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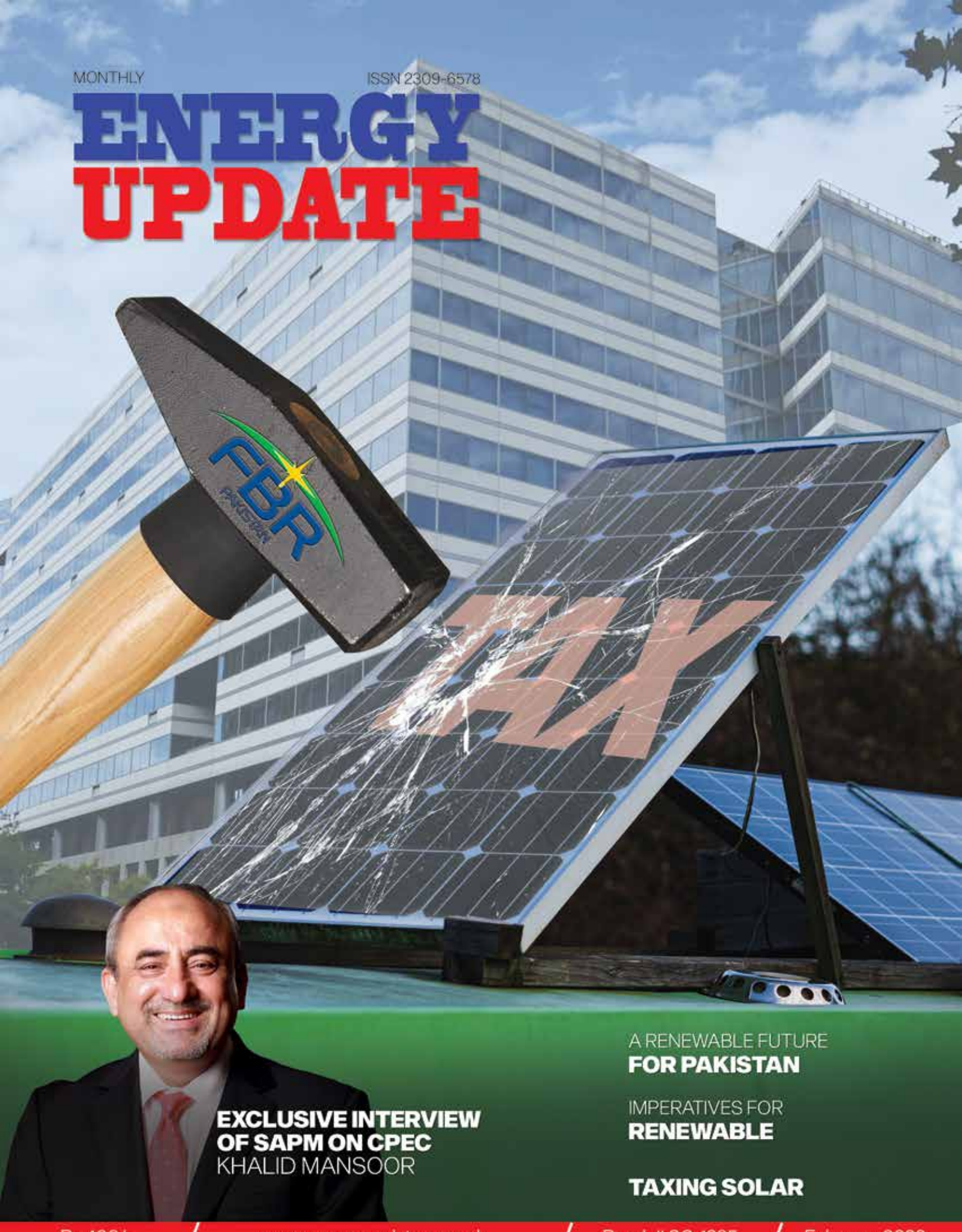

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KHALID MANSOOR

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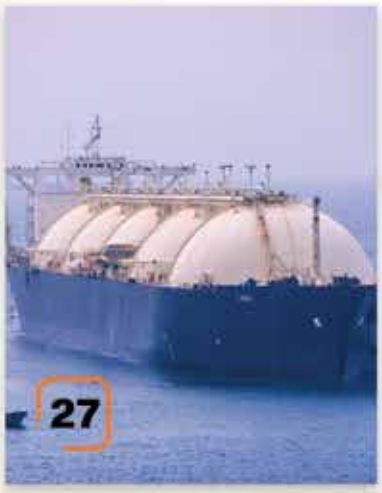

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SCAN ME

FROM THE EDITOR'S DESK...

Special Economic Zones need incentives

As Pakistan enters the second phase of the China Pakistan Economic Corridor (CPEC), Special Economic Zones (SEZs) can play a pivotal role in attracting investment, providing jobs, promoting industrialization in Pakistan, however, they need incentives from the government. Currently, 22 SEZs have been approved out of which 21 have been notified. Thirteen of these had previously existed as Industrial Estates and Industrial Parks while nine others had been approved under CPEC.

According to a new State Bank of Pakistan report, SEZs have emerged as an important investment policy tool to address the problems of low investments, exports, and industrialization. The SEZs address these issues by ensuring business-friendly environment within a designated boundary, with facilitative, institutional, legal and infrastructural architecture. Since developing economies find it difficult to reform business environment across the country at once, they use SEZs both as island of excellence and as a laboratory for policy and regulatory reforms, before gradually rolling out these changes outside the zone.

The majority of SEZs are from the public sector development companies, two are in public private partnership mode, and three are private sector SEZs, of which two are sole enterprise SEZs. However, two more private sector SEZs are in the pipeline. The province-wise breakup shows that 10 SEZs are located in Punjab, six in Sindh, three in Baluchistan, two in Khyber Pakhtunkhwa and one in Islamabad.

Effective Monitoring and Evaluation are crucial for a successful SEZ program. It is a critical parts of the SEZ policy framework, especially if developing economies want to expand the policy, legal and institutional experiments outside the zones or want to scale up the number of zones across the country.

SEZs' potential in the country is constrained by the fact that they are not insulated from overall business and investment climate of the country due to complex process, procedures for approval, registrations, licenses, legal challenges, and sufficient availability of skilled labor.

In addition, challenges to one stop shops, a week framework for long-term operational sustainability for the zones, technical hurdles in the financing of zone enterprises, and weak monitoring mechanisms also pose challenges to the potential success of SEZ.

Following the success of China, SEZs have become a popular tool for investment policy. A latest report shows that a total number of ZEZs in 147 countries of the world has risen to 5,400, with 500 new projects expected to be in the pipeline. Of them, around 89 SEZs are established in developing countries, including Pakistan.

The infrastructure comprising roads, railways, water, electricity, health, education and training facilities for zone residents is a critical success factor which should be ensured. Fiscal incentives like tax holidays, exemptions on dividends and income tax, and duty-free imports, positively correlate with the zones performance and help it attract initial investment. Strategic location is also important factor. Hence, it is also imperative to ensure swifter provision of utilities and infrastructure to the SEZs. A well-designed institutional, legal and infrastructural architecture is required to provide a favorable business environment.

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SCAN ME

NDCs Beyond Coal: A Renewable Future for Pakistan

EU Report

Pakistan recently submitted its revised Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC). NDCs are at the heart of the Paris Climate agreement and contain ambitious targets set by countries for themselves for successive periods of five years.

The purpose of these targets is to reduce national emissions and adapt to climate change in a progressive manner. While the revised NDCs of Pakistan this year outline quite a few of them, a closer look lays bare some glaring issues.

First, the document describes a target for 60% share of renewables in Pakistan's power mix by 2030. This ambitious figure has in fact only recently been devised in the June 2021 Council of Common Interests meeting by redefining what constitutes as renewable energy.

The already existent 30% share of large hydro has been included in the scope of renewables and the previously defined target of 30% variable solar and wind in national mix by 2030, as per the Alternative & Renewable Energy (ARE) Policy 2019, has been added on to it.

However, it has become impossible for variable solar and wind to go beyond 19% (11,798MW out of total planned 61,112MW) by 2030, even in the best-case scenario. Not only do the NDCs fail to note this on-ground situation with clarity, but they also neglect any consideration of the challenges associated with large hydro.

Secondly, the document points out that from 2020, new coal power plants are subject to a moratorium, and no generation of power through imported coal shall be allowed. While it is true that the Prime Minister announced a moratorium on coal power plants last year, the reality is quite different. IGCEP 2021-30, which is the planning document responsible for Pakistan's energy capacity expansion for the next ten years, has no such agenda.

Five new coal power plants (2970 MW in total) are expected to come on-line in the next two years and two new imported coal power plants, Jamshoro Coal Unit-I of 660 MW & Gwadar plant of 300 MW, are to be commissioned by 2022 and 2023 respectively.

As confirmed by IGCEP, by 2030 imported coal will have a capacity of 4920MW and generation of 18,448 GWh in the nation's electric grid, making it the 4th largest source of electricity. Thus, the NDCs and the IGCEP are clearly at odds with each other and show the huge disconnect between different policy making institutions of the country.

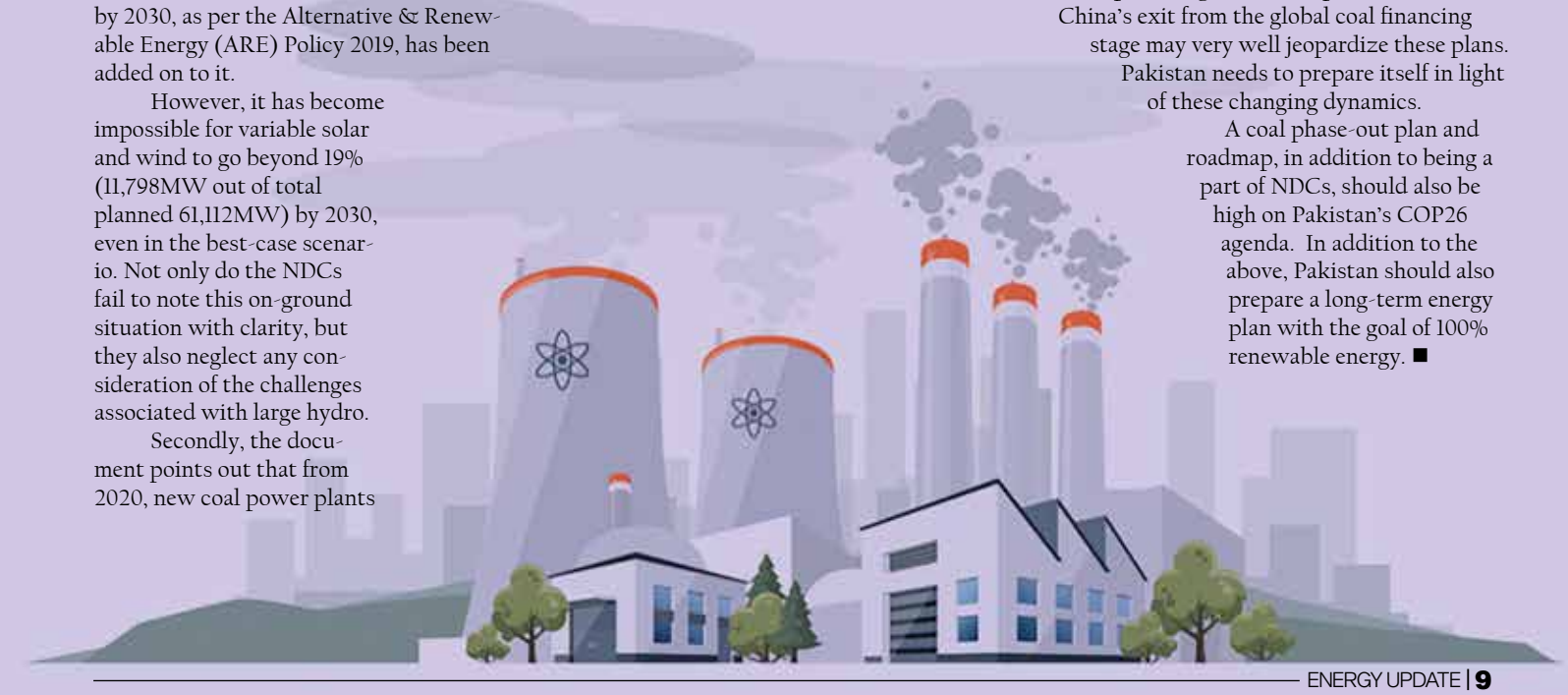
The NDCs mention plans for liquefaction (CTL) and gasification (CTG) of indigenous coal. These technologies have potential concerns which must be studied. Coal liquefaction or gasification is highly water intensive which can be a serious concern in a water scarce region like Thar, where most of the coal is located.

On a positive note, there is one project in the NDCs which makes the country stand out as a global leader: the Ten Billion Tree Tsunami Program (TBTTP). This massive afforestation program is the largest ever in the country's history and one of the most ambitious ones globally. The TBTTP has already finished planting its billionth tree in 2021 and is expected to sequester over 84 Mega tonnes of CO2e overall in the next ten years. Unfortunately, while such nature-based initiatives set Pakistan far ahead of its peers, lacking a firm stance against coal brings it back again, proving detrimental to its climate leadership.

Coal has become an increasingly unattractive option for energy generation over the past years. Renewable energy tariffs have seen sharp drops around the world with tariffs going as low as US 3.5 cents per unit in India and Pakistan.

Recognizing the importance of a shift away from coal, many lending bodies including banks and sovereign governments, historically responsible for coal financing worldwide, have announced commitments to stop funding coal development overseas. China's exit from the global coal financing stage may very well jeopardize these plans. Pakistan needs to prepare itself in light of these changing dynamics.

A coal phase-out plan and roadmap, in addition to being a part of NDCs, should also be high on Pakistan's COP26 agenda. In addition to the above, Pakistan should also prepare a long-term energy plan with the goal of 100% renewable energy. ■



CPEC IN SECOND PHASE

Coastal uplift project worth $3.8bn soon

Khalid Mansoor PM aide

Says power plants having 5,300MW capacity established under CPEC; Informs new energy projects with 3,500MW power are in final stage; tells investment to the tune of $25 billion has reached Pakistan

M. Naeem Qureshi

In the past, we were not producing a single megawatt of electricity in the country on the basis of coal as now we have many state-of-the-art coal-based power plants in Pakistan that is testament to the fact that transfer of technology has taken place as part of CPEC.

This was stated by Special Assistant to the Prime Minister on CPEC Affairs Khalid Mansoor in an exclusive interview with the Energy Update. He informed about the achievements of CPEC so far and the future growth and expansion of the project. Following are the important excerpts from his interview for our readers:

Energy Update: We need to know the progress achieved so far in implementing CPEC in Pakistan.

Khalid Mansoor: The construction of power plants and infrastructure had to take place in phase one of the CPEC. The development of Gwadar Port had also taken place in the first phase as these were the aspects agreed upon by the governments of Pakistan and China. Power plants having a total of 5,300MW power generation capacity have been established in the country under the CPEC regime. New power plants having a total of 3,500 MW power have entered their final stages of construction. Their construction will complete in next six to nine months. Long motorways and road network for the CPEC have been completed in the country. Phase one of the CPEC stands completed as per the scope of the project envisaged jointly by the two countries.

The investment to the tune of $25 billion has reached Pakistan. The under-construction power projects under the CPEC regime mostly belong to renewable sources of electricity. Now CPEC has entered phase two. In the second phase, 10 joint working groups related to the sectors of agriculture, textile, pharmaceutical, science and technology, industrial cooperation etc have been established. The two countries mutually agreed upon the projects to be undertaken in these sectors as these projects were approved and later ratified. All these projects have been undergoing their development cycle in phase two. China has fully agreed and is supportive of the idea that these projects should

be executed in the special economic zones in Pakistan with the mutual cooperation and the highest quality standards.

EU: Is the perception true that Pakistan has now surplus electricity as a result of the implementation of CPEC-related power projects?

Mr. Mansoor: We know very well that we had to install 17,000 MW additional power generation capacity when the country was facing an energy crisis. We required this additional capacity to ensure an uninterrupted supply of electricity in the country both for the general and industrial consumers. At that time, 12 to 18 hours of power load shedding in a day was a norm. The textile sector was badly affected at that time as the national grid didn't have electricity.

The industry had no option but to install captive power plants. Pakistan stopped receiving foreign direct investment because of the energy shortfall. The power generation plants in the public sector of the country have been in shambles as they utterly lack efficiency. We at that time needed a reliable and dependable power supply in the country for the revival and sustenance of the economy. We also needed a cost-effective power supply. Whatever electricity was available in the country was mostly based on the expensive fuel option of furnace oil. Pakistan also did need indigenous coal-based power generation.

Almost all the countries in the world consume coal for power generation. We were supposed to utilize our vast coal reserves in Thar for this purpose. The extraction and utilization of Thar coal for power generation were made possible due to CPEC as otherwise, no one else was ready to finance this huge project. Then we planned to gradually retire the most inefficient power plants in the country. Up to 50 per cent of our power generation comes from the power plants in the public sector whose capacity has been declining. The privatization of these power plants couldn't take place. The electricity off-take in the country will become sustainable with the process of industrial growth going forward. This would resolve the issue of capacity payments in the power sector.

EU: How the implementation of CPEC could be helpful to attract foreign investment and further the process of industrialization in the country?

Mr. Mansoor: We should tell the prospective foreign investors that we have sufficient electricity in the country and several fiscal incentives that are not available in many other countries in the region including Bangladesh, Cambodia, Vietnam etc. We could offer both fiscal incentives and our SEZs for attracting foreign investment. All these incentives make Pakistan an ideal destination for the relocation of the industries from China. CPEC provides us with the opportunity to once again start the era of industrialization in the country.

EU: To what extent, CPEC could be helpful to bring down electricity rates in Pakistan for our consumers?

Mr. Mansoor: Our energy fuel mix was the most inappropriate one in any of the developing countries. Up to 40 per cent of Pakistan's power generation is based on the most expensive fuel i.e. furnace oil. We earlier didn't produce a single megawatt of electricity on the basis of coal although we kept on sitting such a massive reserve of coal for about 70 years. All these issues were later resolved as electricity's weighted average tariff has been gradually decreasing. Our transmission and distribution system has yet to be upgraded and expanded in the desired manner. Up to 17 per cent, average losses of the T&D system has been enormous as Bangladesh has less than 10 per cent losses. The power sector of Pakistan requires a transformation in a holistic manner. The electricity tariff in the country would decline after new power plants consuming both imported and local coal and renewable sources of electricity are established. We have to make efforts to make our power sector affordable and sustainable as the government does have a plan to this effect. We have been gradually implementing this plan.

EU: Is there the element of transfer of technology as part of CPEC for the industrial development of Pakistan?

Mr. Mansoor: We brought to the country coal-based power plants having supercritical technology. We earlier lacked the expertise to run coal-based power plants as the country had not been producing a single megawatt on the basis of coal. Technological and technical interventions took place in the country in this regard having a value of tens of millions of dollars. The coal-based power plants established in the country are better than the standards set for the purpose by the World Bank. All these activities generated massive employment opportunities in the country. The Chinese invested in this sector and established power plants in a record short time. The Sahiwal's power plant was established in just 23 months. The transfer of technology from China to Pakistan did take place in these areas as earlier we had no coal-based power plant as now several such plants were established and have started producing electricity. All these power plants are based on state-of-the-art technology as their standards are higher than the World Bank's specifications.

EU: How many job opportunities have been created in Pakistan as a result of CPEC's implementation?

Mr. Mansoor: The CPEC projects have generated so far 75,000 to 80,000 direct employment opportunities in Pakistan. All sort of manpower was required to run these projects. Technicians having different skill sets related to the fields of electrical, mechanical, instrumentation, wheel fixing etc were required for these projects. The development of these projects also required skilled, semi-skilled, and unskilled labourers. The projects like the construction of roads, motorways, and largest international airport in Gawadar needed massive manpower. However, it is good omen that Chinese grant is also being used to establish a 150-bedded hospital in Gwadar. Furthermore, best vocational training institute will also be established in Gwadar that would generate massive opportunities for our youth to excel. New industrial plants will also be established in Gwadar. The vocational institute will train the local youth to get employment in the industries to be established in Gwadar.

EU: What are the CSR-related initiatives being undertaken in Gwardar as part of the CPEC?

Mr. Mansoor: Gwadar, for the first time, has been connected with the national grid. In this regard, an agreement has been signed with the Frontier Works Organization that would be completed by mid 2023 or by the third quarter of next year. Some 3,000 solar panels are soon arriving in Gwadar for the houses of poor people. We will install them under our direct supervision.

The committee formed for this purpose comprises Balochistan's Chief Secretary, Gwadar GOC, in addition to myself. We have convinced solar companies working in Pakistan to install these solar panels free of charge as part of their CSR initiatives. The biggest project of PSDP has been carried out for supplying potable water to Gwadar by connecting it to the nearby dams that are filled with rainwater. The bottleneck related to the water distribution system in Gwadar will soon be removed. A seawater desalination plant has a capacity of 8.2 MGD will also be executed in Gwadar. The Chinese EPC contractor will install it. Its execution will take place in six months. A 50 MW combined cycle power plant will be set up in Gwadar for industries to be established in the area. This plant will act as a captive power facility for industrial consumers. The plant will provide cheap electricity to the industries as against other captive power plants that are basically diesel generators. This plant will be constructed in six months as additional electricity will be supplied to local people via Gwadar Development Authority.

EU: Is there any component of CPEC related to the development of Karachi?

Mr. Mansoor: For Karachi, the coastal development project of $3.8 billion will be undertaken under the CPEC regime. It is a joint venture agreement between KPT and CPRC that is a big Chinese company. An MoU of the project has also been signed and it has now entered its development phase. Community engagement is very much a part of the project. Full-fledged implementation of the project envisages the complete transformation of the lives of poor people of Machar Colony in Karachi as much the lives of Thari people have been changed as a result of Thar coal project. ■

PAKISTAN NEEDS TO PROPERLY UTILISE MINERAL, GAS RESOURCES

Syed Akhtar Ali

Pakistan has considerable reserves of mineral and gas resources which have not been utilised for a variety of reasons, perhaps mostly political. The country is currently suffering from a gas crisis as local gas resources are constantly depleting and new gas resources have not been explored and developed. Some people are sceptical of the country's gas resource potential. But some argue that high-security risk areas have not been adequately explored.

