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FROM THE

Editor's desk...

Upcoming power sector challenges

Pakistan in the new year 2024 is set to face daunting challenges in power sector as it is still being hit hard by worst-ever gas crisis, high oil prices, deficient policies, lack of investment, crippling socio-economic conditions, electricity theft, population growth, corruption, and lack of good governance. There is no hope of the significant improvement in this sector as we have almost same politicians and same upcoming faces in the government. Since the inception, the big claims of rulers have proved to be hollow slogans.

The biggest challenge to the power sector will be the new upcoming government as the country needs honest rulers who can devise new power policy based on modern lines, build indigenous coal-fired and solar power plants, and reduce gas supply to industries for relief to domestic consumers.

There should be no denying the fact that the energy crisis and its highest-ever prices in the country are the result of ill-energy policies and lack of interest by all successive rulers in public service as they have always been seen busy in saving power chairs rather than making effective and efficient energy policies.

Almost, all the successive governments have failed to reduce energy prices which are affecting the progress of the people, commercialization, and industrialization. Natural gas and imported LNG contribute more than 40 percent to the country's current energy mix, including gas resources used in electricity generation. In recent years, the demand for gas has increased rapidly in Pakistan. But, gas exploration and production have declined, and the LNG operational and regulatory framework is weak, leading to a nationwide shortage and increased supply costs.

Energy investment in Pakistan are direly needed, so they should be raised by 100 in phases during the next five years as compared to existing investments. The major share of IMF loans should be used in the power sector as it will help reduce oil import bill. The three principal drivers of increase in energy demand are the surge in economic activities, population growth and rapid technological transformation in the world.

Currently, global economy faces higher energy prices which may remain intact due to the Russian-Ukraine war, affecting Pakistan's power sector. The war has led to significant disruptions to the production and trade of commodities for which Russia and Ukraine are key exporters. World Bank's (WB) latest forecasts indicated that war in Ukraine is set to trigger the largest commodity shock. This would contribute to huge price surge for energy related goods including oil and natural gas.

Pakistan has higher solar power potential, so there is need to materialize and use it with effective and efficient policies. For this, favourable government policies, increasing adoption of solar PV systems, the cut in price of solar panels and installation costs are required. Pakistan has abundant solar irradiance and receives solar energy almost throughout the year. This factor presents a phenomenal opportunity to exploit solar energy from the most irradiated sites in the country, combined with foreign investments.

In power sector, there is also need to eradicate corruption and control power theft, because these evil deeds are very harmful and without eradicating them, Pakistan could not make progress in power and other sectors which are inter-linked to each other.

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Transitioning away from fossil fuels

COP28 has ended with a compromise solution

Syed Akhtar Ali

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

COP28 has ended with a compromise solution. There was one side, led by the developed countries, and climate activists which emphasized fast-tracked and definite end to fossil fuel. There was another side, led by oil producing countries mostly, which opposed fast track approach and asked for a gradual approach.

The final text of COP28 has for the first time explicitly called for "transition away from fossil fuels –in a just, orderly and equitable manner accelerating action in this critical decade so as to achieve net zero by 2050". It avoided the more explicit and hard language of "phase out or phase down fossil fuels". It has, however, been explicitly against coal calling nations "to accelerate efforts towards the phase down of unabated coal power". So it was a fight for Transition away from fossil fuels vs phase down.

The UN Secretary General's comment on the outcome of COP28 reflects both optimism and frustration. He said: "to those who opposed a clear reference to phase out of fossil fuels during the COP 28 climate conference, I want to say; whether you like it or not, fossil fuel phase out is inevitable. Let's hope, it doesn't come too late". One can summarize the main aspects of COP28 agreement as the following: 1.transition away from fossil fuel; 2. no to coal power; 3. net zero by 2050; 4. development of low emission technologies such as renewables, hydrogen and nuclear; 5.carbon capture, storage and utilization; 6.climate finance; and 7. Loss and Damage Fund.

Loss and Damage Fund

The most positive and practical action taken in the conference was regarding Loss and Damage Fund. This fund is meant to help those countries which suffer from the consequences of climate change in the form of floods, droughts, land use damage, food loss, etc. The fund was agreed to in COP27 held at Sharam al Sheikh. It has been operationalized. Five countries have pledged 420 million USD, although much more is required. It is hoped that more would come along with meaningful approaches and strategies.

Tripling renewable energy by 2030

The agreement calls for tripling the installed capacity of renewable by 2030. An associated provision requires doubling the rate of increase in conservation. Both combined should reduce the demand of fossil fuels. It appears to be a clever device which will automatically affect the role of fossil fuels. When demand goes down, supply goes down. The question is if enough supplies of solar and wind power equipment would be available.

Win-win for the developed countries

Although there is a common future in adopt-

ing policies which contain temperature increase by or below 1.5 deg C by the turn of the century, for developed countries, all is well: fossil or no fossil. They benefitted from exploiting the fossil and the dirtiest fuels and almost exhausted those. They were producers and exporters of fossil fuels. There are and were some developing countries, which were lucky enough to discover and produce fossil fuels. And now that alternative energy is approaching near perfection and wider availability in near future, they would be equally on top of it.

In fact, they would be better off. Their dependence on fossil fuel, especially oil, would be no more there. They would be independently producing alternate energy like solar, wind and hydrogen.

Developing countries' energy predicament

India gets its 70% electricity from coal. Recently, it announced its plans to install an additional power capacity of 80,000 MW based on coal by 2032. India has been arguing to relate emission measurements with countries' economies as measured by GDP. It means that emission reduction responsibilities should be proportional, i.e., emission per unit GDP. India in COP27 along with China fought for coal termination by 2070.

9- This time, it appears, India played it quiet. Its interests seem to be equally divided between renewable energy and coal. It is creating hydrogen production and electrolyzer manufacturing capacity on a fast track. It would thus benefit both ways, an ideal situation. India has been developing solar and wind power. It plans to install 500GW of renewable energy capacity by 2030 and 5 million tons per annum of hydrogen capacity by 2030 also.

OPEC countries opposed the phasing down of fossil fuels and won in getting it is substituted by transition. OPEC countries' main income is from oil & gas .They would suffer from income cuts if oil and gas are cut-off drastically. However, most OPEC countries, including the UAE and Saudi Arabia, are heavily investing in renewable energy, solar, sind and hydrogen. In this respect, they too are part of a win-win situation as developed countries are.

There are other developing countries having large populations (Pakistan, Egypt, Bangladesh, etc.) and are short of energy resources already. Although developing countries have started developing solar and wind power, it would be quite hard for them to develop and produce hydrogen. Their dependence would increase. Fairness demands that the developed countries devise programmes of technology transfer to developing countries. It is obvious that all developing countries would not be able to benefit from it. They would be importing hydrogen in place of oil and gas.

