

ENERGY UPDATE

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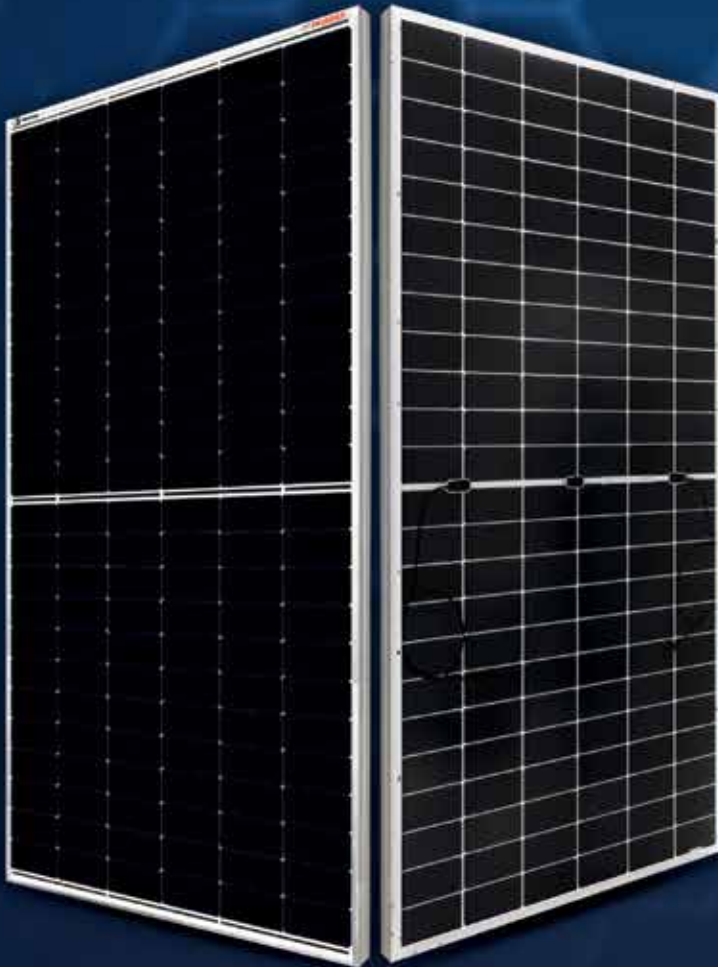
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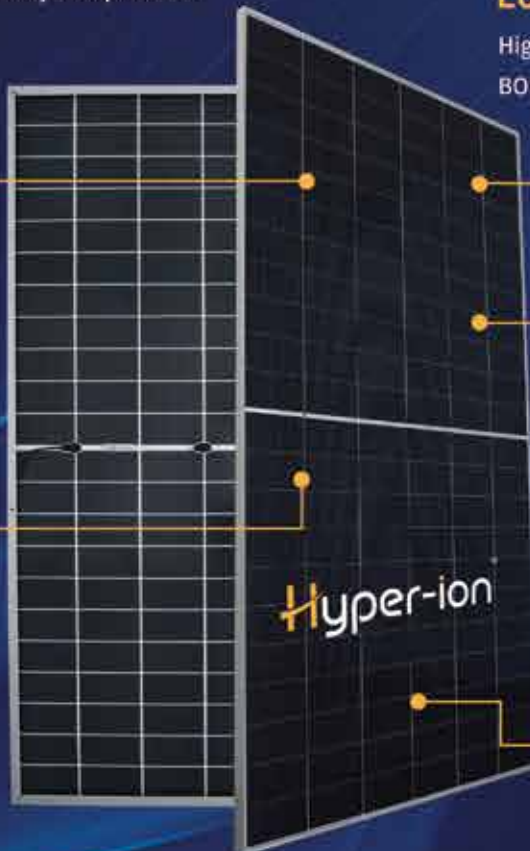
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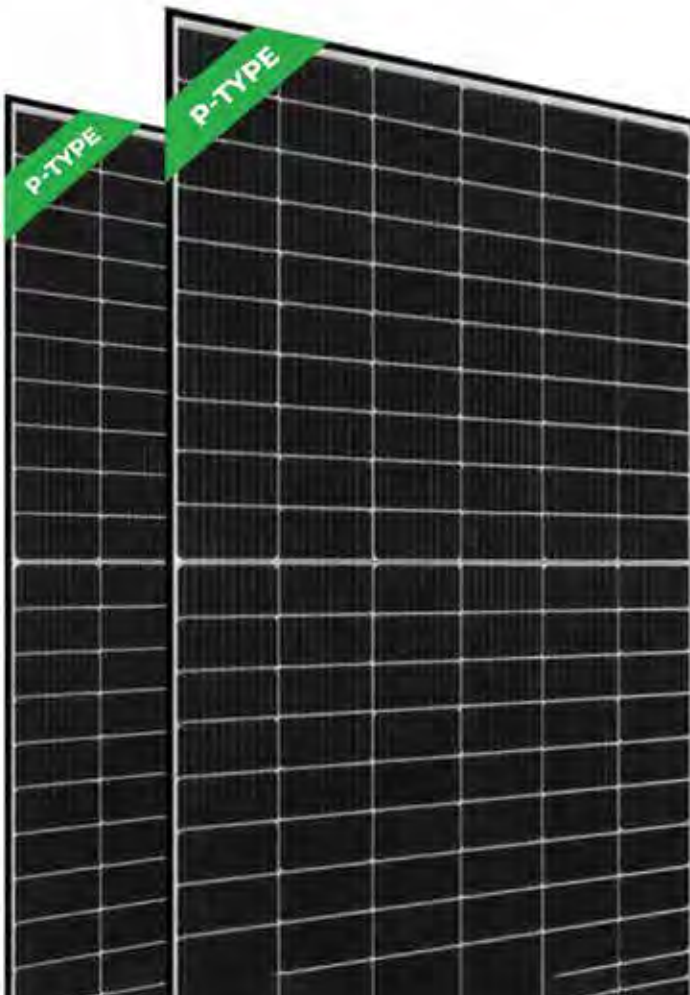
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FROM THE Editor's desk...

COP28 needs to achieve all goals

COP28, the UN's 28th Conference of Parties, has started at the Dubai Expo Center in the United Arab Emirates (UAE) from 30 November and will conclude on December 12, 2023. The UAE has called for the upcoming COP to move from goals to getting it done, which is a great suggestion but is challenging as COP has still not achieved many targets.

The conference is coming after a year of extreme weather events across the world which have broken many climate records, particularly in Pakistan. The climate-changed induced 2022 floods in Pakistan affected 33 million people with 1,739 lives lost, and more than 2.2 million houses damaged or destroyed. Around eight million people were displaced.

It is unfortunate that flood affectees in Pakistan have not been provided compensation for their crop and house devastation despite the provision of international aid.

This issue needs to be highlighted at the COP28 so that Pakistan's affectees can get relief. There is also a need that the UN should provide more rehabilitation aid to Pakistani victims of floods besides announcing a reasonable aid package to tackle ongoing and upcoming climate implications.

It is pertinent to mention here that the UAE is one of the world's top 10 oil-producing nations, and oil is the main fossil fuel that is degrading the world environment by causing the emission of greenhouse gases. Hence, it is mandatory that the UAE contribute sufficient climate change tackling funds besides raising voices to help Pakistan from floods and heavy rain devastations

The COP28 should also keep alive the goal of limiting global mean temperature rise to 1.5 degrees Centigrade as agreed by 197 countries, including the US and the UK, at the Paris Summit in 2015.

Greenhouse gases include carbon dioxide (CO₂) and methane. CO₂ is released when oil, gas, and coal are burned. Methane is produced through farming and landfills. These gases also increase global temperatures by trapping extra energy in the Earth's atmosphere. Furthermore, rapid deforestation across the world means there are fewer trees to absorb CO₂.

The UN wants countries to bring forward their net zero targets by a decade to avoid the growing climate disaster. There is a need to take all possible steps at COP28 to tackle climate change. As not all emissions can be reduced to zero, there is a need to do much more in this regard. The required focus in the conference should be paid on offsetting. Natural offsetting methods include planting trees and restoring peatlands.

One industrial method is carbon capture and storage which involves using machinery to remove CO₂ from the air and store it, often deep underground. However, the technology is still emerging and remains expensive. Although offsetting is important, it can only cancel out a small fraction of current greenhouse gas emissions. So drastic cuts to fossil fuel use are essential to meet the net zero goal.

There is also a need to focus on ramping up the shift to clean energy by cutting greenhouse gas emissions before 2030 in a bid to limit the impact of climate change so as to save humanity and the world from natural disasters.



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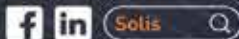
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Hydropower: a friend in need

Balancing immediate energy demands with long-term sustainable solutions is crucial

Asim Javed



The writer is a chartered management accountant working in the power sector for 23 years.

Due to population expansion and urbanisation, Pakistan's energy landscape radically transforms as electricity consumption rises. In 2022, the nation's total electricity consumption reached 138,755GWh due to industrial growth and socioeconomic progress. The expansion has not, however, been strictly linear.

A considerable decline was recorded between 2018 and 2020, most likely due to economic, political, and infrastructure issues. This decline was followed by a brisk recovery, with 2021 being the highest year for consumption. Using exponential smoothing for forecasting, the predicted consumption for 2023 is around 142,897,68GWh, emphasising the continued growth velocity in the nation's power demand. During the first eight months of the current calendar year, 91,819GWh are already consumed.

In addition to the overall growth trends, the seasonal subtleties of Pakistan's energy usage offer essential insights. The data exhibits a pronounced cyclical trend, with consumption peaking throughout the summer. This increase is particularly noticeable in July, August, and September, coinciding with the subcontinent's hottest months.

The higher demand during these months can be ascribed to the population's increased usage of cooling appliances, such as air conditioners and fans, in response to rising temperatures. In contrast, electricity usage decreases by an average of 3,000GWh per month during the cooler months. This cyclical ebb and flow emphasises the significance of having a flexible and adaptable infrastructure for energy generation that can adeptly handle these seasonal variations.

Looking closely at seasonal patterns, hydropower exposes its full prowess from June to November. During this period, its contribution fluctuates between 30-40 percent. As a direct result of this increase, the proportion of other energy

sources decreases from its regular range of 70-80 percent to a more modest 60-70 percent. This seasonal change is notable. It indicates that during peak demand, hydropower production increases, reducing the need for more expensive thermal installations.

However, there's a twist in the tale. While hydropower and renewables have been making their mark, the contribution of all other (non-renewable) energy sources has grown from 62% in 2012 to 70% in 2022. This rise underscores the challenge of balancing sustainable energy sources with the nation's ever-growing power demands. With environmental concerns rising and the push for sustainable development gaining momentum, hydel power is at the heart of the solution. As we delve deeper into Pakistan's energy scenario, understanding the unparalleled value of hydel power becomes vital. As promising as it sounds, hydropower hasn't been immune to misconceptions. Addressing these myths and providing a clear, data-driven perspective is essential as the sustainable energy debate intensifies.

One of the most controversial arguments against hydropower is that it is more expensive than alternative technologies. The second most contentious claim is that hydropower contributes to the capacity trap. Contrary to this notion, hydropower has regularly demonstrated responsiveness, particularly during peak demand.

"Hydel - A Friend in Need" is more than simply a catchphrase; it reflects a fundamental fact for a country's energy destiny. By acknowledging the significance of hydropower and dispelling common misunderstandings, we need to appreciate its role in a sustainable energy future. Significant achievements in sustainable energy, such as hydropower, need patience and vision. Our energy future will be determined by our decisions now. Establishing a hydroelectric project can take seven to ten years and requires extensive planning, environmental assessments, and advanced infrastructure development. We must act now if we want to benefit from hydropower's clean energy by 2030-32.

Balancing immediate energy demands with long-term sustainable solutions is crucial. Stakeholder's commitment to hydropower shall align with global trends towards greener alternatives, paving the way for a resilient and sustainable future. ■



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Electricity tariff: A flawed business model

Engr Tahir Basharat Cheema



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Power tariffs have recently been in the limelight – not for any other issue but for unaffordability of the same. The steep rise during the last two years is of special mention. Amid protestations, it was explained that the falling rupee viz. a viz. the dollar has contributed the most to the present high rates.

The poor electricity consumers, on the other hand, attribute the sad rise due to increasing inefficiency and losses and the all-encompassing non-professionalism woven around the whole sector. According to them DISCOs are dens of inefficiency and corruption, while governance and management of the same sadly remains with the non-professional.

Besides, the make-up of the power tariff based on the trite load suppression model has also been held responsible for the present decay and the low sale of contracted MWs. The above thinking about the tariff seems to have been incorrect when seen in the context of the latest tweet by the Power Division, Ministry of Energy (recently removed), which states that none of the above is true while basically, “Pakistan’s consumer (power) tariff is based on principle of equity: it transfers resources from the rich to the poor; from richer regions to poorer regions; and from federal pool to poor consumers in poorer regions”.

In this tweet, we are further informed that, “no commodity in Pakistan has more federalising effect than electricity”.

All of the above is very disturbing as till date it was thought that basically power tariffs depict the actual cost of service for a specific category of consumers alone.

We do remember that an amendment was made in the Nepra Act of 1997, whereby the regulator was obligated to abide by the various directions of the GoP, but it has never been known that the government has since discarded the earlier basis for tariff setting to convert it into a tool for implementation of socio-economic policies.

If it is so, then it indeed is a very flawed business model (to mirror the PM’s phrase which he used for the print media some days ago). More so, when the present tariff while assuring the so-called socio-economic policies has resulted in outright de-industrialization of the Country, stifling of commerce and exports, resultant high cost of agri-products, etc.

Before we delve into the right way to calculate the power tariff in the Country, it is important to understand as to why we have differential tariffs for DISCOs being determined by Nepra in the first place. For Wapda, the progenitor of the PSCEs, (Discos, NTDC – inclusive of the CPPA(G) and the GENCOs) till 1996, it was simple.

It would calculate the costs involved in generation, transmission and distribution of power all along the national grid and add for its O&M, a little for expansion and a wee bit to take-care of what was then known as the lifeline consumers (using less than 50 units a month). The tariffs for domestic consumers comprised of up to four (4) different slabs – in the



incremental manner and also abiding by the basic principle set forth in a load impression tariff model of 1960s. In other words, the more one used the more would be the rate per unit. It all was planned to assure that the consumer-end tariff remained part of DSM (demand side management).

We see unhappy people, closure of business and industry, unemployment and stunted exports and a seriously disgruntled and fragmented federation. In other words, the present make-up of the consumer-end tariff is an unmitigated disaster. And this is but natural as it indeed is on the basis of a seriously flawed business model.

The question that begs for an answer is what exactly is the anti-dote to the above malady of inter and intra-Disco subsidies. The first step that needs to be taken up is to immediately revert back to the cost of service-based calculations.

Once that is done, each Disco management (hopefully to comprise of professional BoDs and full time CEOs) would understand the issues relating to delivery of power to different categories of consumers – which now gets smothered away from any audit.

This could also be the reason for continuing below-par infrastructure of the Discos. The situation is so precarious that the system extends itself at will with no consideration of distribution engineering. Once the Discos are forced to contain their expenditures to the calculated costs for each category, then the efficiency of operations will automatically increase.

Secondly, best practices would have to be followed assuring up-dating of the existing distribution system at all levels of supply. Here Nepra's distribution code would be considered as the bible to be followed for all intents and purposes.

However, Nepra, mandated to assure the required level of consumer service through the needed distribution infra-structure, will have to re-invent itself from a purely clerical to a dynamic regulator. This could be done by setting a standing and duly paid POE (panel of experts) for advice. Thirdly, the electricity/power tariff has to be set in accordance with the needs of particular areas/provinces (geographical areas) – specially, when Pakistan is a Country that boasts all four seasons at the same time of the year.

The tariff should fulfil the peculiar needs/load/demand conditions of different geographical areas. For example, the northern snow bound areas merit a lesser tariff to counter their heating needs – specially, on account of stunted natural gas and fastly denuding forest cover. The requirements of the barani areas (away from the canal command) and the perennial drought has to be catered along-with the needs of the thousands of tubewells in the fruit-growing swaths of Balochistan. In other words, the Discos will have different tariffs for different areas of the Country.

This incidentally is not to be based on any socio-political considerations – rather, is needed to assure DSM (demand side management) and sale of available MWs all around the year. In this way the changing usage patterns in different areas of the Country would also get considered.

According to some experts, even urban areas needs to be differentiated from the rural outback. The principle thus is to make the sector profitable while also taking care of the needs/demand of different geographical areas and also the times of the day (the present peak and off-peak tariffs have become trite now).

Fourth of the steps that need to be taken is to recognise that even utilities are

businesses – specially, when typical states like Pakistan are unable to dole out subsidies on the federation level. As such, this aspect now has to be passed on to the provinces that are privy to a large share of revenues.

The provinces thus can provide subsidies to whichever category of power consumers are found fit to be helped. The example of Indian Punjab, Haryana and Rajasthan can be followed where agriculture loads are assisted through heavy subsidies.