A clear example is Kohlu where the reserves of approximately 22 trillion cubic feet (tcf) remain underdeveloped due to issues with local tribal resistance. There may be other reasons as well, but we will restrict to the subject's political economy.

In developing countries, mining areas generally have more poverty than other areas, which usually causes conflict and strife in those areas. In developed countries, due to widespread development and a lack of disparities, these problems are almost non-existent. These countries, on the other hand, have developed formulae, structures and mechanisms to deal with those areas which encounter similar problems.

In the mining sector including oil and gas, local communities have to face considerable damage as environmental and physical degradation is normal in these areas. Local water resources and land use are affected. Unfortunately, the locals are not compensated adequately through a formal compensation mechanism. Local identities such as tribal ones are real, while provincial and federal boundaries and identities are political.

Under the existing rules, the total income and corporate taxes go to the federation and royalties' income goes to the provinces. The provincial government is supposed to spend some of the royalty income on the local population of the mining areas, but it is always short of revenue to run the administration and is dependent on federal subsidies. There is an issue of leakage and corruption which is more in the backward areas than in the developed ones.

The mining sector also suffers from colonial and imperial practices. It is well integrated with the mainstream in developed countries which have generally less interest in royalties and more in profits and taxes. Thus, royalties have been underpriced traditionally and more so because it belongs to the developing world. Market forces and international contracts define royalty rates. Corruption on the part of the negotiators also plays a role in the underpricing of royalties; after all companies have an upper limit on how many overheads they can absorb keeping in view the competitive markets of the minerals.

Creative royalty agreements can also solve some of the royalty income issues such as the Chinese did with the Aynak Copper agreement in Afghanistan. They used an S-curve formula under which they gave low royalty rates at low copper prices and higher royalty rates at higher international copper prices. Metal prices vary a lot. Incidentally, this creative formula did a lot of damage in Pakistan as it was misconceived and compared with the Reko Diq royalty formula, causing opposition and the ultimate cancellation of the agreement and the ICSID tribunal fine of $6 billion on Pakistan.

There are various issues, mostly of political nature but embedded in income-sharing and control: one is provincial ownership and rights to control and decide on mining contracts and the utilisation

which is rather of theoretical concern as the capabilities and technical and management resources are lacking.

The mineral sector could not be developed also due to security and political issues. In the case of Reko Diq, new dissenting voices are emerging against a reported compromise solution with a foreign investor company, asserting autonomy and mineral rights. Enrichment of local and provincial incomes can facilitate ready access and a receptive population welcoming mineral businesses. The World Bank tribunal imposed a $6 billion fine. We thought that since it was our resource, we had the rights to it including specifying the installation of a downstream industry like a copper refinery. It is a separate matter that had the Reko Diq project been implemented as per the feasibility study, Pakistan would have had an income of $500 million per year and the accumulated income would have been more than $2 billion by now.

The second issue can be sorted out by developing a revenue-sharing system which also includes revenue other than royalty incomes as has been done elsewhere. The third issue of tribal share and ownership has been intractable although there are ways to resolve it. Tribes make claims of land ownership, and government circles talk about the 'Alaska' formula which recognises and compensates resource ownership based on land sub-surface rights.

Here is how Canadian authorities deal with this issue: Resource revenue-sharing agreements let tribes share in the economic benefits of forestry and mining operations near their communities. Tribes with resource revenue-sharing agreements receive a share of 40 percent of the annual mining tax and royalties from operational mines. Tribes can use such revenue for economic development, education, health, community and cultural development.

On the other hand, Indian authorities have come up with the institutional concept of the District Mineral Foundation (DMF) under a federal law promulgated in 2015 according to which local governments get 30 percent of the mineral revenues including royalties. Such income is to be spent by local authorities. There are issues in its implementation like upward and downward integration. Tribes live in local districts. If local districts get the income, tribes get the impact on their development and welfare. ■

POWER SLUG

Global electricity demand upswing

EU Report

The year 2021 was an exceptional year globally in many ways, and one of them is the sky-rocketing commodity prices and wholesale energy rates. One of the key factors behind the surge in prices was the exceptional demand for electricity around the world, which came from rebounding economies and stronger economic growth after a bleak year 2020.

International Energy Agency (IEA) in its Electricity Market Report, January 2022 highlighted that the global electricity demand in 2021 grew by more than six percent, which was the largest ever annual increase in absolute term as well as the largest increase in electricity demand since the recovery from 2010 financial crisis. The record rise in electricity demand came after a slower year 2020, and as per the study, the industrial sector contributed the most to electricity demand growth, followed by the commercial, services, and the residential sector - in that order. Geographically, the global electricity demand growth in 2021 was concentrated in emerging and developing Asia led by China and India.

IEA's report also shows that despite the worldwide hue and cry over rising carbon emissions, coal and other fossils made their way back into the energy mix. As per the estimates, coal made up for more than half the increase in global electricity demand. And even though renewable energy continued to grow, coal power generation reached all-time peak in 2021 growing by 9 percent – the fastest since 2011.

Rise in demand for fossil fuels and supply constraints were enough for how the energy prices responded. High energy prices resulted in higher wholesale electricity prices around the world. And with coal rising the most, global emissions jumped in 2021 as well. IEA report shows that after declining in 2019 and 2020, global electricity sector emissions grew around 7 percent - peaking in 2021.

However, the global energy watchdog foresees a slowdown in demand in the coming years. And even though coal made a comeback, it is forecasted that the renewables will dominate medium-term supply growth. And electricity emissions are expected to plateau too during 2022-2024. The outlook for 2022-2024 include record-breaking growth in renewables with Covid pandemic and high energy prices as bottlenecks to the growth forecast. At the same time, generation from fossil fuel is expected to stagnate over the next three years primarily due to slowing demand worldwide especially phasing out plans for coal power generation to deal with the climate consequence of the same. ■

Imperatives for a renewable powered grid

Dr Shahid Rahim

Power generation from renewable sources such as solar and wind offers numerous benefits to society but poses multiple challenges. Our government also has set ambitious targets of 20 percent by 2025 and 30 percent by 2030 for their deployment in the country's power grid. This is arguably a good step as renewables can help power our dreams of economic development in a secure and sustainable manner. But turning dreams into reality requires that a set of dynamic policy, institutional, and financial frameworks be placed on ground that are conducive for embracing renewables. Below we identify some major challenges the country will face in upscaling power generation from renewables and outline the policy and regulatory imperatives to effectively deal with these challenges.

Renewable power generation technologies, especially those based on solar and wind, are making unprecedented headways into the power grids around the world. According to REN21's Renewables 2021 Global Status Report, 139 GW of photovoltaic (PV) and 93 GW of wind capacities were added in the global power grids during 2020 leading to a total PV capacity of 760 GW and wind capacity of 743 GW. The Renewable 2021: Analysis and Forecasts 2026 report, released by the International Energy Agency (IEA) in December 2021, expects that the present thrust of power generation from renewables will be maintained in the future as well to realize the society's "Net Zero by 2050" goals.

If blended in the power grid with proper planning, renewable power generation can provide numerous benefits to the country. Just to list a few of such benefits: it can considerably alleviate the country's dependence on highly-polluting and import-based fossil fuels; it can enable shifting to local, affordable, and environmentally-friendly energy supplies thus improving our security; it can reduce transmission and distribution (T&D) losses; it can defer T&D investment requirements; it can lessen excessive reserve capacity needs; and it can spur local industrial development, businesses, and employment.

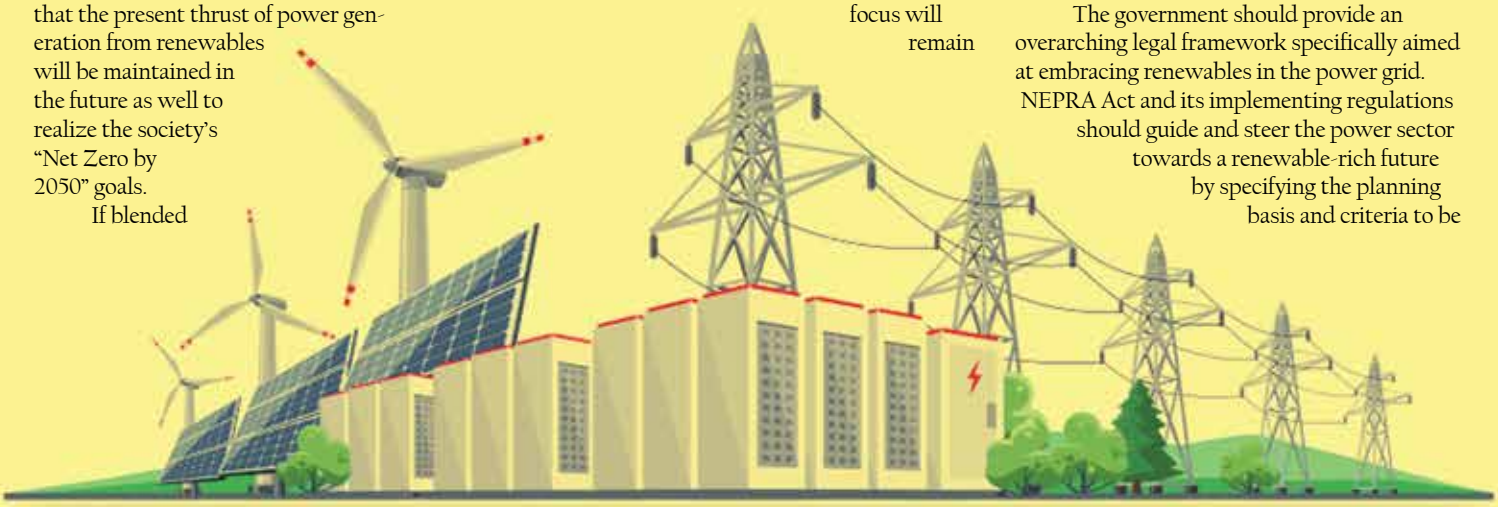
In contrast, unguided and unplanned infiltration of renewable power generation in the grid can impose significant technical and financial penalties and consequently can lead to losing many of their potential benefits. These penalties could include avoidable costs in maintaining excessive reserve capacity in the system, unnecessary duty-cycling of conventional plants and attended wear and tear, sub-optimal investments in the renewable's integration with the grid, and undesirable curtailment of much cheaper and renewable electric power production.

We highlight below some critical challenges the country will face in achieving its renewable power generation ambitions and also offer some pointers for effectively dealing with them. To keep the discussion simple, we will assume that the renewable targets are for the national grid only and exclude any standalone, behind-the-meter, or off-grid applications. Our focus will remain largely on answering just one question: "to reach these targets, what regulatory, institutional, financial, and technical frameworks and systems must be in place?"

First and foremost, we must realize that renewable generation technologies are inherently different and will require different treatment. Unlike conventional technologies which rely on exhaustible fuel stocks, solar and wind technologies base on natural energy flows. These flows, though ubiquitous, are scattered and diffused; their availability is also uncertain and variable over time. The existing planning, decision-making, financing, and operating frameworks have evolved around large-sized conventional projects in a centralized grid setting and are not amenable for a fair evaluation of small-sized, distributed, and diffuse-resource based power generation schemes. Therefore, we must accord renewables a level playing field for competition with conventional generation options.

Setting of renewable power generation targets is a commendable decision of the government, but it must be supported by providing the enabling conditions that are imperative for achieving these targets. The following five are the minimum that will be needed: (i) a legal umbrella (a set of laws, policies, and regulations); (ii) a decision-support, planning, and operational framework; (iii) a lean, interlinked, and responsive institutional setup; (iv) a renewable-friendly financial framework; and (v) an R&D setup aimed at promoting renewables' adoption in the country.

The government should provide an overarching legal framework specifically aimed at embracing renewables in the power grid. NEPRA Act and its implementing regulations should guide and steer the power sector towards a renewable-rich future by specifying the planning basis and criteria to be



followed for evaluating various generation and T&D options for serving forecast demand in the country. The relevant network codes and procedures should incorporate requisite changes to facilitate renewables' smooth interconnection with and operation in the system without undue costs or penalties. The market rules and codes should also be revised to make them resource and technology neutral. The national electricity policy should adequately reflect the nation's ambition for renewable transition and the national electricity plan should define concrete and actionable strategies and defined milestones.

Adding renewable capacity in the grid in any significant levels poses both planning and operational challenges. Planners face three key issues in developing long-term resource plans for their systems with high shares of renewables. First, how much firm capacity the renewable plants will contribute to their systems to ensure serving the forecast demand reliably? Second, how much energy they will contribute to their systems? Third, what support from the rest of the system, if any, they will need to cover the uncertain and variable nature of the renewables? Since all these factors contribute to capital and operating costs, any miscalculation can easily lead to both allocative and productive inefficiencies for which the economy and consumers often have to pay dearly.

The present decision-making frameworks, planning practices and tools, and operational protocols and procedures are all remnants from a bygone era of "the bigger, the better, and cheaper too" mindset. It has served its purpose quite well for over a century but is not cut for dealing with small-scale, distributed, and site and local weather specific renewables. These demand careful attention to local resource availability and its temporal distribution, operating environment, and consumer demand to decide on the best renewable resource, technology, size, and deployment scheme. Planners will need to be trained, skilled, and properly equipped to deal with the issues, attributes, and demands of such data-intensive and analytically-demanding renewable options.

System operation and control setup, protocols, and procedures will also require revamping as the share of renewables in the power grid increases. The current operational practices require radical changes. The system operators will need greater visibility about the dynamic conditions in the grid, availability and expected output from renewable plants, as close as possible to the real-time as well as during actual operation. A state-of-the-art supervisory control and data acquisition (SCADA) system embedded in an equally-sophisticated energy management system (EMS) and supported with an ensemble of renewable generation forecasts will provide the foundation for a stable, secure, and economic operation of the grid with higher shares of renewable power in it.

In sharp contrast to conventional plants, renewable plants require large tracts of land some of which may fall into protected, environmentally-fragile, or politically-sensitive regions. Developers may be required to secure permits and authorizations from government agencies which often involve satisfying cumbersome procedures and considerable time. Such sites, and in particular those rich in wind sources, may be located far away from existing T&D networks. Also, road access to such sites may not be available or adequate. It's always useful for the government to do some advanced homework about such issues and develop a mechanism to provide as much comfort to prospective developers as possible.

Financial markets and instruments also exist primarily to serve large-sized conventional power generation projects. Developers of renewable power projects may find it difficult to secure financing for their smaller, dispersed, and high-upfront cost projects due to the perceived higher risks and uncertain rewards associated with such projects. It's also not unusual for potential sponsors of such projects to demand relatively higher returns on their investment backed up by long-term contracts and guarantees. As most of the investment for renewable power projects is to come from the private sector, our government will need to establish a renewable investor-friendly environment and a consistent and stable policy on ground.

The need for establishing a supportive R&D setup for upscaling renewable power generation in the country cannot be overstated. There are numerous issues involved with the higher shares of renewables in the power grid. Only a few are raised in this article. International experiences cannot be adopted blindly in Pakistan. Renewable power generation can be pursued via multiple pathways, each with its own pros and cons. It's critical to follow a route that holds the greatest potential value for our nation. This will be possible only if the efforts to upscale renewable power generation in the country are informed and guided by the results of rigorous research studies at every step along the way. ■

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Ehsaas Petrol Card for bikers on the cards

Mehtab Haider

The government has decided to launch Eshaas Petrol Card for providing petrol at a subsidised rate to motorcyclists. It also plans to raise salaries of public sector employees in the coming budget for fiscal year 2022-23.

However, there is no consideration to monetise perks and privileges of bureaucrats despite Pakistan Institute of Development Economics (PIDE) reported that top bureaucrats in Pakistan are drawing salaries and perks more than the United Nations employees. Prime Minister Imran Khan in a recent statement hinted that the government would grant market-based salaries but the question is: why perks and privileges in the shape of luxury houses, cars, petrol, and many other allowances were abolished and made part of take-home salary? According to an official announcement, Federal Minister for Finance and Revenue, Shaukat Tarin, chaired the meeting of the Macro-Economic Advisory Group (MEAG) at Finance Division. One participant of the meeting said that basically three points came under discussion, including ideas to support middle-class (safaid posh) against high inflation. The meeting considered proposals like subsidised fuel, tax reliefs, rise in income/minimum wages, internships (for educated unemployed), economic reforms especially in energy sector, and finally build further on the growth momentum with 5.6 percent GDP growth, 15 percent rise in exports, over 10 percent increase in remittances and record tax collection by building up further business confidence and remove bureaucratic hurdles, and ensure maintenance of consistent polices. Meanwhile, Tarin also presided over the meeting of Steering Committee of Kamyab Pakistan Programme (KPP). A detailed presentation was given to the Finance Minister on the progress of Kamyab Pakistan Programme. The loans are being disbursed after fulfilment of requirements to the deserving applicants for the uplift of living standards of the underprivileged people of the country. Small loans for business, farmers and construction of houses are also a part of the programme. ■

Executive Directors

Farhat Jabeen & ShahZada Fahad's

Interview with Energy Update

Kestral Digital presents cutting-edge technology solutions for the digital transformation of Power & Utilities Sector in Pakistan

Kestral Digital Executive Directors have said in an interview to Energy Update (EU) that his company presents cutting-edge technology solutions for digital transformation of power and utilities sector in Pakistan.

EU: Tell us about your organization?
Ms. Farhat and Mr. Fahad: Kestral Group was founded in 1989. Since its inception, Kestral group has established many companies consisting of Kestral Trading, Kestral Holding, Kestral Logistics, Kestral Services, Kestral Energy, and Kestral Digital. Kestral Digital is one of the technology companies.

Vision of Kestral Digital is "To become world's most innovative technologies solution partner" to help organizations in adopting cutting-edge technologies to achieve their digital transformation goals i.e.

end-to end business processes automations, orchestrating data challenges enablement of aging or new workforce

EU: What role your company has been playing to promote automation and digitization of Pakistan's corporate and industrial sectors?
F&F: To address the issues of complete business automation and to meet most challenging data issues in Pakistani corporates and industries, Kestral Digital represents several premier technology vendors in Pakistan. These include the brands IFS (Industrial Financial Solutions), Denodo and e-Maint by Fluke. All of these features in benchmark technology indices (Gartner Quadrant), reputable industry analysis (IDC and Forrester), also review reports (Gartner Peer Insights) and many others. These are best of the breed solutions for defense/aviation, power & utilities, telecom, manufacturing & construction, and public sector organizations.

EU: What are the challenges in power sector which can be overcome through the adoption of technology or digital/business transformation.
F&F: Energy and utility companies are the most impacted by the industrial/technological revolution. Smart grids, distributed power generation, connected cities and renewable energy are changing business models and regulatory framework. Energy and utility companies are also taking mobile first approach to connecting with their customers and internal stakeholder.

The biggest challenge for the energy and utility companies is to provide the customer-focused services with optimizing field workforce and driving operational efficiency. This is particularly hard when you focus on complex field service work on technology advanced assets with multiple dependencies. These have massive impact on cost and performance.

Firstly, with the invent of smart cars, smart homes and other smart products, energy and utility companies depend on advanced analytics for metering, billing, oil exploration, outage management and other activities. It becomes clear that this industry is being significantly impacted by the enormous amount of data being generated by machines.

Secondly, analyzing machine generated data has shown tremendous potential for gen-

erating business insights and fueling revenue growth. But machine generated data comes at a cost. Connected devices can quickly generates petabytes of data which can easily overwhelm enterprise data warehouses due to the required cost and time.

Thirdly, also, physical data warehousing cannot support real-time insights, so companies are seeking new warehousing solutions.

The success of these new business models will depend on implementation of the right enterprise technology solutions. Emerging technologies such as big data, IoT, artificial intelligence, augmented reality, digital twins, present new opportunities to optimize all these challenges.

EU: What are the focused solutions for power& utilities industry, where you feel your partners and solution can bring value?

F&F: To meet the challenges of end-to-end business processes and data challenges, Kestral Digital along offers following solutions.

1- IFS solution for the power industry: IFS is independently recognized as a leading global supplier of cloud and on premises-based enablement of ERP (Enterprise Resource Planning), EAM (Enterprise Assets Management) and FSM (Field Service Management) Software through one single platform. IFS five founders famously pitched a tent outside the entrance of Barsebäck (Sweden) power station in 1983, and since then,

IFS solutions have consistently delivered value to the organizations around the globe in the energy and utilities sector, power generation, transmission & distribution, as well as water supply and treatment. IFS solutions are equally valuable for the new entrants, established operators and companies servicing in the power industry like nuclear, thermal, renewables, transmission, distribution, field service and smart metering services.

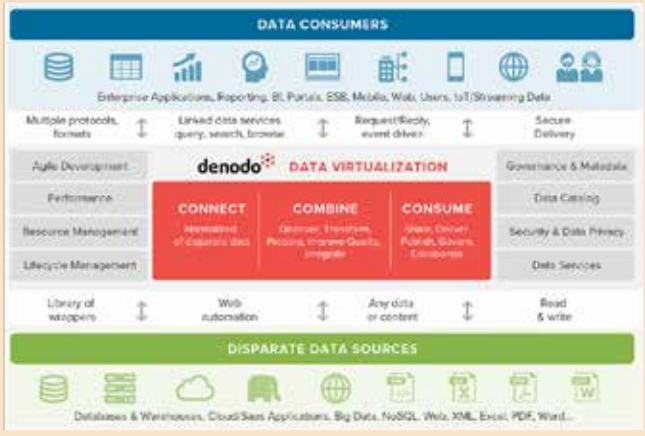
2- Denodo solution for the power industry: Over the decades, with the induction of technologies in any size of organization, data analysis has become quite cumbersome. Mostly, data is stored in silos and in different formats. Collecting and combining all these data and analyzing this for improvement of current businesses and prediction for future strategies have become quiet challenging. To address such scenario, Kestral Digital offers data virtualization solution by Denodo.

Data virtualization solution by Denodo is the game changer: Unlike legacy data integration technologies, which depend on physical data movement and store data in expensive data repositories, the data virtualization technology by Denodo can off load large data volumes to inexpensive Hadoop repositories or combine multiple primary data stores on the fly; this enables energy and utility companies to decrease TCO while increasing ROI.