What to do?

China has already announced that it would not install any coal power plant outside its own territory. There is no reason to assume that it does not apply on Pakistan and CPEC (China Pakistan Economic Corridor). A repetition of firm denunciation of coal power is an additional reason for implementing what can be called a coal power embargo. Thar coal is the only large energy resource that Pakistan has which it has started utilizing lately. Pakistan can increase its Thar coal mining capacity for firing its cement plants. Almost all cement plants are working on imported coal.

Adoption of EVs, especially motor cycles, is already being talked about due to the pollution and smog impact of motor Bikes. COP28 agreement may enhance the incentives of EV motor-cycles. If EV car prices come down to affordability level, this may happen to EV motor-cycles as well.

Investment in new refinery project is on the table for more than five year or more. Will COP28 increase the motivations of oil producing countries to spread their oil sector investment or will it dissuade them? All kinds of incentives have been provided for the new oil refineries. However, expansion projects of existing oil refineries may be considered a low risk investment.

E&P oil and gas sector has been on the low key for several decades. No major discovery has been made in this period. Foreign companies have been leaving due to low prospects and high risk. OGDC (Oil and Gas Development Company) and PPL (Pakistan Petroleum Limited) are already diversifying into the mineral sector. Will new investment come to this sector?

There are good prospects of investment in solar, wind and biogas sector. Local and foreign investment can come in this area. Local manufacturing capability may also be enhanced under these investments. Pakistan has been high on Climate Risk Index among top ten. Pakistan can benefit from Loss and Damage Fund that has been operationalized. Suitable projects should be developed in water sector.

Nuclear power has been supported in COP28 discussions. China may be more inclined to invest in this sector. If fossil fuels are not there or supply reduced, nuclear power can be the only energy source to stabilize the grid and provide dispatch-able power. We have discussed this elsewhere in our last piece in detail.

Concluding, the controversy and heated debate leading to a soft statement has disappointed many policy intellectuals in the West. It may be noted that according to the existing rules, all members of UNFCC have to agree; even if one member disagrees, decisions cannot be made. They are thinking to change the rules to the acceptance by some majority measure like 67-75% of the members. COP process can be wound away. The world policies are shaped by the consensus of the developed countries which are strongly in favour of Net Zero by 2050. Carbon tax may be levied on fossil fuels and imports or exports of the countries using fossil fuels in defiance. ■

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Energy sector: a nightmare in Pakistan

Farhat Ali

The writer is a former President, Overseas Investors Chamber of Commerce and Industry

Caretaker Prime Minister Anwaar-ul-Haq Kakar in a statement this week has described the energy sector as "a nightmare for the country" mainly because of the fact that the government produces costly electricity and sells it at subsidized rates.

This fact is well known to all and sundry; and it is experienced by consumers day in and day out. What is not in public knowledge is the extent of appalling governance and incompetence that makes the cost of production of electricity exorbitant and is shrouded in the unsustainable gap between the production cost of electricity and the price at which it is sold to the consumer.

It is not only humongous and mind boggling but also exists at every node of the energy supply chain - moving up from the procurement of fuel for generation, its transportation, the role of Independent Power Producers (IPPs) and the power transmission and distribution companies in the public sector and the conduct of many consumers. Each extracts its pound of flesh, so to speak.

This truth can be well confirmed if one digs deeper into the causes of circular debt in the power sector that has ballooned to Rs2.31 trillion and continues to mount in the absence of any meaningful corrective measures by successive governments. The easy way out has been to take only two measures: (1) subsidy; and (2) tariff hike. These measures too are now at the tail end with the International Monetary Fund's (IMF's) 'veto' to any subsidy and consumers' outcry and protests against massive tariff increases. Words 'what now' therefore constitute a question mark?

Leaderships of previous governments experienced similar nightmares but none ever gathered the required courage to confront the menace head on. The government of PPP (Pakistan People's Party) and PML-N (Pakistan Muslim League-Nawaz) leveraged this nightmare into an opportunity for the rampant induction of IPPs (independent power producers) based on imported fossil fuels, which turned into a fiscal fiasco. Whereas, the government of Pakistan Tehreek-e-Insaf (PTI) tried to overcome this challenge by renegotiating the agreements made by the former two governments with IPPs. This could not deliver the desired result as the mess in the energy sector spread beyond the fiasco created by IPPs in the first place. The impact is now so humongous that despite a massive increase in tariffs, the circular debt stock of Pakistan's power sector increased to Rs2.31 trillion by the end of June 2023, up from Rs2.25 trillion at the end of the previous fiscal year (FY22).

A similar problem besets the gas sector. The Director General (gas) of the government of Pakistan, in a briefing to the Senate Standing Committee, testified that the sector would suffer a revenue shortfall of Rs210 billion because of the outstanding old recoveries and supply of LNG to the domestic sector on subsidized rates. Therefore, they have no other option but to increase the gas prices. He further told the committee that the circular debt of gas sector was increasing by 40%, adding that it had hit the Rs2.1 trillion mark.

The International Monetary Fund (IMF) loan conditions have strictly forbidden subsidies, whereas, the tariff increase has reached a level which is no longer sustainable by industry and domestic consumers alike. The cleaning up of the mess in the energy sector requires a strong political government and leadership to own up to this situation and take it head on. When and if such a strong government and leadership would emerge is a big question.

Privatisation of public-sector enterprises in the energy (power and gas) sector appears to be the only realistic way out of the nightmare, which may mitigate much of the bad governance and incompetence by ushering in competent managements, funding and transparency in this sector.

But this option too appears out of reach anytime soon as the privatization of loss-making public sector enterprises is slow-pedaling - a bit forward and a bit backward. On the other hand, the hitherto wait-and-see approach is no longer an option. Something needs to be done and done soonest possible. ■

LONGi's Technical Director discusses breakthroughs, best practices in solar tech

Osman Maud, Technical Director for Central Asia at LONGi delves into the revolutionary back-contact technology, combating counterfeits; says our products are designed to perform optimally for 25 to 30 years; states LONGi emphasizes R&D through collaborations with global laboratories

Amer Malik

In an exclusive interview with Energy Update, Osman Maud, Technical Director for Central Asia at LONGi, delves into the revolutionary back-contact technology, combating counterfeits, and the essential practices for efficient solar panel installation and maintenance.