Fifth of the steps is the formation of a national plan based upon which the distribution network/infrastructure of all Discos [including KE to an extent as it has been dubbed as a Disco in 2007 and is since reaping the facilities too] would be up-graded to assure the least cost of service right to the customer premises presently being served at the low voltage level.

This step is very important and a necessary appendage to full change over to a tariff based on cost of service. Besides, this step would assure implementation of the presently ignored modules of distribution engineering.

Sixth of the steps would be to do away with the various monthly and quarterly adjustments, which would need to be replaced with yearly adjustments. Fact of the matter remains that Disco operations should result both for the viability of the utilities and for acceptability and ease of the consumers.

Besides, it is also used by the FBR as a tax collector of the first resort. During the process, economy and economic requirements of the country have been ignored and so has been the sector itself. This surely is due to continuing non-professionalism around the sector and the penchant of the un-initiated to decide things. Probably, the wayward policy tweet by the Power Division in an indicator of this mindset. ■

Govt should decrease footprint in power sector by privatizing DISCOs

Caretaker Energy Minister **Muhammad Ali** says tapping unexplored gas fields will generate 300 to 400 MMCFD of additional gas; new power generation plants to be established should rely on cheap power sources of Thar coal, hydroelectricity

M. Naeem Qureshi

“**T**he government should decrease its footprint in the power sector by privatizing the DISCOs and implementing the CTBCM regime. Newer power generation capacity to be installed in the country should be based on cheaper and indigenous energy sources. All these steps will help lower power generation costs in the country”.

Caretaker Minister for Energy, Petroleum and Power, Muhammad Ali, stated this in an exclusive interview with the panel of Energy Update. In the interview, he talked at length about the main issues of the Pakistani energy sector and the reforms introduced by the current caretaker regime to resolve them.

Energy Update: What are the main issues responsible for the consistent decline of Pakistan’s energy sector for the past many years?

Muhammad Ali: The main issue in the energy sector relates to its structuring and planning. The power and petroleum sectors exist here as two separate ministries. In other countries, the energy sector is always managed by a single umbrella ministry. In the present caretaker set-up, I am in a position to look at the holistic picture because I have the portfolios of both these ministries.

There is a need to improve the planning aspect of the energy sector. Overall, our planning

aspect is very weak. In the energy sector, we need to plan for the next five, 10, or 20 years. Pakistan is an energy-deficient country while at the same time, our per capita consumption is very low. We direly need more energy for the growth of Pakistan at the global level. At present, the industry is a small user of energy in Pakistan as compared to electricity consumption in the domestic sector. The industry has always had a higher share in energy consumption in the cases of the countries, which grow globally. We need to set up many more industries if we need to grow. We need much more energy as many of these industries will be energy-intensive. There is a gap in the energy sector as far as the domestic sector is concerned as every household in Pakistan doesn’t have access to electricity. Energizing the industrial activity to increase Pakistan’s exports could be one of the biggest usages of additional electricity in our country. In this connection, a huge potential

for energy consumption exists in Pakistan. We need energy, which is affordable and accessible 24/7 and 365 days a year. Industrial activity should continue without any interruption as we need a sustainable supply of energy for this cause. Our planning for the energy sector at the macro level has gone wrong. It should be a holistic and well-coordinated activity. There should be people who could look at the energy sector holistically.

EU: What reforms should be adopted to improve our incumbent energy sector regime?

Mr Ali: The framework and structure of Pakistan’s energy sector form a regulated regime. The energy sector regime is not market-driven. The key decisions in our energy sector are taken by the regulator. The regulator decides issues related to demand and supply and pricing of the energy sector. We need to change this



mindset as we need to de-regulate the energy market. We need to adopt policies for the energy sector, which should ensure three things: 1- There is a constant supply of energy. 2- Energy producers shouldn't have the power to manipulate the price and 3- the energy consumer gets a fair price. The producer in the energy sector should also get a fair return on its investment. The policy framework of the energy sector should decide all these issues. Our energy sector would gradually improve as we moved towards the mindset of de-regulating the energy sector while its dynamics should be market-based.

What are the main issues in the petroleum and gas sectors in the country?

Mr Ali: As far as our gas sector is concerned, the prices our customers are charged for gas supply were not appropriate. The gas was sold at a lower price despite its much higher cost. The producers decided to leave this sector after they didn't get the money against their services. The local production of gas has decreased as a result, petroleum imports have increased. The local gas pricing has recently been rectified. We need to improve policies for the petroleum sector to promote exploration in the country. The increase in exploration activities would decrease the import of petroleum products. We are purchasing LNG at 15 dollars. These 15 dollars are going to the pocket of someone outside the country. The customers and industries in Pakistan are paying these 15 dollars while the locally produced gas is available at six dollars.

This shows a policy flaw in the petroleum sector. We should do wealth creation for our own country instead of creating wealth for other countries. We need to activate and rejuvenate the exploration activity in the country. Secondly, we need to import gas from outside the country through pipelines instead of importing LNG as LNG is expensive. There are massive gas reserves in the Central Asian region in our neighbourhood. We need to sign contracts to bring this gas through pipelines for our export-based industry. We need a consistent gas supply in the country. Then we should also expand our local gas distribution network all over the country.

EU: What steps should be taken to improve our power sector?

Mr Ali: The circular debt in the power sector is not going to increase but there are losses in the electricity system. Losses are because of the issue of electricity theft. We have started a crackdown against power theft and defaulters of electricity bills. The cost of power generation in the country is higher. Solar and wind power genera-

tion sources are producing a total of only 2,000MW. Hydropower generation in the country is around 10,000 to 12,000MW, but it decreases during winters. Subsequently, you have to rely on LNG and RFO-based power plants.

In the South of the country, there are Thar coal-based power plants that are capable of producing cheaper electricity but their power supply couldn't be dispatched to the upcountry areas due to constraints of the transmission systems. You couldn't wriggle out of your obligation of honouring the legacy contracts Pakistan earlier signed. You have to own them. We need to ensure that the upcoming power generation capacity should be based on competitive bidding. The new power generation plants to be established in the country should rely on the cheap power sources of Thar coal and hydroelectricity. We need to improve our transmission system. We also need to privatize our DISCOs to improve their governance. The government is incapable of managing them.

The government should decrease its footprint in the power sector. The management of the power sector should be improved. This will help in decreasing the overall cost of power generation and decreasing electricity rates in the country. Moreover, we should come out of the cost-plus tariff model we earlier offered to the IPPs. The contracts signed with the IPPs are based on a cost-plus tariff model. We need to adopt a competitive bidding model. We need to adopt the CTBCM model and introduce the wheeling and multi-buyer regime in the country. We should abandon the single-buyer model in the power sector. We need to issue supplier licenses to allow the private sector in the country to manage the power supply system.

EU: What reforms the current caretaker regime has adopted in the power and energy sectors?

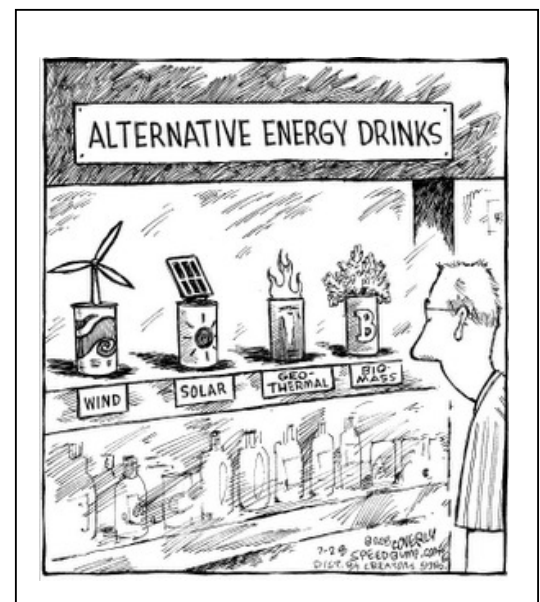
Mr Ali: The reforms in the gas pricing system have been introduced by the caretaker regime in the country. The crackdown against power theft has been launched in the franchise area of every DICO all over the country. A large number of people involved in the pilferage of electricity have been penalised under the crackdown. We are trying our best to decrease the stock of circular debt in the country. We are studying the tariff structure to rationalize it. We are also working to rationalize the debt component attached to the capacity payments to IPPs. We have also started working to utilize gas fields in the country that have been unexplored for the past 10 to 15 years. Tapping these unexplored gas fields would generate 300 to 400 MMCFD of additional gas in the country. ■



Irfan Mirza Unanimously Elected as New WWEA President

Bonn, 27 November 2023 (WWEA) – In a momentous occasion at the WWEC2023 in Hobart, Peter Rae, who admirably led the World Wind Energy Association for eight years, gracefully announced his resignation as WWEA President. Following this, the WWEA Board unanimously elected Dr. Irfan Mirza as the new President.

Dr. Irfan Mirza, a pioneering force for renewable energy in Pakistan, notably as a key figure in the Alternative Energy Development Board of Pakistan, expressed his gratitude upon accepting the role. He emphasized the collective responsibility to combat climate change, acknowledging the foundation laid by Peter Rae and expressing eagerness to work closely with Stefan Gsanger, WWEA Secretary General.



Rising trend of global warming

Boosting solar energy, electrifying transport can significantly reduce heat

Pakistan needs to pursue adaptation, mitigation strategies to tackle warming; international cooperation is essential to resolve transboundary climate change impacts

Special Report by Mansoor

Boosting solar energy and electrifying transport to a larger extent can play a significant role in mitigating the impacts of global warming (also called climate change) in Pakistan, particularly in its hottest cities of Nawabshah, Jacobabad, Larkana, Bahawalpur, Sibi, and many others, where passing life has become very difficult. Such boosting steps can also contribute to international efforts to reduce global warming.

The goal of limiting global warming to below 2 degrees Celsius is a key aspect of international climate change agreements, including the Paris Agreement. The Paris Agreement, adopted in 2015, aims to limit the increase in global average temperature to well below 2 degrees Celsius above pre-industrial levels, with an aspiration to limit it to 1.5 degrees Celsius. To achieve these temperature targets, the world needs to significantly reduce greenhouse gas emissions, especially from the burning of fossil fuels.

Greenhouse gases are substances in the Earth's atmosphere that trap heat. They contribute to the greenhouse effect, which is essential for keeping the planet warm enough to support life. However, human activities, particularly the burning of fossil fuels and deforestation, have increased the concentration of these gases, leading to enhanced global warming.

Global warming is associated with an increase in the frequency and intensity of extreme weather events such as hurricanes, floods, and droughts. These events in Pakistan have brought direct and indirect effects on human health, including deaths, injuries, economic-social losses, displacement, and the spread of diseases. Vulnerable populations, including the elderly, children, and those with pre-existing health conditions, have badly been affected.

A Unicef report says: "The 2022 floods in Pakistan submerged one-third of the country, affecting 33 million people, half of whom were children. The floods damaged most of the water systems in affected areas, forcing more than 5.4 million people to rely solely on contaminated water from ponds and wells."

Carbon Dioxide is the most prevalent greenhouse gas. It is released through the burning of fossil fuels (coal, oil, and natural gas), deforestation, and certain industrial processes. Methane is a potent greenhouse gas with a much higher heat-trapping potential than carbon dioxide. It is emitted during the production and transport of coal, oil, and natural gas. Agricultural activities, livestock digestion, and the decay of organic waste in landfills also release methane.

Nitrous Oxide is another potent greenhouse gas, released from agricultural and industrial activities, as well as the combustion of fossil fuels and biomass. Water Vapor is a natural component of the atmosphere and plays a significant role in the Earth's climate, it is not usually considered a direct contributor to human-induced climate change. However,

human activities can indirectly influence water vapor levels.

Ozone in the stratosphere protects life on Earth by absorbing the majority of the sun's harmful ultraviolet (UV) radiation, ground-level ozone is a greenhouse gas and a component of smog. It is formed by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight.

Chlorofluorocarbons (CFCs): Synthetic compounds that were once commonly used in refrigeration, air conditioning, and aerosol propellants. CFCs are potent greenhouse gases, and their production has been phased out due to their role in ozone depletion.

Synthetic gases are potent greenhouse gases and are used in various applications, including refrigeration, air conditioning, and foam-blowing agents. Synthetic gases used in various industrial applications, including electronics manufacturing and aluminum production, are highly stable and have a high global warming potential. Sulfur Hexafluoride is an extremely potent greenhouse gas used in electrical transmission and distribution equipment, the magnesium industry, and other industrial applications.

It's important to note that the impact of each greenhouse gas on the greenhouse effect varies based on its concentration, atmospheric lifetime, and heat-trapping potential. Efforts to address climate change often focus on reducing emissions of these gases through mitigation strategies and the promotion of cleaner and more sustainable practices.

Solar energy, on the other hand, is a clean



and renewable source of power that generates electricity without producing carbon dioxide or other harmful pollutants. Solar power systems, such as photovoltaic (PV) panels and solar thermal systems, generate electricity without emitting greenhouse gases. By replacing traditional fossil fuel-based power generation with solar energy, we can reduce the overall carbon footprint of the energy sector.

Solar energy helps decrease our dependence on fossil fuels, which are the primary source of carbon emissions. The more we shift to renewable energy sources like solar, the less we rely on burning coal, oil, and natural gas for electricity generation. Solar energy is a sustainable and virtually inexhaustible source of power. Unlike fossil fuels, which are finite and contribute to environmental degradation when extracted, solar power harnesses the energy from the sun, a resource that will be available for billions of years.

Ongoing advancements in solar technology, energy storage, and grid integration are making solar power more efficient and cost-effective. This makes it an increasingly attractive option for large-scale electricity production.

Job Creation and Economic Benefits: The transition to solar energy can create jobs in the renewable energy sector and stimulate economic growth. As the industry expands, more opportunities for employment in manufacturing, installation, maintenance, and research and development arise.

While solar energy alone may not solve the entire problem of global warming, it is a crucial part of a broader strategy to transition to a more sustainable and low-carbon energy system. Combining solar power with other renewable energy sources, energy efficiency measures, and responsible energy consumption practices can contribute significantly to mitigating the impacts of climate change.

Global warming has a range of impacts on Pakistan, affecting various aspects of the environment, economy, and society. Pakistan has experienced an increase in average temperatures, leading to more frequent and intense heatwaves. High temperatures can have detrimental effects on agriculture, water resources, and human health.

Global warming alters precipitation patterns, leading to changes in the timing and intensity of rainfall. Pakistan already faces challenges related to water scarcity and floods, and these issues may become more pronounced with erratic rainfall patterns. Pakistan is home to several glaciers, particu-

larly in the Himalayan and Karakoram ranges. Rising temperatures contribute to the melting of these glaciers, impacting water availability for agriculture and other uses. Additionally, increased glacial melt can lead to glacial lake outbursts and floods.

Sea Level Rise:

While Pakistan itself may not experience direct sea level rise, it is vulnerable to the impacts of rising sea levels in neighboring regions, particularly in terms of potential displacement of populations. Changes in temperature and precipitation patterns affect crop yields. Rising temperatures can lead to heat stress on crops, while changes in rainfall patterns can result in droughts or floods, impacting agricultural productivity.

Pakistan already faces water scarcity issues, and global warming exacerbates this problem. Changes in precipitation patterns, glacial melt, and increased evaporation due to higher temperatures contribute to water shortages, affecting both agriculture and human consumption. Global warming increases the frequency and intensity of extreme weather events such as cyclones and storms. Pakistan is prone to such events, and their impact on infrastructure, agriculture, and human settlements can be severe.

Changes in temperature and precipitation patterns can disrupt ecosystems and impact biodiversity. Species that are unable to adapt or migrate may face extinction, leading to a loss of biodiversity. Higher temperatures and changes in disease patterns can pose health risks. The spread of vector-borne diseases, heat-related illnesses, and waterborne diseases may increase.

Electrifying transport is considered a key strategy for reducing global warming and mitigating the impacts of climate change. Traditional modes of transportation, particularly those relying on internal combustion engines powered by fossil fuels, contribute significantly to greenhouse gas emissions. By transitioning to electric vehicles (EVs) and improving the overall electrification of the transportation sector, several benefits can be realized:

Electric vehicles produce zero tailpipe emissions, reducing the direct contribution of the transportation sector to air pollution and greenhouse gas emissions. The overall environmental impact depends on the source of electricity used to charge the vehicles, but even when accounting for electricity generation emissions, EVs are generally more environmen-

tally friendly than traditional vehicles.

As the electricity grid becomes increasingly powered by renewable energy sources such as solar, wind, and hydropower, the environmental benefits of electric vehicles are enhanced. Electrifying transport can be part of a broader effort to transition to a low-carbon energy system. Electric vehicles are generally more energy-efficient than internal combustion engine vehicles. They convert a higher percentage of the energy from the power source to the wheels, leading to lower overall energy consumption per unit of distance traveled.

Electric vehicles contribute to better local air quality by eliminating tailpipe emissions of pollutants such as nitrogen oxides and particulate matter. This has direct health benefits for people in urban areas where air pollution from traffic is a significant concern. Electrifying transport reduces dependence on fossil fuels, particularly oil. This can enhance energy security by diversifying energy sources and reducing vulnerability to fluctuations in oil prices and supply.