3- EMaint: To address the challenge of integrated services requirement, Kestral Digital offers EMaint solution by Fluke. It's a groundbreaking Computerized Maintenance Management System (CMMS) solution to address the business requirements of every service industry. As a SaaS, solution deployment its implementation is very easy, that organization can realize a higher return on investment (ROI) quickly.

EU: To what extent the specialised services of your company were affected due to lockdowns imposed worldwide against the spread of Covid-19.

F&F: Yes, our services and business activities have also been affected, despite the fact that Covid-19, has fostered the realization for the adoption of technologies around the globe. Being a technology company Kestral Digital tailored its resources and moved to remote/ cloud based services model, so that in person interaction can be minimized. Moving to the cloud made us deliver the solutions swiftly and kept our human resources safe.



EU: In your opinion, how your services will be able to help organizations in Pakistan to adopt cutting-edge technologies in post-covid scenario?

F&F: In my opinion, organization have to analyze their business processes aggressively specially if they have any legacy systems in place and formulate way forward to migrate towards new cutting-edge technologies. Both our services / solutions can verily help any organization to achieve their organizational goals.

EU: Were there any specialised service of your company to beef up the medical facilities in Pakistan to tackle the coronavirus health emergency?

F&F: Kestral has played its part in the fight to stop the spread of the coronavirus in Pakistan. The company team utilised its strong commercial and sourcing capabilities for the National Disaster Management Authority and the Pakistan Air Force. It identified and secured a diverse range of medical equipment and supplies that include prime high-value equipment including thermal scanners and ventilators; and high-demand products including protective suits and coverings, goggles, gowns, gloves, sanitisers and wipes.

EU: Tell us about the CSR-related activities of your company?

F&F: Our CEO, Mr. Liaquat Ali Baig says "When intertwined, two ropes strengthen. It's a similar effect when we combine social responsibility and long-term business success."

He has assisted needy individuals, non-profit organizations, and deployed Kestral people & resources to assist in major emergencies. His particular areas of interest include:

Supporting education and health provision for under-privileged children
The empowerment of women in the workplace
Natural disaster relief and recovery

Tackling high energy prices this year

Sarfaraz A Khan

Oil prices surged in 2021, with the international benchmark Brent crude rising from $55 a barrel at the start of the year to $80 in December, driven by the rise in demand.

Global economic recovery and tight supplies also pushed prices of other commodities higher, including LNG whose price more than doubled in Asia. Due to robust global demand, prices may remain high in 2022. Global economy is expected to expand 4.9% this year, according to the IMF's estimate.

Demand for energy products will rise with the increase in travel and business activity. In the crude oil market, for instance, global consumption is forecast to climb to 99.53 million barrels per day (bpd) in 2022, up from 96.2 million bpd last year, as per the International Energy Agency.

This means that crude oil consumption will essentially climb back to pre-Covid levels of 99.55 million bpd seen in 2019.

In Pakistan, petrol and diesel consumption rose 10.8% and 19.8% in the first five months (Jul-Nov) of current fiscal year as compared to the same period of last year, despite rising pump prices.

Supplies, however, may remain tight. Several OPEC members have struggled to increase output while the US shale oil producers, facing pressure from shareholders, are concentrating on keeping spending low. In this environment, oil prices may remain elevated.

High energy prices will weigh on Pakistan's current account deficit, which came in at $7 billion in the first five months of the ongoing fiscal year, as opposed to the surplus of $1.64 billion reported for the same period a year earlier, according to data released by the State Bank of Pakistan.

To ease pressure on the country's finances, the policymakers need to prepare in advance for what could be a challenging future.

There are five oil refineries that can together produce 3.3 million tonnes of petrol and 5.9 million tonnes of high-speed diesel (HSD) each year. But due to the low utilisation, their annual production is estimated to be around 2.05 million tonnes of petrol and 3.96 million tonnes of HSD. This creates a shortfall of almost 3.2 million tonnes of petrol and diesel, which has to be imported for around $1.5 billion to $2 billion. With persistently high commodity prices in the international market, the fuel deficit could keep hurting the current account balance.

However, by making efforts that help lift refinery utilisation and thereby increase domestic petrol and diesel production by around 50%, Pakistan can mitigate the impact of lofty oil prices. This can be done by prioritising the consumption of domestic furnace oil stocks held by refineries and oil marketing companies, ahead of imports.

Recently, the government allowed significant imports of furnace oil, instead of first lifting stocks that were already available at home. Soon, the refineries ran out of storage capacity and all either had to curtail or completely shut down operations, which further hurt the utilisation rates.

Skyrocketing LNG price

Asia's LNG price has recorded a phenomenal growth. The JKM LNG price was at $30.51 per mmbtu in December, up from $13.33 a year earlier.

On top of this, the buyers are also facing the risk of order cancellations from sellers, which Pakistan has experienced.

LNG is used extensively in Pakistan by the IPPs for power generation. But if LNG prices keep moving higher, then Pakistan should consider replacing LNG with furnace oil as the feedstock for power plants. This will help improve refinery utilisation. Additionally, the scarce gas supplies that are then available can be diverted to households and export-oriented industries.

Measures required

Pakistan can also take several other measures to soften the blow of high commodity prices. These may not yield immediate positive returns but will certainly help over the long term. First and foremost, work needs to be done on increasing domestic oil and gas production. The country's gas reserves are declining at an annual rate of 9%, Minister for Energy Hammad Azhar recently informed the cabinet, while production is also going downhill.

This raises Pakistan's reliance on expensive foreign LNG. To avert an impending crisis, exploration work should be ramped up, particularly for shale gas, by drafting new policies that give incentives to exploration and production companies. At the same time, effective measures should be taken to curb theft and distribution losses.

There is also a dire need to strengthen the country's energy supply chain, which will make the energy supply system more efficient and bring down costs. This can be done by expediting the construction of LNG terminals, enhancing storage capacity, and building pipelines. Oil and gas handling capacity at ports should also be expanded to reduce congestion and delivery delays.

A Karachi-based petroleum company is using its Single Point Mooring (SPM) – which is a floating jetty located in deep-sea off the coast of Balochistan – to import crude oil. Authorities should consider using this facility and encourage the private sector to deploy more SPMs to ease pressure on ports and strengthen the crude oil supply chain.

The writer focuses on subjects of business and economics, specialising in the energy sector. ■

Courtesy Express Tribune

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Taxing solar panels

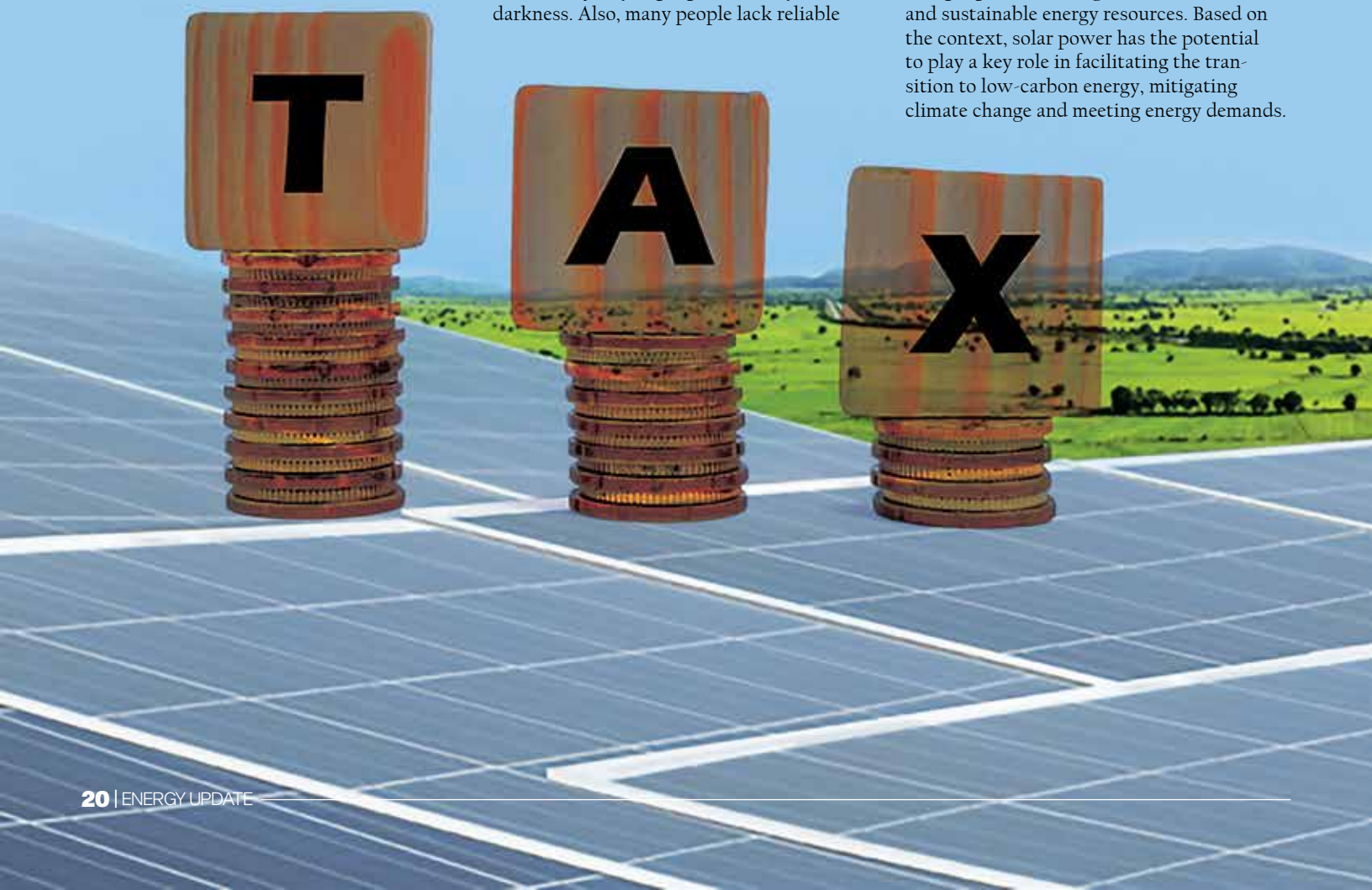
Naila Saleh

Pakistan plans to expand its power sector substantially. It has enormous solar photovoltaic (PV) potential and all the necessary conditions for its implementation such as high radiation yield, a regulatory framework, a favourable architectural landscape and strong demand forces that support its development.

The Alternative Renewable Energy Policy, 2019 also aims to produce 30 percent of its energy from non-hydro renewable energy resources by 2030. The revised Nationally Determined Contributions 2021 commits to achieving a 60 percent renewable energy share in the next decade.

These targets could be easily transposed as more than 30,000 villages in the country are still without electricity; in rural areas, a majority of people currently live in darkness. Also, many people lack reliable access to energy supply. Solar installations have already seen an unprecedented growth in off-grid and weak grid regions. There has particularly been an exponential growth in the use of solar tube wells and water pumps for irrigation purposes – to counter the soaring diesel and petrol fuel prices in the domestic market.

Due to rising electricity tariffs, there has also been a growing trend in net metering and distributed generation. This indicates that people are shifting towards affordable and sustainable energy resources. Based on the context, solar power has the potential to play a key role in facilitating the transition to low-carbon energy, mitigating climate change and meeting energy demands.



However, to create a coherent push to tap these potential indigenous resources, little attention has so far been given to the role of supportive instruments and their interaction across different policy domains, which could trigger transition from the perspective of technology adopters and investors.

The government recently proposed a 17 percent sales tax – previously, zero percent – on the import of solar panels. Before examining the implications of this tax, it is important to understand that the solar PV market of Pakistan is largely dominated by imported products. The uneven statistics indicate that more than 90 percent of the consumer market for solar PV panels is met via imported products. The local industry for the production of these products today is negligible.

In such a scenario, the imposition of GST will only add further complexities. It will increase the retail price of the complete system for potential adopters and disincentivise the national solar drive in an early market. This will widen the gap between imported fossil fuel-based power generation and solar PV energy base – delaying the onset of the targeted indigenisation of power procurement resources.

Imposing the tax will also have a direct bearing on the profitability of investors and vendors, discouraging potential investment in the sector. Moreover, with an inflation rate of 9.7 percent in Pakistan, solar panels have already led to high operation costs for solar companies, which translates into higher installation costs. The ill-timed renewed attempt to impose a tax on solar products is not only incompatible with the existing policy renewable uptake goals and ambitions but will also undermine the solar PV drive cutting into our national emissions reduction potential and power generation indigenisation drive.

If we look at the import statistics of solar panels, we could see that after the government waived off GST on solar panels in 2014, it registered a steady positive-year wise growth – increasing from $44 million in 2013 to $722 million in 2017. The market, however, was impacted in 2019 due to the Covid-19 crisis, nonetheless, reviving in 2021. At this stage, it is important to extend continued support to the nascent solar market in the country.

Decentralised Renewable Energy (DRE) configurations have many benefits for the Global South, and for a country such as Pakistan, they offer a potent option for an affordable, sustainable and climate-safe energy system. Pakistan holds one of the largest unserved populations globally and has a high potential for bottom-up solar PV technological leapfrogging. Importantly, amongst the different PV customer segments in the Pakistan market, the residential sector remains one of the key sectors driving the solar PV growth in the country and is also one of the most price-sensitive sectors. Any further price hikes will only constrain the drive towards solar PV adoption.

Progressive economies of the world are evolving renewable energy (RE) policies to incentivise the stakeholders and support the solar industry's growth. For example, through America's investment tax credit system, residential solar PV system owners can claim 26 percent of the project's capital cost, although the solar PV system cost in the US is highest than in other countries. While in Australia, the incentives cover almost half to two-thirds of the project cost.

Similarly, rather than imposing taxes, the Pakistani government needs to offer loans, rebates, duty exemption and credit schemes. Developing policies and tax benefits that help RE integration should be the government's top priority. Pakistan can make significant gains in terms of decarbonisation and low carbon development if it facilitates RE adoption and waives off the recently introduced additional tax.

The government should also extend substantial support to domestic renewable energy manufacturing firms in the short- to medium-term, to constructively reduce reliance on imported manufactured solar products. The need of the hour is a long-term strategy, which retains a steady growth trajectory for solar while increasing protection against imported panels in the long run through incentivising local production.

The writer is a researcher based at Policy Research Institute for Equitable Development and Technical University, Berlin.

BREAKING IMF SHACKLES

Arbab Usman

Pakistan and IMF are like a love story where the partners seem to be inseparable, or perhaps an addiction without which Pakistan can't live. The fact that Pakistan has made a record of being one of the top borrowers of the Fund, approaching the Fund 22 times as of 1958 and 15 times since 1980, is embarrassing.

It seems that every regime in Pakistan, especially since General Zia's era, that got power looked at the IMF as a child would go to mother for rescue, and then the same economic disaster ensued. Even in 2022, there are talks of another tranche to keep us afloat.

How is it possible that Bangladesh that separated from us and was weaker than us, got less support from the IMF?

Pakistani decision-makers' ill-conceived, unrealistic, and narcissistic decisions are the simple answer to the above questions.

Wisdom must prevail at some juncture and now would be a better time than any other, as the country is on the verge of an economic meltdown and is virtually bankrupt. Even a layperson won't think that Pakistan can expect to get out of the IMF's shackles in the coming few years. However, a structured approach built on short-, medium- and long-term plans, coupled with building foreign reserves based on alternate economic activities and formulating an inside out economic development approach, can get us out of the fiasco.

With its enormous resources such as oil, gas, minerals and potent industries like tourism and agriculture, geographical situation and a young population, Pakistan undoubtedly has the potential to be among the top economies in the world – or at least has the capacity to shed off its dependence on foreign loans.

Oil and gas have been our major imports (Pakistan imported over $10 billion a year of oil for the past decades and over $13 billion in the year 2019/20), even though we have mega reserves of them, and still run shortage of gas; this is incomprehensible and unacceptable. The main reason why we haven't been able to tap into these precious resources is none other than the governments and OGDCL.

Oil/gas exploration and production is a capital-intensive business, but conglomerates would only invest in a conducive environment with long-term expectations of returns. Case in point: the Middle East, and Africa for companies like Sinopec (one of the largest companies worth over $300 billion) that started investing in turbulent markets like Goban and Sudan from 2004 and since then have had many ventures in such areas. There are many other companies that have made significant investments in these types of markets.

China is one of the largest oil importers, importing over a million barrels a day and mainly from Russia. With our geographical proximity to China and attractive incentives, China would instead import from us than other markets.

Why haven't these companies considered Pakistan? It can't be that we don't have enough reserves since even we don't know for sure how many reserves we have. But certainly we have enough, based on what has been discovered so far; with Fata, we must tap the mega resources mentioned in the preliminary reports.

Pakistan must come up with effective policies that include a sovereign guarantee and attractive contracts based on reasonable rates and terms to attract investments. There are many opportunities available in the area. The government must limit its role to a facilitator and allow the sector to develop.

Further, an inexpensive and competitive supply of inputs is imperative for building a solid industrial base. Cheap and uninterrupted electricity supply is one of the main driving forces for industries, and Pakistan has struggled in this area. The approach to solving this problem has been unpragmatic, where we have focused on traditional electricity sources, like building dams, and mainly only the government has been managing the sector.

Pakistan produces over 37,000 megawatts of electricity annually and requires about 26,000 megawatts, but due to archaic infrastructure and ineffective supply mechanism, the industry doesn't get the needed electricity.

To fix this, Pakistan must involve the private sector on a competitive basis and exploit alternate means. With the country's large population and potential to compose a solid industrial base, many corporations would be interested in considering electricity production and supply, if they get attractive, competitive market-based incentives.

One solution can be to benchmark the mobile phone industry for electricity deliverance. Instead of having one IPP (that may use solar or other means for production) for an area (like K-Electric), we should open the area to a few IPPs to produce and sell electricity on a competitive basis. On a long-term basis and on market-based rates, another solution can be to allow private companies to set up solar farms and build the needed infrastructure.

Another attractive area for Pakistan for economic development is tourism, which is one of the largest industries globally with the potential for significant contribution to the GDP.

The industry is worth about $5 trillion, and the figure may even be higher if it includes the related services. With the focus on providing a valued experience to tourists, Muslim countries like Turkey, Malaysia and Indonesia recorded tourism revenue of $34 billion, $21 billion, and $18 billion, respectively. Pakistan can achieve the same kind of revenue figures, if not more.

We must ask hard questions to build a solid domestic and foreign tourism industry. And we must set specific objectives based on modern, 21st-century requirements and view the industry independently, instead of through a religious lens.

Limited infrastructure like roads to Swat and Galiyat are being built and this has significantly contributed to the industry. However, considerable development must still be done, especially in the northern areas. For starters, all government lodgings, like the governor house in Nathiagali and other places must be auctioned immediately.

Further, security agencies and departments must formulate a foolproof nationwide security plan. It's imperative that both local and foreign tourists feel safe.

Along with the above areas, the agricultural sector is another area that can play a pivotal role in economic development. Agricultural production is suboptimal and needs dramatic capacity building for farmers and for maximising yields. Also, fruits and vegetable processing, polishing, and packaging plants need to be set up throughout the country to make agricultural produce more competitive for export purposes. Pakistan needs to tap into the fast-growing organic industry for not only agricultural produce but also for meat. Moreover, the government should consider developing vertical gardening by providing the relevant training and running awareness campaigns (to attract people and render technical training for the relevant elements such as hydroponic irrigation).

The livestock sector too has the potential for significant improvement. The government needs to separate the industry from agriculture to give it the required recognition. The sector needs dramatic capacity-building for training people to rear quality livestock for meat and milk production. People should get livestock on attractive and friendly payback terms to increase production.

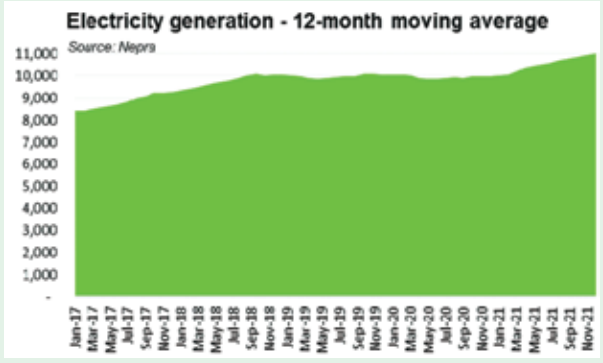
Many other areas can substantially improve the economy. But one thing is sure: plans must be consolidated and implemented on a war footing to turn around the economic meltdown and move towards breaking the IMF's shackles.

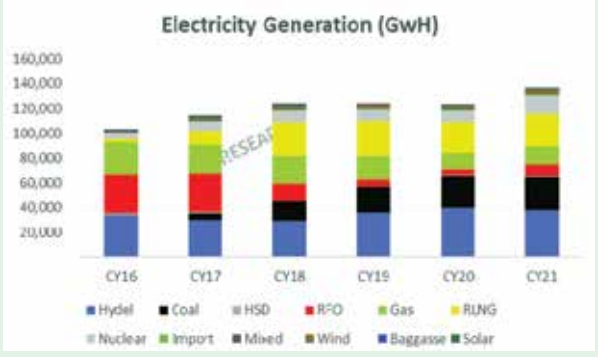
Finally, we cannot expect the federal and provincial governments to be directly involved in the above recommendations. The governments' role must be limited to facilitation for providing a level playing field and conducive environment for the integration of the private sector. ■

Power generation: Signs of growth

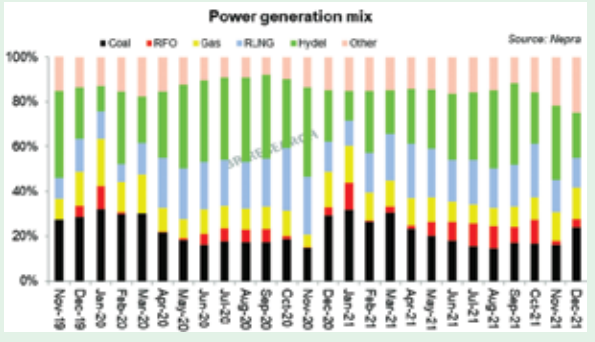
EU Report

Having stayed virtually stagnant for two years, Pakistan's grid electricity generation in 2021 went up by 10.4 percent year-on-year. Power generation at 132 billion units for CY21 is easily the highest ever, finally breaking free from the three-year rut. That said 10 percent year-on-year power generation growth is not unprecedented or extraordinary. It appears the demand in the economy is just reverting to the mean trajectory that was apparent before 2019.