LONGi Solar, a pioneer in the solar energy industry, has been at the forefront of innovation not only with breakthrough technologies but also in addressing challenges faced by consumers in the market. In this interview, Osman Maud, the Technical Director for Central Asia at LONGi, shared insights into the game-changing back-contact technology, the battle against counterfeit panels, and essential guidelines for ensuring the longevity and efficiency of solar projects.

Energy Update: Mr Maud, could you elaborate on how LONGi's back-contact technology has become a deterrent against counterfeit solar panels?
Osman Maud: Certainly, the back-contact technology we employ is not easily imitated due to the significant investment required. Counterfeiters wouldn't find it feasible to invest $200 million to replicate this technology, making our panels less susceptible to imitation.

Energy Update: Despite this, you mentioned the presence of fake LONGi panels in the market. How does LONGi address this issue?
Osman Maud: Identifying and taking action against counterfeit panels is a challenge. However, our back-contact technology acts as a defense mechanism. We are committed to combating impersonation, as efforts are underway to trace and take legal action against those selling fake LONGi panels.

Energy Update: You highlighted the importance of proper installation for solar projects. Could you share insights into the potential risks and losses associated with improper installations?
Osman Maud: Improper installation poses significant risks, including breakage, suboptimal performance, and potential financial losses for customers investing in solar projects. It's crucial for installers to seek guidance and expertise to ensure the longevity and efficiency of the solar panels.

Energy Update: Speaking of longevity, could you clarify LONGi's policy regarding the warranty and repair of solar panels?
Osman Maud: LONGi does not cover breakage under warranty, and repairing solar panels is not advised. If any issues arise, we opt for replacement. Our vertically-integrated approach ensures strict quality procedures, and our products are designed to perform optimally for 25 to 30 years.

Energy Update: You mentioned the importance of cleaning solar panels. What are the recommended cleaning practices for LONGi panels?
Osman Maud: Cleaning should be done with plain drinking water only. Using soap, chemicals, washing powder, or other cleaning agents can leave spots on the plates, hampering efficiency. Simple water is sufficient for effective cleaning.

Energy Update: Could you share insights into the significance of providing ample space around solar panels, especially in terms of temperature variations?
Osman Maud: It's crucial to allow space for the contraction and expansion of solar panels in changing temperatures. Placing panels directly on the roof can lead to overheating, potentially causing glass breakage. A minimum space of 100mm or 4 inches ensures consistent airflow for cooling.

Energy Update: Lastly, could you shed light on LONGi's approach to Research and Development (R&D) and the support offered to customers using LONGi solar panels?
Osman Maud: LONGi emphasizes R&D through collaborations with global laboratories. We continually improve technology and products. Additionally, we provide free customer support, covering technical assistance, quality claims, site audits, and more, to ensure our customers' satisfaction and success. ■

COP28 climate summit in Dubai

Deal signals beginning of end of fossil fuel

Deal shows a milestone for global climate progress, but a hard work and sincerity is needed; historic accord on a loss and damage fund is also a great milestone; Recharge Pakistan initiative worth $77.8 million supported by US

Special Report by Mansoor

The UN Climate Change Conference in Dubai that started on Nov 30 concluded on 13 Dec 2023 reached a deal that signals the beginning of the end of the fossil fuel. Government ministers representing nearly 200 countries agreed to the deal that calls for a transition away from fossil fuels.

The draft deal text also urged for accelerating efforts towards the phase-down of unabated coal power and for "tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030. The COP28 agreement shows a milestone for global climate progress, but a hard work and sincerity is needed. Turning it into real-world decarbonization will require support from all industries and transports organisations of all countries. A huge investment is must to be made to acheive this goal.

A "phase-out" commitment would likely have required a shift away from fossil fuels until their use is eliminated. In a demonstration of global cooperation, negotiators from nearly 200 countries for the first time recognized the need to transition away from fossil fuels. "Whilst we didn't turn the page on the fossil fuel era in Dubai, this outcome is the beginning of the end," said UN Climate Change Executive Secretary Simon Stiell in his closing speech. UN chief António Guterres emphasized that the era of fossil fuels must end with justice and equity. "Developing countries must be supported every step of the way," he said in his statement on the closing of COP28.

COP28 began with a historic agreement on a loss and damage fund to help developing countries cope with the effects of climate change. The fund was agreed to by delegates on the first day of the conference. Several countries have pledged money to the fund, including the United Arab Emirates, Germany, and the United States. The fund is a significant step forward in addressing the issue of loss and damage, but it is important to remember that it is just one part of the solution. Germany also pledged $100 million, while the European Union committed to $245.39 million, Britain promised "at least" $51 million, the United States agreed to give $17.5 million and Japan $10 million

The victory on day one of COP28 is a symbolic step toward climate justice. But many highly contentious issues remain. First, developed countries chose the World Bank as the interim organization to manage the funds, despite serious concerns from the Global South and civil society.

In addition, there is no clarity on how the fund will be financed or replenished. The current commitment of $700 million lags far

behind an estimated need of $400 billion a year. Mitigation and adaptation finance long promised by the Global North to the Global South—to reach $100 billion a year by 2020—never fully materialized. According to the Climate Policy Initiative, 90% of the funds disbursed in 2022 focused on mitigation only, and mostly as market-rate loans or debt-financing instruments.

Prime Minister Anwaarul Haq Kakar at the COP28 unveiled the ambitious "Recharge Pakistan" initiative, a seven-year, $77.8 million effort aimed at utilising nature to enhance climate change adaptation in the country, which was applauded. According to a post shared on X, formerly known as Twitter, by the Embassy of the United States of America in Islamabad, "Today on the margins of COP28, Ambassador Blome joined Caretaker PM Kakar in launching Recharge Pakistan, a $77.8 million partnership to enhance Pakistan's climate and water resilience.

"In partnership with the Green Climate Fund, Coca-Cola Foundation, and the World Wildlife Fund, Recharge Pakistan will help Pakistan pivot toward ecosystem-based adaptation across three of the nation's provinces directly benefitting 700,000 Pakistanis and indirectly benefitting 7 million more. The groundbreaking program puts local communities at the center of climate decision-making."

The burning of coal, oil and gas is the largest contributor to climate change, accounting for more than three-quarters of global greenhouse gas emissions. Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas.

Nations at COP28 in Dubai approved earlier a roadmap for "transitioning away from fossil fuels" – a first for a UN climate conference – but the deal still stopped short of a long-demanded call for a "phaseout" of oil, coal and gas.

UNEP Executive Director statement on the closing of COP28 says;" "COP28 has delivered, for the first time at climate talks, a clear call on countries to transition away from fossil fuels. The deal is not perfect, but one thing is clear: the world is no longer denying our harmful addiction to fossil fuels. Now we move beyond bargaining to action. As the Secretary-General has said, the phase-out of fossil fuels is inevitable.