Continued advancements in battery technology and the electrification of various modes of transportation (cars, buses, bikes, and more) contribute to the widespread adoption of electric vehicles. This, in turn, drives further innovation, cost reductions, and market competitiveness. While electrifying transport is a positive step, it is crucial to ensure that the electricity used to charge electric vehicles comes from renewable sources to maximize environmental benefits. Additionally, addressing challenges such as the production and disposal of batteries and the need for robust charging infrastructure is essential for a sustainable and comprehensive transition to electrified transport.

The cumulative effects of global warming have significant economic implications for Pakistan. Disruptions in agriculture, damage to infrastructure, and the costs associated with adapting to climate change can strain the economy. Adaptation and mitigation strategies are crucial for addressing the impacts of global warming in Pakistan. These may include sustainable water management practices, the development of climate-resilient agriculture, infrastructure improvements, and policies to reduce greenhouse gas emissions on a global scale. International cooperation is also essential to address the transboundary nature of climate change impacts. ■



Implementing fiscal strategy

Building resilience to climate disasters for reducing economic costs is one of four objectives of IMF's \$3n SBA

Ali Tauqeer Sheikh



The writer is an expert on climate change and development

The federal government has rectified what successive governments in Pakistan had overlooked for many years: announcing a National Climate Finance Strategy to help mainstream climate change in national policymaking processes. The NCFS has raised the bar of Pakistan's ambition

and committed to reorient the portfolios of key national institutions for climate finance, enable innovative instruments, secure carbon credits and accreditation with global climate funds.

Building resilience to climate disasters for reducing economic costs for the economy is one of four objectives of the ongoing \$3 billion Stand-by Arrangement with the IMF. The NCFS is expected to create some badly needed fiscal space while building resilience. The World Bank and IMF had earlier indicated that development and climate financing may not flow to Pakistan in future unless national investments were aligned with Climate-Public Investment Management Assessment. The C-PIMA is derived from the IMF's time-tested PMIA used as a yardstick or conditionality for disbursements. This will hopefully help the government identify potential improvements in public investment institutions and processes to build

a low-carbon and climate-resilient economy.

Pakistan has just committed to IMF that C-PMIA will be presented to the cabinet for approval and that Pakistan's future investments will be climate resilient. The process will begin with three key institutions: Special Investment Facilitation Council (SIFC), Public Sector Development Plans (PSDP), and Public Private Partnership Authority (3PA), all housed and managed by the Planning Commission. CPEC was not mentioned in the blueprint. The C-PMIA will be accomplished through a newly minted Sustainable Finance Bureau, again at the Planning Commission, to 'revolutionise' climate finance. It is expected that the SFB will reorient 20 per cent of the new PSDP schemes during FY 2023-24, amounting to Rs925bn.

These projects will qualify Pakistan, it is hoped, for concessional finances and help it meet targets set in the National Adaptation Plan (NAP) and the Nationally Determined Contributions (NDCs). Both NAP and NDCs reflect Pakistan's sovereign commitments, as part of the Paris Agreement, submitted to the secretariat of the climate change convention. Has Pakistan revised its construction standards to reduce climate risks and costs?

The government plans to invest in resilience through 4RF (Resilient Recovery, Rehabilitation, and Reconstruction Framework that was developed after the 2022 floods), recently updated 4th NFPP (National Flood Protection Plan), and by developing sectoral priorities. The blueprint of NCFS has not furnished details, but the sectoral priorities will be derived from the National Climate Change Policy and NAP. These will presumably be developed by the sectoral ministries and departments.

In order to meet the IMF conditionalities, the policymakers have packaged many ongoing endeavours and cobbled them together to meet the IMF demands. If successful, it will reflect the 'whole-of-government' approach that is mentioned in several national and provincial policies but seldom translated into action. The progress on NCFS will be reviewed early next year under five heads already given in the C-PI-MA: climate-smart planning, inter-ministerial coordination, appraisal and selection of projects, budgeting and portfolio management, and risk management.

While the government has announced its



commitment, how will it create synergy to ensure its time-bound implementation? The fiscal strategy has committed that all projects will have new templates for project concept notes, and technical feasibility studies across the planning documents to completion certificates. This will require the Planning Commission to revise PC-I to PC-V in order to ensure that public sector projects also map climate risks and respond to adaptation, mitigation, and their development co-benefits, and the finance ministry to adopt mechanisms to track all its climate-related expenditures.

This necessitates brass-tracking on multiple fronts, particularly: i) getting SFB off the ground, ii) notifying templates for climate-smart PSDP projects, iii) initiating expenditure tracking and, finally, iv) putting in place an entire ecosystem that includes carbon trading policy, carbon inventory and its digitalisation, and the required monitoring and validation systems. Meaningful progress on these will serve as precursors for the two urgent objectives of the NCFS: accessing concessional finances and leveraging private sector investments.

Pakistan's failure to access international climate finance at scale is often attributed to relatively limited technical capacity of the focal ministry. Instead of understanding the deeper reasons, many ministries and provincial departments have begun to set up specialised units to lure climate finance rather than embedding resilience in their sectoral policies and projects. These lacunae in governance are confusing for everyone, starting from policymakers, multilateral and bilateral development partners and their governments, to private sector investors and citizens. The NCFS will hopefully bring some discipline to this mayhem.

Underneath this veneer of macro-level commitments are deep layers of needed structural and institutional reforms. The IMF is a new entrant in Pakistan's climate change space and it is still in the process of defining its standards and procedures. By way of example, its term 'climate-aware infrastructure' has not been defined and adopted by Pakistan, let alone implementing it on the ground. In the 2022 floods, except for \$12,969 million losses incurred in agriculture, the major amount of \$30bn losses were infrastructural damages in housing, education, health, roads, transmission lines, and so on. Has Pakistan revised its construction standards to reduce climate risks and costs?

The IMF can take comfort in setting the direction for Pakistan's long journey towards resilience and tick the right boxes to enable the release of the second tranche early next year. Alternatively, the interim government can set a realistic roadmap that balances reform-averse government machinery, urgency of climate action, and the desperate need to build upon the Stand-by Arrangement. Since the second IMF review in 2024 will cover five interrelated domains (planning, coordination, projects, budgeting and portfolio management, and risk management), it is imperative that finance strategy implementation is synchronised by trespassing silos within which the ministries often operate.

The NCFS is designed as an inter-ministerial and multisectoral document that would, out of necessity, require 'whole-of-government' approach, and that is not possible without exercising convening power. After all, climate finance is a function of climate governance and climate diplomacy at COP28. Both will need to work in tandem and to leverage one to maximise the other. This will require the NCFS to have its own dedicated secretariat to oversee its realisation rather than leaving it to chance. ■

EVENT REPORT

PSA joins govt for 60% renewable vision



The Pakistan Solar Association (PSA) has pledged its commitment to collaborate with the government of Pakistan to achieve the ambitious goal of generating 60% renewable electricity by 2030. The announcement was made by PSA Chairman Amir Chaudhry at the 'Lets Grow Together' event on Friday.

Chaudhry expressed the association's excitement, emphasising the importance of recent initiatives like the 10GW fast track projects launched by the Alternative Energy Development Board (AEDB) and the energy ministry last year. He commended projects such as the solarisation of public buildings, tube wells, and 11kV feeders, each presenting significant potential exceeding 1,000 MW, 2,500 MW, and 2,000 MW, respectively.

Notably, Chaudhry stressed the need for local private sector companies to take a leading role in financing these projects, reducing dependence on foreign investors or donors. Former



PSA Chairman Rana Abbas echoed this sentiment, expressing eagerness to collaborate with the government to ensure project success and actively contribute to additional initiatives supporting the national energy transition.

One of PSA's primary targets is installing 4GW of solar capacity by 2024, translating to a remarkable 16 million kWh (units) of solar energy generated daily. This initiative aims at saving Rs800 million daily and an annual savings of almost Rs300 billion on electricity costs. The impact is expected to benefit 800,000 households, marking a significant move toward a sustainable and cost-effective energy future. ■



Towards environmentally cleaner fuels

These can be used independently or mixed in various proportions

Syed Akhtar Ali



The writer is former Member Energy, Planning Commission and author of several books on the energy sector

Petrol, diesel, gas and liquefied petroleum gas (LPG) are widely known and used fuels. But there are other alternative fuels as well which can be used independently or can be mixed with the aforementioned fuels in various proportions.

Motivations for the alternative fuels can vary depending on individual circumstances. These are environmentally cleaner, local resource endowment, lower cost and foreign exchange savings. The main alternative fuels are ethanol (bio-ethanol) and methanol. Pakistan State Oil (PSO) had introduced E5 (5% mixture of ethanol and 95% gasoline) more than a decade ago. For unknown reasons or market scepticism, the E5 grade has been dropped. However, amazingly, the Oil and Gas Regulatory Authority (Ogra) continues to issue tariff for this product probably leaving options for those oil marketing companies (OMCs) which may have some new thoughts about it and may like to enter into this segment. Ethanol is being locally produced by the sugar industry and is exported. Competition with export possibilities may be another constraint. Economics of exports vs equivalent amount of petrol should be re-examined.

Technically, there should be no scepticism as E5 and even E10 are being widely used in most countries including the US, EU, Asean and other regions. Even higher percentages of ethanol are being envisaged. India is already doing it in case of E5 and E10. It had a goal of introducing even E20 by 2030. However, recently, India has advanced its target to 2025.

Bio-ethanol can now be produced out of crop waste and even MSW (municipal solid waste). On both sides of the border, crop waste like rice stubble is being burnt and contributing to smog and pollution. There are other crop wastes also. Similarly, there is a lot of MSW burning in both countries. Under the new circumstances when environmental issues have become so serious, E5 and E10 issue should be taken up afresh and appropriate programme and policy be introduced.

Now coming to methanol (CH₃OH), which is a versatile chemical. It is used both as a starting chemical for producing many chemicals and petrochemicals. It is used as energy compound as well. It is mixed with gasoline and diesel as ethanol is.

In small percentage mixtures, it can be used without any change in engines. In larger percentages, however, some small adjustments are required in IC engines. Methanol is a clean burning fuel which can replace all fuels, partly or wholly, such as gasoline, diesel, LPG and kerosene. Methanol burns efficiently in all internal combustion engines without producing any particulate matters, soot, NO_x, Sox, etc. Methanol is also mixed with LPG for use in cooking stoves. In Africa, many countries have adopted it. Methanol is being widely used in China, in ordinary vehicles and specialised vehicles.

A wide grade of methanol blend is used in China from M5 (5% methanol) to M100 (100% methanol). It is also being used in industries in boilers and power applications. In the West, however, its use in pure methanol form is limited. Only 3% mixture is allowed. Methanol is also used in fuel cells which have

many applications including automotives. Methanol is the choice of fuel for world marine fleet wherein bunker oil is being replaced fast.

The readiest opportunity is of exploiting the biogas resource. It can be used in four forms; small household plants, community plants, large gas grid-connected plants and bio-CNG plants. There is a large resource base in the form of dung, food waste, crop waste and MSW (the organic component). Biogas also has fertiliser as a byproduct. There are other products such as CO₂ which is used in refrigeration and cold chain.

As compared to processing plants like that of methanol, ethanol and oil refineries, even very large biogas plants do not require a lot of capital exceeding \$20 million. It can be handled by local investors. However, the government has to organise a programme and policy. There are multiple issues of investments, financing, tariff, land, fuel supply agreements, local bodies' integration, etc.

Biogas is very dear to European environmentalists. Some grant or concessional funding may be available through bilateral and multilateral sources including carbon market. Nothing is a panacea. All energy sources have strength and weaknesses. An energy mix is optimised which may maximise revenues or output and minimise input and cost.

Local resource availability may be a strong criterion. Exports, external politics and availability of financial resources are all important factors that have to be considered. Detailed studies would be required in selection and choice of products, processes and technology. Additionally, it is a highly risky transition time. So many competing options are emerging. It is not known which will succeed? For a poor developing country, the consequences may be more. ■



MEA & CA Renewable Energy Markets

LONGi

Solar's innovative strategies propel growth, sustainability

President of LONGi's MEA and CA region, **Jia Chao**, discusses tailored solutions, community engagement, and future technological leadership; says innovation is our focus to enhance product efficiency, reliability, and cost-effectiveness



Amer Malik

In a recent interview with Energy Update Magazine, Mr Jia Chao, President of LONGi's Middle East and Africa as well as Central Asia region (hereinafter referred to as MEA and CA region), shed light on LONGi's pioneering approach in the global green energy market. Emphasizing innovation as a driving force, Mr Jia Chao elaborated on the company's commitment to adapting technologies to meet regional demands, navigating challenges, and fostering sustainable growth in dynamic markets. The discussion also delved into LONGi's community engagement initiatives and its vision for leading technological transformation in the renewable energy industry.

EU: Mr. Jia Chao, thank you for joining us today. Let's start with LONGi's innovative approach to meeting the unique demands of the green energy market. How does the company adapt its technologies to suit the target market while considering specific regional demands?

Mr Jia Chao: Thank you for having me. LONGi's approach revolves around leadership of innovation. We recognize the importance of tailoring our technologies to meet the unique demands of each market. We focus on high-efficiency solar panels, such as the development of ultra-high efficiency modules, which aligns with the growing demand for maximizing energy output within limited space. By adapting our strategies to cater to regional demands, we ensure that our products are well-suited for the specific needs of each market.

EU: Speaking about the Middle East & Africa (MEA) and Central Asia regions, what is LONGi's vision for sustainable growth in these dynamic markets?

Mr Jia Chao: Understanding the diverse needs and dynamics of each country within the MEA & CA region is at the core of our thought process. We have tailor-made strategies and products to suit specific market conditions, regulatory environments, and energy demands. It is crucial to build strategic partnerships with local governments, businesses, and organizations, and we strive to adapt to the local regulatory framework. Leveraging regional expertise is key to accessing local markets successfully.

EU: How does LONGi plan to navigate challenges and contribute to the renewable energy landscape in the MEA & CA region?

Mr Jia Chao: Innovation is our focus to enhance product efficiency, reliability, and cost-effectiveness. We invest continuously in research and development to bring cutting-edge technologies that align with the region's renewable energy landscape. Identifying growth opportunities, we expand our presence in emerging markets within the MEA & CA region.

EU: Turning to community engagement, what initiatives does LONGi undertake to contribute to the communities in which it operates?

Mr Jia Chao: LONGi is committed to community engagement through initiatives such as renewable energy-related workshops, seminars, and training sessions for local

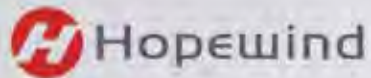
communities, schools, and professionals. Our programs aim to raise awareness and impart knowledge about solar energy and its benefits. Providing job opportunities and skill-upgrading programs for community members is at the heart of our social responsibility. We prioritize hiring locally and offer training programs to enhance the skills of the workforce.

EU: How does LONGi balance business success with social responsibility, and what impact does this have on the communities it operates in?

Mr Jia Chao: Striking a balance between achieving business objectives and fulfilling social responsibility is crucial for us. Both aspects go hand in hand, especially when executing specific projects in certain areas. We believe in engaging local communities in a meaningful way, creating a positive impact on the lives of all stakeholders. By investing in education, specialized training, health, and the environment, we aim to contribute to the betterment of local people.

EU: Looking ahead, what are LONGi's future plans in terms of sustainable advantages, innovation, and its role in leading technological transformation in the industry?

Mr Jia Chao: LONGi remains focused on sustainable advantages and innovation. We aim to lead technological transformation in the industry through innovation, R&D investment, and capacity building. Our goal is to bring about a low-carbon transition to the world with clean energy, and we are committed to creating competitive products and solutions. ■



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Hopewind stands fully committed to speedy completion of renewable energy initiatives under public-private partnership mode

EU Report

The Hopewind being the world's leading renewable energy equipment producer with its state-of-the-art technical expertise stands fully committed to ensuring the speedy development of new clean energy projects in Sindh under the Public Private Partnership (PPP) mode.

This was stated by Syed Salman Mohiuddin, Hopewind's Country Manager while speaking as the keynote speaker at a seminar on "Role of public-private partnerships in promoting renewable energy" organised by Energy Update in collaboration with Hopewind.

"We have also plans to conduct local R&D activities to promote and support the Pakistani renewable sector for maximum utilisation of solar and wind power," Mohiuddin said on the occasion.

He said the Hopewind was among the only four top inverter producers in China that are publicly listed companies.

He told the audience that Hopewind had emerged as the largest seller of wind converters globally,

He informed the audience that Hopewind was also the largest producer of string solar inverters having a capacity ranging from 5 KWs to 385 KWs. "We also deal in central inverters of several megawatts capacity".

Mohiuddin said the Hopewind's inverters were very stable having virtually zero per cent failure rate because they were not based on IGBT.

He told the audience that only very few genuine cases of warranty claims had so far been received by Hopewind since it had started serving customers in the wind and solar markets of Pakistan.

Sindh government's Energy Secretary, Rehan Iqbal Baloch, said the provincial government would fully support the development of new clean energy projects to harness the vast solar and wind power generation poten-

tial of the province under the PPP mode.