The power generation on a 12-month trailing basis at an average 11 billion units monthly is a fairer reflection that irons out the base effects of Covid. There definitely is organic demand growth in an expanding economy but may not necessarily be a result of urban consumers making the switch from gas to electricity in big numbers as a result of incremental winter consumption package.



The generation mix makes for an interesting reading, where nuclear power generation was the biggest gainer with 6 billion additional units in 2021. The nuclear share went up to 11.4 percent, up from 7.8 percent last year, and was the first-ever time that the grid generated more electricity molecules from nuclear than natural gas.

Coal continued to lead the thermal side, outstripping RLNG for the second year running, with 20 percent share in the mix. Lower water reserves meant hydel generation went down by over 2 billion units, with the share going down to 27.6 percent. This is the lowest share of hydel generation in five years. As has been the case often, hydel's loss was furnace oil's gain. FO based generation more than doubled year-on-year, as the system struggled with supply side constraints in terms of arranging timely fuel, amongst other ongoing technical issues.

The cumulative fuel bill for CY21 at Rs923 billion outdid the much-dreaded capacity payments. A combination of sky-high international fuel prices alongside inability to evacuate and generate from more efficient plants, violations of merit order, and delays in procurement of fuel – all chipped in to take the fuel bill higher by over 62 percent.

Much of the same is in store for another two to three months, as oil and gas prices have shown no signs of respite yet. The axe falls on the consumers in the shape of monthly fuel adjustments. For the third month running, the monthly FCA will be north of Rs3 per unit, despite the monthly reference fuel tariffs revised upwards by 50 percent. ■

We are going to establish Pakistan's first Green EV charging network

Mustafa Tahir

Qasim Azam
CEO Ningbo Energy

"We are going to establish a countrywide network of Green EV charging stations in the next one to two years to build the culture of electric vehicles in Pakistan as early as possible."

This was stated by CEO of Ningbo Energy, Qasim Azam, in an exclusive interview with the Energy Update in, which he talked about his current association and future plans for the clean energy sector of Pakistan. Following are the important excerpts from his interview for our readers:

Energy Update: Tell us about your work and how you entered the energy sector?

Qasim Azam: By profession, I am an engineer as I entered the field of energy to offer my services related to industrial UPS and backup solutions. I started my work in the solar sector in 2016 when there was not much awareness about renewable sources of power. I welcomed a Chinese company's arrival in Pakistan and started a partnership with it. In 2017, we started the solar sector business on a full-fledged basis. We tried to build the trust of our prospective clients through the arrangement of Power Purchase Agreements. Then we started the work to install solar systems on the rooftops of the buildings of our

clients and then we do billing for these systems. Then, People gained awareness and had the realization that return on investment is quite speedy after installing the solar system. The RoI is possible in just three to four years and then the facility of financing from State Bank is also available. Then people switched to the EPC mode for doing solar projects instead of using the option of PPA or BOOT.

EU: What are your current projects in the renewable energy sector of Pakistan?

Mr. Qasim: The volume of business was not so much large in the year 2015-16. The volume became higher as we move forward. The earliest solar project undertaken by us in terms of good volume was of one-megawatt capacity at the Institute of Space Technology in Islamabad under the aegis of Strategic Plans Division. The project was completed on a PPA basis, which means the BOOT arrangement for 15 years. Then, later on, we did solar projects for almost every sector like educational facilities, industries, commercial area and even resorts. Our clientele mostly comprises commercial and industrial consumers. We haven't been much into the residential sector so far. Then we are also undertaking the project we signed with the Frontier Works Organization to install solar systems at all the service stations on the M-2 section of the motorway. Then we also won the bid to install charging stations for electric vehicles at Chakri and Sial service stations of the M-2 motorway. This project is happened to be golden feather in our cap.

EU: What are your future plans?

Mr. Qasim: Availability of EV charging stations and electric vehicles in the country is our next target. We have been doing our internal work to launch these facilities. The option of EV charging will become feasible in Pakistan only if it consumes renewable energy. We are going to build Pakistan's first Green EV charging facility on the M-2 motorway. We'll build solar-based EV charging stations. Renewable energy-based EV charging stations are good both for the national economy and the environment. We have a plan to keep all our EV charging facilities solar-based. We have the plan to establish a network of Green EV charging stations all across the country in the next coming years. The full utilization of this network would be possible in the next up to three years with the arrival of electric vehicles in the country in sufficient numbers. Somebody has to take the initiative in this regard to build the culture of electric vehicles in our country as we are going to take this first step.

EU: Tell us about your plan to bring electric vehicles to Pakistan.

Mr. Qasim: We have planned to bring small electric vehicles. These would be both two-door and four-door electric cars, which would be sold at the most economical price range of Rs 500,000 to Rs 700,000. These economical electric cars will be introduced in Pakistan, as the rate of the cheapest car available in the local market is not less than Rs one million. We want to introduce an economical car in the Pakistani market along with the option of battery swapping technology. This car will be most suitable for the university-going students who have to spend a sizable sum daily on their travelling.

EU: What is your opinion about the growth and progress of Pakistani solar market?

Mr. Qasim: A fairly large volume of business is available in our industry. But one should keep in mind that ours is basically a buyers' market where a number of sellers are available. Resultantly, the competition is getting tough. Every day, a company is formed. The profit margin is getting squeezed. Big business groups have been entering this market. They have sensed that the solar sector is a growing business in Pakistan. The industry has been making progress towards the peak of its business. All the conditions are very favourable as the ROI is achievable in the minimum possible time due to an increase in electricity rates. The State Bank's financing is available at very favourable terms and conditions. All the factors compel industrial consumers to switch to the option of solar power. My prediction is that service providers like us in the solar sector will move towards the option of asset management in the next three to four years. This means that we would be doing the operation, maintenance, and management of the large solar plants after their installation in the country. Even the small industries in the country are going to install MW solar plants. So these industrial clients would have to seek formal O&M and asset management services for getting the proper output of their solar plants.

EU: Are there any issues related to quality of solar energy products in Pakistan?

Mr. Qasim: There have been quality-related issues in the solar systems of less than 300 KWs capacity installed in the commercial sector. There are certain solar companies, which only think about their short-term benefits as you have to be quality conscious for the long-term benefits. The companies, which think only about their short-term advantages do compromise on the quality of their service and products. But if you talk about bigger plants the properly qualified engineers are deputed to scrutinize their operations. There aren't many quality issues as far as large plants are concerned.

EU: Is there a need to develop the system of transfer of technology for solar sector in Pakistan?

Mr. Qasim: Yes, there is an urgent need to do the transfer of technology for the solar sector. This is because the annual import of solar panels has increased to half-a-billion dollars for bringing in 1000 to 1300 MWs generation capacity. I have heard that assembly lines for the solar industry are being built in the country, which are likely to be ready by March or April this year. But the biggest challenge in this regard is that changes take place in the manufacturing of solar technology at a very rapid pace. Earlier, a single solar panel was of just 270 watts generation capacity, which is being increased to 650 watts in just few years. The assembly line to be established in the country needs to be very up-to-date. An assembly line, which would be unable to upgrade in accordance with the latest available technology globally would become obsolete within a few months. We are not capable of doing solar cell manufacturing in the country as merely an assembly line could be established in the country as at the end of the day we would be required to import the solar cell.

EU: What is your opinion about the latest proposal of the government to impose tax on the solar products in the country?

Mr. Qasim: If taxes are imposed then it will create a major impact on the residential and commercial sector. The taxation wouldn't affect much the industrial sectors as in their case the taxes can be adjusted. The taxation regime would likely create a bigger challenge for the residential sector. Up to 30 to 40 per cent consumption of our services is in the domestic sector, which would suddenly be stopped if the taxation regime was imposed. Whereas trading sector of goods would be badly affected. ■

Let Karachi LIVE AGAIN

Of 12,000 tons of waste daily, 60% never reaches dumping sites

Mohammad Younus Dagha

Pakistan has eight cities with populations of more than a million souls, as per the last census. Punjab has five of these cities, Sindh two and Khyber-Pakhtunkhwa one. The way we prepare and maintain these engines of growth to compete in the global economy will determine the future of our economy.

Karachi, with roughly 10% of country's population, contributes more than 50% of its export earnings, around 56% to the federal revenues and 96% to Sindh's revenues. Karachi pays in Sales Tax on services almost equal to the Sales Tax on services paid by the entire province of Punjab.

World Bank in its report 'Transforming Karachi into a liveable and competitive megacity (2017)' made out a case that it will take Karachi around $10 billion of capital investment to close the infrastructure gaps in the city.

"With 45 residents competing for one bus seat, travel within the city is difficult. Many households rely on private vendors who sell water from tankers at high prices. The sewage network has not been well maintained since the 1960s. Industrial waste, which contains hazardous materials and heavy oils, is dumped directly into the sea untreated. Of the 12,000 tons of municipal solid waste generated each day, 60% never reaches a dumpsite." Karachi's pattern of growth appears to be on the brink of an unsustainable path.

Federal and provincial governments heeded the report only after heavy rains in 2020 inundated Karachi when both the governments fiercely contended that they would contribute more in the joint package of Rs1100 billion for the Karachi Transformation Plan which was to be implemented in three years. The progress is far behind the promised schedule after eighteen months.

But then why should the federal and provincial governments make special provisions for Karachi's developmental gaps?

Provinces became mega-rich after the 2009 NFC award, which devolved fiscal authority of collection of Sales Tax on Services and unprecedentedly higher distribution of funds from federal divisible pool in their favour. Sindh's revenues grew 815% in past 15 years from Rs178 billion in 2007-08 to Rs1,452 billion in the Budget 2021-22. This prosperity should have turned its capital city into a resourceful metropolis rather than becoming one of the least liveable cities of the world.

Karachi's share in transfers from the provincial budget fell from 20% (Rs37 billion) in 2007-08 to a meagre 3% (Rs38 billion) in 2020-21. Had the transfer percentage of 2007-08 maintained, Karachi would have received around Rs244 billion in 2020-21. Around 85% of Karachi's dues are being regularly withheld since 2009 when the Provincial Finance Commission was turned dysfunctional.

Similarly the share of 6.6% in Federal PSDP that Karachi had in 2007-08 dropped to just 2.1% in 2021-22. In very conservative estimates, these cuts by the provincial and federal governments deprived Karachi of Rs949 billion since 2009 (Rs663 billion by the provincial government and Rs286 billion by the federal government) almost equal to the cost of infrastructure gaps found in the World Bank report, rather more in net present value. The largesse of Karachi Transformation Plan is nothing but just a promise to return back part of the funds of the city withheld by both the governments.

This imprudent behaviour towards Karachi, our largest growth engine, is not in the interest of the country if we have any plans towards achieving economic growth and prosperity. Keeping Karachi continuously on the verge of collapse is also not good for the unity and peace of the province. How can a province protect its claims on the devolved rights under the Constitution and share in NFC award, when itself in violation of Article 140A of the Constitution which makes it mandatory to "devolve political, administrative and financial responsibility and authority to the elected representatives of the local governments".

The equitable distribution of the Provincial resources to the districts must be revived through a new Provincial Finance Commission Award, pending since 2009. Karachi should be getting Rs250-300 billion as direct transfers annually instead of Rs38 billion received last year, Badin Rs18 billion as against 1.6 billion and Umerkot Rs20 billion as against less than a billion.

There can't be any justification for the garbage collection contracts to be decided by the Chief Minister. This over-centralisation is as unreasonable as the over-devolution by the Musharraf regime. Municipal functions must be performed by the City governments such as Water, Sanitation (Sewerage and Solid Waste Management), Municipal Taxation & Regulation, Master Plan and Building Control, City Development (KDA, LDA, etc), City Transport and Mass Transit. Property and Motor Vehicle Taxes also need to be devolved to the districts. ■

LNG market and its challenges

Jamil Khan

Since the beginning of the last few decades, LNG has become an extremely popular source of energy as many countries, irrespective of their economic prosperity, have been converting their oil and coal-based power generations to LNG.

Its main drivers for the popularity and the shift have been due to its lower price and a cleaner source of energy against the other two fossil fuels, namely oil and coal. Now, with the global warming concerns due to planet's rising temperature, and frequent extreme weather conditions occurrences, general public is getting overly sensitive about these changes. Additionally, with the rise in pollution in every major city of the world, chronic diseases like asthma and respiratory illnesses are on the rise.

The situation is demanding actions by the health officials, environmentalists, activists, and the citizens of every country.

With the conclusion of the COP26 conference last November in Edinburgh, Glasgow, all participants of the conference pledged to do their part in stopping the global warming by reducing the use of the fossil fuels by replacing them with the renewables (solar, wind, hydro, nuclear, etc.). Since this goal cannot be accomplished overnight due to large investment requirements for building the renewables sources and their infrastructures ground up, it made more sense to go through a transitory fuel, like the LNG that is significantly cleaner, cheaper and can be easily used in the existing infrastructure in many countries.

With the advancement of technology to harness it and to convert it as fuel and downstream building blocks started to monetize it.

This shift in the paradigm opened up new opportunities for the natural gas. With the buildup of pipeline infrastructure for its transportation and commercialization of its liquification process, storage, and regasification, it became another energy commodity, like the oil, which can be transported from its source to far flung destinations safely and economically. This opened up new and lucrative market for the LNG and with its upfront advantage of being a cleaner fuel than oil and coal, its growth continued and outpaced the capacity.

Continued addition of the new capacities brought the LNG prices down. By using the unique horizontal drilling, the USA became the lowest cost producer of oil and gas. This changed the entire balance of the energy supply chain.

As a result, the USA not only became self-sufficient for its energy needs but also a major player in the global energy supply. As a matter of fact, in just a few years after the "shale-gas/oil" revolution, the USA became a net exporter of Oil & Gas more competitively than the established players. And this created a new momentum in the global economy and the world started riding on its full speed with all of its cylinders roaring!

However, with the Covid-19 pandemic, the global economy nosedived, and like its cousin oil and coal, LNG demand also plummeted. Under these circumstances, energy prices collapsed and fell through the bottom (first time in history reached the negative territory) that forced to reduce the production of all type of fuels.

These conditions pushed drastic reductions in investments for new explorations and capacity additions and forced shutdown of oil & gas wells that were not cost competitive. This led to large layoffs of all types of the energy sector employees. Houston, Texas, as the global capital of energy, recorded about half million of energy sector employees layoffs in a single quarter.

But about a year later, by following the WHO (World Health Organization) directives, the economic recovery started globally. As the global recovery was rolling out, fossil fuels' limited supply became major concerns for the recovery's sustainability. Additionally, as the winter in Europe started settling, energy supplies did not keep up with its seasonal demand and as such prices shot up to unprecedented, elevated levels.

Pakistan having a lack of vision for its "energy security" became very discernible during its economic recovery period. And, in the absence of coordination within its procurement agencies Pakistan State Oil (PSO) and Pakistan LNG Limited (PLL) for the LNG supply created situations that were unmanageable by its inexperienced staff. Because of the mismanagement and chaotic actions, Pakistan had to buy its needed LNG volume at exorbitant price levels that could have been easily avoided if its policymakers and procurement agencies had been working in a coordinated manner. ■

First electric commercial vehicle unveiled

EU Report

Sitara Engineering in collaboration with Tesla Industries has introduced the first electric commercial vehicle (ECV) in Pakistan.

According to a report, an 11-seater mini-bus and a cargo van, which are capable to transport up to one ton, were exhibited in a ceremony. The solar charging station and AC chargers were also showcased for ECVs.

The company's top officials addressing the ceremony said the electric vehicles are need of the hours to counter rising fuel prices and an alarming rise in air pollution.

Average cost of these vehicles will be around Rs3.5 per kilometer and these vehicles are initially being imported from China, but their assembly would start in the South Asian country in a year or two.

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Pakistan needs to conserve energy in all sectors

Engr Ainul Abedin

We have an acute energy crisis and really, no action is being taken to ensure high efficiency for both power generation and distribution. Immediate directives are required to be taken up at highest level to ensure we have an affordable overall Energy Policy covering both environmental and economical issues.

Due to supply constraints, and the resulting inflationary pressures, base energy costs covering both oil and gas will remain very high in future, thus undermining overall planning in most developing countries! For Pakistan, we have an urgent need to understand that we are basically an "energy deficient" country and need to conserve energy in all sectors till we are blessed with new sources of gas/oil wells.

Two major sectors need urgent and intelligent actions. Buildings, in general, need to be Energy Efficient. Although we have an "approved" Building Energy Code, adopting the international recommendations to make our buildings meet the minimum energy conservation requirements, nearly all buildings defy logic and waste enormous amount of energy (at least 30 percent above required energy for sensible planning), causing havoc to our overall energy sources, covering basically our critical dependence on natural gas.

It is really unfortunate that we had an opportunity to follow the worldwide accepted building codes, with a huge number of new building projects to ensure energy Conservation, and thus solve the critical issues but we have seen no action either from the earlier authorities nor from the present lot and thus suffer, and suffer badly, from the consequences.

Renewable energy, especially solar resource, has not been utilised even partly; though we have been blessed with this abundant energy and continue to encourage fossil fuel-based power plants with no check on efficiency. Even theoretical "efficient" combined cycle power plants are operated inefficiently and the authorities accept inefficient operation, and thus add high fuel costs to the tariff, without any hesitation as "pass-thru" costs, certainly worst possible policy!

Technologies are available to ensure that these inefficiently-operated combined cycle power plants are operated at high efficiency under different ambient conditions but they are encouraged to be inefficient so that high fuel costs actually add to overall profits.

We have not really encouraged cost-effective solar energy source which should have seen some major investment in solar thermal power plants in our sun-belt areas, at base production costs of less than equivalent 4 US cents per kWH unit. How is it that we are allowing new gas-based power plants when cost, and availability of natural gas would be subject to worldwide inflation? If we could ensure more power at overall less gas consumption per kWH unit from the present power plants, why should we allow new investment in inefficient power plants, causing both high foreign exchange loss in capital investment and continued high foreign exchange loss in imported gas consumption?

We need to urgently take action to ensure high-efficiency operation of our existing combined cycle power plants and set up solar thermal power plants to avoid dependence on inefficient and highly polluting power plants as being presently done. ■

BOP to raise Rs13bn debt for Lucky Electric

After successfully raising Rs7.9 billion debt financing for Lucky Electric Power Company Limited (LEPCL) in two tranches, the Bank of Punjab (BOP) has been awarded a third debt arrangement mandate by the company to raise an additional Rs5 billion working capital.

To mark these successful transactions and award of fresh mandate, a ceremony was held at the head office of Lucky Cement recently, which was attended by Mohammad Ali Tabba (CEO Lucky Cement Limited), Ghazanfar Jillani (Director, BOP) and Zafar Masud (President & CEO, BOP) along with other senior officials of the two institutions. LEPCL is developing a 660MW coal-fired power plant at a cost of USD 850 million.

The project shall operate on Thar coal after expansion of the coal mine and help bring down the cost of Thar coal through economies of scale. Being one of the most efficient coal-fired power projects in Pakistan, the project will also help bring down the cost of electricity in Pakistan. The award of third debt arrangement mandate over a period of just two months is a testament of Lucky Group's trust on the investment banking capabilities of the BOG under its new leadership.

Mohammad Ali Tabba appreciated the role of BOP, which is fast emerging as one of the most active commercial banks in the market with a seasoned investment banking team for arranging financing for LEPCL. Zafar Masud expressed his keen desire to further deepen BOP's relationship with Lucky Group which is cementing its place as one of the largest industrial conglomerates of the country. ■

IMF urged to revoke GST on solar panels, electric vehicles

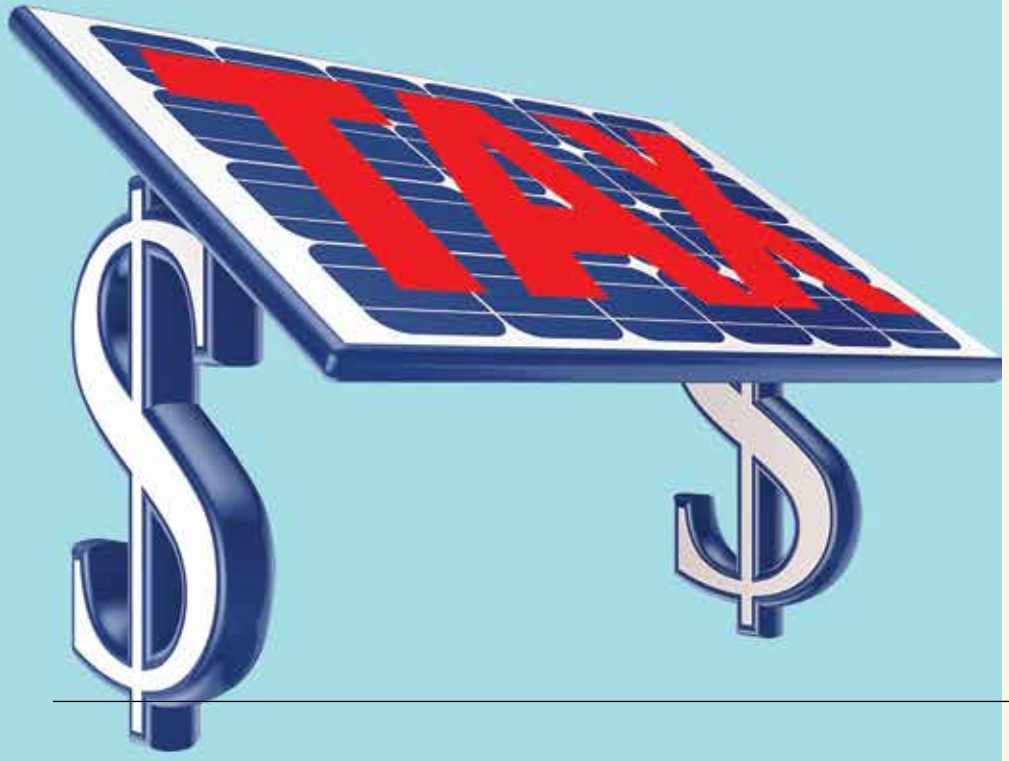
Demanding from the government to revoke imposition of General Sales Tax (GST) on solar panels and electric vehicles, a civil society group striving to promote renewable energy has asked the International Monetary Fund (IMF) to play a responsible part in developing socially and environmental-friendly financing solutions in Pakistan.