"This means real action on a rapid transition away from fossil fuels, especially for the G20, and real action on the many other positives agreed at COP28: the framework on the Global Goal on Adaptation, operationalizing the Loss and Damage Fund, and new commitments on sustainable cooling, methane reduction, tripling renewable energy targets and nature breakthroughs. The reality, as outlined in UNEP's Emissions Gap report released ahead of the COP, is that we are not on track to deliver a resilient, low-carbon and just world. This reality has not changed yet. Now the hard work of decarbonization must begin, UNEP Executive Director concludes."

Burning fossil fuels generates greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun's heat and raising temperatures. The main greenhouse gases that are causing climate change include carbon dioxide and methane. These come from using gasoline for driving a car or coal for heating a building, for example. Clearing land and cutting down forests can also release carbon dioxide. Agriculture, oil and gas operations are major sources of methane emissions. Energy, industry, transport, buildings, agriculture and land use are among the main sectors causing greenhouse gases.

Climate scientists have showed that humans are responsible for virtually all global heating over the last 200 years. Human activities like the ones mentioned above are causing greenhouse gases that are warming the world faster than at any time in at least the last two thousand years.

The average temperature of the Earth's surface is now about 1.1°C warmer than it was in the late 1800s (before the industrial revolution) and warmer than at any time in the last 100,000 years. The last decade (2011-2020) was the warmest on record, and each of the last four decades has been warmer than any previous decade since 1850. ■

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4888 MW-Tarbela Hydel Power Stations


Dasu Hydropower Project: Diversion Tunnel and Starter Dam


1450 MW-Ghazi Barotha Hydel Power Station

As 2023 draws to a close, Pakistan's Water and Power Development Authority (WAPDA) reflects on a fruitful year marked by significant achievements in hydropower generation and progress on ongoing projects. The nation experienced a notable surge in hydel electricity production, with WAPDA generating approximately 34 billion units in 2023 – an impressive increase of 2.2 billion units compared to the previous year.

This heightened hydel generation not only contributed to the nation's clean and green energy portfolio but also translated into substantial cost savings for the national exchequer. The low-cost hydel electricity, priced at Rs. 3.51 per unit, constituted 30% of the total electricity supplied to the National Grid. The savings amounted to Rs. 106 billion, emphasizing the economic advantage of relying on indigenous, renewable energy sources over expensive imported fossil fuels.

WAPDA, with ownership of 22 hydel power stations and a cumulative capacity of 9459 Megawatts (MW), showcased impressive performance figures. Key contributors included Tarbela, generating 12.9 billion units, Tarbela 4th Extension with 4.4 billion units, and Ghazi Barotha producing 6.8 billion units, among others. The cost-effective nature of WAPDA's hydel electricity underscores its pivotal role in the country's energy landscape. Amid economic challenges, WAPDA's commitment to ongoing projects remained unwavering. The successful river diversion at Dasu Hydropower Project in February 2023 and the Diamer Basha Dam's Indus River diversion through test-run demonstrated significant progress. The ambitious Mohmand Dam Project is poised to achieve its river diversion milestone in the next three to four years.

ooking ahead, WAPDA is actively developing eight mega projects aimed at bolstering water, food, and energy security in the country.


Diamer Basha Dam Project: River Diversion through Test Run

These projects, scheduled for completion from 2024 to 2028-29, are projected to add 9.7 million acre-feet to the gross water storage capacity. Furthermore, the hydel generation capacity is expected to nearly double to 20,000 MW, marking an approximate 10,000 MW increase over the next five years. WAPDA's achievements in 2023 set the stage for a promising future in sustainable energy and infrastructure development. ■

Solar panels to be installed at CPO

The Sindh police authorities and provincial government have decided to install a solar system at the Central Police Office, which would likely to generate 258kV electricity, resulting in saving of Rs14 million annually.

This was stated in a meeting chaired by IGP Riffat Mukhtar Raja at his office, attended by Secretary Energy Rehan Baloch and other officials.

PPI, CERAD, Huawei launch White Paper on Arc Fault Circuit Interrupter

EU Report

PPIB, CERAD and Huawei Pakistan has jointly unveiled the White Paper on Arc Fault Circuit Interrupter (AFCI) for Photovoltaic (PV) systems, marking a significant stride in realm of solar power technology.

The launch, a result of collaborative efforts with Private Power & Infrastructure Board (PPIB) and the Center for Advanced Research in Engineering and Development (CERAD), is poised to redefine the landscape of PV power plant development in the country.

The event, adorned with a technical white paper launch ceremony, featured Chief Executive Officer of Huawei Pakistan, Ethan Sun, who in his welcome address, emphasized importance of the AFCI in advancing technological frontiers, providing a comprehensive reference for enterprises involved in PV power plant development.

He said the objective is to establish a foundation for technological development and promotions. He said this technical white paper will serve as a guiding document for enterprises, enabling them to continuously enhance their products in response to evolving situations and application requirements. Ethan Sun said this document serves as a comprehensive guide for industry stakeholders, elucidating the development background, technical principles, challenges, features, and the tangible results of AFCI technology verification and evaluation.

On the occasion, Managing Director of Private Power & Infrastructure Board, Shah Jahan Mirza lauded Huawei's commitment to technological advancement and expressed optimism that the introduction of this cutting-edge technology would play a pivotal role in addressing Pakistan's power challenges. Shah Jahan Mirza, in his speech said that the Technical White Paper on Intelligent DC Arc Detection (AFCI) for PV Systems, jointly released by PPIB, CERAD, and Huawei, serves as a comprehensive guide for the industry.

The event was also attended by the Commercial Counselor for the Embassy of Peoples republic of China, Mr. Yang Guangyuan who along with Managing Director PPIB and CEO Huawei initiated the launch sequence for the White Paper document. ■

Longi Solar provides cost-effective renewable energy solutions

Ali Majid

Country Director, LS, Pakistan

Amer Malik

Ali Majid says our company is actively expanding its presence in global markets, including Pakistan; informs we are also forging strategic partnerships within solar energy industry; asserts our current production capacity for green energy projects in Pakistan is substantial, with shipments reaching about 1GW this year

In an exclusive interview with Energy Update magazine, Ali Majid, Country Director of Longi Solar in Pakistan, shed light on the company's customized approach to meet Pakistan's growing demand for cost-effective renewable energy.

As Pakistan ambitiously strives to shift towards 60% renewable energy and eliminate imported coal consumption by 2030, companies like Longi Solar are playing a pivotal role in shaping the nation's energy landscape.

