panels, inverters, charge controllers, batteries etc.). Against installation of each 1000 MW installation by IPP in future, a PV panels production facility of minimum 100 MW per year should be installed locally by IPP, strong manufacturing base of various models of wind turbines should also be developed with exporting capacity, improve regulatory framework and policy for business-friendly import of renewable energy components, waste to energy technology should be implemented as Pakistan produces one of the world's largest waste, carbon emissions credits should be claimed and traded to avail benefits and earned amounts should be used for promotion of the renewable energy sector, network metering for solar home/ commercial solutions should be further facilitated to customers with the help of all stakeholders (Neptra, Discos and banks), financing facilities towards IPPs, vendors and suppliers for development of renewable projects of different sizes should be improved by State Bank of Pakistan together with local banks. ■

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