Alliance for Climate Justice and Clean Energy (ACJCE) has made these demands in a letter written to the IMF Board ahead of its meeting for Pakistan's sixth review, following the recent imposition of 20% GST on solar panels in Pakistan. ACJCE shared details of the letter in a media briefing held recently, where the speakers assailed the tax imposition and discussed its repercussions.

Speaking at the briefing, Mr Zain Moulvi, Associate at Alternative Law Collective, said that the hastily passed mini budget was a grim reminder of how IMF's policies and lending practices could sabotage Pakistan's social and environmental planning. "The new IMF-backed fiscal reforms include heavy taxes on solar panels, wind turbines and electric vehicles, which are likely to cripple the renewable energy market," he said. Moulvi emphasized that the renewables are Pakistan's biggest hope for cheap electricity.

Waqas Moosa, Member Executive Committee of Pakistan Solar Association (PSA), revealed that solar deployments in Pakistan are expected to fall by at least 20% in 2022 as solar equipment's cost will increase by around 20% due to the added taxes. "Consumers who are unable to shift to solar due to higher cost will end up paying an extra Rs175 billion in electricity costs over 20 years," PSA representative said.

Haneea Isaad, Research Associate at Institute for Energy Economics and Financial Analysis, and research analyst at Renewables First, Mustafa Amjad, also spoke on the occasion. ■



Category-III projects: AEDB to go for competitive bidding plan

Alternative Energy Development Board (AEDB) has decided to go for competitive bidding plan for category-III projects as per directions of Cabinet Committee on Energy (CCoE).

The decision was taken at a meeting presided over by AEDB Chief Executive Officer a few days ago. The meeting was convened to discuss/finalise the Interconnection Ready Zones (IRZs) provided by NTDC for carrying out the competitive bidding of Category-III wind and solar projects.

National Electric Power Regulatory Authority (Nepra) had approved over a dozen renewable energy projects but the Power Division did not include them in its new generation plan, which irritated the regulator.

The representatives of NTDC, Hesco, Mepco, Sepco, Gepco, Iesco and Qesco attended the meeting. However, Pesco was unable to attend the meeting. CEO AEDB stated that AEDB was required to carry out competitive bidding amongst wind & solar projects listed under Category-II as per the decisions of the CCoE and Council of Common Interests (CCI).

He further contended that CCoE in its recent meeting had also directed Ministry of Energy (Power Division) to finalise the competitive bidding plan for Category-III projects, at the earliest. The meeting was further informed that the Request For Proposal (RFP) documents prepared by AEDB had already been approved by Nepra, however, the information pertaining to IRZs was required to be incorporated in the RFP documents prior to initiating the process of competitive bidding.

In this regard, NTDC has shared the information pertaining to IRZs with AEDB with the request to get the consent/confirmation from the relevant DISCO prior to finalization/ incorporation of it in the RFP documents.

CEO AEDB apprised the participants that the Indicative Generation Capacity Expansion Plan (IGCEP) 2021, recently approved by Nepra, identifies addition of 1000MW capacity each from wind and solar for year 2024.

Accordingly, the evacuation facilities would be required to be made available to solar and wind projects by 1st and 3rd quarters of 2024, respectively. In this regard, he requested the DISCOs to also indicate/identify the IRZs other than the ones shared by NTDC enabling AEDB/GoP to procure the capacity addition for year 2024. ■

Pakistan
A RICH COUNTRY?

Syed Shabbar Zaidi

Pakistan owes over 100 billion USD in foreign debts. It has had over 375 billion in the current account deficit since 1947. The country imports around 10 USD billion worth of food items annually. This is the state of affairs of the state of Pakistan. However, it is also a fact that Pakistanis are the second largest investor in properties in Dubai.

Around six daily flights to Dubai are all jam packed with first class and business seats occupied by Pakistanis. Lacs of very expensive animals are slaughtered during festivals.

Almost all the mosques in the country are well equipped with airy space and large halls which remain unutilized except for prayers which in total consume one to two hours in a twenty four hours day. Prostitution and pornography is constantly increasing as society is choked.

Pakistanis purchased a very large number of four wheel drive vehicles during 2020-2021 and such vehicles are all booked in advance for two to four years. In all the big cities of Pakistan middle and high end restaurants require at least an hour waiting time for dinner.

Average attendance in a middle class wedding, which consists of at least two functions, is around 400 people with lavish food and excellent arrangements.

All these facts and many others not mentioned reveal that there is a serious contradiction between the Pakistan we see in state numbers and the Pakistan we see if we move around in the upper middle class. Apparently there is a contradiction or disharmony.

However my analysis of Pakistan's social, economic, and political structure reveals that this is all part of a well thought out scheme. This society has been established by design and it suits the people who matter whether they are bureaucrats, politicians, forces, and professionals.

This is the product of a very long journey which Pakistan has travelled from 1947 to 2021. This is an elitist state made by elitists, ruled by elitists for the elitist. Those who challenge are spectators outside the pavilion. This is the reason that no right wing person has ever been punished whereas leftists starting from Hasan Nasir to Dr Aizaz Nazir have records of butchery. Those who belong to the left are now living in Defence Societies like me writing articles like this and have become part of the system.

The system which has been so designed in Pakistan requires legal and financial security to the people who are enjoying this state of affairs.

Pakistan may be the only country in the world that has effectively legalized this disharmony and has installed sensitive trip wires which alarm the arrival of the intruder in the system. This article covers only some aspects of this extortionist system and is limited to the subject of finances and businesses.

Pakistan is the only country in the world that has placed foreign exchange regulations against the documented and organized companies and has opened the free movement of currencies by individuals.

Legally, prior to 2018 an individual was authorized to buy foreign currency without any limit in the open market without any practical documentation about the source of money from so-called exchange companies.

This is a unique animal created in Pakistan. This money can be deposited in the foreign currency account of the individual and sent anywhere in the world without any probe. 'No question asked' is an attribute propagated by court economists of the political elite.

Availability of rupee without any source is guaranteed by the cash economy in the country which consists of around 40 percent of

the GDP of the country. This roughly amounts to USD 150 billion per year.

This means that around 20,000 billion rupees are injected in the economy every year which all remain unaccounted for. This sum is earned from trade, agricultural income, real estate and all other sectors, including some industrial sectors, which are undocumented. For example around 30% of the tobacco industry consists of undocumented economy.

Whole sugar industry is undocumented after the production stage. This 20,000 billion rupee is used for the purposes identified in the first paragraph. The story would have been satisfactory if this money would have remained in Pakistan.

It is not so, businessmen and bureaucrats want to enjoy their money in London and Dubai. Therefore, Zia Ul Haque and Nawaz Sharif designed systems whereby such rupees are available in USD. Protection of Economic Reform Act, 1992 was promulgated to facilitate the same. It was a poison to an ailing patient. However, Nawaz Sharif is not the only person to be blamed. Afterwards Zardaris and PPP, Musharraf and his Chaudhries and Imran Khan's friends all enjoyed the system.

All politicians when not in power live in Dubai, London or New York as people in Pakistan are dirty and life is insecure. It is a disease that is inflicted when political recognition is achieved.

Nevertheless the lesson I have learnt is that stakes are so big in this country that there will be a strong resistance crossing this trip wire. A whole generation has been nurtured where no tax, no documentation, luxurious life in Dubai and London is the norm.

This generation which is reasonably educated is confident that their future is guaranteed as their fathers have substantial assets and properties outside Pakistan. Pakistan is a second rural home for them for leisure and to promote corruption or play politics.

After the economic shocks which the western societies had due to Chinese economic tsunami and the event of 9/11 it has become difficult for the western governments' protected tax and regulatory heavens to distinguish between funds that can be used for terrorism and those accumulated there by corrupt rulers and bureaucrats of undeveloped or developing countries like us. So there is a deliberate attempt to unveil that system. This led to these leaks.

The rich citizens of poor countries are being incentivized to park their declared and undeclared wealth in these tax haven jurisdictions from where these funds end up in New York and London capital markets. New York and London are happy as long as the funds are not related to terrorism.

Nevertheless those Pakistanis who are parking their wealth in these jurisdictions including the Gulf Emirates are warned that I foresee a time in the near future when such assets would be frozen in these jurisdictions.

Malta, Cyprus, Hungary etc are not places to keep assets that can be used for generations. One can earn real income only at the place where there is a natural network. Let people learn the lesson because it is very difficult to persuade those who have money without effort.

As against that, there are a very large number of middle class youngsters who are very bright. They work day and night and obtain straight A's or over 80 marks in Cambridge and Matriculation examinations respectively.

These youngsters do not see their future in the country for the reason that the initial gap is too large to be bridged. Some of them find suitable jobs in Pakistan and remaining try to live somewhere in Canada or USA if they find such an opportunity.

This hypocrisy cannot continue. Let us get together to enlighten the society against intellectual corruption in addition to financial corruption. ■

Threatening debt crisis

EU Report

The debt crisis remains the biggest threat to stability in Pakistan, outweighing inflation, climate change and terrible cybersecurity, according to a new World Economic Forum (WEF) report.

The Global Risks Report 2022 based its listing of the top five risks in 124 countries on survey responses from thousands of executives across the globe. Many of the global risks also apply to Pakistan — apart from the long-term dangers of climate change, natural and manmade environmental disasters, which were near-universal along with economic upheaval either due to debt or inflation, and the Covid-19 pandemic.

Meanwhile, short-term risks include societal divides, livelihood crises and mental health deterioration. While unemployment and underemployment do get attention from Pakistani governments, societal divides usually seem to get lip service attention.

The increased weight of these short-term pressures is bound to have a knock-on effect on policymaking to avert long-term threats, including involuntary migration forced by conflict, economic circumstances, and climate change. Pakistan is already seeing these occurring from abroad and inside the country. Incidentally, the report estimates that almost 5% of the global population is currently displaced by conflict.

Another international threat that has been magnified by remote work operations in the pale of Covid-19 is cybersecurity, with malware and ransomware attacks up by about 400%. Pakistan also saw major data breaches last year, like the FBR hack. ■

Indonesia offers coal for CPEC projects

The Indonesian coal industry is well refined and it can provide coal to Pakistan for power projects being developed under the China-Pakistan Economic Corridor (CPEC), said Indonesian Ambassador to Pakistan Adam M Tugio.

In a meeting with prominent businessmen in Lahore, the ambassador said that his country could also provide coal to the domestic large-scale manufacturing sector. He was of the view that a large chunk of Pakistan's coal demand could easily be met through a consortium of Indonesian exporters, who would trade with local businessmen.

"Indonesia currently exports 8.51 million tons of coal to the world and accounts for 26% of total exports of the commodity," said Tugio. "Data shows that Pakistan's coal demand is continuously increasing year after year." In 2020, the total value of coal imported by Pakistan stood at $1.233 billion, however, a mere $224 million worth of coal was imported from Indonesia, he said.

He stated that apart from Indonesia, Pakistan received coal shipments from South Africa, Russia, Australia, Afghanistan and China. ■

Seizing climate opportunities

Ali Tauqeer Sheikh

Must we punish the people of Murree, the Galiyat and the entire northern belt of the country for receiving snowfall? The snowfall in Murree has already cost human lives and brought the local economy to a screeching halt. The inquiry committee set up by the Punjab government has proposed some administrative measures that will only restrict citizens' mobility and stifle the nascent tourist industry. The government's administrative measures are costing the local economy dearly. In this tragedy lies an opportunity to pursue climate-smart ecotourism in the country's fast-degrading mountain ecology.

Clearing snow is a simple municipal function. Making Murree a district will not make the problem go away, but the timely use of road salt will. Millions of kilometres are routinely cleaned everyday by local governments in many parts of the world; they only maintain a fleet of snowplough trucks, snow-blowers, front-end loaders and dump trucks. Often these are the same trucks, tractors and road-graders used in summer for road maintenance. They take a regular dump truck and fix a snowplough blade in front. This is essentially a private sector function that, given the opportunity, local contractors and service providers can perform from Ghora and Ghika Gali in Punjab to the Khunjerab Pass in Gilgit-Baltistan on the China-Pakistan border.

Pakistan had embarked on a reform agenda for disaster preparedness after the 2005 earthquake and established Erra, followed by the National Disaster Management Authority (NDMA), supported by provincial set-ups or PDMAs. The district disaster management authorities (DDMA), that were to be set up under the act exist only in official files. They have been notified but not resourced.

Environmental sustainability rests in bottom-up planning. At the union council level, three to four squads of seven to 14 trained locals can help constitute a force of 20 to 50 workers in a UC to clear all major arteries. A normal size tehsil, would probably need twice as many staff headed by a local government officer. Under the NDMA Act, it is the duty of DDMAs to ensure early warning of any disaster and make plans to deal with it. But the ground reality is that instead of resourcing DDMAs, the national and provincial authorities have, since the 18th Amendment, competed with each other for resources to develop Multi-hazard Vulnerability and Risk Assessments. No MRVA has been developed for Murree.

Pakistan's mountain areas deserve integrated area development planning

Instead of recognising this grand failure, the inquiry committee has investigated a dozen top-heavy institutions to determine their responsibility in the tragedy: the police, forestry, highways and C&W departments, in addition to FWO, IESCO, NHA, Rescue 1122, NDMA, PDMA, the army and the Provincial Crisis Management and Control Centre. None of them were unambiguously held responsible! The committee ended up suspending some traffic police, forest and district-level emergency officers. By reviewing their compliance with SOPs developed decades ago as an added set of responsibilities for the commissioners, the inquiry committee has effectively buried the reform agenda of empowering local communities to serve as the first line of defence against climate-induced and other disasters.

The dysfunctionality of the reform agenda is glaring: the Galiyat Development Authority that was set up by the KP government claims a 24/7 snow removal centre but has no coordination with the hill station; Rescue 1122 has not been equipped for the mountain areas; the meteorological department has not upgraded or standardised its warning systems for snowstorms and heatwaves; the Environment Protection Agency has not developed guidelines for extreme weather events. Equally important, adaptation plans still have to be developed for the mountain ecology. In the meanwhile, unplanned tourism has put enormous stress in several areas on local land use which has resulted in soil erosion, natural habitat loss and pressure on endangered species. Negative environmental impacts are increasing to include the depletion of local natural

resources, air and water pollution and waste management issues. The municipal and tourism development plans for them have yet to be developed to meet the growing demand from domestic tourism that has been enabled by an increasing web of motorways substantially reducing travel time for motorists.

Murree has become a choke point as other snowy areas have not been developed. Its unplanned and unsafe multistoried buildings, hotels and resorts are hazardous and cannot serve as models for neighbouring tourist destinations. The promotion of skiing resorts or ice hockey needs to be supported by resourcing newly formed local governments at the district level and UCs 46, 59 and 15 respectively in Abbottabad, Mansehra and Murree to have infrastructure that is safe and environment-friendly.

Tourism is weather-dependent and by extension, climate-dependent. Pakistan's mountain areas are exposed to multiple hazards and climatic changes have begun to increase this exposure. Snowstorms, landslides, avalanches and rockfalls are becoming more common and more intense, threatening livelihoods and infrastructure. The patterns of annual rainfall and snowfall and the duration and timing of snowy days are changing. The closure or cancellation of tourism destinations as a result of climate not only affects local economies, but also the attractiveness of destinations and reduces their economic opportunities.

The Inter-governmental Panel on Climate Change has predicted that mountain ecosystems will change profoundly as glaciers melt. This problem will only get worse as temperatures continue to rise. Pakistan already has more than 7,000 glaciers out of which an alarming 3,044 have become glacial lakes. Many others have been marked as a potential risk due to rising temperatures. As they melt, they can burst their banks and flood downstream. This phenomenon is called glacial lake outburst flood and results in changed periods of water flow, having a major impact on water availability for agriculture or hydropower. The recently formed Attabad Lake has already become a tourist destination as an example of disaster-induced tourism.

Pakistan's mountain areas deserve integrated area development planning. The transition to climate-resilient development in mountain areas will create opportunities for sustainable tourism, offering immediate development opportunities for Pakistan's mountainous areas. The government can help ensure that climate opportunities are captured by reviewing existing policies and plans and focusing on long-term value rather than making hollow claims. Local governments that are being elected now can play a pivotal role in bringing about change that can include managing transition to a climate-smart local economy supported by ecotourism. ■

PM Khan seeks resolution to PD-Nepra 'disputes'

Mushtaq Ghumman

Prime Minister Imran Khan has directed Power Division to sit with National Electric Power Regulatory Authority (Nepra) and resolve their outstanding issues so that 'wheeling policy' is approved and announced next month (February 2022), well informed sources reported.

Prime Minister issued these directions at meeting on Energy Roadmap, in which different issues related to the country's energy sector were discussed. Following the Prime Minister's directives, Power Division, led by Secretary Power Asif Hyder Shah, Additional Secretary -1, Musaddiq Ahmed Khan and other officials met Chairman Nepra and discussed the way out of current issues including resolution of wheeling charge of Rs 1.8 per unit approved by Nepra.

During discussion on power sector related issues, it was noted that introduction of 'wheeling' is missing, which is necessary before the launch of Competitive Trading Bilateral Contracts Market (CTBCM). The sources said, CTBCM design is complex and will take 5-7 years to become operational and will be applicable to grid-connected entities. However, wheeling can be introduced earlier in phase-1 and will be required for non-grid connected entities wanting to enter into bilateral agreements.

It was urged that stay orders given by Islamabad High Court (IHC) to nine power Distribution Companies (Discos) need to be vacated. According to sources, the meeting also noted that there is no mention of any plan to reduce capacity payments after introduction of CTBCM in May 2022.

It was assumed that one possibility could be that the government may consider invoking the generation licences clause of IPPs where they agreed to consider moving to "take and pay" in "good faith" (Article 7 "Competitive Trading Arrangements" of generation licence).

The meeting deliberated on this issue and maintained that the government may consider approaching the Supreme Court to get a decision. It was also noted that no mention was made of attracting private sector investment in transmission network or reduction of T&D losses which are 17 per cent and ABC cables. No work was also undertaken on two other factors, i.e., improvement of Discos' performance and SCADA for improved monitoring of plant availability and energy sold. Prime Minister also directed Law Division to furnish its advice on clarification sought by Petroleum Division for capacity enhancement of Pakistan Gas Port Consortium Limited (PGPCL) terminal in the light of on-going arbitration.

Petroleum Division, sources said, has been directed to finalize Facilitation Agreement (FA) on North-South pipeline to be finalized by 1st week of February 2022. Petroleum Division has been asked to follow up with Russian side.

Petroleum Division in coordination with the office of Attorney General for Pakistan would pursue court cases on exploration blocks for early vacation of stays/ conclusion. A list shall be shared with AG Office and a copy sent to Prime Minister Office (PMO).

Prime Minister has also directed Power Division and Petroleum Division to update their roadmaps presented in the light of observations of the PMO and come up with an action plan with specific targets/ tasks and timelines for their implementation. These will form part of their performance deliveries. ■

Courtesy Business Recorder

Import of fuel, other commodities soars

Oil import bill surges by over 113pc; natural gas import goes up by 127.98pc

Imran Ali Kundi

Pakistan's oil import bill has surged by over 113 per cent to $10.18 billion in first half (July to December) of the current fiscal year mainly due to the higher international prices and massive depreciation of the rupee.

The country's import bill has gone up by $10.18 billion during July to December period of the year 2021-22 from $4.771 billion in the same period of the previous year, according to the latest data of Pakistan Bureau of Statistics (PBS). The import bill of petroleum products is increasing due to higher prices in international market and rupee depreciation against the dollar. Meanwhile, the food import bill is also widening. The steady increase in import bill of food and petroleum products are triggering trade deficit and pose a threat of exerting pressures on the external side of the government. Pakistan's trade deficit had already widened to $25.5 billion during July-December) of the current fiscal year 2021-22 compared to $12.344 billion during the same period of 2020-21, showing an increase of 106.4 percent. The economic experts believed that trade deficit is projected to go around $55 billion by the end of current fiscal year due to massive increase in imports.

Imports had already increased by 65.94 percent during the first half of the current fiscal year and stood at $40.580 billion compared to $24.454 billion during the same period of the corresponding year. The country's exports increased by 24.7 percent and remained $15.102 billion in the first half of current fiscal year compared to $12.110 billion during the same period of 2020-21.

The latest data of PBS showed that imports of almost all groups are enhancing. In overall oil products, the commodities that contributed an increase of oil import bill included petroleum products, the imports of which enhanced by 133.16 percent to $5.056 billion during first half of the current fiscal year from $2.168 billion last year. Likewise, the imports of petroleum cured increased from $2.41 billion to $1.322 billion, an increase of 82.21 percent.

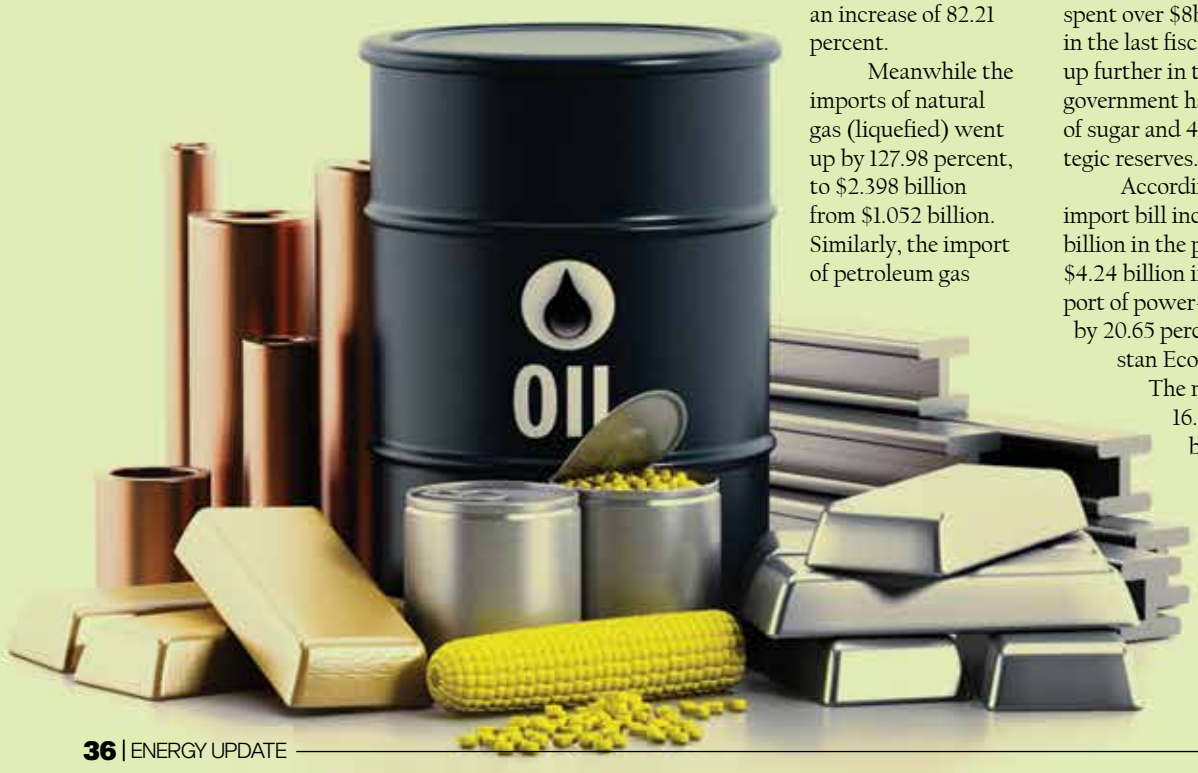
Meanwhile the imports of natural gas (liquefied) went up by 127.98 percent, to $2.398 billion from $1.052 billion. Similarly, the import of petroleum gas (liquefied) increased from $227 million to $315 million, showing growth of 38.72 percent.