In an interview with Energy Update Magazine, Ali Majid, Country Director of Longi Solar in Pakistan, shared insights into the company's tailored strategies, commitment to environmental goals, and its impactful contributions to the communities through Corporate Social Responsibility initiatives.

Energy Update: Mr Majid, thank you for taking the time to speak with us. Let's begin with the current market needs in Pakistan. How has Longi Solar tailored its strategies to meet the demand for cost-effective renewable energy?

Ali Majid: Thank you for having me. Longi Solar is deeply committed to providing cost-effective renewable energy solutions in line with Pakistan's vision to shift to 60% renewable energy and phase out imported coal consumption by 2030.

To address these needs, we customize our sales strategies and product offerings based on various factors such as market demands, government policies, consumer preferences, economic factors, and competitor analysis.

Energy Update: Could you provide some insights into how Longi Solar has adjusted its product offerings to suit the specific requirements of the Pakistani market?

Ali Majid: Certainly. Longi Solar understands the unique climate conditions in Pakistan, and we have adapted our solar panels to meet these requirements. We've also aligned our pricing to ensure affordability in the local market. It's essential for us to provide solutions that not only align with environmental goals but also cater to the economic realities of the region.

Energy Update: Pakistan aims to transition to 60% renewable energy by 2030. How is Longi Solar contributing to this goal, and what strategic partnerships have been formed within the solar energy industry to optimize energy structures in the country?

Ali Majid: Longi Solar is actively contributing to Pakistan's renewable energy goals by forging strategic partnerships within the solar energy industry. We collaborate with local partners to develop and deploy solar energy solutions. Our current production capacity for green energy

projects in Pakistan is substantial, with shipments reaching about 1GW this year. This reflects our commitment to optimizing the energy structure and supporting the country's renewable energy objectives.

Energy Update: Beyond business, how is Longi Solar engaging in Corporate Social Responsibility (CSR) initiatives in Pakistan?
Ali Majid: Longi Solar is dedicated to making a positive impact on Pakistani society. Our CSR initiatives include sponsoring students' tuition fees, providing solar system sponsorships, offering technical training programs, and distributing food boxes to underprivileged communities during Ramadan. These initiatives underline our commitment to education, sustainable energy solutions, skill upgrading, and addressing the nutritional needs of disadvantaged populations.

Energy Update: How is Longi Solar adapting its distribution channels and sales strategies to fit the local market's dynamics in the changing environmental and economic circumstances?
Ali Majid: We understand the importance of building trust among Pakistani consumers, therefore, we focus on strong distribution channels, partnerships with local distributors, establishing local offices, and providing after-sales support. These efforts are crucial in adapting to changing environmental and economic circumstances and ensuring that our solutions meet the evolving needs of the market.

Energy Update: Finally, could you share Longi Solar's vision for sales growth and market development in Pakistan, including any upcoming initiatives or strategies?
Ali Majid: Longi Solar is actively expanding its presence in global markets, including Pakistan. While we frequently update our strategies to adapt to changing circumstances and clinch new opportunities, our initiatives in Pakistan will likely remain aligned with our broader vision. This includes increasing market share, fostering partnerships with local distributors and businesses, and promoting the adoption of solar energy solutions through our high-quality products.

CLIMATE CHANGE

Pakistan's climate heroes

40 million Pakistanis, roughly one in every six individuals, go to bed hungry each night

Mariam Saleem

The writer is a partner at Hassan Kaunain Nafees, Legal Practitioners & Advisers and a graduate from King's College London

As many as 40 million Pakistanis, roughly one in every six individuals, go to bed hungry each night. Couple that with extreme weather conditions, rising cost of living, and water scarcity, and you have a disheartening recipe of compounding challenges that cast a long shadow over the nation's wellbeing.

But what if there was a single, unassuming word, resounding with profound potential, that could present itself as a holistic solution to tackle these interrelated challenges at once?

Nature's gifted crops – the planet's sustainable protein superheroes – pulses provide a third of global dietary protein. These smart crops are affordable, nutrient-rich, and eco-friendly. They enhance soil health, reduce fertilizer use, and aid in carbon sequestration. Their economic viability, low resource requirements, and benefits in crop rotation can boost farm income, disrupt disease cycles, ensure food security, and support sustainable agriculture. Thriving in challenging conditions, they are remarkably water-efficient, a lifeline for water-scarce regions like Pakistan. Until 2008, Pakistan was a pulse exporter. However, in response to the 2006 global grain shortage, the government imposed a 35 per cent export tax and eventually banned all pulse exports, in an attempt to secure domestic food supplies.

Today, pulse production is a meagre 382,000 tons, while total annual consumption is estimated at 1.3 million tons, leading to a nearly $1 billion import cost. So then why is it that even in the face of this bursting local demand and the government's immense financial commitment to fulfill it, Pakistani farmers are reluctant to embrace pulse cultivation and in fact every year pulse yields are declining? In the 1960s, the green revolution reshaped Pakistan's agriculture with high-yield wheat and rice varieties, heavily supported by the government, offering profitable international trade prospects.

Consequently, farmers concentrated on these cash crops, neglecting pulses due to perceived high risks and a lack of focus on yield improvement. This relegated legume production so far into the background that today local demand remains significantly unmet. The public sector's failure to provide high-quality source seeds, limited private-sector involvement in seed production and distribution, and a complete lack of institutional support have resulted in a shortage of improved seed varieties, with seed corporations primarily focusing on cereals and cotton.

In over seven decades since Independence, only a few pulse varieties have been released for commercial use. Currently, about 80 per cent of pulse crops use farmer-saved seeds due to inadequate seed improvements. A survey found that half of farmers rely on open grain market seeds, a quarter use saved seeds, and only 2.0 per cent buy from registered dealers or companies.

Similarly, 85 per cent of chickpea growers use seed from previous crops, leading to lower productivity. In FY22, Pakistan needed 42,674 metric tons of certified pulse seed, but only 3,182 metric tons were available.

In Pakistan, the lack of specialized machinery for planting, harvesting, and threshing pulses hampers yields. Unlike in countries like Australia and Canada, where mechanical harvesting is common, in Pakistan, manual methods predominate, causing crop damage when using wheat threshers for pulses. This stands in stark contrast to its neighbouring countries, with India and China dedicating 0.3 per cent and 0.62 per cent of their GDP, respectively. As a result, Pakistan faces high production costs, low yields, and challenges in the international market due to outdated technology.