He said that Sindh had an abundance of resources to generate massive renewable electricity and support of the private sector was essential to tapping this potential.

He said the waste-to-energy was one such mode of generating renewable electricity that was yet to be explored in urban parts of the province,

He told the audience that earlier PPP mode was successfully implemented for extracting Thar coal for massive electricity production for the entire country.

"We are fully open to ideas as the private sector is more than welcome to come to us with their proposals for building new clean energy projects in the province as Sindh government has its PPP unit for implementing such plans for the energy sector," he said.

Sonia Ishtiaq Soomro, Strategic Adviser of Sindh Solar Energy Project, apprised the audience about the progress so far achieved in utilizing the solar energy potential of the province with support from the World Bank.

She said the Sindh Solar Energy Project stood for establishing utility-scale solar parks, providing solar home systems to underprivileged people in rural areas, and using rooftops of government buildings for installing solar systems.

She informed the audience that the Sindh government aimed to establish a solar park having 400 MW generation capacity under the PPP mode till 2025.

Senior energy expert, Irfan Ahmed, lamented that less than one GW of clean power based on solar energy was being produced in Pakistan when the clean energy resource could produce up to 2900 GWs of electricity.

He suggested that the PPP mode should urgently be utilised to improve the functioning of loss-making power distribution companies so that they could enhance their role in promoting clean electricity in the country.

He suggested that the government should minimize its involvement in the energy sector and only act as a facilitator to let the private sector come and run the affairs of power companies that have been mostly running in loss. Rukhasana Zuberi, former chairperson of Pakistan Engineering Council, lamented that the countries, which had launched their regulatory regimes for renewable energy projects almost the same time Pakistan introduced such systems had shown massive growth in producing clean electricity.

Naeem Qureshi of Energy Update welcomed the overwhelming interest shown by the Chinese renewable energy companies in the clean energy market of Pakistan. ■



Coal mining disrupts livelihoods

Manesh Kumar

The writer is a multimedia journalist based in Karachi

The indigenous communities of Thar are adapted to seasonal migration to fertile and urban areas in search of livelihoods. Most of them undertake return migration to their homes when it rains as rainfall creates livelihood opportunities closer to their homes in the form of agricultural activities.

After the rainfall, pastures green up, creating the grassland resources for their livestock to thrive on, and land becomes cultivable. This year, owing to coal mining operations in their native land, the option of returning to their homes was not available to many Thari locals despite a good rainfall in the area.

One of the villages, Senhri Daras, once stood where the mining site of Thar Coal Block-II is now located. It was the first village displaced in 2018 and resettled as New Senhri Daras 13.9 kilometres away. The new settlement village was declared a model village by the Sindh government and the Sindh Engro Coal Mining Company, who claimed that the houses were built with proper planning and a school, a dispensary, a reverse osmosis water treatment plant and a market were provided.

Senhri Daras had been home to 172 families, 111 of them belonging to Bheel and Kolhi communities that have lived in Sindh for centuries. Dhai Bheel, 45, now lives in New Senhri Daras along with her husband and four sons, three of them married. Having spent almost all her life in traditional thatched huts, called chaunras in Thar, Bheel's family would raise cows and goats besides cultivating crops on a small patch of land. The family migrates twice or thrice a year to the barrage areas, such as those in Mirpurkhas and Badin districts 100 to 200 kilometres away.

"We lost our land to coal mining. We can't raise livestock as there is no gauchar [pasture] available. No livelihood is available to us now" says Bheel adding that her family now migrates to far-off fertile lands in various parts of Sindh for labour to work on wheat, rice, cotton and sugarcane farms.

In the old Senhri Daras, villagers had had 4,000 acres of surveyed land and 1,250 acres of gauchar (pasture). All that land was acquired by the government for coalmining. Now, there is no land for the villagers to cultivate crops or raise livestock.

The villagers say they were not fairly compensated for the land they lost to the coalmining projects. Naru Bheel, a 55-year-old displaced villager now living in New Senhri Daras, says that his grandfather had owned 300 acres of land in the old village. However, he says, his family got compensation for only 100 acres at the rate of 190,000 per acre. "We are nine brothers. The money I got as compensation was spent quickly," he says.

Having lost his land for what Naru Bheel calls "an insignificant amount," he has to travel to far-off places to find work. Two years ago, he went to Badin district, some 200 kilometres away from his new home in New Senhri Daras for the first time in his life to work as a labourer. "Initially, I was no good at the

work because I had no experience of growing or harvesting crops other than in Thar, but I have learnt a bit now," says Naru, adding that there is no other option available to him.

Tharparkar is home to 1.65 million people. Most of them have traditionally been agro-pastoral (cultivating crops and raising livestock). After rains [July-August to October-November], they have traditionally cultivated their lands and raised livestock for the rest of the year. The traditional, yet sustainable, lifestyle came to an end after they lost their lands and gauchars (grazing lands) to coalmining (or development, as government officials describe it).

Putting his abrupt transformation from a livestock and land owner to a labourer in perspective, Naru Bheel says: "At the time of leaving our old village, I had 15 acres of land and about fifty cows. I can't even remember the number of goats I had. Now, I have only three cows. All I had is gone in two years. We were not given a gauchar. Where could we raise our animals?"

For Dhai, who now lives in a three-room house in the model village, made of baked bricks and cement, the modern-day housing facilities mean nothing in the absence of livelihood options. "The land that fed us and our animals was everything for us. Now, we have nothing. Only one of my sons works in the company for a daily wage. The other three are jobless" says Dhai. She adds: "The very land was the resting place of our loved ones."

Broken promises, poor compensation

With the inception of the Thar coal project, the government of Sindh acquired lands from local communities using a colonial era law, the Land Acquisition Act, 1894. Villagers say that the government had promised them two jobs for every household. The promise is yet to be fulfilled.

The coalmining companies, however, contest this claim. "We acquired their lands and houses and gave them money as compensation. Each family is also receiving Rs 100,000 annually. But no jobs were promised," says Farhan Ansari, general manager of Thar Foundation, a company that runs on the CSR fund of Thar Coal Block-2. He, however, says that they prefer locals in the company. "75 percent of our employees are locals," he says.

Kamran Khosa, a researcher from the Policy Research Institute for Equitable Development, a think tank on climate justice, says livelihood in the Thar desert is connected to land. "But gauchars are more important [for the indigenous people] than agriculture lands. Agriculture is occasional since Thar faces frequent droughts," he says, adding that "livestock is what their survival depends on."

According to Khosa, the government acquired the lands invoking emergency conditions in which people don't have a right to appeal. They obtained their surveyed land for Rs 180,000 to Rs 190,000 rupees per acre, Khosa says. He added that the government did not pay them for yaksala, leased government land in people's possessions for a fee.

The people have also not been paid for gauchars (pasture land), Khosa says. Gauchar land was allocated by the British government in the sub-continent, especially in Tharparkar, which includes part of the desert in India's Rajasthan state, to

and migration patterns in Thar

the people who relied on livestock. The title typically remains with the government so that no influential person or family should claim it as their exclusive possession.

"In my research, I have found that due to loss of gauchar, the livestock population in some villages has decreased by 20 to 70 percent," says Khosa.

Arsam Saleem, a senior research associate at Karachi Urban Lab, says that before initiating any project, the planners need to understand the lifestyle of people who live there, their sources of livelihood, how they think about the project and how it can make their lives better. "For the Thar coal projects, these things were not considered" he says. He adds: "They acquired their land and compensated them with some land in nearby areas because that land happened to be cheaper. Now if the government decides to work on other blocks, it will result in displacement of the [already] displaced. There will be still more displacements besides the loss of livelihood, worsening of water quality and subsequent migration."

Coalmining in Thar is also causing environmental pollution, which also acts as a trigger for migration. Gorano, a village of 20,000 population, has been affected by a 1,500 acres man-made water reservoir, Gorano Dam, for the discharge of wastewater from Thar Coal Block-II. "After the building of Gorano Dam, water table has gone up by 20 to 25 feet" says Lachman Meghwar, "[but], the water has become unfit for drinking."

Warvai, a village of 1,000 households, is now encircled by barbed wires. On the south and east side, the village is surrounded by the mining site of Thar Coal Block-I. On its north, there's a power plant; on its west a wastewater disposal system.

These things limit the mobility of people and their animals, the villagers say. Allah Jurio Rahmoon, one of the residents, says that he has shifted to Islamkot City, 11.7 kilometres away from the village. "We can't breathe here, especially when the northern wind blows. I've developed a lung problem. I have decided to move away from here," Rahmoon says.

A study by the Centre for Research on Energy and Clean Air estimates that coal projects in Thar could expose 100,000 people to harmful gasses. More than 29,000 people could die from air pollution-related causes over the 30-year operating life of the plants.

"Apart from their other losses, the carbon dioxide, sulphur dioxide, nitrogen oxide and mercury could affect their health, physical as well as mental. These gases numb minds, limiting people's ability to think clearly. Children are particularly affected by these gases," says Dr Suleman Otho, a pulmonologist.

Many villagers from Gorano and Warvai have moved to other places. Their villages are yet to be resettled by the government. Till now, only two villages, New Senhri Daras and Allah Dino Hajam, have been resettled by Thar Coal Block-II. These were directly affected by coalmining activities. However, many villages affected indirectly are not included in the resettlement plan.

Resource development anomalies

Out of Thar desert's 19,637 square kilometres area, about forty-five percent (9,000 square kilometres) is covered by an

estimated 175 billion tonnes reserves of lignite coal. The area is divided into 13 blocks. Currently, only two blocks, Block-1 and Block-2, are being mined. These contribute 2,640 megawatts of electricity to the national grid.

A decade ago, when coalmining started in the Thar region, a slogan was promoted: "Thar Badlay Ga Pakistan" (Thar will change the fate of Pakistan). The region appears to be living up to that slogan, assuring "a positive change" for Pakistan, a country struggling with foreign exchange reserves but dependent on fuel imports. Pakistan imports almost 90 million tonnes of coal annually, half of which is consumed by the power sector. Now, there is a proposal to run all its power plants on indigenous coal to save approximately \$2.5 billion in energy imports.

But, while coalmining in Thar might be helpful to Pakistan, experts say it comes at a huge cost for the people who have lived in the region. Noor Muhammad Bajeer, a development practitioner, says that the social impact of these coalmining projects isn't entirely visible as all the impacts on the inhabitants are not being documented.

Because of the coalmining in Thar, people are not only losing their land and homes but also their social relations, cultural capital and peace. "The rapid transition for which people were unprepared has resulted in social and psychological problems them. Its long-term effects can be horrific" Bajeer says.

Also, focus on coal, at a time when the world is seeking to produce energy from renewable resources such as solar and wind, is not anomalous. According to a World Bank report, Pakistan has the potential to generate 40 gigawatts of electricity from solar. If the country utilizes just 0.071 percent of its area for solar power generation, it will be able to meet the current electricity demand. In the Paris Agreement, Pakistan pledged to produce 60 percent of its total electricity from renewables by 2031. In May 2015, Pakistan had started its 100-megawatt solar power project (Quaid-i-Azam Solar Project in Bahawalpur). As per Indication Generation Capacity Expansion Plan 2023, the number of power plants that will be set up by 2031 will be decided on a cost-effective basis.

Currently, the share of alternative energy in Pakistan's energy mix is four percent. The rest is generated from hydro, thermal and nuclear sources. "Currently, solar energy is the cheapest source of energy in Pakistan," says Muhammad Mustafa Amjad, programme manager at Renewable First, an energy think tank based in Islamabad. "Currently, the problem for the people of Pakistan is that electricity prices are going up. To bring that down, you have to bring down the basket price. The more you integrate renewable energy sources, the lower the prices will go. Therefore, sooner or later, Pakistan has to move towards alternative sources of energy," he says.

But, despite its pledges, Pakistan's inclination towards fossil fuels has not decreased. While it has decided to get rid of imported coal, it appears to be aggressively utilising indigenous coal despite its impact on people and their livelihoods besides the environmental implications, experts say. ■

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Govt yet to seriously take up rising smog issue in Punjab

Harsh punitive measures need to be taken against those responsible for harmful emissions

Naeem Qureshi

The Writer is Managing Editor of Energy Update and Environment Activist

The Punjab government has to think about certain drastic measures seemingly as the last resort to tackle the issue of smog in Lahore and other parts of central Punjab.

The imposition of smart lockdowns in the areas of central Punjab is one such recent extraordinary administrative step taken by the provincial government in its effort to tackle the adverse weather conditions. The imposition of smart lockdowns in eight smog-hit cities of central Punjab reminds us of the coronavirus pandemic era when such stern administrative measures were adopted to restrict public movement and overcrowding of markets to slow the spread of the lethal viral infection.

The concerned businessmen and traders in Lahore, as expected, agitated against the recent lockdown regime while claiming that the provincial government by resorting to such a step has given a virtual license to police to extort money from the retailers and shopkeepers. The leaders of the business community complained that shopkeepers facing unbearable business conditions due to high inflation shouldn't be subjected to such harsh measures as otherwise it would be nearly impossible for them to keep running their shops and employing several salespersons.

Another drastic step the Punjab gov-

ernment has been mulling over is the use of "artificial rain" for mitigating the smog situation. The Punjab Environment Department held a meeting and decided to form a working group to explore the option of cloud seeding for artificial rain in the smog-hit areas.

Across the border, the Indian authorities have also been considering the option of artificial rain as an emergency step to tackle smog in New Delhi and adjoining areas. Around 23 years back, there were some experimental attempts in Pakistan for artificial rains after a severe drought spell severely affected life in desert areas including Thar.

The relevant environmental and meteorological experts believe that such steps could only provide momentary relief from the troubling situation of smog that has been affecting the daily lives of people in several cities. Certainly, long-term measures are required to tackle this serious environmental challenge permanently. As it is a cross-border issue, environmental and meteorological experts both from India and Pakistan should sit together to collectively consider the deteriorating conditions in both Indian and Pakistani Punjab and suggest effective measures for collectively mitigating the situation on scientific lines.

The farmers in both Punjab should be motivated to adopt better and modern ways of dealing with the problem of farm waste at the end of crop season instead of burning it. The constant burning of crop waste is one of the major reasons behind the worsening phenomenon of smog in India and Pakistan. The small farmers should be offered incentives and mod-

ern farming tools to lure them away from the traditional practice of burning of agricultural waste before the next crop season.

The next concrete step in this regard would be a strict check on all forms of harmful emissions in and around the urban centers in Central Punjab. The emissions from motor vehicles, industries, brick kilns, power generation units, foundries, and other major polluting sources shouldn't exceed the emission limits and standards defined in the national and provincial environmental laws.

The environmental laws and regulations should be strictly implemented with no concession or relaxation granted to any polluting industry or other source of harmful emissions. The provincial environmental protection agencies should dutifully perform their lawful duties in this regard by slapping fines or taking other harsh punitive measures against those responsible for harmful emissions. No concession should be given to any polluting industrial unit no matter how influential and well-connected their owners are. Strict compliance with the environmental rules should be the way forward for the authorities from now onwards.

The government should also introduce more stringent regulatory measures to lessen vehicular traffic on the main roads of Lahore and other cities. Options like mass transit services, carpooling, and ridesharing services should be promoted by the government.

At the same time, the government should speed up the tree plantation drives in and around urban centers and increase its reliance on renewable forms of energy especially solar power for electricity generation instead of using conventional power generation sources. The government should also discourage the trend of unchecked and fast conversion of farmlands in central Punjab into housing societies. ■





Amer Malik

In a transformative move to navigate the evolving dynamics of the Central Asian market, LONGi Green Energy Technology Co., Ltd. (hereafter "LONGi"), a global leader in the green energy sector, has unveiled an enhanced strategy vision.

With a focus on expanding its presence, the company aims to penetrate deeper into the Central Asian market through a multifaceted approach. Mr Alex Li, Central Asia Regional Manager of LONGi, shared insights into the company's initiatives, product excellence, and commitment to local communities in an exclusive interview with Energy Update during the inauguration of LONGi's Lahore office.

Energy Update (EU): Mr Alex Li, thank you for joining us. To begin, could you elaborate on LONGi's strategy for further exploration in the Central Asian market?

Mr Alex Li (AL): Thank you for having me. LONGi is committed to expanding its footprint in Central Asia by focusing on three key pillars: expanding our distribution network, establishing local partnerships, and introducing innovative products and modules tailored to the specific needs of the region. We are also actively engaging with policymakers to advocate for favorable policies that promote the widespread adoption of solar energy.

EU: LONGi is recognized globally for its high-quality solar products. How does the company ensure that its products meet the diverse needs of both Western markets and those in Asia, including Australia?

AL: LONGi Group, established in 2000, is the world's largest monocrystalline silicon producer and a major player in the solar industry. We provide comprehensive solar PV solutions that are adaptable to a wide range of project applications. Our products have gained acclaim in Asian, Western and Australian markets due to their high power ratings, energy yields, and proven reliability. LONGi panels are designed for residential, commercial, and industrial applications, offering efficiency and affordability.