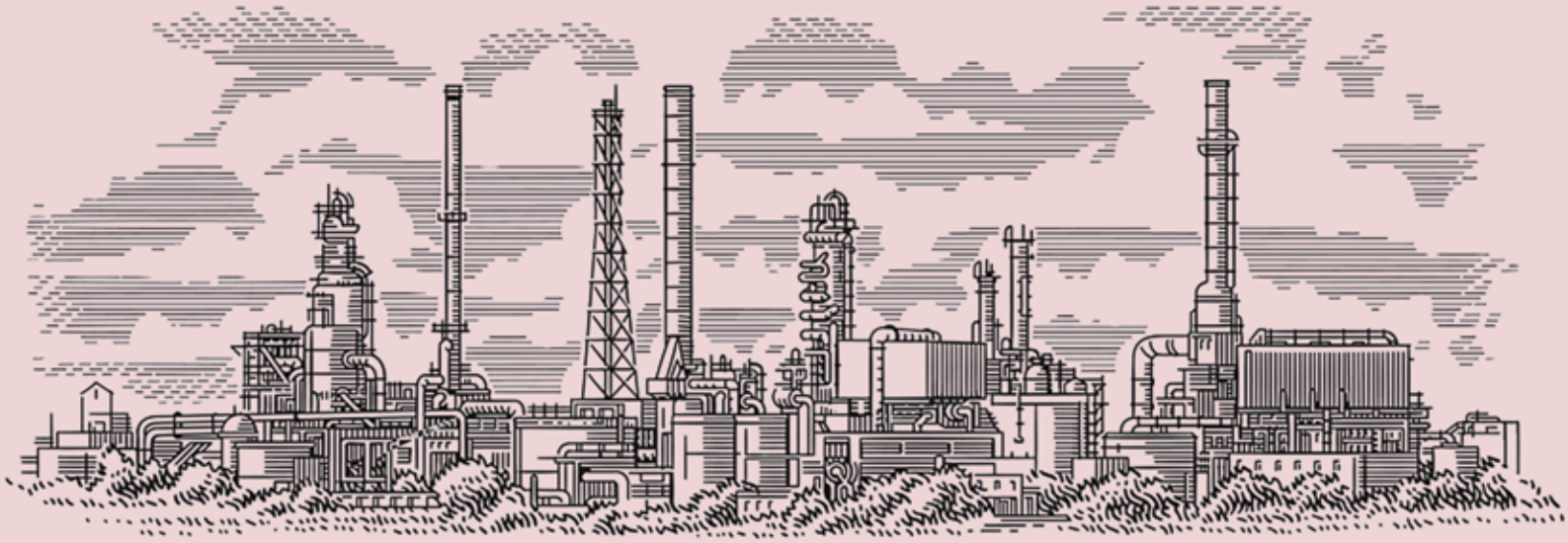
According to the PBS data, the country's food import bill had widened by 22.28 percent to $4.798 billion in July to December of the current fiscal year (FY22) from $3.905 billion over the corresponding period of the last year. The government is importing food commodities to bridge the local shortage in the country. Within the food group import, the major contribution came from tea, spices, palm oil, sugar and pulses.

Edible oil import witnessed a substantial increase in quantity, value and per value terms. Import of palm oil grew by 65.84 percent in first half of the FY 22 to $1.843 billion from $1.111 billion over the corresponding months of last year. The palm oil import bill increased due to rise in international price of this commodity. The import of sugar has gone up by 49.49 to $189.2 million percent in first half of the FY 22.

The government has spent $470.5 million on importing wheat. The rising food imports and the consequent trade deficit is yet another source of worry for the government. Pakistan spent over $8b on the import of edible items in the last fiscal year. The import bill will go up further in the coming months because the government has decided to import 0.6m tonnes of sugar and 4m tonnes of wheat to build strategic reserves.

According to the PBS data, machinery import bill increased by 39.54 percent to $5.917 billion in the period under review as against $4.24 billion in the same period last year. Import of power-generating machinery went up by 20.65 percent mainly due to China-Pakistan Economic Corridor-related projects. The mobile phone imports were up by 16.17 percent year-on-year to $1.09 billion. The import of the transport sector posted a growth of 104.99 percent to $2.322 billion in first half of the current fiscal year as against $1.132 billion over the same period last year. It was mainly led by massive imports of road motor vehicles (build unit, CKD/SKD). ■





No way yet to bail out refineries from ullage crisis

Power Division sets up committee to seek solution to ullage crisis

Khalid Mustafa

The Petroleum Division has so far failed to wriggle the country's refineries out of the ullage crisis that prompted them to operate with lower throughput because of increasing stock of the furnace oil in their storages, a senior official at the Energy Ministry said.

Hammad Azhar, Federal Minister for Energy, has asked the refineries to provide subsidy on furnace oil prices, so that the use of product for power generation could be implemented. The furnace oil at discounted price will enable the government to match the Economic Merit Order.

Under the Economic Merit Order (EMO), power plants using the cheapest fuel are first run. And those power plants which run on furnace oil come in the EMO at second last as furnace oil prices are higher than the price of LNG, which is used in LNG-based power plants. And the fuel cost is a pass-through item to the end consumers.

The power plants, which are run on diesel, produce the priciest electricity, which is why the plants based on diesel stand last in the Economic Merit Order. However, the local refineries earlier, as per the official correspondence available, opposed the government's proposal asking for a discount in the prices of furnace oil for use in power plants on the ground that lowering furnace oil prices was not a viable proposition. This has led to further surge in the ullage crisis in refineries.

However, in a new development, the official said, the Power Division has set up a committee headed by PARCO managing director with lead role with the mandate to interact with his counterparts in other local refineries to seek a solution of the ullage crisis that has badly affected the output of refineries keeping in view the proposal of the Ministry of Energy. The Power Division will also be asked to interact with refineries committee with regard to the discount in furnace oil prices.

Earlier, Pakistan Refinery Limited (PRL), National Refinery Limited (NRL), Attock Refinery Limited (ARL) and BYCO had rejected the government proposal of lowering the furnace oil prices, terming it not an apt solution to the issue as it does not address the refineries' sustainability issue.

However, PARCO offered the furnace oil price at Rs86,000 per ton in response to the letter of DG Oil based on the directions of the meeting held on January 06 headed by the Energy Minister.

Likewise, the National Refinery Limited came up with the furnace oil price of Rs81,000 per ton. The Pakistan Refinery Limited came up with a price at Rs80,000 per ton and Cnergyico (Byco) Rs86,000 per ton. All refineries refused to give further discount in the furnace oil prices.

Since then, there is no progress at all and now the Petroleum Division, as desired by its secretary, has constituted a committee headed by MD PARCO to interact with his counterparts and representatives of the Power Division to reach the price of furnace oil acceptable to both sides. ■

First electric commercial vehicle unveiled

EU Report

A private company in collaboration with Tesla Industries has introduced the first electric commercial vehicle (ECV) in Pakistan. According to a report, an 11-seater mini-bus and a cargo van, which are capable to transport up to one ton, were exhibited in a ceremony. The solar charging station and AC chargers were also showcased for ECVs. The company's top officials addressing the ceremony said the electric vehicles are need of the hours to counter rising fuel prices and an alarming rise in air pollution. Average cost of these vehicles will be around Rs3.5 per kilometer and these vehicles are initially being imported from China, but their assembly would start in the South Asian country in a year or two. ■

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Water scarcity could be killing the economy

By Engr. Zafar Iqbal Wattoo

Water is the second most important factor in human life after air, for which man is ready to die and be killed. Sudan's region of Greater Darfur is a case in point. The "water wars" may soon break to control the water even more intensely if the world do not pay attention to the water scarcity issue.

Unlike oil, water is a natural resource, for which there is no substitute. Just as the last century was the century of oil, so the present century is the century of water. The superpowers of this century would be the nations with abundant water resources such as the Brazil, Russia, USA, Canada and China.

There is a general impression in Pakistan that India has diverted the waters of our rivers in its hostility towards Pakistan. It is true that all the rivers flowing in Pakistan flow from India but it is also a fact that India formulated its first water policy in 1978 while in our country, this miracle happened 40 years after India in 2018.

Despite the fact that agriculture is the basis of our national economy, we have been in a state of dream for so long whereas the world has gone far from here. Despite all our deterrence, our backs can be broken due to water shortage. How can agricultural production be sustained when the required amount of water is not available? How long will we may be able to manage our agricultural economy by not being self-sufficient in agriculture with less water?

According to an estimate, Pakistan currently has the capacity to store water for only 30 days, while India has a capacity of about 100 days. It is also important to note that India's needs are five to six times greater than ours. The Chinese have the water storage capacity for years. Even the African nation of Ethiopia, which has been suffering from famine for decades, has saved its water by building a millennium dam on the Blue Nile which will be used for the hydropower generation.

The guidelines of international organizations say that a country should have the capacity to store up to 40% of the total volume of water received from rain or snow, while in our country this capacity has not yet reached 10% mark. How will we be able to meet our needs in the days of water scarcity? We have more than 80% of our available water in the three months of rainy season and rest of the time very little water. We have not made any significant effort in the last many decades to increase storage capacity for our fresh water. Now work has started on Bhasha and Mohmand Dams. However, the project of Kala Bagh dam has almost been shelved due to mutual mistrust among provinces.

On the other hand, the situation is such that every year we waste half of the water stored in the dams mercilessly. Ninety percent of Pakistan's total water requirement is used for agriculture. However, out of this we waste almost half of the water before it reaches the crops due to our centuries old flood irrigation system. The world has already switched to the high efficiency irrigation system and even now micro-irrigation has reached the point where the individual needs of each plant are digitally dripped in a measurable way.

The city of Quetta is fighting its last battle for survival from where according to expert's mass migration of people may start. The situation in Karachi is almost similar. Cities of Lahore, Peshawar and Rawalpindi Islamabad are fast moving towards becoming water scarcity areas. The groundwater in Kasur and Sialkot has deteriorated considerably.

There is very little time left to save ourselves. Let us first make ourselves accountable for every single drop of water used on ourselves. ■

NEPRA to act against negligent entities

The National Electric Power Regulatory Authority (Nepra) is pursuing the vision of "Power with Safety", and will initiate legal proceedings against those companies that depict poor performance in the area of health, safety and environment (HSE) in the second round, said Nepra Chairman Tauseef Farooqi.

He held a meeting with all licensees who lagging behind in the HSE performance as identified in the performance evaluation.

Moreover, two top HSE performers were also in the meeting so that other companies could learn from their experiences.

A large number of HSE professionals from power generation, transmission and distribution companies attended the meeting to understand legal requirements of the Power Safety Code. ■

Economic conditions of Pakistan

Syed Ali Imran

If increasing import numbers are being considered mysterious, a probable U-turn on the upcoming Textile Policy is termed as deadliest for the sector giving more than 50 per cent of exports of the country. Inflation is going double-digit followed by discount rate-making cost of living and doing business more expensive.

Everything is related to the Balance of Payment crisis and to secure the last trench of the International Monetary Fund (IMF), the government needs to take harsh steps towards financial legislation. IMF is focused to secure its repayments whereas the government cannot play anymore with the general public and the business community.

However, the grant of IMF final trench and positive assessment is related to fetching further loans from other international financial institutions, issuance of bonds and already held Saudi Grant. Control over financial emergencies is also related to government efficiency towards knocking down new variants of Coronavirus while the world may not witness another great global lockdown. The deadly virus has hit the world economy badly where the international commodity market is witnessing inflationary pressure at large.

According to a report, statistics related to imports show some anomalies to be addressed by the government as swelling numbers are giving a very gloomy impression of increasing trade deficit. November 2021 recorded the highest ever import figure which stood around Rs 8 Billion approximately. Half-year current fiscal calendar trade deficit popped up with a dangerous figure of $24.79 billion where imports are increased 63% as compared to the same period of last fiscal year.

Though in December 2021, imports recorded less than $1 billion from last month, however, increasing Trade Deficit and Current Account Deficit i.e. twin deficits making an overall picture of Pakistan economy in a problem towards the balance of payments. Government officials suggest that the pace of export is improving and by end of the current fiscal year, exports will increase to $31 billion with remittance to record at $32 billion. Apart from the increasing inward flow of dollars, imports are making the economic picture troublesome for twin deficits. Imports mainly increased due to three most important segments of present times; oil, machinery and vaccine.

Control over financial emergencies is also related to the government efficiency towards knocking down new variants of Coronavirus.

In great global lockdown due to Coronavirus in the year 2020, industrial activities stopped for a longer period which impacted the price of the world's top useful commodity i.e. petroleum price to crash. Import bills of countries dependent on petroleum products fell considerably in that period till then when world economy started again with great pace to coup up the backlogs.

Now the price is the highest ever and impacts these dependent economies including Pakistan. In such a period, the State Bank of Pakistan, in consultation with the government of Pakistan, took some measures and gave support to the business community so that the economy may be kept going. Among such measures control over interest rates, subsidized loan to the construction sector and Temporary Economic Relief Facility (TERF) to import machinery for the industry to impact in years to come if not administered rightfully.

Interest rate obliged borrowers to take more loans to make their industries a going concern in such global lockdown and no doubt, it worked well during the period where Pakistan was open as compared to neighbours and the momentum is on the go. More activity means more imports if inputs are not available in the country especially for the export segment i.e. cotton bales if we may take textile as a major export segment. Further, through the TERF facility, industries booked a huge amount of machinery from relevant countries for improving their production efficiencies and adding other segments to increase production. Now in the current fiscal year, the payment of such imports is due and it is adding up the import bill. Unavoidable import is related to medical equipment and vaccines for Coronavi-

rus treatment.

It is, however, important to understand that the machinery coming into the country through TERF will improve the production efficiency of related industries. Majorly, the TERF facility is availed by the textile sector, which means that such additions into plant and machinery export would gradually relax the trade deficit in years to come. There is another point of view of the said facility that it is hijacked by the textile industry where almost half of the amount is used by a spinning segment of the said industry, which is not a value-added segment. When another subsidized facility by SBP for the long term loan is available to the textile industry for the import of machinery, why is TERF allowed to the said industry?

TERF should be available to start-ups and for those industries, which can be beneficial to reduce the dependency of the country over imports i.e. industries related to import substitutions. Now, time will tell if the TERF facility allowed to textile is a good idea or not. Still, it is a notable fact that exports will increase as soon as production efficiencies increase. Another segment that disturbed the balance of payment is spare parts and the import of cars. Now the government has taken measures and is making it a little difficult to buy a car. However, the same is negatively impacting over allied industries as margins are reducing.

Recently, the government of Pakistan has drafted Textile Policy 2021-25 where the target is set to double the exports by such period i.e. from $20 billion to $40 billion. By such time, subsidized loans and energy would be made available to the textile sector, together with duty drawback arrangements.

However, the government is backing out of such policy, majorly due to pressure from IMF and securing the last trench from the financial institution, which is very important to lodge bonds into the international market.

The textile industry has, however, posted the highest-ever net profit margins, where major spinning units earned profits in the first quarter of the current fiscal year, which they used to earn in the full year of performance. But, this is considered a one-off phenomenon due to the impact of the lockdown of neighbour countries and the flow of orders towards Pakistan.

If these subsidized loans may not be available by the State Bank of Pakistan, textile or other export industries will have to bear the normal rate of borrowing where the interest rate is increasing by each passing day due to inflation. It will double the figure of borrowing cost where profitability margins reduce considerably. Reduced profit margins can compel present export industry segments to invest in diversification, which can slow down the pace of exports in short term.

TARIFF RELIEF

Discos to refund Rs22.5bn to power consumers

The National Electric Power Regulatory Authority (Nepra) on Thursday notified a 99-paisa per unit cut in electricity rates for consumers of ex-Wapda distribution companies (Discos) under quarterly tariff adjustment (QTA).

The tariff cut to become effective from Feb 1 and remain in place until April 30, 2022 and provide about Rs22bn relief to the consumers in these three months. The adjustment was on account of various cost variations for the 4th quarter (March-June) of 2020-21. The lower tariff will be applicable to the consumers of all Discos. The notification came following a meeting of the Federal Cabinet on Jan 11 that rejected a request of the Power Division to absorb the tariff cut to cover a part of the subsidy

According to Information Minister Fawad Chaudhry, the cabinet approved a 99- paisa per unit reduction in QTA as determined by the regulator and rejected a proposal from the Power Division to increase rates for consumers using less than 300 units per month. The Power Division had requested the cabinet that in order to protect the domestic consumers consuming up to 300 units, the impact of uniform quarterly adjustments for the 4th quarter of 2019-20 and the 1st and 2nd quarters of 2020-21 amounted to Rs1.72/kWh notified by Nepra in August 2021 was not passed on to them. Consequently, these consumers were being cross subsidised from other categories.

The Power Division demanded that the benefit of negative QTA determined for the 4th quarter of 2020-21 should not be passed to non-ToU (time of use) domestic non-protected consumers with less than 300 units usage. It also demanded that instead of passing on the impact of 99-paisa per unit reduction to all consumers in a quarter, the impact should be phased over 12 months because of liquidity constraints of the power companies. This was rejected by the cabinet.

As a consequence, Nepra on Thursday notified the tariff cut for three months starting Feb 1. Based on the information submitted by power companies, the Nepra worked out the amount of QTA for the 4th quarter of 2020-2 1 as negative Rs22.479bn. ■

Courtesy Dawn

Murunj Dam to generate 12MW power

EU Report

Murunj Dam Project to be constructed on Kaha Nullah, 116km west of Rajanpur, will generate 12 megawatt (MW) cheap and environmental-friendly electricity while having the gross water storage of 800,000 acre feet.

Kaha Nullah is one of the largest hill torrents of the Koh-I-Sulaiman Range located in the vicinity of Rajanpur with average annual inflows of 183,000 acre feet. The project will have tangible benefits and bring about 120,000 acres into irrigable, ground water recharging, and fisheries development.

CPHGC's coal transhipment fleet:

FBR's support sought for reimport

Mushtaq Ghumman

Special Assistant to Prime Minister on CEPC Khalid Mansoor has sought support from Federal Board of Revenue (FBR) for re-import of coal transhipment fleet for M/s China Power Hub Generation Company (CPHGC) Private Limited without additional tax or duty.

In a letter to Member Customs (Operations), Mansoor maintained that 1320MW CPHGC imported coal-fired power plant with integrated jetty is one of the largest foreign direct investments of CPEC in Balochistan with an investment of $2 billion.

The project has successfully achieved its COD on Aug 14, 2019. The project provided multiple benefits to Pakistan economy including uninterrupted cost-effective electricity, local direct and indirect employment, millions of dollars to national and provincial exchequer in terms of taxes, etc.

According to SAPM, who is extending fulltime assistance to Chinese investors, the Company has stated that their power plant fully relies on imported coal for which coal is imported on Ocean Going Vessel (OGV) at transhipment area, and then transferred on transhipment vessel, which is permanently anchored at Gadani, (Hub Balochistan) and further transferred to barges and tugboats till the site for power generation.

In connection with such transhipment facilities, the Company imported CTS fleet which comprises of 1 transhipment vessel, 2 units of barges and 3 units of tugboats for smooth operations of its power generation plant, and the Company paid all applicable taxes and duties at the time of initial import on the said CTS fleet. Now, as per the requirements of Classification Societies and RINA rules, the CTS fleet needs inspection, maintenance and repair at dry-docking facilities which are not available in Pakistan. Hence, the same CTS fleet will have to leave Pakistan from time to time for dry-docking facilities and then re-enter.

The letter states that under the present applicable taxation regime, no exemption is available for the Company on re-import of the same CTS fleet, hence it will be liable for duties and applicable taxes such as re-import, which is clearly not the case here.

According to SAPM on CPEC, under the PCT/HS Code 9918.0000, customs duty is only payable on repair cost of machinery and any additional equipment apparatus, appliances, components sub-components if re-imported after repairs and not on the cost of the vessels since applicable duties in relation to the vessels would have already been paid at the time of initial import.

Mansoor requested to extend necessary support to the company to avoid any interruption in power

plant's operations.

Earlier, CEO of the company also wrote a letter to the concerned authorities including SAPM and sought their help in resolution of the issue of re-import of transhipment for smooth operation of power plant.

Meanwhile, CPHGC's CFO has said, the outstanding receivables have remained a significant concern for all CPEC energy projects. As at January 20, 2022 the outstanding receivables of CPHGC stand at Rs 54 billion out of which Rs 41 billion is overdue. A significant amount of billing is currently pending due to the delay in the decision of the one-time tariff adjustment. Currently, an amount in excess of Rs 17 billion is pending to be billed by the Company which includes the effect of non-indexation of tariff components from Commercial Operations Date (COD), i.e., August17, 2019 till June, 2020 due to variation in foreign exchange rate &LIBOR (already billed on reference values & needed to be revised as per the indexation mechanism).