Moreover, the 18th Amendment, enacted in FY11, exacerbated R&D funding woes by transferring power to provinces, exposing gaps in sectoral growth, causing coordination and resource allocation issues, and service disparities. This lack of integrated planning strained trust between federal and provincial bodies, causing poor agricultural yields, notably in the pulse sector, and a sector-wide performance decline. Today, Pakistan is in the firm grip of climate change, its impact unmistakable as heatwaves and erratic rainfall patterns wreak havoc across the nation, a factor critically important for pulse production, which is heavily reliant on rainfall. Yet, the policy framework does not support climate-smart agriculture and is marred by distortions and government inaction.

The inability of those in positions of authority to keep pace with evolving trends and patterns has placed Pakistan at a critical crossroads, as the nation struggles to cope with food scarcity and economic crisis in the woes of climate change, emphasizing the urgent and pressing need for innovative solutions. Relentless inflation has already rendered meat a luxury for many, leading citizens to rely on the 'poor man's meat' or pulses. The crucial question remains: can Pakistan act decisively to prevent basic sustenance from becoming an unattainable extravagance for ordinary people? ■

The Olympics of climate change

Dr Khalid Waleed

The writer, a research fellow at the Sustainable Development Policy Institute, has a doctorate in energy economics

Like the Olympics which represents a harmonious blend of cultural diversity, sportsmanship, and global unity — drawing participants from every continent — the Conference of the Parties (COP28) in the United Arab Emirates embodies this spirit in the crucial field of climate action.

Mirroring the Olympic gathering of athletes from across the globe, COP28 brings together a diverse array of parties, delegates, and attendees from numerous nations.

Each participant at COP28 contributes their cultural viewpoint and understanding, echoing the rich landscape of representation seen in the Olympic Games. This event serves as a critical platform for global collaboration, dialogue and action in addressing the pressing and complex challenges of climate change.

The debate on energy transition at COP28 is akin to a marathon, demanding endurance, strategic foresight and adaptability. Many nations and climate experts have declared the energy sector as the key to solving the climate change crisis. However, the landscape of energy transition is difficult and complex.

Many fossil fuel economies including Saudi Arabia are not in favour of rapid phasing out of fossil fuels, and they are pleading their case for orderly and just energy transition. Nations are required to pace their transition from fossil fuels to renewables, balancing immediate energy requirements with long-term sustainability goals. This transition is analogous to a marathon runner's strategy, requiring a mix of immediate energy and sustained effort.

On the other side, climate experts, groups and the Powering Past Coal Alliance (PPCA) are calling for the retirement of coal power plants and a ban on new coal plants as the 100-metre sprint, a highlight of the Olympics, symbolises the urgent race to halt coal expansion at COP28. This race requires immediate, decisive action, akin to the burst of speed in a sprint.

Nations must rapidly shift policies and investments away from coal to prevent further environmental degradation, reflecting the sprint's intensity and focus. This alliance led by the UK and other EU nations has recently been joined by the US, the UAE and other nations.

The archery event of this climate Olympics is the operationalisation of the Loss and Damage Fund, where precision and focus are apt metaphors for the challenge of directing funds effectively in climate finance. Every dollar must be meticulously targeted, like an arrow, to achieve maximum impact. This requires detailed knowledge of where funding is most needed and how it can be best utilised, which involves complex assessments and international cooperation.

In the realm of COP28, the intricate process of climate financing and the creation of a loss and damage fund can be metaphorically compared to the sport of archery in the Olympics. Just as an archer must aim with precision and focus to hit the bullseye, the allocation of climate funds requires strategic and accurate targeting.

This precision is essential in ensuring that resources are directed effectively, particularly towards regions most vulnerable to climate change impacts. The allocation process, akin to an archer adjusting for various factors, must consider the severity and specifics of climate impacts, prioritising the needs of those most affected.

The management of the Loss and Damage Fund in COP28 mirrors the skill and steady

hand needed in archery. It demands careful assessment, distribution, and oversight of the funds, ensuring they are utilised transparently and effectively. This approach is crucial for providing support and relief to countries facing the disproportionate effects of climate change.

Both scenarios underscore the importance of precision, strategic planning, and a focused execution in achieving their respective objectives — whether it's in the precise sport of archery or the critical task of climate action financing.

In the high jump, athletes must overcome gravity to reach new heights. Similarly, at COP28, nations aim to transcend traditional energy practices to achieve greater efficiency. This involves not just technological innovation but also changes in consumer behaviour, policy reforms, and educational initiatives to promote a culture of sustainability.

The drive to double the energy efficiency and cooling pledge targets the ever-increasing cooling load, particularly for Pakistan, where the summer demand for electricity is way higher than the winter demand and the cooling load causes an exponential increase in the electricity tariff and electricity demand.

Other important events in this climate Olympics are the methane pledge as Pakistan is among the top ten methane emitters, increased focus on carbon capture, nuclear energy, climate-smart food, carbon markets, circular economy, and reducing waste, responsible consumption and production, and role of youth and gender in climate injustice between the Global North and the Global South.

The climax of COP28 is not marked by individual triumphs but by collective progress towards climate resilience. This requires a paradigm shift from competitive to cooperative efforts. Just as in the Olympics, where the spirit of sportsmanship prevails, COP28 must foster a spirit of global solidarity. It is not just about one nation's victory but about every nation crossing the finish line, symbolising a world united in its response to climate change.

COP28 is akin to the Olympics of climate change, where the pursuit of environmental excellence is a collective journey. Success is measured not in medals but in milestones towards a sustainable and resilient world. The path is challenging, but with shared commitment and global cooperation, every nation can cross the finish line of climate resilience. ■

ALTERNATIVE ENERGY

Biogas from fodder grass

Syed Akhtar Ali

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

We are passing through difficult times in terms of energy supply and prices. Energy supply is decreasing and international energy prices are increasing. It has become vital for us to look for and discover as many energy resources as possible. Also climate change issues are requiring the development of renewable energy sources and curtailment of the use of fossil energy sources.

Additionally, the new energy sources should also contribute to the increase in income and employment of people. And perhaps finally, the resources should be local to avoid the drain on foreign exchange. We have been discussing various energy sources in this space and have stressed the development and use of biogas resources identifying a variety of fuels like organic waste, municipal solid waste (MSW), food waste, agro- and industrial bio-waste, etc. In this space, we will discuss the use of elephant grass due to the high height it has.