Strategic vision for green energy transition

LONGi's products gain fame in Asian, Western, Australian markets

Company's Central Asia Regional Manager **Alex Li** in an interview with Energy Update unveils LONGi's growth plans, quality commitment, and social responsibility; says our CSR initiatives in Central Asia focus on funding education, healthcare, and environmental projects

EU: Speaking of efficiency, how does LONGi maintain its competitiveness in terms of product efficiency, especially in comparison to other solar panel technologies?

AL: Efficiency is a key area where LONGi excels. Our dominance over competitors lies in the production of both monocrystalline and polycrystalline solar panels. Monocrystalline panels, in particular, are the most efficient type, delivering up to 23.2 percent efficiency based on cutting-edge technologies. LONGi remains ahead of the curve by offering high efficiency at competitive prices, making us stand out in the market.

EU: Moving on to your commitment to local employment and skill development in Central Asia, could you shed light on LONGi's training and educational programs for the local workforce?

AL: Certainly. At LONGi, we prioritize hiring local talent and providing training opportunities to support the communities in which we operate. Our training and educational programs in Central Asia aim to enhance the capabilities of the local workforce. We believe in creating sustainable employment opportunities and fostering skill development to contribute to the overall growth of the region.

EU: Regarding environmental and social responsibility in Central Asia, how does LONGi contribute to sustainability, and what are the company's environmental conservation initiatives?

AL: Our primary contribution to environmental sustainability lies in promoting and providing high-quality solar products aimed at reducing carbon emissions. By encouraging the adoption of renewable energy sources like solar power, LONGi indirectly contributes to environmental conservation in Central Asia. We are committed to being a responsible corporate citizen, and our initiatives go beyond business operations to create a positive impact on the environment.

EU: Lastly, could you elaborate on LONGi's Corporate Social Responsibility (CSR) initiatives in Central Asia, particularly in terms of community outreach programs?

AL: LONGi's CSR initiatives in Central Asia focus on funding education, healthcare, and environmental projects in the communities where we operate. These programs are designed to create a positive impact beyond our business operations. We actively engage with local NGOs and community groups, collaborating on joint projects that address social and environmental issues. Our aim is to contribute meaningfully to the well-being of the communities we serve. ■

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IMF deal: a boon and a burden

While business community expressed qualified support, ordinary Pakistanis dread further hardships

Afshan Subohi

The caretaker government is jubilant, feeling a sense of vindication. The market, in turn, embraced the International Monetary Fund (IMF) agreement with warmth. The deal unlocked the critically needed second \$700 million tranche, bringing the total disbursement to \$1.9 billion, within the \$3bn bailout framework deemed essential for Pakistan's financial stability.

While the business community expressed qualified support, ordinary Pakistanis dread further hardships due to the inherent conditions of the package. The IMF obligates the government to implement stabilisation policies, leading to increased taxes, levies, elevated energy rates and reduced development spending.

To address the substantial budget deficit, the donor often recommends a halt on government recruitment and advocates leaner state-owned enterprises before a potential sale. Unfortunately, the resulting impact, including inflation, job losses and cuts to development spending, disproportionately hurt the working masses.

It's not surprising that people in Pakistan resent the IMF. The memory of all previous programmes is unpleasant, marked by the anticipation of gains that never materi-

alised despite enduring the pain of stabilisation", observed an analyst. While the feel-good sentiment is there in the economy, the IMF obligates the government to implement policies that lead to inflation and joblessness.

Since July 2023, when the IMF approved a nine-month \$3bn bailout package for Pakistan, fuel, electricity and gas prices have risen, contributing to crushingly high inflation and unemployment rates. Since the caretakers assumed power in August, petrol and diesel prices increased by Rs58.6 and Rs55.7 till the end of September.

Although revised down in October and November, the overall balance remains higher by Rs16.2 and Rs23.2 compared to mid-August prices. Both electricity and gas tariffs rose astronomically, impacting even the lifeline consumers of gas, who were charged Rs10 per month and will now pay a minimum of Rs500.

In response to inquiries about the growing economic discontent, Dr Shamshad Akhtar, Caretaker Finance Minister, conveyed over phone, stating, "Economic and price stability will pave the way for benefits for the poor."

Upon successfully engaging with the IMF team, she remarked, "There has been a broad recognition of the government's commitment to the IMF standby agreement and its strict adherence to stipulated quantitative and structural benchmarks.

"Following the standard operating pro-

cedure, the second tranche of \$700 million will be released after approval of the IMF Management and Executive Boards.

"The staff-level agreement and its forward-looking directives will bolster macroeconomic stability, fostering growth and facilitating expansion in social safety nets for the vulnerable."

After reviewing Pakistan's situation, the IMF said, "A nascent recovery is underway, buoyed by international partners' support and signs of improved confidence". It anticipated a further decline in the inflation rate, which fell from 38 per cent in May to under 27pc in October, but cautioned about susceptibility to external risks, including intensification of geopolitical tensions, resurgent commodity prices, and further tightening in global financial conditions. It advised focusing on building resilience.

The capital and currency markets celebrated the IMF deal by propelling the Pakistan Stock Exchange's benchmark index to over 57,000 mark, and the rupee showed resilience by gaining value against the dollar, albeit marginally.

Ehsan Malik, CEO, Pakistan Business Council, voiced the corporate sector's apprehensions about the escalating cost of doing business. He responded to criticism of the Special Investment Facilitation Council (SIFC) and emphasised the inevitability of a

24th programme next year.

“In our discussions with the IMF, we have consistently championed the cause of equitable distribution of tax, be it in the realms of energy or other areas. We contend that the front-loaded targets merely address the symptoms and not the cause of Pakistan’s problems, which primarily stem from a lack of political will and the Federal Board of Revenue’s (FBR) capacity to expand the tax base while curbing theft, transmission and distribution inefficiencies in the energy sector.

“The IMF’s measures disproportionately burden the formal sector, fostering greater incentives for evasion by the informal sector. Likewise, an orthodox monetary policy, lacking fiscal expenditure controls, pursues inflation driven by cost-push, supply-side pressures and devaluation impacts. This results in a higher cost of funds for the formal sector, borrowing from banks, collectively hindering the formalisation agenda of the economy.

“This time, the IMF has been more receptive, focusing on taxing untaxed sectors for sustainable revenue. We wish a similar approach had been taken for energy tariffs.”

Defending the new body, he stated, “The SIFC is a pragmatic solution to government decision-making fragmentation and red tape. Both we and the IMF envision sustainable institutional strengthening, and we believe the SIFC could pave the way”.

“We remain concerned about the looming debt challenge as standby assistance and deposits from friendly nations offer temporary support, yet a near-term funding gap persists. Clarification is needed on the proposal regarding the debt reprofiling. While a challenge for an incoming government, the caretaker regime could seek advice from sovereign debt advisors, with potential private sector assistance to fill any gap in government resources.”

Former Federation of Pakistan Chamber of Commerce and Industry President Nasser Hayat Magoon cautioned, “Further power hikes may force closures of textile units as it will become impossible to compete with countries like China, India, Bangladesh, Vietnam and Indonesia in the global market. While welcoming fair taxation for retailers and realtors, the question remains whether FBR can effectively implement it.”

Karachi industrialist Majyd Aziz derided the convoluted language and numerical jargon in economic statements that elude common understanding. While criticising the recurrent increase in power rates, he offered support for the SIFC.

“The recent gas rate increase has severely impacted domestic and industrial consumers. The mention of the necessity of free and fair elections is a positive development, removing uncertainty. IMF’s scrutiny of SIFC is puzzling. The rationale of its establishment is to create a comfort zone for mega investors, recognised for sustainable guarantees and prioritising indigenous sectors like agriculture, mining, and information technology.” ■

Courtesy Dawn

Navigating Pakistan’s Economic Landscape

Bringing good governance, privatization, and financial reforms can only ensure sustainable development in Pakistan; taking more actions against currency smugglers and alternative remittance systems is vital to further narrow the gap between open market and interbank dollar prices

Mustafa Tahir

The Writer is Deputy Editor of Energy Update

As Pakistan is gearing up for general elections scheduled to be held on 08 February 2024, there are signs of optimism regarding the solution to the country’s economic and political challenges. The announcement of the formal election date, following consultations between the Election Commission of Pakistan and the President of Pakistan, has put an end to speculation and controversy. Despite concerns raised by major political parties about the fairness of the upcoming general elections, the focus is shifting towards forging alliances between political parties and preparing for the crucial polls.

The country’s political scenario is marked by the imprisonment of key leaders, including Pakistan Tehreek-i-Insaf (PTI) Chairman Imran Khan and Vice Chairman Shah Mahmood Qureshi. This has led to speculation about potential strategies to sideline the PTI, opening the possibility for Pakistan Muslim League-Nawaz (PML-N) chief Nawaz Sharif’s return to the prime minister’s post. PML-N has raised concerns about the legitimacy of convictions in cases like Avenfield and Al-Azizia, questioning the fairness of the judicial process.

Despite political uncertainties, Pakistan has witnessed positive economic trends in recent months. The government’s visible efforts to comply with International Monetary Fund (IMF) conditions have resulted in significant improvements. Actions against currency smugglers and alternative remittance systems have narrowed the gap between open market and interbank dollar prices, maintaining the agreed-upon 1.25 per cent gap with the IMF. There is a dire need to take such more actions.

The Pakistan Stock Exchange (PSX)

has experienced historic growth, with the PSX 100 index surpassing the 56,500 level. Analysts link this surge to positive developments in talks between the caretaker government and the IMF. Reports suggest agreements on structural adjustments and additional taxes on real estate, agriculture, and retail sectors. Additionally, strides in reducing the current account deficit have also contributed to economic stability.

The recent census results have indicated a population exceeding 241 million, putting pressure on already insufficient resources. To address this, a call for the adoption of a corporate model for governance is emphasized. Inflation, measured by Consumer Price Indices, has seen a modest improvement. The review for the year reveals a decrease in general inflation from 31.4 percent in September 2023 to 26.9 percent in October 2023. However, long-term relief depends on the government’s commitment to structural reforms and addressing economic challenges.

The major challenges facing Pakistan’s economy include low foreign exchange reserves and constrained revenue collection. The IMF is urging better governance and privatization of loss-making state-owned enterprises (SOEs). The government’s agreement to operationalize a central monitoring unit for SOEs is seen as a positive step. Technical negotiations with the IMF have reportedly been successful, leading to the completion of the first review of the ongoing nine-month standby agreement.

As Pakistan navigates its economic landscape, addressing political uncertainties and implementing structural reforms are crucial for long-term stability. The upcoming general elections, economic trends, and negotiations with the IMF are playing integral roles in shaping the country’s path forward. A commitment to good governance, privatization, and financial reforms will be pivotal in overcoming economic challenges and ensuring a sustainable future for Pakistan. ■

Global Climate Crisis: From Talk to Action at COP28

Implementation of policies lags behind in Pakistan, particularly in achieving 1.5°C pathway for the energy sector

Saleha Qureshi

Writer is Research Associate at Sustainable Development Policy Institute

In our ever-changing world, each day brings new surprises. The unsettling temperature swings we face have become a cause for alarm, and our ability to effectively address these shifts remains inadequate. Just a few years ago, we were discussing the challenges of climate change. Today, we find ourselves in a state of what can only be described as "global boiling," where our planet, much like a boiling pot, seems to be simmering with intensity.

As we ponder this situation, we are confronted with extreme heat, bitter cold, and unpredictable weather patterns. However, it's essential to recognize that our own actions have played a significant role in bringing us to this point. We understand the problem and hold the solutions in our grasp, yet the enigma lies in why we find ourselves in this perplexing predicament.

While we engage in debates and proclaim our commitments in accordance with the Paris Agreement, a cloud of uncertainty still hangs over us. Are we steadfastly pursuing the 1.5°C or 2°C target, or have we veered off course? This question looms large,



demanding answers.

Adaptation and mitigation measures, though timely, seem insufficient to fulfill the promises laid out in the Paris Agreement's 1.5-degree pathway. A pressing debate reveals large: the global north, responsible for significant emissions, appears to be lagging in its commitment compared to the global south, which contributes less to the problem. Unfortunately, this debate hasn't gained the traction it deserves.

As challenges mount, the divide between the developed and developing world becomes increasingly apparent. Opportunities and challenges in addressing climate change differ significantly between these two realms. Access to finance, technological innovation, skills, and crucially, resources, all vary. One key aspect that demands attention is the formulation and implementation of climate policies tailored to these unique circumstances.

As we approach climate catastrophes, solutions must go beyond short-term fixes. COP28, on the horizon, is a critical juncture. The focus this year revolves around decarbonizing the energy industry, climate finance reform, prioritizing nature, and livelihoods, and promoting inclusivity. For the developing world, certain priorities emerge increasing funding for mitigation and adaptation, enhancing transparency in climate finance, mobilizing the private sector for clean energy, and ensuring broader participation in climate negotiations.

Well of course the COP28 is a stage for the developed world to demonstrate leadership and innovation in climate action. It's an opportunity to fulfill commitments and support the developing world's quest for a just and sustainable future. We anticipate COP to foster public-private dialogue and expand the loss and damage fund, as \$100 billion annually no longer suffices. The presidency must steer global finance toward a global agenda, recognizing the limitations of public finances.

At COP27, Pakistan stance on pushing 'loss and damage' onto the U.N. agenda was one of the remarkable achievements. However, it remains uncertain that COP commitments have been honored. This COP Pakistan should be stressed upon the conversion of investments into opportunities more specifically the energy sector of Pakistan. It seeks to catalyze significant initiatives such as generating carbon credits, expanding green building and housing, and developing renewable energy (RE) projects, all of which require substantial investments. Among all the Private sector involvement is indispensable for climate action, an area where we currently lack the capacity.

Implementation of policies lags behind in Pakistan, particularly in achieving

the 1.5°C pathway for the energy sector, a major contributor to GHG emissions as per Pakistan's NDCs. The imperative for pushing renewable energy projects and facilitating land leasing for ventures grappling with the limited space cannot be overstated. Pakistan must embrace global initiatives like RE 100 to bolster its capacity.

Currently, businesses and private sector investments are hindered by various instabilities, including political, economic, and climatic factors. These challenges underscore the need for stable, long-term climate-related policies, which are essential for businesses involved in climate action. An alarming issue is the lack of clarity regarding climate-related products and behavioral change, creating a gap in climate commitments. Failure to address this promptly could result in swift and severe climate consequences, potentially causing us to miss a critical opportunity.

Here, COP 28 is a vital opportunity for Pakistan to put up the stance and We need a cross-sectoral approach involving other ministries like Finance and commerce and to assess on position on the loss and damage and most importantly learning from our mistakes and enhancing monitoring and evaluation. It's a moment to bridge the gap between commitment and action, turning tangible investments into a sustainable future. The urgency of the climate crisis demands nothing less.

Incorporating Pakistan's NDC documents into financial quotations serves as a crucial step in attracting essential international support, necessitate financial assistance from the global community, this action aligns financial policies seamlessly with climate action objectives, facilitating a smoother transition towards a low-carbon economy.

To ensure effective implementation of the Paris Agreement, developed countries must lead in emissions reduction and support developing nations financially, technologically, and in capacity building. A transparent global stocktake process is needed to assess progress and identify gaps, guiding increased ambition.

We also require a robust mechanism to address loss and damage caused by climate change, offering resources to affected developing countries. Balancing adaptation and mitigation, considering diverse needs, is essential, with access to funding and technology for vulnerable nations.

Lastly, meaningful involvement of civil society, indigenous groups, women, youth, and stakeholders is vital, ensuring their voices are heard and enabling action at all levels. This comprehensive approach forms the foundation for global climate action. ■

Plan to give 30pc equity of GBHPP

EU Report

The government has worked out an apparently doable and unique strategy under which it will dole out 30 per cent equity of the Ghazi Barotha Hydropower Project (GBHPP) to generate \$700-800 million for financing the Diamer-Bhasha Dam. To this effect, the chief of army staff has been sensitized, who asked the Special Investment Facilitation Council (SIFC) to take up this plan for positive consultations between stakeholder entities. The equity will be sold out to potential investors from friendly countries for 10 years, top officials told The News.

"The divestment of 30 per cent equity of the Ghazi Barotha Hydropower Project would be based on profit sharing basis," official sources said, adding that the caretaker federal minister for water resources earlier briefed the chief of army staff about the divestment of 30 per cent equity plan of GBHPP worked out by the Technical Wing of Water Resources Ministry.

He appreciated the plan and its proposed execution and asked the SIFC to start consultations on this unique plan with the Power Division, Finance Division and NEPRA.

The Ghazi Barotha Hydropower Project is the golden goose as it continues to generate electricity in the summer and winter seasons with an average hydro generation of 800 MW. The project has the capacity to generate 1,450 MW and generates 1,450 MW in the summer, but in the winter, the generation of electricity fluctuates depending upon water flows in the Indus River downstream of Tarbela Dam. However, during the peak time in the ongoing winter season for four hours, the project still generates 1,450 MW.

The GBHPP produces 6.7 billion units in a year and the government would sell out electricity directly to the export industry of the country under the CTBCM model 450 MW, which is 30 per cent of the total hydro generation of the project.