The company in its several correspondences and meeting with the relevant officials have raised the concern of liquidity; however, no significant improvement has been witnessed in this regard. According to the CFO, owing to such slow recoveries the Company has not been able to declare any dividend to its sponsors. Further, various meetings and correspondences with CPPA-G for allocation of funds have been made in order to draw attention towards the issue of accumulation of such huge debt and company's requirement of extra funds allocation through various letters especially recent letters.

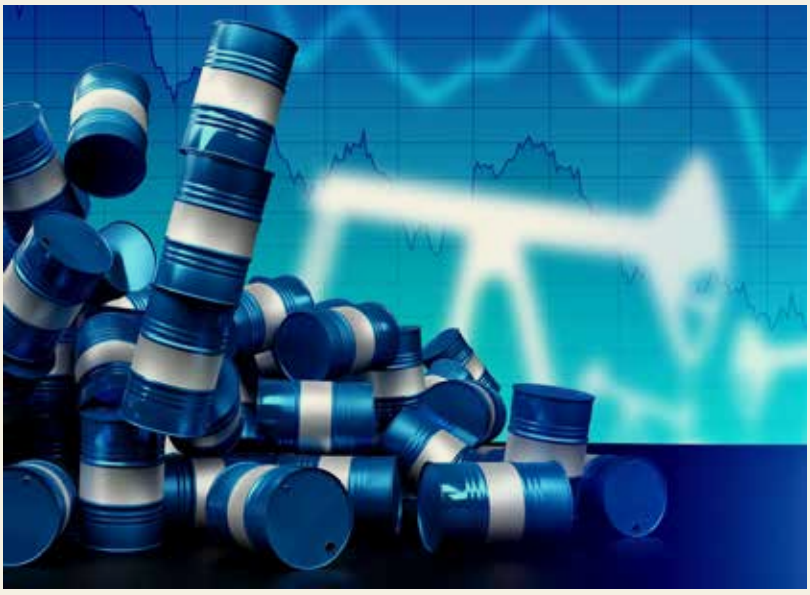
The company, has emphasized through communications that it has to procure at least around 480,000 tons of coal each month starting from January, 2022 to April, 2022 to meet the full demand of NPCC for energy production at an affordable cost and to cater the restriction on import of coal by NEPRA during monsoon season, i.e., maximum up to 600,000 tons.

NEPRA has allowed CPHGC to import coal on its own jetty, after a proper due diligence and its economic viability survey, through CTS arrangement (where a vessel is permanently stationed in deep sea near CPHGC and coal is unloaded from incoming coal importing vessel to this stationary vessel and then transferred through barges to the jetty) but in monsoon period, import through CTS is not possible due to high tides in the sea and unfavourable weather conditions. Thereof, accordingly NEPRA has allowed import through non-CTS arrangement (where the coal is unloaded on the ports other than the CPHGC-owned jetty and then transferred to coal yard through land transportation) also but has restricted the import of coal through such arrangement maximum up to 600,000 tons against annual requirement of almost 4,000,000 tons. Therefore, the pre-monsoon coal procurement is burdened much to minimize the relatively expensive purchases during monsoon period.

CFO, in its letter has maintained that the issue of immediate requirement of funds is also highlighted by the company's higher management represented by CEO & Vice President (Legal & Corporate Affairs & Production Development Department) in the meeting held with Secretary Power on January 18, 2022.

CFO maintained that currently, the working capital lines of the company had already been fully exhausted due to the reasons while payments of fuel suppliers and contractors were still pending. He sought Secretary Power Division's cooperation beyond usual. ■

Courtesy Business Recorder



Fuel cost for electricity generation surges 72.4pc

Kazim Alam

The cost of fuel for electricity generation in December 2021 surged 72.4 per cent year-on-year to Rs8.24 per unit, according to data released by the National Electric Power Regulatory Authority.

The increase in the fuel cost, which is one of the three components of the final rate that power producers charge their government-backed buyer, was 30.4pc on a month-on-month basis.

The steep increase was because of a jump in furnace oil (FO) and regasified liquefied natural gas (RLNG)–based cost of power generation, according to Tahir Abbas, head of research at Arif Habib Ltd.

The two sources of fuel collectively contributed about 18pc to the fuel mix in December. Total power generation stood at 8,828 gigawatt hour last month, up 12pc and 4.1pc on annual and monthly bases, respectively.

According to Pak-Kuwait Investment Company Head of Research Samiullah Tariq, the 12pc increase in power generation is reflective of "strong economic activity". He noted that electricity produced on high-speed diesel (HSD) was cheaper than that on RLNG, which "validates [the] government's stance" with respect to the cost-effectiveness of HSD amidst rising gas prices. The per-unit fuel cost of HSD was Rs14.1 in December versus Rs17.8 of RLNG, data showed.

Ministry of Energy spokesperson Muzzammil Aslam said consumers are getting higher electricity bills for the last two months because of the fuel surcharge component.

The largest contributor to the power mix in December was coal (23.8pc), although its share came down 5.3 percentage points from a year ago. Hydel was the second largest contributor to the power mix with a share of 20pc, down 2.7 percentage points from December 2020.

Nuclear power witnessed the highest year-on-year jump (109pc) in terms of units generated in December following the commissioning of a 1,100MW power plant. ■

Courtesy Dawn

Extraction of lignite coal deposits begins in Thar

EU Report

Sino-Sindh Resources Ltd (SSRL) has said it successfully extracted the first shovel of lignite coal at Block 1 of the Thar coalfields near Islamkot Town of Tharparkar, Sindh.

Block 1 boasts lignite coal deposits of over three billion tonnes (equivalent to over 5bn barrels of crude oil) with an annual output of 7.8 million tonnes.

SSRL, which majority shareholder is Shanghai Electric Group, was granted a mining lease on May 24, 2012, and the project was included in the Joint Energy Working Group by the governments of Pakistan and China. As soon as the two governments officially announced the China-Pakistan Economic Corridor, the Thar coal project was included in it as an early-harvest project.

After back-to-back meetings between SSRL and the Energy Department of the government of Sindh, the first excavation took place on Jan 23, 2019, for the development of the largest open-pit coal mine in Block 1.

According to the Thar Coal Energy Board, SSRL and Shanghai Electric Group have already signed a coal supply agreement for power generation through two mine-mouth power plants of 660 megawatt each.

Financial close of the project was achieved on Dec 31, 2019. Soon after the first excavation, the SSRL management started importing mining equipment from China and by July 2020 all the required equipment was at the project site.

Ministry of Energy spokesperson Muzzammil Aslam said both majority (Shanghai Electric Group) and minority (SSRL) investors in Block 1 are Chinese. Unlike Block 2 where the Sindh government owns a stake of 54.7 per cent, Block I has no direct shareholding by the provincial government, he said.

NEPRA hosts CSR Awards ceremony

EU Report

To appreciate the achievements of its licensees in the area of Corporate Social Responsibility (CSR), NEPRA organized the first ever CSR Awards ceremony at its Headquarters in the capital. The ceremony was chaired by NEPRA Chairman Tauseef H Farooqi and was attended by a large number of NEPRA Professionals and licensees including K-Electric, Pakistan Atomic Energy Commission (PAEC), Water and Power Development Authority (WAPDA) and ENGRO.

Mr Farooqi in his opening remarks presented his vision about NEPRA's drive of "Power with Prosperity (PwP)" in addition to its two other drives "Power with Safety" and "Power with Security". He elaborated that NEPRA through its PwP drive was making tremendous headways by encouraging its licensees to help and contribute to the development of the marginalized sections of the society living under abject poverty.

The NEPRA chairman presented CSR Stalwart awards to the top performing organizations and announced the CSR Gold , Silver & Bronze Awards. K-Electric was declared as the top performer and presented with Gold Award. WAPDA and PAEC were jointly declared as winners of Silver Award while ENGRO received Bronze Award. Farooqi concluded the ceremony by thanking the participants for their presence and also congratulated the winners for their outstanding performance in the field of CSR.

Progress on energy schemes reviewed

World Bank Country Director for Pakistan Najy Benhassine called on Federal Minister of Energy Hammad Azhar recently and reviewed the progress of energy sector schemes funded by the bank and appreciated the energy sector reforms undertaken by the government.

Speaking at the meeting, Mr Azhar said that Pakistan valued its partnership with the World Bank and other financial institutions.

Pak Suzuki donates ambulance

Pak Suzuki recently donated Suzuki Bolan (a fully equipped ambulance), stock of several kinds of medicines (related to injuries, BP, fever, different types of pain, sugar, etc.), medical items (first aid boxes, infrared thermometers, digital BP apparatus, glucometers, nebulizer machines, etc.) and COVID-19 protection items (masks, gloves, surgical caps, sanitizer, etc.) to SAIBAN NGO Muzaffarabad.

Cutting mangroves: A climatic disaster

For Karachi, the mangrove cover along its coastline is a thin line of defence against potential oceanic and climatic disasters. Known as guardian forests, mangroves absorb four times more carbon from the atmosphere than rainforests, and are 1,000 times cheaper per kilometre than building sea walls to protect against the effects of natural disasters, according to the UN. Besides, they are a natural nursery for marine life. Losing the mangrove forests would strip the city of what remains of its protective armour and leave its population exposed to every passing storm in the Arabian Sea.

Unfortunately, we have refused to wake up to the calamity that faces us as mangroves are ruthlessly cut down. According to an IUCN report, in the 1980s somewhere between 615,000 and 700,000 acres of the Indus delta was covered by mangrove forests, but by the 1990s the area was reduced to about 395,000 acres. It is a travesty that such a rich natural resource in parts of Karachi is being destroyed by the land and timber mafias and their backers in government.

These elements are cutting down mangroves in areas including Machhar Colony, Kakapir village, Rehri Goth and Ibrahim Hyderi. That the state is either apathetic, or in cahoots with these mafias, is evident by its lack of action against the land grabbers who were allegedly involved in the deaths of two environmental activists in Kakapir village a decade ago.

Moreover, while the Sindh government's efforts for planting a record 1.172bn mangrove trees between 2008 and 2020, are laudable. Though mangrove reclamation and conservation are said to be a key component of the prime minister's Ten Billion Tree Tsunami Programme, simply planting mangrove saplings won't be enough if other factors such as deforestation and land encroachment are not tackled simultaneously. The authorities should rethink their approach and punish the land grabbers who play havoc with nature. ■

Courtesy Dawn

CM Bizenjo approves environmental lab

EU Report

Balochistan Chief Minister Abdul Quddus Bizenjo has given approval for the establishment of the province's first-ever environmental laboratory in Lasbela to ensure protection of environment and marine life.

The research laboratory will be set up with a cost of Rs100 million at the Lasbela University of Agriculture, Water and Marine Sciences (LUAWMS) located in Uthal, district Lasbela, an official of Balochistan government said. The official said installation of 10 new Air Quality Monitoring Stations (AQMS) in the border areas were underway to analyze air quality on regular basis. He said the provincial government would install AQMS on various sites including Taftan, Chaman, Gwadar, Khuzdar, Hub, Loralai and other locations.

Mondelz hires new MD

Mondelez Pakistan appointed Sami Wahid as its new managing director (MD) effective from January, 2022.

According to the company information, Wahid will be responsible for the overall business strategy and commercial offerings. In the snack and beverage industry, he possesses over 17 years of experience in the field of marketing, sales, and strategy.

Wahid has had a long association with Mondelez International, starting back from 2015 where he became part of the organization and have overlooked responsibilities across the Middle East, North Africa and Pakistan (MENAP) markets.

He also served as the strategy lead for MENAP at Mondelez, steering the company through the challenging times of Covid-19. "It is an honor to take on this exciting new role, especially at a time when there are growing opportunities and promising business

avenues for Pakistan," said Wahid over his appointed as the new MD. He added that he would make the most of his knowledge and experiences to accelerate the company's growth and would also focus on team development. Sami has his origins in Pakistan where he earned an MBA in marketing and Bachelors from the Institute of Business Management (IoBM). ■

Cnergyico set to acquire major stake in Puma

Cnergyico Pk Limited, formerly Byco Petroleum Pakistan Limited, one of Pakistan's leading petroleum companies and largest refinery, is set to acquire major stake in Puma Energy Pakistan Private Limited (Puma).

Cnergyico, after this acquisition, would have the second largest retail fuel network based on the current number shared by OMCs in Pakistan. In a meeting, Cnergyico's Board of Directors has approved the acquisition of 57.37% shares of Puma Energy which runs 542 petrol pumps and owns two storage terminals in Machike, Punjab and Daulatpur, Sindh that can together store up to 10,500 MT of petroleum products. The company would be the supply backbone of the second largest amassed retail network of fuel stations in Pakistan.

PLANET HEATING UP like never before

EU satellite system shows past seven years were hottest; Nobody expected so much trouble to start so soon

Robert Hunziker

The planet is heating up like never before, as 'ground temperatures' hit all-time records in the Northern Hemisphere as well as the Southern Hemisphere, and ocean temperatures threaten the world's major fisheries of the Far North, which are imperiled beyond any known historical precedent. According to the National Oceanic and Atmospheric Administration (NOAA) July 2021 was the hottest month in recorded history for the world. The European Union (EU) satellite system also confirmed that the past seven years have been the hottest on record.

Too much heat brings unanticipated problems of unexpected scale, putting decades of legacy infrastructure at risk of malfunctioning and/or total collapse. Nobody expected so much trouble to start so soon. Nobody anticipated such massive record-breaking back-to-back heat, north and south, to hit so soon on the heels of only 1.2C above estimated baseline for global warming.

In that regard, and with deep concern, the Council on Foreign Relations (founded, 1921) stated: "More than one-fifth of the global population now lives in regions that have already experienced warming greater than 1.5 degrees C (2.7 degrees F), an increase that almost all nations have agreed should be avoided to significantly reduce the risk of harm from climate change."

Moreover, as further stated by the Council: "Exposure to a sustained wet-bulb temperature of 35 degrees C (95 degrees F), a point of intense heat with extreme humidity (90 plus), has been identified as the limit for human survival. When wet-bulb conditions develop, sweat can no longer evaporate off a person's skin and the body cannot cool down. Just a few hours of this kind of heat exposure can lead to death... Some regions, including southwestern North America, South Asia, and the Middle East have already endured conditions at or near this limit, and certain areas will experience the effects more intensely than others. One projection indicates that, by 2030, this type of heat wave could afflict over two hundred million people in India alone."

Notably, according to the International Energy Agency (IEA): Only 8 percent of the 2.8 billion people living in the hottest parts of the world have air conditioners. Furthermore, the Council claims: "The infrastructure of today was not built to withstand surging temperatures." As follows, global heat is rapidly outpacing infrastructure capacities. This is a surefire pathway to disaster on a scale seldom, if ever, witnessed.

Over time, excessive heat impairs and/or destroys infrastructure. Hot weather, when too hot, causes power lines to sag. When water used to cool power plants becomes too hot, electricity production measurably decreases, and drought conditions lower water levels beyond effectiveness for hydropower plants. This is already threatening in Brazil where hydro amounts to 62 percent of its total installed electric generating capacity. In America, the Hoover Dam, which serves electrical power to 8 million people, is at it lowest level since 1937 when its lake was still being filled.

And, too much heat causes steel-comprising damage to drawbridges. Train tracks can bend under intense heat, which actually caused train cancellations in Europe in 2019. And, planes can struggle to fly in extreme heat conditions. According to the EPA, when cities are exposed to extreme heat, it can magnify heat conditions by up to 15C above surrounding rural conditions, effectively turning major cities of the world into furnaces of trapped heat.

Already, South America's summer of 2022 is hot as blazes: "Practically all of Argentina and also neighboring countries such as Uruguay, southern Brazil, and Paraguay are experiencing the hottest days in history." This is according to Cindy Fernández, meteorologist at the official National Meteorological Service.

Argentina, as of January 12, 2022 reported: 129 degrees F ground temperatures that brought blackouts. "This is a heat wave of extraordinary characteristics, with extreme temperature values that will even be analyzed after its completion, and it may generate some historical records for Argentina temperatures and persistence of heat," according to meteorologist Lucas Berengua.

Thereafter, Argentina's infrastructure sagged and 700,000 people were without power, and drinking water purification systems went on the blink. Argentina's ground temperatures echoed readings from the Northern Hemisphere of only 6 months ago, which, in retrospect, served as a foreboding for the southern continent, as it now begins its summer.

The heat has been so bad in Argentina that it was briefly the hottest place in the world, surpassing parts of Australia that usually carry that dubious honor during austral summer. According to BBC News, Australia equaled its hottest day on record at 50.7C or 123.26F in Onslow, Western Australia on January 13th, 2022. The normal average temperature for Onslow (a coastal town) this time of year is 36.5C, not 50C. Additionally, Mardie and Roebourne, two other towns in the area, reported temperatures over 50C. And, in South Australia Oodnadatta reported 50.7C on January 2, 2022.

The summer of 2021 up north found the Anthropocene, the geological period of human influence, turn into the Pyrocene, when a shocking number of wildfires consumed vast areas of the Northern Hemisphere. It was 'the summer of hell'. Global warming dried out grasslands and forests turned to tinder. The chief of the US Forest Service declared a 'National Wildfire Crisis'.

Oregon and California fires were powerful enough to create stand-alone weather systems. The town of Lytton, British Columbia burned to the ground like a smoldering matchstick. Ground temperatures in Washington State in June 2021 hit 145F (63C) during an unprecedented Pacific Northwest heat wave too hot to even walk near concrete or squishy asphalt. In Canada's northwest, Ontario and Manitoba experienced 157 severe wildfires intense enough to create stand-alone weather systems.

Siberia experienced Biblical-scale fires like nobody has ever seen. A study showed the extreme heat driving the fires to levels calculated as 600 times more likely to occur because of climate change. Siberia at its most northern reaches registered a shocking 118 degrees F (48C) in June.

In the Mediterranean region, the summer of 2021 experienced wildfires raging out of control in Turkey and Greece with ground temperatures of more than 127F degrees (53C). There is a point to be made about this disheartening litany of the world succumbing to heat since it's happening with global warming at only 1.2C above pre-industrial. But, is pre-industrial (same as post-industrial) really since 1880 or 1950, or should it be 1750, or is the entire affair really worse than we've been told at any rate? Answer: Look at the evidence and make a judgment. ■

Challenges for existing energy plans, future options

Farrukh Mahmood Mian

The space for Pakistan's energy options is undergoing a squeeze due to a combination of external and internal factors. This winter we have been once again reminded that our domestic gas reserves will largely deplete in a matter of a few years.

It has also emerged that the imported LNG (liquefied natural gas), which was seen as a substitute for domestic gas, cannot be taken for granted.

This is mainly because the rich importing countries are able to elbow out financially weak countries like Pakistan when the international LNG prices shoot up, as happened in 2021.

Being domestic consumers, we are affected by the gas shortages at a more personal level, losing sight of the fact that the outputs of two productive areas of the economy — electricity and fertiliser — are also highly dependent on a reliable supply of gas.

The power generation scene in the next decade should hover around large-scale hydropower plants, nuclear-based thermal plants, wind and solar and battery-based storage solutions

Let us now come to the case of domestic coal production (from Thar coalfields), which was expected to help in reducing our reliance on imported fuels. The National Transmission & Despatch Company (NTDC) has plans to increase the domestic-coal-based generation from 660MW in 2021 to 3,630MW in 2030. Thus, far we have relied mainly on the multilateral donor banks and the China-Pakistan Economic Corridor for building new coal-based power plants.

There's now a major roadblock staring us as both of these financing avenues appear to be closing due to international climate change concerns. Especially, China's decision to no longer fund coal plants in foreign countries has come as a rude shock to our power system plans.

The above-mentioned setbacks leave us with limited choices in building our future power generating capacity that is reliable and sustainable. It also implies that the mix of different generation technologies which is given in the recently approved Power Plan will need to undergo a change.

For renewable energy, we will rely on large hydropower plants, some of which are under construction, and to a lesser extent on wind and solar facilities. When it comes to thermal plants, nuclear power should gain prominence as is also being seen in many other countries that are taking a fresh look at it after a long gap since the Fukushima accident.

The NTDC's present plan makes a provision to increase nuclear output from 2,500MW in 2021 to 3,600MW in 2025 with no further addition until 2030. Nuclear output will need to be increased to make up for the "no-longer-likely" domestic coal plant additions. It may be noted that nearly 3,000MW additions based on domestic coal have been planned between 2021 and 2030.

The government has ambitious plans to add renewable energy on a large scale over the next 10 years. No doubt that wind and solar energy are clean and sustainable and are becoming more and more affordable, however, where they are installed and their modes of investment can vary. By necessity, wind plants have to be installed in the already identified wind corridors that are mainly in Sindh.

Furthermore, these will need to be large-scale types of projects that are led by the governments and rely on private investments, mostly foreign-based. As to solar power, there are two choices although they are not mutually exclusive. One is to build large solar plants similar to the Quaid-e-Azam solar park in Bahawalpur. The second way is to set up small-scale solar plants throughout the country under a distributed energy resources (DER) expansion program.

Large-size utility-scale solar plants must be supplemented with an active DER program to ease the burden on the government's resources. It is to be noted that the American state of California has so far installed more than 10,000MW of roof-top solar generation. Pakistan can install at least half of that capacity within the next few years provided that the DISCOs are assigned annual targets of achievements which will also instil a sense of competition among them.

The setting of targets for DISCOS can also lead to innovative financing instruments and new business ventures that can act as integrators of several roof-top facilities. The government can use its funds to develop large battery storage projects that smoothen out the variation of output from wind and solar plants. ■

Courtesy Dawn

NTDC to expand transmission capacity by 2,000MW

Nasir Jamal

The National Transmission and Despatch Company (NTDC) is trying to expand its nationwide transmission capacity by 2,000 megawatts before the start of summer. Once the transmission constraints are removed the largest power sector company will be able to transmit 2,700 to 2,800 megawatts of electricity.

Last summer, the demand had peaked at 24,564MW. The enhanced NTDC transmission network will, however, still be lagging far behind the available generation capacity of around 34,400MW.

"At the moment we are targeting mostly on removing summer constraints to boost our transmission network capacity," Manzoor Ahmed, who has been given acting charge of the office of the NTDC managing director for six months, told this correspondent recently.

"We are hopeful of completing the job of increasing our transmission network by 2,000MW. It's a tough target but we intend to pull it off before summer demand starts rising. We are also near completion of our project for the evacuation of 500-550MW of wind power from Jhimpir in Sindh."