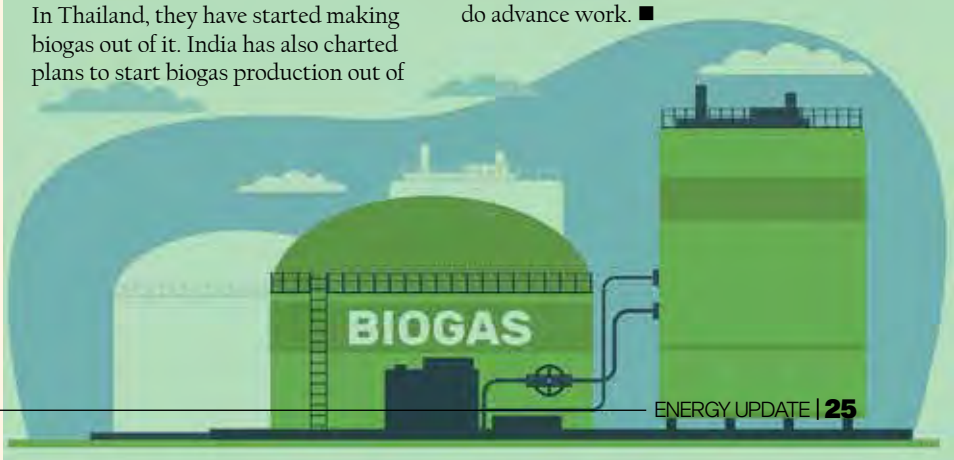
A rather new energy source has been discovered recently. It is called Napier grass after the name of the developer and usually called elephant or Sudanese grass. Fodder grass has been known and used for animal feed. But elephant grass is a new variety whose output is many times higher than the ordinary grass. It can be produced five times in a year. It requires less water and can be grown in arid areas. Elephant grass is being grown in Thailand, India, Africa and elsewhere. In Thailand, they have started making biogas out of it. India has also charted plans to start biogas production out of the elephant grass.

Biogas yield from elephant grass has been reported to be 90-150 cubic metres per tonne. However, being a lingo cellulosic material, elephant grass has to be pre-treated with 1% NaOH for 24 hours to enable it to undergo traditional digestion as is done generally in biogas production. Elephant grass can also be mixed with other conventional waste material like cow dung, food waste, organic waste, etc. In fact, biogas yield with a mix of waste with elephant grass is higher than the single material elephant grass.

However, elephant grass is a warm season growing material. There should be an alternative material to take its place when it is not available. Arid areas having range farming activities like those in Balochistan can probably be suitable for this. It would help both, local energy (biogas) and fodder for animal farming and range management activities.

New technologies are under development, one of which has increased yield by 100%, reducing land requirement by half. Recent figures quote 120 acres of land for a five-ton-per-day bio-CNG plant. Similarly, the elephant grass output has been reported to have increased from 150-200 tonnes per acre to 350-400 tonnes. In Gujarat, India, biogas plants of 10 tons per day based on elephant grass are being developed. Some should have started operating as well.

Every area has a different resource endowment and comparative energy prices are different. Hence, it is important to undertake this exercise. The most important issue on his subject is to identify optimal location from the agricultural point of view. These days, quite some international attention is there on renewable energy resources. Carbon finance markets and grants are available. It is requested that the government forms a committee which should do advance work. ■



Pakistan's Economic Outlook

Navigating challenges and embracing growth in 2024

Mustafa Tahir

The Writer is Deputy Editor of Energy Update

In a recent report by Bloomberg economist Ankur Shukla, Pakistan's economic landscape is poised for recovery, projecting a growth of 2.1 percent in the fiscal year and a significant acceleration to 4.8 percent in fiscal 2025. Several factors contribute to this optimistic outlook, including the approval of a $700 million loan tranche from the International Monetary Fund (IMF) in November, easing supply bottlenecks, lower interest rates, and positive agricultural indicators.

The approval of the IMF loan tranche in November has played a pivotal role in shoring up Pakistan's economic activity. Shukla emphasizes the need for additional aid from the IMF, estimating that Pakistan requires approximately $30 billion annually through fiscal 2028 to manage external debts and import expenses. Despite current foreign exchange reserves standing at $7.3 billion, negotiations for a new longer-term deal with the IMF are anticipated once the current program concludes in March.

The report highlights several positive indicators that contribute to the anticipated economic growth in 2024. Increased farming acreage, removal of import restrictions, and lower borrowing costs are identified as key factors. Shukla notes that the removal of import restrictions and an increase in farming acreage are likely to result in higher agricultural output. Official data for the July-September quarter shows significant increases in the cultivation areas for rice, cotton, and maize, compared to the previous year.

Furthermore, Shukla points out that the growth figures will benefit from a low year-earlier base of comparison, as the economy contracted by 0.2 percent in the year through June 2023. The report suggests that the growth trajectory is also supported by a recovery in activity between June and October, with a 3.2 percent increase.

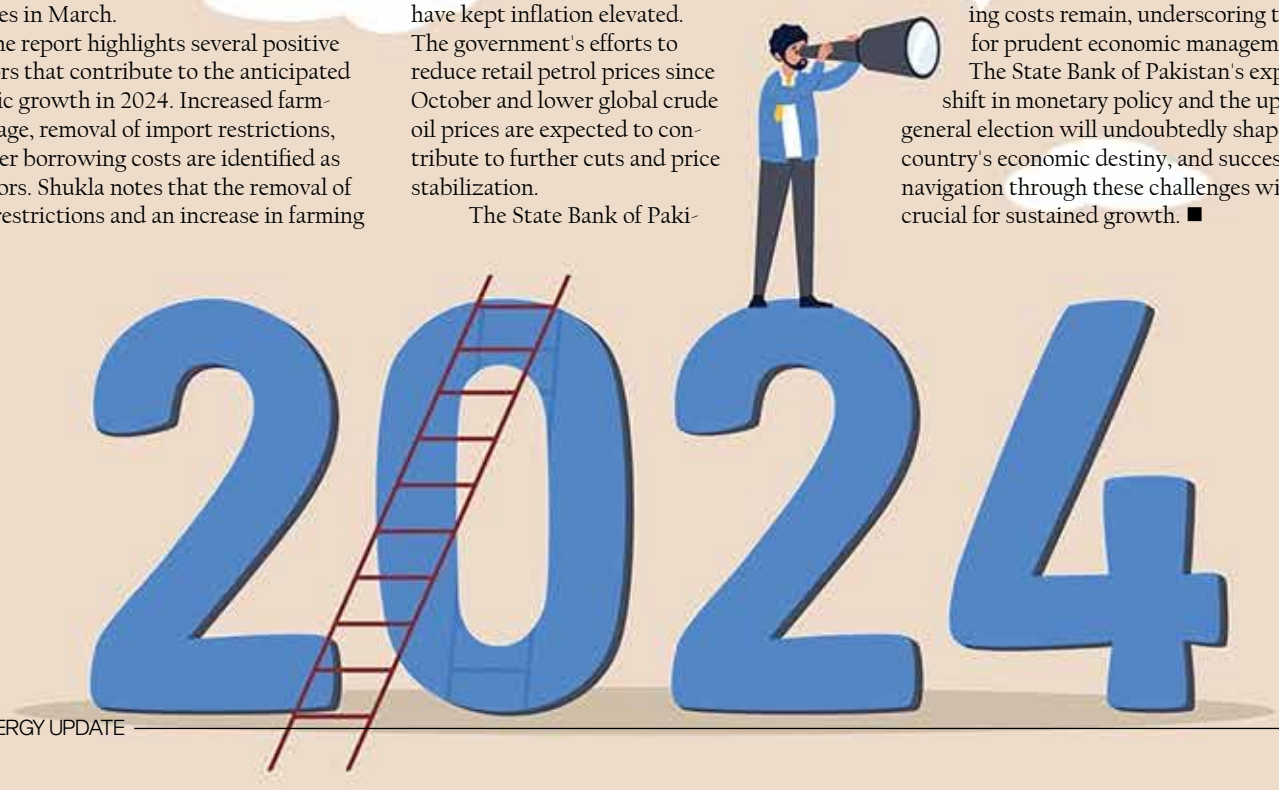
While the economic outlook appears promising, challenges and headwinds are acknowledged. Elevated taxes, high fuel and energy bills, and sharp increases in debt servicing costs have constrained consumer spending power, limiting the space for fiscal spending. Shukla warns that these factors could act as impediments to the anticipated rebound.