This is how this would be the pilot project that will provide electricity to the export industry by using the transmission and distribution system of NTDC and relevant DISCOs. This will reduce the current tariff of export industry manifold that will help reduce the input cost of the industry and boost exports of the country. ■

Revolutionizing energy security

Innovations against theft, line losses in industrial and commercial sectors

Dr Basharat Hasan Bashir



Writer is Alternative Energy & Climate Change (Mitigation and Adaptation) Specialist

In an era defined by technological prowess, the battle against electricity theft and line losses has entered a new phase. This comprehensive paper embarks on a journey through the latest technologies reshaping the landscape of energy security. From smart grids to artificial intelligence, we explore the cutting-edge innovations driving a paradigm shift in the fight against electricity theft and line losses. In a world where energy efficiency is paramount, these technologies stand as sentinels, guarding against illicit practices and fortifying the foundations of a resilient energy infrastructure.

The Smart Grid, a technological marvel at the forefront of the battle against electricity theft and line losses, represents a paradigm shift in the way we conceive and manage power distribution. This section unravels the intricate layers of smart grid technology, delving into the transformative elements that make it a linchpin in fortifying energy security.

At the core of the smart grid revolution is the Advanced Metering Infrastructure (AMI). This technology replaces conventional meters with intelligent, two-way communication devices. It not only enables the collection of real-time data on energy consumption but also facilitates instantaneous communication between utilities and consumers. By providing accurate and granular data, AMI eliminates billing inaccuracies, reduces the potential for theft through meter tampering, and lays the foundation for a more transparent and efficient energy ecosystem.

For instance, in a major metropolitan area where electricity theft was prevalent, the implementation of a smart grid resulted in a significant reduction in unauthorized consumption. By leveraging the granular data provided by AMI, utilities identified abnormal consumption patterns, swiftly pinpointing areas susceptible to theft. The real-time monitoring capabilities enabled rapid detection of irregularities, allowing for immediate intervention and a substantial decrease in overall losses.

In another case study in a rural setting, the smart grid proved instrumental in reducing technical losses associated with inefficient pow-

er distribution. The two-way communication system facilitated timely detection of faults, enabling utilities to undertake preventive maintenance and address issues before they escalated. The smart grid, with its amalgamation of AMI, real-time monitoring, and two-way communication, emerges as a powerful arsenal in the fight against electricity theft and line losses. The real-world impact showcased through case studies demonstrates its ability to transform traditional power grids into intelligent, adaptive networks. The integration of AI into energy security frameworks enables the analysis of extensive datasets generated by smart grids, sensors, and other monitoring devices. AI algorithms excel in extracting meaningful insights from this wealth of information, identifying consumption patterns, and establishing baseline behaviors. This capacity to discern normal usage facilitates the rapid identification of deviations that might signal potential theft or irregularities.

One of the cornerstones of AI's contribution to energy security lies in its ability to detect anomalies indicative of unauthorized activities. By establishing normal patterns through historical data, AI algorithms can flag aberrations or inconsistencies in real-time. This capability extends to recognizing abnormal energy consumption, unusual grid behavior, or suspicious activities within the system. Through a combination of machine learning and pattern recognition, AI acts as a vigilant guardian, alerting utilities to potential threats swiftly.

Predictive analytics, a subset of AI, takes center stage in anticipating and mitigating electricity theft. This subsection explores how machine learning algorithms forecast potential theft patterns based on historical data, weather conditions, and other relevant factors. By establishing predictive models, utilities gain foresight into regions or times at higher risk of theft, enabling them to deploy preemptive measures. This proactive approach not only minimizes losses but also acts as a deterrent against illicit activities. As the energy landscape undergoes a digital makeover, blockchain technology emerges as a disruptive force in fortifying energy transactions. This exploration unveils how blockchain guarantees the integrity and transparency of these transactions, minimizing vulnerabilities to tampering and theft. The narrative navigates through pilot projects and industry initiatives, showcasing blockchain's potential to revolutionize billing systems and combat losses stemming from fraudulent activities.

Blockchain's primary strength lies in its

ability to ensure the integrity and transparency of energy transactions. Unlike traditional centralized databases, blockchain records transactions in a secure and unalterable manner. Smart contracts, self-executing agreements with predefined rules, automate and enforce the terms of energy transactions.

This segment sheds light on the pivotal roles played by advanced metering systems and prepaid solutions in the ongoing campaign against electricity theft. Beyond traditional metering methods, these technologies provide consumers with the tools to actively monitor and regulate their energy consumption, fostering a proactive approach to energy management. Positioned as potent deterrents, these systems not only contribute to reducing losses but also signify a transformative shift toward cultivating responsible and sustainable energy consumption practices. As we navigate through the evolving landscape of energy security, the significance of advanced metering and prepaid systems becomes increasingly evident. These technologies not only enhance revenue collection and minimize losses but also embody a proactive strategy in reshaping consumer behavior.

Drones and remote sensing technologies offer innovative solutions for monitoring power infrastructure and detecting unauthorized activities. Drones equipped with sensors and cameras provide utilities with cost-effective and efficient means of inspecting power lines, identifying potential theft points, and enhancing overall surveillance. The Internet of Things (IoT) and sensor networks create a mesh of interconnected devices that enable real-time monitoring and data collection. These technologies enhance the granularity of data available to utilities, facilitating the early detection of abnormalities indicative of theft. IoT and sensor networks contribute to reducing losses, improving grid efficiency, and fortifying the overall resilience of power systems.

In a global landscape increasingly prioritizing energy efficiency and sustainability, these technological advancements transcend mere loss mitigation; they set the stage for a future where energy security seamlessly intertwines with progressive technological solutions. The amalgamation of intelligent grids and artificial intelligence not only strengthens the stability of power systems but also charts a path toward a sustainable energy ecosystem, where the convergence of efficiency, security, and technological innovation becomes the cornerstone of a promising and eco-friendly energy future. ■

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13th ANNUAL FIRE SAFETY AWARDS & CONVENTION 2023

Govt will support KMC in building more fire stations: Jumani



Group Photo of Award Winners with Chief Guest Minister Local Government Mubeen Jumani and NFEH Team.

EU Report

The challenges, hardships, advancements, and improvements so far made in the domain of fire safety and protection in urban parts of Pakistan were discussed in detail at a recently held daylong event titled the 13th Fire Safety Convention and Awards-2023 that gathered under one roof all the stakeholders of the fire protection sector in Pakistan.

The National Forum for Environment and Health (NFEH) and the Fire Protection Industry of Pakistan (FPIP) jointly organised the event at a hotel in Karachi to promote the culture of fire safety in urban areas. Caretaker Sindh Minister for Local Government, Mubeen Jumani, was the chief guest at the event.

In his speech, Jumani said the current caretaker Sindh government was fully committed to supporting the Karachi Metropolitan Corporation in strengthening firefighting systems in Karachi to save its numerous high-rise commercial and residential buildings from the fire emergency.

The Caretaker Local Government Minister conceded that the operational capacity of Karachi's Fire Department should be massively improved to make it capable of handling two major fire emergencies at a time in the city.

He said the interim provincial govern-

ment stood fully committed to safeguarding the precious lives and belongings of the people in the city. The interim provincial government would support the KMC in building more fire stations in the city and provide the latest firefighting, safety, and rescue equipment to Karachi's fire brigade staff, Jumani said.



Group Photo of Panelist of Panel Discussion includes Anis Younus, Brig. Qadir Lakhair, Dr. Imran Taj and others seen in the picture.



From L to R Mubeen Jumani Minister Local Government Sindh, CG Oman Eng. Sami Abdullah Salim Al Khanjari, President KCCI Iftikhar Shaikh, President FPIP Dr. Imran Taj, President NFEH M. Naeem Qureshi, Saeed Jadoon, VP NFEH Engr. Nadeem Ashraf, Secretary General NFEH Ruqiya Naeem, Anas Hammad, Salman Rasheed, Jamshed Babar, Zulaikha Soorma and Yogi Wajahat.

He said the Sindh Building Control Authority and other relevant civic agencies should discharge their responsibilities of inspecting new high-rise buildings in cities for the availability of the necessary fire safety arrangements as per the law.

Karachi Chamber of Commerce and Industry President Iftikhar Ahmed Sheikh said that owing to the efforts of the KCCI, each of the seven industrial zones in the city had a dedicated fire station with two fire tenders provided by the federal government to deal with any fire emergency at any factory without loss of precious time.

He, however, conceded that much had to be done by the industries in the city to beef up their individual fire protection measures with strict adoption of the safety laws.

The KCCI chief said the KCCI would join hands with NGOs like the NFEH to run an awareness campaign in the industrial zones to motivate the factory owners to adopt the fire safety codes.

Consul General of Oman in Karachi, Sami Abdullah Salim Al Khanjari, hoped that events like the Fire Safety Convention would go a long in promoting the culture of fire safety in residential and office buildings in the

city.

He noted that dangerously hanging wires of electricity and TV cable service in almost all parts of Karachi posed a serious risk to people and the relevant civic agencies should immediately take care of this issue.

Sami informed the audience about strict compliance with fire safety codes while constructing commercial and residential buildings in Oman. He said the latest technology was used in Oman for swift adoption of the safety measures including electricity shutdown to deal with any fire emergency.

FPIP President Dr Imran Taj emphasised

GLIMPSES OF STALLS



GLIMPSES OF STALLS



that every industrial unit should undergo annual inspections to check the validity of its fire safety measures.

He underlined the need for strict compliance with the Fire Safety Provisions-2016 of the Building Code of Pakistan while constricting residential and commercial buildings in the cities for the safety of their occupants.

Sindh Integrated Emergency & Health Services (SIEHS) CEO, Brig (retired) Tariq Qadir Lakhari, said the Sindh government had succeeded in curtailing the response time for dispatching firefighters, ambulances, and first aiders to any troubled spot in the cities after the launch of SIEHS that work with Fire Department of KMC.

Dr Abid Jalaluddin Shaikh, Director at Sindh Emergency Service, said the Rescue 1122

service had been launched in the province as a centralised agency for all sorts of emergencies including conduct of urban search and rescue operations.

He urged commercial and industrial organisations to ensure that their offices, businesses, and factories fully comply with the Fire Safety Provisions-2016 as given in the Building Code of Pakistan.

Zulekha Soorma, a senior HSE consultant, talked about the importance of containment methods as per international safety standards for making safe disposal of the water used in firefighting operations in the industrial zones so that it shouldn't harm the drainage system of the cities.

NEFH Secretary-General, Ruqiya Naem, stressed that to avoid fire incidents,

superstores on the ground floor of high-rise residential buildings shouldn't be allowed to stuff cooking oil or any hazardous material in the basements.

NEFH President Muhammad Naeem Qureshi, in his welcome speech, said the recommendations of the convention would be sent to the relevant government authorities and agencies for strict adoption of the fire safety measures in the multi-storey residential and commercial buildings in cities.

NEFH Vice-President, Engineer Nadeem Ashraf, delivered the vote of thanks.

At the event, 50 companies and industries were given awards by the Caretaker Local Government Minister for showing excellence in adopting fire safety measures in their offices and industrial set-ups.

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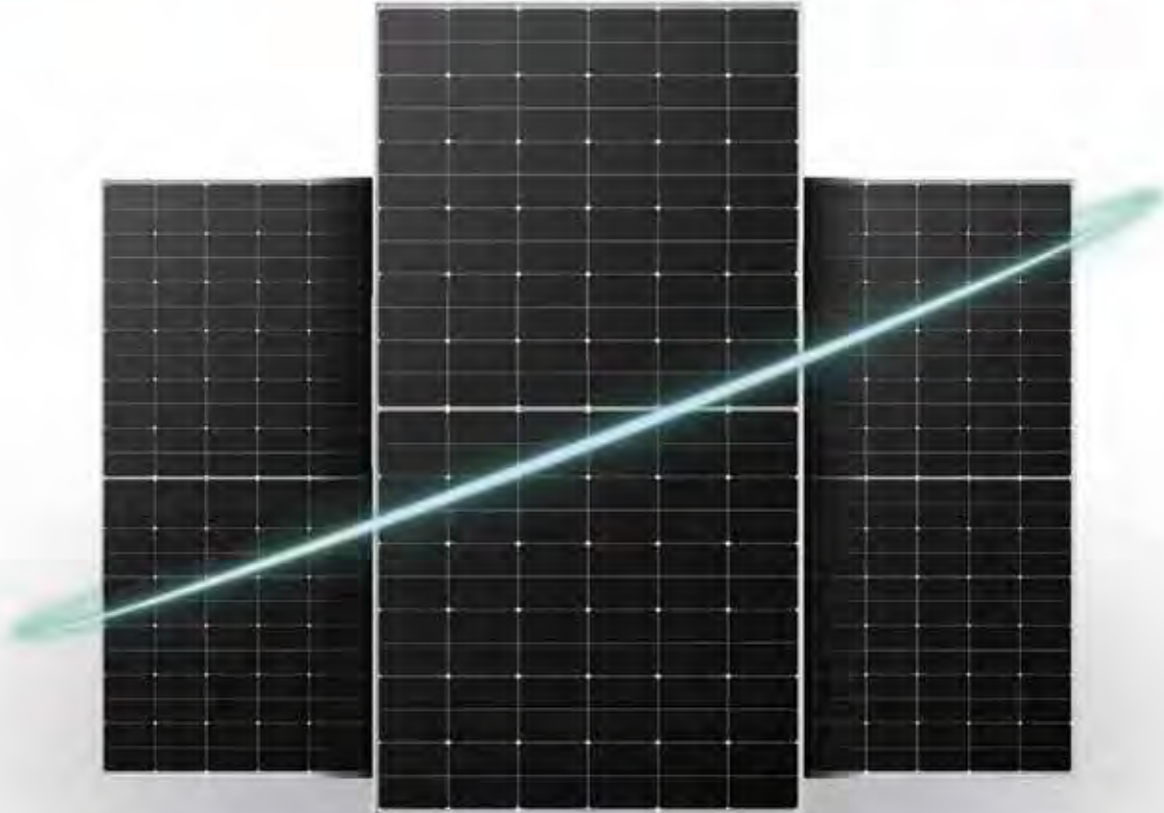


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CLIMATE ADAPTATION

How realistic are aims in Pakistan?

Facing failure in the face of this key target, global climate leaders are seeking success elsewhere; there is need to adjust social, economic and ecological systems to adapt to the reality of climate change and its impacts

Huma Yusuf



The writer is a political and integrity risk analyst

World War III will get us before climate change. This is an increasingly common refrain, an understandable response to tragic and terrifying world events. As the Israel-Gaza war dominates headlines, it's not surprising that developments in the lead-up to the annual UN climate change conference, COP28, have been sidelined. But one disaster does not negate another, and we will equally have to contend with conflict and the consequences of climate change. For most Pakistanis, the latter is arguably more immediately existential.

The World Meteorological Society in May this year reported that the world would by 2027 breach the 1.5 degrees Celsius climate threshold agreed at the 2015 Paris climate summit, meaning that average global temperatures are likely to rise by more than 1.5°C above pre-industrial levels. That's three years away. How old will you be? Your children?

Facing failure in the face of this key target, global climate leaders are seeking success elsewhere. Attention is turning to climate adaptation — the need to adjust social, economic and ecological systems to adapt to the reality of climate change and its impacts. Climate efforts so far have coalesced around mitigation (reduction of GHG emissions), but there is growing recognition that as we seem incapable of giving up our addiction to fossil fuels, we must learn to

adapt to the consequences of burning them.

According to a recent UN report, developing countries need \$387 billion a year to adapt to climate change, an amount that has increased by \$47bn since the last count. The UN report found that the adaptation financing need was 10 to 18 times more than current international public finance flows, which have dwindled in recent years. According to former climate minister Sherry Rehman, Pakistan alone needs \$348bn by 2030 to build climate resilience. But as of November 2022, the country had only received \$86.2 million since 2016 in bilateral grants with a climate adaptation focus. The numbers are stark enough that the president-designate of COP28 last week conceded that adaptation doesn't get adequate finance.

How realistic are climate aims in Pakistan?

Pakistan has already recognised the need to prioritise adaptation (floods that put over one-third of your land mass under water would do that). The climate change ministry in July published Pakistan's first-ever National Adaptation Plan (NAP). The plan was 11 years too late as per the country's own climate strategy, but timely in the run-up to COP28.

Covering the seven-year period to 2030, NAP aligns with UN's best practice approaches and climate adaptation frameworks. Its recommendations also align with key findings of a recent McKinsey report that advocates for a systemic approach to climate adaptation. That approach highlights the importance of "a climate risk management mindset; technological and behavioural adaptation levers; economic and societal adjustments; and governance, institutional support, and commitment".

McKinsey's economic and societal adjustment bucket calls for "compensating

mechanisms for vulnerable communities and institutions" and under its governance category it pushes for community awareness and engagement. Pakistan's NAP echoes these principles with recommendations for evidence-based decision-making, the need to act locally, and a major emphasis on inclusion and equity (particularly for women, youth and marginalised communities), and with clear language promoting social justice and insisting that no one be left behind.