The NTDC transmission network had not expanded in line with the need owing to the government's focus only on increasing power generation capacity

Manzoor Ahmed is the fourth managing director of the company since May 2021, holding the charge for six months."Since my tenure is short, I'm focusing only on short-term targets and projects. It, however, doesn't mean we are ignoring other issues. "The issues faced by people are not because of the NTDC but because of poor maintenance of networks of distribution companies (Disco). The Discos are not keeping up with our speed or upgrading their network to support the distribution of additional supplies. Every time we undertake a transmission network expansion project, we try to inform Discos about our plans. For example, we are preparing our 10-year transmission system expansion plan and asking Discos to upgrade their networks accordingly as well. The problem is that Discos do invest in the expansion of their networks but do not invest enough in the maintenance of their assets."

Replying to a question, he says the transmission network had not expanded in line with the generation capacity owing to multiple reasons. These include the previous government's focus only on increasing power generation capacity without worrying about the issues in evacuation, transmission and distribution of additional megawatts. Then transmission projects take longer to complete.

"What you must understand is that not entire generation capacity is available at any time of the year. Power availability is seasonal and actually available megawatts keep fluctuating through the year. Sometimes you don't have hydel power; at others wind power is not available and on and on. In winter we are producing close to 200MW hydel power while our system is connected with more than 10,000 megawatts (of hydel power).

"Besides, our power demand, even at its last year's peak, is still below our transmission network capacity. For example, the peak flow of electricity through our system had gone up to 24,564MW last year. The additional transmission network of 2,000MW this year will mean that we still have surplus capacity. In other words, we can transmit more electricity than the peak demand."

Talking about future projects, Mr Ahmed says the government has given the NTDC two years to build a transmission network to special economic zones (SEZs) in Swabi, Haripur, Faisalabad, Sheikhupura, and Dhabeji. This is now our priority project, he adds.

The NTDC managing director clarifies that the NTDC is not against the recently established provincial transmission companies." We have a monopoly over transmission until 2032 under our license. ■

COURTESY Dawn

PM Khan's visit to Beijing
Pakistan welcomes increased Chinese investments in CPEC

Prime Minister Imran Khan visited Beijing from 3-6 February 2022 to attend the opening ceremony of the Winter Olympic Games 2022. During the visit, the prime minister held talks with Chinese President Xi Jinping and Premier Li Keqiang.

Prime Minister Khan called on President Xi at the Great Hall of People in Beijing. This was the first meeting of the two leaders since the prime minister's visit to China in October 2019. The two leaders reviewed the entire gamut of Pakistan-China bilateral cooperation and exchanged views on regional and global issues of mutual interest in a warm and cordial atmosphere.

PM Khan congratulated the leadership and people of China on the successful hosting of the 24th Olympic Winter Games in Beijing and extended his best wishes on the Chinese Lunar New Year. The prime minister underscored that China is Pakistan's steadfast partner and staunch supporter.

He briefed President Xi on people-centered geo-economics vision and his government's policies for Pakistan's sustained growth, industrial development, agricultural modernization, and regional connectivity. He lauded China's continued support and assistance to Pakistan's socio-economic development which had greatly benefitted from the high quality development of CPEC.

Launched in 2013, the CPEC is a massive component of the Belt and Road Initiative to boost trade and infrastructure links across Asia and beyond.

It comprises a network of roads, railways, ports, power plants, oil and gas pipelines and optical fibre cables. A main feature of the project is a road from Xinjiang in China's far west to Gwadar Port in Balochistan.

The prime minister welcomed increased Chinese investments in CPEC's Phase-II which centered on industrialization and improving people's livelihoods. He also shared his views with President Xi on growing polarization in the world which threatened unraveling of global developmental gains, and posed serious risks to the developing countries. He highlighted that insurmountable challenges like climate change, health pandemics and growing inequalities could only be tackled though cooperation of all nations in accordance with the purposes and principles of the UN Charter.

In this regard, he lauded President Xi's visionary Belt and Road and Global Development Initiatives

which called for collective action for sustainable development and win-win outcomes. Mr Khan highlighted that atrocities being perpetrated in the Indian Illegally Occupied Jammu and Kashmir, and the persecution of minorities in India in advancing the Hindutva mindset of RSS-BJP, was a threat to regional peace and stability.

He added that rapid militarization of India was undermining regional stability. Khan highlighted that partnership between Pakistan and China was an anchor for peace and stability in the region and thanked China for its unwavering support to Pakistan's sovereignty, territorial integrity, independence and national development.

The prime minister also reaffirmed Pakistan's full support to China on all issues of its core interest. Both leaders acknowledged that a peaceful and stable Afghanistan would promote economic development and connectivity in the region and called on the international community to promptly assist the Afghan people in averting a humanitarian catastrophe. Both leaders appreciated the signing of a number of agreements covering industrial cooperation, space cooperation, and vaccine cooperation. The prime minister renewed his invitation to President Xi to undertake a visit to Pakistan at his early convenience.

'Karachi needs at least 10m more trees for maintaining city's ecological balance'

Karachi needs at least 10 million more trees as part of urban forests and plantations at various sites to combat the serious issues of ecological imbalance and environmental degradation.

This was stated by the concerned environmentalists and speakers who spoke at a programme held to spend an evening to let the nature lovers in the city observe the urban forest developed at the Shaheed Benazir Bhutto Park in the Boating Basin area of Clifton. The National Forum for Environment and Health (NFEH) organised the event. The speakers and participants include Sindh Government's Secretary for Culture and Tourism, Abdul Rahim Soomro, NFEH President, Naeem Qureshi, Intisaruddin, Ali Asghar, Waleed Ansari, Shahzad Qureshi, and Farooq Dadi, CSR Club President Anis Younus, NFEH Secretary-General Ruqiya Naeem, Convener of CSR Committee of FPCCI Shamsah Javed, Maria Iqbal Tarana from Azad Kashmir, Brig (retd) Tarique Lakhiar, Abdul Hameed Aslam, Ghulam Kabria, and Mustafa Tahir.

WB's inaction over water disputes damaging Pakistan

India constructing another 850MW power project

Khalid Mustafa

India has geared up its construction activities on the 850MW Ratle Hydropower project and made 330MW Kishenganaga project operational on Pakistan rivers with objectionable designs during the last five-year time after the World Bank stopped on December 12, 2016 separate processes initiated by India and Pakistan under the Indus Waters Treaty to allow the two countries to consider alternative ways to resolve their disagreements on both the said projects.

It was Pakistan which moved the World Bank first, seeking the constitution of the court of arbitration to resolve the fate of the Kishenganga Hydropower project, which is operational on the Jehlum River and 850MW Ratle hydropower project being built on Chenab River. However, India later on asked the World Bank to appoint neutral experts to allay the concerns of Pakistan on the designs of both the projects. But the top management of the World Bank, according to its website, took pause on December 12, 2016 and halted the process to move for the mechanism to resolve the objections raised by Pakistan to save the Indus Waters Treaty between the two nuclear countries, which it had brokered in 1960.

The World Bank says that it had halted the appointment of chairman of the Court of Arbitration as requested by Pakistan and a neutral expert as requested by India to resolve issues regarding two hydroelectric power plants under construction by India along the Indus rivers system. The bank says that both processes initiated by Pakistan and India at the same time create a risk of contradictory outcomes that could potentially endanger the Treaty.However, the top sources both in the water resources ministry and Pakistan Commission of Indus Water told The News that India, while taking advantage of the pause taken by the World Bank in December 2016, has not only made its Kishenganaga project operational but also advanced its progress on 850MW Ratle Hydropower project. So much so, India has submitted to the United Nations its final design of the Ratle project without allaying the concerns of Pakistan for qualifying the carbon credits.

India had erected the Kishenganga project with objectionable design in 2017, one year after the pause taken by the World Bank and now it is advancing its construction activities on the site of the Ratle Hydropower project again with a design which does not conform with provisions of waters treaty as per the objection raised by Pakistan. Pakistan had written a letter to the World Bank on April 3, 2018, saying that the pause taken by the Bank has provided time for the Indian side to erect the Kishenganga project.

And in case the Ratle project is completed in the presence of the ongoing pause taken by the World Bank, Pakistan would have to brave 40 percent loss in water flows that are destined to reach Sialkot Headmarala. This means the huge loss to irrigation of various crops in Punjab, which is the food basket of the country. Ratle project once completed will directly damage the food basket of the country.

When contacted, Syed Mehr Ali Shah, joint secretary in Water Resources Ministry and also acting Pakistan's Commissioner of Indus Waters. said that he is in touch with the World Bank and in the latest communication Pakistan had asked the World Bank to break the pause and constitute the court of arbitration as India may take the advantage of the pause. He said that the World Bank has also promised to mediate between the two countries, but no progress was made in this regard. "We are optimistic that the World Bank will come up with a positive mind on the issue in response to the latest communication from Pakistan."

He claimed that Pakistan was the first country to move the World Bank asking for the constitution of the court of arbitration and India later on asked the World Bank to appoint a neutral expert. He said the World Bank needs to interpret that when one party approaches WB for a forum of either neutral expert or court of arbitration, the Bank should listen to that party first. Under the dispute resolution enshrined in the Indus Waters Treaty, the World Bank has the role as it is also the party to the dispute between Pakistan and India. Pakistan had called for resolution of disputes over the Kishenganga project on the Neelum

River and 850 MW Ratle Hydropower project on the Chenab.

Pakistan believes that Kishenganga's poundage should be a maximum of one million cubic meters instead of 7.5 million cubic meters, intake should be up to four meters and spillways should be raised to nine meters.

About the Rattle project, Pakistan had four objections. Freeboard should be one meter instead of two meters, poundage should be a maximum of eight million cubic meters instead of 24 million, intake level should be at 8.8 meters and spillways at the height of 20 meters.

Arshad H Abbasi, associated with SDPI who has worked a lot on transboundary water issues with India under Track-II Policy in his comments, said that Pakistan's Commission of Indus waters has never raised the genuine issues about the Ratle Hydropower project arguing it didn't raise the issues of seismic vulnerability and structure stability of the project.

However, it has also failed to persuade the World Bank to break the pause which is still continuing and is paving way to complete the project with objectionable design. He also claimed that the Pakistan Commission of Indus water is not current and updated about the pace of the construction work on the Ratle project.

Engr M A Jabbar, who also keeps an eye on water related issues with India, said the government lacks knowledge based professionals for giving correct technical input to its negotiators and lawyers to fight its case both at bilateral level at PCIW (Permanent Commission of Indus Waters) level and international forums.

As far as Ratle project is concerned, top sources said, India has so far completed significant civil works, including two diversion tunnels, including upstream bridge, upstream and downstream roads and will soon start construction work on the dam portion having height of almost 134 meters. The Indian authorities want to take advantage of the pause taken by the World Bank and will soon initiate the construction work on the pressure shaft and power house as well.

The Ratle project, located in the Kishtwar district of J&K state, essentially lies in the central crystalline sequences of the Higher Himalaya.

The project is around 215 kms from Jammu. The nearest operational airport is at Jammu and nearest Railhead is Udhampur about 155 kms from the project site. The left bank of the dam site is connected with a foot track from Jammu-Kishtwar motor road near Drabshala.

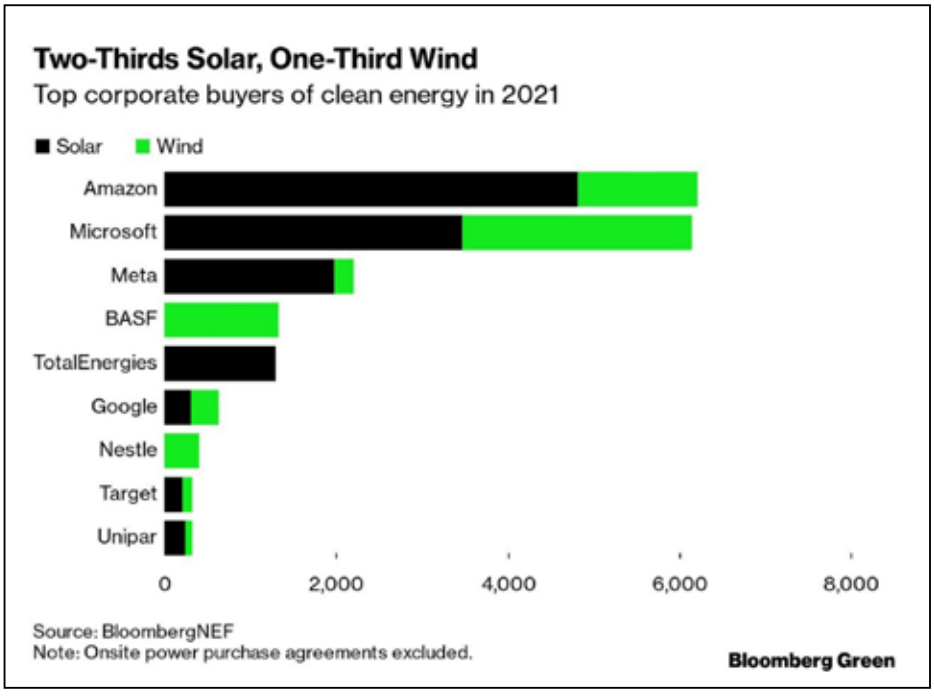
The Ratle Dam having a gross reservoir capacity of 18,646 Acre Feet, and a live storage capacity of 8,107 Acre-feet, but its height is 191 feet may have significant impact on Pakistan. ■

Long-term strategy sought to tackle water scarcity

Pakistan turns third-most water-stressed country; private sector work alongside govt suggested to resolve water problems

Recently, Punjab Governor Chaudhary Sarwar highlighted the safe clean drinking water issue as about 70 percent of the population in the country lacks access to it. Speaking during a press conference, he pointed out that those who are deprived of this basic right are suffering from water-borne diseases and that the issue required urgent attention.

It is commendable on part of the governor to bring attention towards this issue considering how Pakistan is the third-most water-stressed country and houses the world's fifth largest population. Focusing on Punjab, the Aab-e-Pak Authority has been introduced to ensure the provision of clean water to the neglected areas of the province as the authority is working on establishing 131 water filtration plans in the Multan division by March this year. Pursuing its goal of providing clean drinking water to about eight million people without any discrimination, the government is also working with the private sector and philanthropists for installing solar-power hand pumps and filtration plants. These are all encouraging steps and will benefit the people of Punjab greatly if the implementation is ensured rightly. Given our resource constraints, it is important to work alongside the private sector and NGOs as it is heartening to see organisations like the Sarwar Foundation, Pak Aid and Al-Khair Foundation stepped up for this cause. However, this issue extends beyond just one province and the government will have to come up with a more comprehensive and long-term strategy to tackle water scarcity woes. A lot of our water issues arise from ineffective management. Unequal access and distribution, growing population, urbanisation, progressive industrialisation, lack of storage capacity and climate risk makes water management a difficult task. Pakistan's first National Water Policy in 2018 does not pay sufficient attention to water sensitive urban designs, risk management against natural hazards and trade in water-intensive crops. Going forward, these gaps need to be addressed through solutions that are area specific and not generic. We do not have the luxury to wait and plan anymore. ■



The wealthy asylees OF CLIMATE CHANGE

Imran Jan

I remember reading an Op-Ed in a leading Pakistani newspaper where the author had said that back in the good old days, he would visit the US embassy to get a visa and there never was a question of not getting it. All that was required was to visit the embassy. He had written that he would sip a cup of tea while his passport passed from one embassy official to the next. By the time the tea was finished, his passport was back in his hands with the US visa stamped in it. Those days sure seem like a fairytale from another world.

Then came the late 90s and the period after 9/11. Getting a US visa became close to impossible. People around the world started applying for Canadian immigration. The beautiful country offered the promise of a better life and more importantly better economic opportunities. Canada recruited the talent around the world to help keep its economic engine lubricated. The purpose has been to help Canada stay at a distance from the economic harshness the incoming migrants were running away from. The symbiotic relationship worked pretty well.

While that phase was the result of the neoliberal assault that was unleashed upon the world around the 1970s, the next phase of global migration would be driven by climate change. And I don't mean the migration of the poor refugees but rather the migration of the rich. This would be the migration of the people not with the need but those who can afford the seat. This is going to be a bought migration. Whoever can afford to run away from the worst effects of climate change would be able to place an order.

Truth be told, this migration would have its roots in the same neoliberal assault because the selfish capitalist practices of the fossil fuel industry involved remaining silent over the devastating effects of the combustion of the very product they were selling. All for the sake of profits. Just as the neoliberal economic policies were devastating for the developing nations around the world but beneficial for a few corporations, the fossil fuel usage has also been devastating for everyone around the world except quite profitable for some corporations.

The previous generation of migrants escaped joblessness and poverty. The next generation of migrants would be trying to escape the devastating effects of climate change. Many regions around the world would become uninhabitable. Many others would lose any semblance of economic normalcy where getting access to basic necessities such as food and water would become close to impossible. Many regions around the world would mirror the current situation of Africa where life is defined by starvation, thirst, and disease.

Given this situation, only the wealthy and powerful nations around the world would be able to sustain some ability to support normal life. Today it is a symbol of status as well as a source of wealth for many people to retain citizenship of wealthy countries such as the USA, Canada, the UK, and so forth. In the near future, citizenship of such countries would become a necessity to remain alive. Strong and wealthy nations around the world would have the ability to keep their citizens afloat while many other nations if not all would be drowning in poverty, unlivable environments, and drowning literally in rising sea levels. Money and citizenship would be driving the life-saving engine on earth. This would be the ugliest manifestation of capitalism.

A generation of Pakistani, Indian and people from many other nations live in the western countries. For them, including yours truly, visiting the nation of birth is a beautiful pilgrimage every year. That will end. The move to foreign nations would become permanent. Today, people breathe fresh air to stay alive. In a world dominated by the rawness of climate change, people will stay alive only to breathe in some fresh air, if they can find it. ■

Courtesy Express Tribune

SAF, GCT receive massive financial support in Lahore

EU Report

Shahid Afridi Foundation (SAF) and Green Crescent Trust (GCT), have received a massive financial support from leading businessmen and industrialists of Lahore for the education of at least 10,000 out-of-school children.

The third joint fundraiser meeting of SAF and GCT was held here at a hotel. The most appealing feature of the fundraiser was the participation by leading Pakistani sports and show business celebrities including Anwar Maqasood, Adnan Siddiqui, Shahid Afridi, Jahangir Khan, Ahmad Shahzad, and Shahbaz Senior.

A total of over 400 businessmen, industrialists, philanthropists of Lahore attended the fundraiser and announced donations for the joint SAF-GCT charitable drive.

Akhuwat Founder, Dr Amjad Saqib, was one of the prominent guests of the event

who personally announced Rs2.5 million donations for the charitable school education campaign of the two organizations.

Speaking on on the occasion, the SAF chairman said that his non-profit organization had joined hands with the GCT in view of its years long work to educate children of the backward areas.

GCT CEO, Zahid Saeed, said the joint charitable campaign required the support of the concerned philanthropists from all over the country.

Other prominent participants of the fundraiser include SAF board member Uzair Sabur, GCT trustees Abrar Ahmed, Faizan Jawaid, and Saad Zia.

NTDC finishes 2nd Phase of Jhelum transmission line

EU Report

National Transmission and Despatch Company Limited (NTDC) has successfully completed and energized the 133 km long 2nd phase of 500 kV Neelum-Jhehlum double circuit transmission line and energized it successfully. Now the power generated through the 969MW Neelum Jhehlum Hydropower Project will be dispatched directly to 500 kV Nokhar (New Ghakkar) Grid Station which is closer to the load centres.

The spokesman has said that the transmission line had been completed in two phases. Phase-I comprised 152 km emanating from Neelum Jhelum Power House to Domeli (near Rawat) which was completed in 2018.

The spokesman further updated that in addition to power evacuation from Neelum-Jhelum HPP, NTDC had also connected 720MW Karot HPP through looping with this Neelum

Jhelum to Nokhar Transmission Line. Presently, the testing of 720MW Karot Hydropower Project was underway and after its successful commissioning, 720MW cheap energy would be added soon in the National Grid. Resultantly, load management issues of Gujranwala, Sialkot and their surrounding districts will be overcome. Moreover, the addition of hydel power will play a key role in improving the system reliability and voltage profile at load centers. ■

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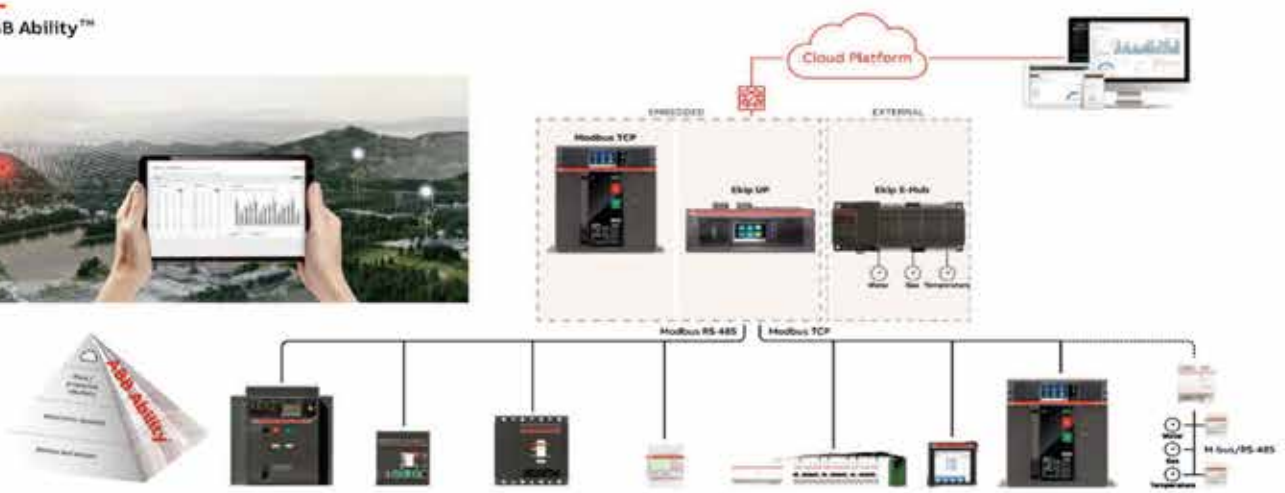

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