Here's the elephant in the room. These principles are not the reality of our society. Inclusion and equity are an afterthought when it comes to other areas such as access to health-care, justice, rule of law, education or public finances. Adaptation strategies will indeed work best when developed and implemented locally, but how will that work in a country that shuns and disempowers local governments? And women and marginalised communities are no doubt most at risk from climate impacts, but given how we violate their rights in normal circumstances, why would we behave differently when faced with heat, floods or fire?

Critiques of climate adaptation approaches are still too high level. McKinsey celebrates that 84 per cent of the parties to the UN Framework Convention on Climate Change have adaptation plans, but points out these are not grounded in the physical risks they ameliorate, do not articulate financing needs, and are yet to be executed. Even critiques of NAP focused on the lack of details around financing mechanisms and the scant specifics on implementation. But there is little mention of the disconnect between adaptation planning and societal attitudes more broadly. Without meaningfully changing ourselves and our society, we will not successfully adapt to a climate change-affected world. ■

Courtesy Dawn

LONGI's grand reopening celebration in Lahore marks a milestone

EU Report

In a dazzling celebration that captured the essence of innovation and sustainable development, Longi's Distributed Middle East-Africa Regional Office-Central Asia Representative Office in Lahore, Pakistan, celebrated its grand reopening on November 12, 2023. The event garnered widespread media attention, showcasing the company's commitment to advancing the clean energy sector in the region.

The ribbon-cutting ceremony, attended by local government officials, industry leaders, strategic clients, and customer representatives, symbolized Longi's dedication to the Pakistan region. Ali Majid, the Regional Sales Director for the office, delivered an inspiring opening speech, emphasizing Longi's commitment to promoting and developing photovoltaic energy projects in Pakistan. He outlined the company's vision and mission, highlighting ongoing efforts to contribute to the local economy and sustainable development.

Tian Wentao, Director of the Product Solutions Department, underscored Longi's leading technological position and consistent innovation in the renewable energy field. The Lahore representative office, he stated, not only expands Longi's international business footprint but also deepens its presence in the Middle East-Africa region market.

A significant highlight of the event was the insight shared by Murtaza Solangi, Minister of Information and Broadcasting in Pakistan, regarding the country's energy crisis. He commended Longi and other Chinese companies for their continuous investment in renewable energy since the establishment of the China-Pakistan Economic Corridor. This collaboration has played a crucial role in addressing Pakistan's energy challenges, marking Longi's presence as a beacon of progress.

As Longi takes this new step in Lahore, the company is set to contribute significantly to Pakistan's sustainable future, showcasing the power of global collaboration in tackling pressing issues such as the energy crisis. The grand reopening celebration echoes a positive narrative of progress, cooperation, and a shared vision for a cleaner, greener future. ■



Special Facilitation Investment Committee making waves?

Anjum Ibrahim

Special Facilitation Investment Committee (SIFC) was established by the Shehbaz Sharif-led government on 17 June 2023, and has since come under considerable criticism - by Shahbaz Sharif haters who maintain that it reflects his sustained capitulation to the establishment, this time at the cost of democracy, by Finance Ministry officials (reportedly led by former finance minister Ishaq Dar whose flawed economic policies have significantly contributed to the current appalling state of the economy) for not subordinating the entity to the Finance Ministry, and by analysts for inducting army personnel in an area for which they may not have the necessary expertise.

Criticism is therefore not focused on SIFC's objectives or functions but on the chain of command and the composition of its membership. SIFC has three tiers of decision making: (i) apex committee headed by the Prime Minister and including provincial chief ministers and the chief of army staff - a membership designed to ensure smooth synchronized implementation of policy decisions to achieve the best results; (ii) Executive Committee (to be headed by the Planning, Development and Special Initiatives Minister with representation from all relevant ministries/provincial secretaries and a Major General from the Pakistan Army); and (iii) Implementation Committee organised into SIFC Secretariat with Sectoral Divisions for planning, coordination and execution of projects as well as a Director General

from Pakistan army and five coordinators from the army.

The twin salutary objectives of SIFC are facilitating foreign investment inflows (immediate target of 5 billion dollars, 60 billion dollars in five years and 100 billion dollars in the long term) and economic revival. Details of the SIFC functions are noted in the 4 August 2023 Act No XLI of 2023 published by the Gazette of Pakistan ranging from acting as a single window for multi-domain cooperation in relevant fields with Gulf Cooperation Countries (GCC) in particular and other countries in general for facilitation of investment and development of an enabling policy environment to recommending approvals, to executing commercial transactions and/or entering into arrangements for agreements, directly or indirectly, with local and foreign investors, to considering individual investment proposals as well as categories of investment that require special treatment and recommending where appropriate, additional incentives for relaxation in the regulatory and policy framework.

For the fulfilment of these functions the SIFC was granted the power to issue directives/summon regulatory bodies, public sector entities, divisions and departments of the federal government.

And, finally, the standard addition in the stated functions notably SIFC could perform any other function assigned by the federal government. Immunity has been granted to SIFC (or any of its members or consultants) for any act done, procedural lapse suffered or omission made in exercise of performance of any functions, power or duty conferred.

The objectives specified have to-date enabled the SIFC to take decisions relating to privatization of two white elephants - Pakistan Steel and Pakistan International Airlines - and in functions associated with the Board of Investment.

The following recommendations/decisions have been reported so far: (i) Finance Division and the State Bank of Pakistan to clear the outstanding bills due to Chinese Independent Power Producers (IPPs) as the failure to release the funds, due to paucity of foreign exchange reserves, has reportedly led to increasingly acrimonious exchange with the Chinese that is compromising the inflow of other project assistance under China Pakistan Economic Corridor (CPEC) umbrella; foreign exchange reserves on 3 November were a low of 7511.5 million dollars - less than two months of imports and with the failure of the government to secure the budgeted market financing of around 6 billion dollars at affordable rates (due primarily to no upgrade by rating agencies subsequent to the International Monetary Fund's approval of the Stand By Arrangement) clearing the dues to the Chinese IPPS may have to be further deferred; (ii) to scrap the previous three elected governments' proposal to provincialize distribution companies and instead to implement private sector management control; (iii) take PSM out of the list of privatization and to consider use of PSM land for setting up an export processing zone; (iv) appoint a financial advisor for sale of PIA assets; and (v) talks on possible Saudi Arabia partnership/investment in the Reko Diq deal.

These measures, apart from (v), were ex-



tensively debated during previous administrations, including during the tenure of the deceased powerful dictator Musharraf, however implementation remained pending due to lack of an appropriate environment conducive to attract investment and in terms of (iii) and (iv) due to organised resistance by powerful unions, many a time supported by opposition leaders. It would undoubtedly be deemed a success if the SIFC decisions are implemented where previous three civilian and a military administration failed. Success, however, is likely to be undermined by the expected return of a civilian set-up that had failed to implement these policies in the past.

If the next government is led by Nawaz Sharif, as is widely believed, then in spite of the honeymoon period he is currently enjoying after his four-year absence from the country the chances of Ishaq Dar's reappointment as the finance minister are high – a decision that would almost certainly upset the applecart in general and the SIFC applecart in particular sooner rather than later.

Reports also indicate that the Finance Division has given a detailed briefing to the SIFC on the state of the economy though the recommendations/directives, if any, have not been made public. Suggestions relating to economic policy decisions by the SIFC are as follows: (i) provinces must share the expense of subsidies (particularly for supply of urea); and (ii) provinces must share the cost of Benazir Income Support Programme to the extent of the numbers served in a partic-

ular province. Again these proposals have been on the cards for quite a while and, if implemented, would strengthen support for SIFC.

Two possible areas of concern with respect to the SIFC decisions and their implementation are as follows: (i) foreign investment inflow at whatever cost must not be the overarching objective with little attention paid to the terms of the contract.

The contracts signed with IPPs under CPEC are the reason for high tariffs today; and (ii) logjams may occur due to political considerations; especially, when the centre and any of the federating units are being administered by different political parties, as is widely expected. In this context it is relevant to note that the 2010 passage of the eighteenth amendment that envisaged devolution of social sector subjects to provinces (based on the tenth National Finance Commission award also agreed in 2010) that raised the share of the provinces in the divisible pool remains unimplemented to this day.

To conclude, SIFC's membership can be supported given the current rise in security threats and the red tapism due to persistent lack of federal and provincial coordination on several matters as is the intent of the SIFC members to attain development not by increasing borrowing, as in the past, but by attracting foreign investment but one would caution given our past: economic policies (monetary and fiscal) must not be held subordinate to political considerations. ■

Courtesy: Business Recorder

IMC generates 4.5MW solar energy

EU Report

Chief Executive Indus Motor Company Ali Asghar Jamali has said that IMC has been using the largest solar plant by any automobile company in the country with 4.5MWs energy generation as they are committed to increasing green energy's share in their overall energy consumption.

He was speaking at the "Champions of Change: A Dialogue with the Private Sector" conference held here on the severe impacts of emissions on Pakistan's health, lives, and the environment. "Toyota's global commitment is to go carbon neutral by 2035 and reach out to net zero emissions by 2050.

Thus, IMC is using energy-efficient equipment to reduce carbon footprints," said Jamali, adding that all IMC buildings are covered with solar panels.

The conference paved the way for the launch of two ground-breaking research studies "Scoping Study of Corporate Sector Energy Consumption" and "Textile and Sports Industry - Assessing Decarbonisation and Growth Potential".

The first study was conducted by the Indus Consortium in collaboration with the Centre for Business and Economic Research (CBER) at IBA which focused on the energy consumption of corporate sectors, particularly the findings related to Indus Motor Company (IMC) and Coca-Cola Beverages Pakistan. ■

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Abnormal Noise from Inverter: Causes and Solutions

Inverters operating at high or full power sometimes exhibit abnormal noises, ranging from subtle to more pronounced sounds. What causes these issues, and how can they be resolved? This Solis seminar will analyze typical causes of abnormal noise and share effective solutions.

Abnormal sounds from inverters can normally be categorized into the following categories:

This often occurs when the inverter is running at high power or full power, and the fan needs to dissipate heat. If the fan isn't operating as it should, it will produce a more distinguishable sound – when prolonged this may affect the working order of the inverter.

This type of noise is primarily caused by internal inductance vibrations or unsteady inverter installations. These factors can cause operational vibrations, resulting in unwanted noise that hampers the inverter's performance and lifespan.

Abnormal fan noise can be attributed to the following factors

The field inverter installation spacing is not reasonable (normal spacing $\geq 0.5\text{m}$), resulting in timely heat dissipation, high temperature makes the fan frequently start, the fan rotation shaft loses lubrication, and the operating condition deteriorates, causing noise.

Refer to the installation requirements of the product manual, correct the installation position, expand the spacing, to ensure smooth heat dissipation, as illustrated above.

As the inverter cooling fan rotates, it collides with foreign bodies resulting in noise. This may cause the fan to fail to rotate, as shown in the below image:

Clear any debris around the inverter, and check whether there is foreign matter in the fan and air duct, clean promptly if so, and test (as below) whether the fan rotates well after cleaning. If the fan is damaged, replace it promptly.

Test process: Main menu

(Or hold down ESC for more than 3 seconds to start the fan, and press the up and Down keys for more than 3 seconds to stop the fan).

Blocked heat dissipation duct: When the heat dissipation duct is blocked, the cooling performance of the inverter will be reduced. Since the fan's operation is signal-controlled by a temperature sensor, it operates at high speed for extended periods when the heat dissipation duct is obstructed, resulting in increased

abnormal noise.

Solution: Make sure the radiator slot is free of foreign objects and that there is enough space at the top and bottom of the inverter for easy air circulation.

Fan-related issues: Problems with the fan itself or insecure installation can lead to noise. Blade breakage during inverter installation can disrupt the fan's balance and cause noise during rotation. Loose fastening screws on the fan and protective cover can result in noise due to fan shaking and friction during operation.

Solution: If the fan is damaged, replace it. If the fan exhibits abnormalities, ensure screws are securely tightened. Perform a fan test after adjustments (as below).

Add protective measures

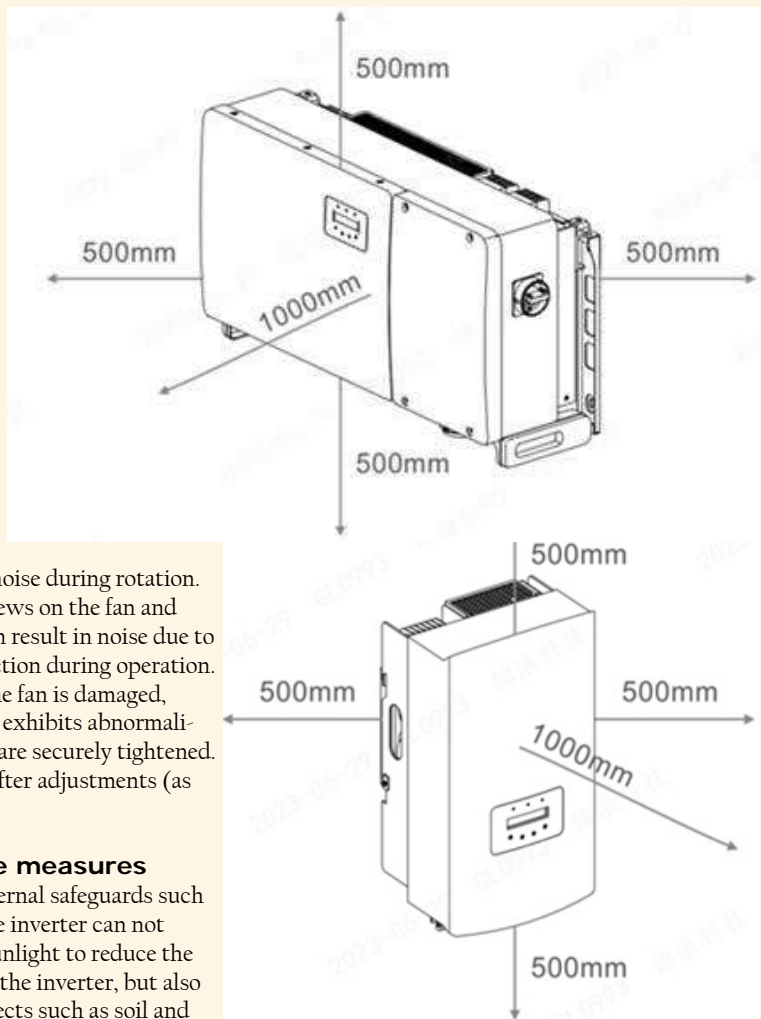
The addition of external safeguards such as sunshades for the inverter can not only block direct sunlight to reduce the temperature rise of the inverter, but also prevent foreign objects such as soil and leaves from blocking the heat dissipation channel and the fan.

Other sources of abnormal noise

Even after addressing abnormal fan noise, the inverter may still exhibit running noise. This could be attributed to the following issues:

Inductance whistling: The main cause of inductance whistling is poor quality power from the local grid. This results in the inverter's internal filter sensing an irregular and intense electromagnetic field, leading to coil jitters and magnetic core vibrations. You can assess this by sound judgment or measuring waveforms with an oscilloscope.

Solution: Inductive whistling is mainly affected by the quality of the power grid, you can examine this through an oscilloscope and power quality tester. Alternatively seek assistance from a Solis technical assistance. Solution may be tailored according to the



specific test results.

Insecure inverter installation: The inverter is not firmly installed on site: the screws on the back plate of the inverter are loose or the screws are not locked during installation, resulting in vibration during the operation of the inverter, which makes a significant noise.

Solution: Tighten the loose screws to eliminate abnormal vibration of the inverter. If the installation site lacks sufficient stability, consider relocating the inverter.

Conclusion

Abnormal inverter noise, while uncommon, can disrupt the product's performance. Therefore, conducting a comprehensive investigation is vital. Careful assessment, exclusion of potential issues, and regular maintenance are vital to ensure the inverter continues to operate reliably and efficiently. ■

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seals top position in Pakistan's solar sector with EUPD certification and inverter shipments

SolaX emerges as the exclusive EU- PD-Certified Solar Solution Supplier in Pakistan, achieving a significant milestone by securing the prestigious TOP Brand PV Inverters accolade from EUPD Research for both 2022 and 2023. This remarkable accomplishment solidifies SolaX's unrivaled leadership in Pakistan's solar energy sector.

In a groundbreaking revelation, customs data highlights SolaX Power's dominance, securing the top position in grid-tied inverter shipments in Pakistan. This achievement underscores the profound confidence consumers place in SolaX products and reinforces the company's commanding market presence.

To further elevate customer satisfaction and address any challenges promptly, SolaX strategically establishes a local service center in Pakistan. This service center boasts a team of highly skilled technical professionals committed to delivering swift and effective solutions. Recognizing the importance of localized support, the SolaX service center serves as a hub for troubleshooting, maintenance,



and consultations, ensuring personalized and timely assistance for valued customers.

As the preferred choice for consumers seeking top-notch solar solutions, SolaX

offers a diverse and reliable product portfolio. From residential to commercial and industrial inverters, along with batteries, SolaX products are renowned for their performance and innovation.

SolaX introduces the X3-MIC G2 and X3-PRO G2, ideal for small commercial PV arrays. The X3-MIC G2 features two MPPT trackers, while the X3-PRO G2 offers three, both achieving a maximum efficiency of over 98%. Catering to commercial and industrial scenarios, the X3-FORTH boasts 12 MPPT, 32A input current, and 150% oversized PV power for optimal yield. The X3-MEGA G2 stands out with an impressive 98.4% efficiency and the highest DC voltage of 1100V.

In addition to product excellence, SolaX spearheads innovative initiatives, including the MW Club and SolaX Academy, acting as robust platforms for knowledge exchange and continuous improvement. Through comprehensive training programs and ongoing support mechanisms, SolaX actively contributes to the local energy ecosystem in Pakistan, ensuring installers stay abreast of industry advancements.

For further information on SolaX's cutting-edge solar technologies, please contact info@solaxpower.com or info@fronus.com. ■

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Loss-making Discos: Who tops the chart?

Engr Tahir Basharat Cheema



The writer is B.E. (Elect), Dip. Pub. Admn, Dip. Bus. Admn., Cert. Statistical Sciences, M.B.A. and former MD PEPCO, former President I.E.E.E.P. Former Caretaker President I.E.E.E.P

Unfortunately, the Pakistan Power Sector is never away from the public eye—specifically, since the last two decades. Media, primarily, picked-up the then ongoing negotiations with the notorious IPPs in the early 2000s and then the continuing power crises pushed everything behind it.

It has been so since 2007 barring a few years around 2016 and 2017, when the new power plants started pumping badly needed MWs in the system. From thence so onwards, affordability issues have taken over any possible availability constraints. At present, the back-breaking electricity tariffs (comprising of everything under the sun) are the bane. So much so, that we have presently seen extensive protestations in the Country that were even more in emotionalism than what was happening in 2009-2011 on account of debilitating power shortages. Like always, both the people and the governments start quoting privatization as the solution. That KE's earlier privatization has not netted anything for the poor customers nor for the GoP is off-course forgotten.

Imagine the amount of subsidy which the GoP has to dole out to KE for maintaining a decent tariff for its customers, while its privatization had envisioned a paradigm change and even utopia for the helpless customers of Karachi. For the nth time in our history, the tomes also agree to the solution but with a caveat that this time the privatization has to be taken up in the merit order of those companies – which are loss-making the most. And in a jiffy, the attention is diverted to the poor DISCOs servicing Northern Sindh, Baluchistan and the KPK (exclusive of TESCO which serves the erstwhile FATA).

In fact, LESCO is the most loss-making Disco in the country – specially, when PESCO serves the whole of the KPK and that this province is marred by very serious terrorist and law and order situation. Similarly, is the situation of QESCO. It also needs to be understood that much is wrong with the Disco data being issued for all concerned each month. As a first, we see that there is no metering in the erstwhile FATA

areas (may be nothing else could be done) and the losses are being calculated on the basis of a notional loss of 25%. Similarly, the actual figure for QESCO is surely very high because the 28% calculated each month is sadly based on billing of the 32,000 tube-wells (tagged and the un-tagged ones) on the average basis. Any correction by metering the tube-wells or by simply taking them off from the loss data sheet would double the actual loss of QESCO. Not to be left at this, it is only now that we hear about over billing in a Company like LESCO – which if considered would simply change the dynamics and standing of Discos on the loss table.

Consequently, there is a need to develop the right formula for comparing the various Discos whereby the best candidate(s) for any

treatment could be selected. Experts agree that any comparison based on percentage is simply wavered and thus cannot be the true depiction of the loss or profit of a particular Disco.

Once the required management concessions have been awarded and implemented, the decision makers would be able to firm-up the required policy whereby other Discos, but in the real order of loss precedence, could be taken-up for any process in earnest. The above exercise would also assist both the regulator Nepra and the governing Power Division to properly manage the Sector without the present hesitation and a focus on the wrong culprits.

It, however, does not mean that the smaller of the DISCOs have to be let loose. These too, have to be treated appropriately; however, while considering and proposing solutions for the specific threats being faced there, which incidentally, is not common to the Punjab DISCOs. The afore-stated way of treating the various DISCOs is the only solution to the present debilitating issues and which can reap a bonanza s for the country ■

Unity Foods teams up with PET to achieve zero emissions



EU Report

Unity Foods Limited (UFL) and its affiliated companies have embarked on a transformative journey towards a more sustainable and environmentally responsible future. In a landmark initiative, UFL has teamed up with the Pakistan Environment Trust (PET) to commit to achieving Net Zero emissions by the year 2050, solidifying their dedication to combat climate change and reduce their carbon footprint.

UFL and PET have signed a Memorandum of Understanding (MoU) that encompasses a multi-faceted strategy to decarbonize their operations and foster responsible environmental practices. The strategy includes conducting a Comprehensive Emission Assessment to conduct a thorough evaluation of greenhouse gas (GHG) emissions across all three scopes—Scope 1, Scope 2, and Scope 3. This in-depth assessment will serve as the cornerstone of the decarbonization strategy, providing a clear and data-driven perspective on the carbon footprint.

The alliance between UFL and PET also extends to a steadfast commitment to Science-Based Targets (SBTi). By aligning their goals with the latest scientific recommendations and industry standards, UFL and PET aim to ensure that their decarbonization efforts are not only ambitious but also grounded in validated methodologies. Further, by embracing the SBTi framework, UFL and PET are laying the groundwork for consistent investments in decarbonization measures. This structured approach enhances the effectiveness of their efforts and ensures a clear pathway for financial and resource allocation, supporting long-term sustainability in their journey towards Net Zero emissions. UFL and its subsidiaries, in partnership with PET, are not only addressing their carbon emissions but also setting a new standard for environmental responsibility within their industry. Their commitment to Net Zero emissions signifies a proactive stance in the global fight against climate change, setting an example for businesses worldwide. ■



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8 Regional Offices

Pakistan plans to raise power capacity by 40pc

Munawar Hasan

Pakistan is planning to boost its installed power generation capacity by 40 percent in the next eight years, as it seeks to meet the growing demand for electricity and shift to cleaner sources of energy. The country aims to increase its power capacity from 45 gigawatts to 63 gigawatts by 2031, according to an official document. The plan, which is under the Special Investment Facilitation Council (SIFC), is based on a projected 5 percent average annual growth in the next eight years. By 2025, Pakistan plans to enhance installed power capacity to 51GW.

Although 40 percent jump in power generation seems a lot, the country's aim to expand power generation capacity seems a modest addition in terms of electricity demand and per capita consumption. In comparison, India's current power generation capacity is 417GW, almost ten times more than Pakistan's, whereas its population stands at over 1.4 billion, about six times bigger than Pakistan.

India plans to increase its power capacity to 900GW by 2031-32, a 116 percent increase. Despite concerns about climate change, India plans to increase its share of power generation from coal to 260GW from the current 205GW. Pakistan on the other hand is least interested in developing cost-ef-

fective indigenous Thar coal in future, which was once considered a panacea for addressing energy woes effectively.

Unlike the regional trend, power establishment in the country is least interested in exploring cheap indigenous coal for power generation in run up to year 2031 under the SIFC plan. The share of locally produced Thar coal, one of the cheapest sources for electrifying the national grid, is expected to increase from 5 percent to just 7 percent by 2031. It should be noted that that presently electricity generation from Thar coal is one of the cheapest sources for electrifying the national grid. It does not require any foreign exchange compared to imported coal or other fuels including Re-gasified Liquefied Natural Gas (RLNG).

PPL makes gas and condensate discovery in Sindh



EU Report

Pakistan Petroleum Limited (PPL) and its joint venture partners have made a gas and condensate discovery at an exploration well in Shah Bandar Block in Sindh province, the company said on Monday.

The Jhim East X-1 well, operated by PPL with a 63 percent working interest, was drilled to a depth of 2,545 metres and tested the hydrocarbon potential of the Lower Goru formation, PPL said in a statement.

The well flowed 13.69 million standard cubic feet per day (MMscfd) of gas and 236 barrels per day of condensate at a wellhead pressure of 2,668 psig at a 32/64 inch choke.

"Based on the drilling results and wireline logs, potential hydrocarbon bearing zones were identified. During testing of

Lower Goru upper sand (A sand), the well flowed 13.69 MMscfd gas and 236 barrels/day condensate at wellhead flowing pressure of 2,668 psig at 32/64" choke," the company said. "The well is being further evaluated to obtain necessary information about its performance."

The discovery is the second one in the Shah Bandar Block, which covers an area of 2,467 square kilometres in District Sujawal, Sindh. The other joint venture partners are Mari Petroleum Company Limited with a 32 percent stake, Sindh Energy Holding Company Limited and Government Holdings (Private) Limited with 2.5 percent each.

The well was drilled and tested using indigenous expertise and will add hydrocarbon reserves to reduce the gap between energy supply and demand in the country, PPL said.

Growatt launches SPH 10000TL-HU inverter for Pakistani solar market

Growatt, a global solar inverter and energy storage solutions provider, introduces the SPH 10000TL-HU inverter to address the dynamic Pakistani solar and energy storage market. With three MPPTs, it efficiently handles high-power solar modules, achieving an impressive 97.5% efficiency and supporting a 1.5 DC/AC ratio for seamless solar panel integration.



The inverter prioritizes safety with type II SPDs on both AC and DC sides and an AFCI for fire prevention. It supports parallel operations, allowing scalability with up to six units for a maximum 60kW system capacity. Integration with diesel and gas generators ensures a reliable power supply during outages or unstable grids.

Featuring a robust 200A battery charging and discharging current and a 10 kW power, the SPH 10000TL-HU guarantees ample electricity for emergency loads. Growatt's user-friendly ShineServer platform and ShineTools app simplify operation and maintenance, reducing on-site visits and minimizing costs.

The SPH 10000TL-HU marks Growatt's stride in revolutionizing the Pakistani solar market, offering an efficient, scalable, and safe energy solution to meet the region's unique needs.

SOCIAL AND BUSINESS ROUND UP



Country Head Growatt PK Mian Fahad with Government and private sector dignitaries at an Event organized by Growatt PK in Islamabad.



Jason Avancena CEO Nestle Pakistan presented corporate contribution of PKR 5 million to Sourya Anwar, President SOS Children's Villlage to support the welfare, upbringing and education of hundreds of orphan children.



Team Energy Update met with Federal Minister Energy Muhammad Ali at his office in Islamabad



At Solar Expo Peshawar a group photo with Saleem Diwan, Sarmad Wahab, M. Naeem Qureshi and Engr. Nadeem Ashraf



SDPI holds renewable energy conference in Islamabad. A Group Photo with MD PPIB Shah Jahan Mirza, Hammad Yasir, Naeem Qureshi, Dr. Hina Aslam and Halima Khan



Meeting with ED OGDCL Zia Salahuddin with team Energy Update and NFEH on CSR & Environment activities.



Team Energy Update met with Chairman Rehman Habib Consultant Rana Amir, Director Zafar Iqbal Watto at Lahore



Solar Expo Peshawar. A group Photo with Secretary Energy KPK, Engr. Naeem Khan CEO PEDO, Naeem Qureshi, Engr. Nadeem Ashraf and others

All-out efforts on to provide energy: minister

Growatt, a global solar inverter and energy storage solutions provider, introduces the SPH 10000TL-HU inverter to address the dynamic Pakistani solar and energy storage market. With three MPPTs, it efficiently handles high-power solar modules, achieving an impressive 97.5% efficiency and supporting a 1.5 DC/AC ratio for seamless solar panel integration.

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Islamabad: Minister for Energy Muhammad Ali inaugurated the Exhibition at 29th edition of Annual technical conference and Oil Show.

Peshawar's first solar exhibition, ISEM Peshawar, sparks excitement in Khyber Pakhtunkhwa!



Peshawar hosts its inaugural International Solar Energy Meet at Monal Marquee, featuring 50+ companies unveiling the latest in solar tech. Organized in collaboration with Pakistan Solar Association and supported by key partners like PEDO and Khyber Chamber of



Commerce, the event showcases advancements in battery tech, PV modules, and solar financing. Visitors explore affordable renewable energy solutions for homes and offices, marking a significant step towards a sustainable future.



Beaconhouse Jubilee Campus holds event showcasing sustainable fashion talent of its students

Beaconhouse Jubilee Campus showcased the sustainable fashion achievements of its students, launching "The Green Raiment," Pakistan's first school-led sustainable fashion brand. The exhibition featured 61 dresses and 100 accessories made entirely from recyclable materials, reflecting the students' year-long dedication.

The event attracted prominent figures in the fashion industry, such as Uzma Munaf (CEO of Sana Safinaz), Huma Adnan (CEO of CraftStory FNKAsia), Amneh Sheikh (CEO and founder of Polly and Other Stories), and Asiah Seemab (Head of the School of Fashion and Design at the Indus Valley of Arts and Architecture). These guests commended Beaconhouse students for promoting sustainable fashion trends and encouraged students from other schools to follow suit.

PRL signs licence deals with Honeywell UOP, Axens



EU Report

Pakistan Refinery Limited (PRL) has signed pivotal license agreements with global technology providers Honeywell UOP and Axens for its ambitious Refinery Expansion and Upgrade Project (REUP), the company said.

"PRL has signed pivotal license agreements with renowned industry leaders Honeywell UOP and Axens, for its ambitious REUP," the PRL said in a filing to the Pakistan Stock Exchange (PSX).

The REUP project aims to double PRL's refining capacity from the current 50,000 barrels per day (bpd) to 100,000 bpd and upgrade the existing configuration from hydro skimming to a deep conversion refinery, enabling it to produce value-added products and Euro V-compliant fuels. "Our partnership with Honeywell UOP and Axens marks a significant milestone in our

journey towards refinery modernisation," said Zahid Mir, Managing Director and CEO of PRL. "We believe that these collaborations will play a crucial role in shaping the future of Pakistan's energy landscape."

PRL said it has selected state-of-the-art process technologies from Honeywell UOP and Axens for bottom-of-the-barrel conversion, naphtha processing, and gasoline and diesel upgrading. The conversion would enable it to produce value-added products and Euro V-compliant (European emission standards) fuels that are environmentally preferable to legacy automotive fuels. "PRL has selected state-of-the-art process technologies from these global technology providers," the company's statement said. Honeywell UOP will provide the Residue Fluidized Catalytic Cracking Process, the LPG Merox process, and a naphtha complex, featuring a naphtha hydrotreater and a CCR Platforming unit.

"OGDCL successfully fast-tracks Khewari Project, enhancing gas supply efficiency"

OGDCL has successfully concluded the Khewari Development Project using a strategic fast-track approach. The project, located in the Sanghar district of Sindh province, has a potential of 10 MMSCFD, with gas processing at the Sinjhoru Plant. Through efficient processes and timely delivery, OGDCL laid a 6-inch pipeline over 14.5 kilometers, connecting the Gathering Facility to the Chabaro Tie-in point for



early gas injection into the SSGC system. OGDCL, with a 77.50% stake, operated the joint venture in collaboration with GHPL holding 22.50%. This accomplishment aligns with OGDCL's broader initiative to boost efficiency, optimize production, and contribute to addressing energy demand through local resources, demonstrating its commitment to a sustainable and reliable energy future for the nation.

Ghani Chemical Industries to Build \$5-5.5M Coal Power Plant

Ghani Chemical Industries Limited (GCIL) is set to enhance its market share in southern Pakistan by establishing a \$5-5.5 million, 7 MW coal power plant near Port Qasim. The plant, utilizing local and imported coal, will power the company's air separation unit (ASU) plants, leading to an anticipated 45-50% reduction in power costs compared to grid electricity. Additionally, the board plans to relocate one of its ASU plants from Phool Nagar to meet growing demand for medical and industrial gases in the southern region, providing backup support for its operations across the country. ■

Climate damage fund hailed, but 'needs billions rather than millions'

The launch of a climate "loss and damage" fund drew praise and hundreds of millions of dollars in pledges at the UN's COP28 talks but also warnings that much more is needed to help vulnerable nations.

"We have delivered history," the UAE's COP28 president Sultan Al Jaber told delegates who stood and applauded after the decision's adoption in Dubai. The announcement was followed immediately by financial pledges, including 225 million euros (\$246 million) from the European Union, \$100 million from the United Arab Emirates, another \$100 million from Germany, \$40 million from Britain, \$17.5 million from the United States and \$10 million from Japan. ■

Honda unveils its first electric motorcycle

Chief Officer of Motorcycle and Power Products at Atlas Honda, Noriaki Abe, unveiled Honda's inaugural electric vehicle (EV) motorcycle, the Honda BENLY-e, as part of the celebration of Atlas Honda's 60th year of operations in Pakistan. The unveiling took place during a ceremony at Atlas Honda's Sheikhpura factory and was attended by Shinji Aoyama, Executive Vice President and COO of Honda Motor Company, and Toshio Kuwahara, President and CEO of Asian Honda Motor Company, according to a press release. ■

Mughal Iron & Steel Industries completes acquisition of energy subsidiary

Mughal Iron & Steel Industries Limited, one of Pakistan's largest steel manufacturers, has successfully completed the acquisition of Mughal Energy Limited (MEL). The company shared the development in its notice to the Pakistan Stock Exchange (PSX). ■



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