Additionally, inflation, which averaged 29% in the first five months of the current fiscal year, is expected to slow to 24% in 2024. Factors contributing to this decline include higher domestic agricultural production, lower global oil prices, and the high base effect. However, Shukla notes that the hikes in energy prices to fulfill the IMF's aid terms have kept inflation elevated. The government's efforts to reduce retail petrol prices since October and lower global crude oil prices are expected to contribute to further cuts and price stabilization.

The State Bank of Pakistan, which implemented a substantial 600 basis points increase in its key policy rate to 22 percent in the first half of 2023 to curb inflation and stabilize the currency, is expected to shift its stance. Shukla predicts that the central bank will likely start cutting rates from March as inflation slows. The forecast suggests a significant reduction of 700 basis points, bringing the policy rate to 15 percent by the end of 2024.

The upcoming general election scheduled for February is expected to play a crucial role in shaping Pakistan's economic landscape. Shukla anticipates that the election will lead to greater political stability and investor confidence. He emphasizes the importance of any new government adhering to IMF terms and successfully completing the current program.

In conclusion, Pakistan's economic trajectory for 2024 holds promise, marked by positive indicators such as increased farming acreage, removal of import restrictions, and lower borrowing costs. The approval of the IMF loan tranche in November and the anticipated negotiation of a new longer-term deal post-March further contribute to the positive outlook. However, challenges such as elevated taxes, high energy bills, and debt servicing costs remain, underscoring the need for prudent economic management. The State Bank of Pakistan's expected shift in monetary policy and the upcoming general election will undoubtedly shape the country's economic destiny, and successful navigation through these challenges will be crucial for sustained growth. ■



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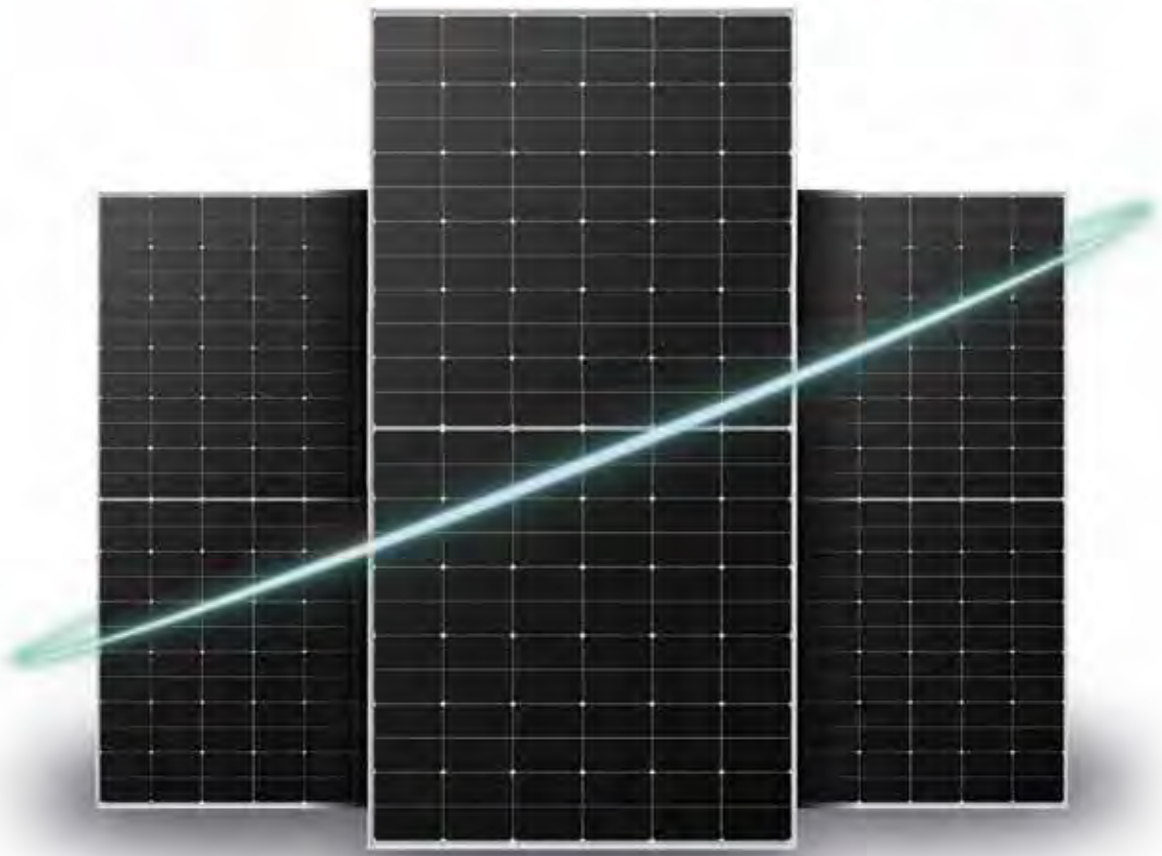

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Dilemmas: oil and gas policies

Pakistan finds itself ensnared in the repercussions of short-sighted decisions within the oil and gas sector

Sajid Mehmood Qazi

The writer is a Additional Secretary Revenue Division Govt of Pakistan Islamabad

In the intricate interplay between energy policy and national security, Pakistan finds itself ensnared in the repercussions of short-sighted decisions within the oil and gas sector. Designed as the linchpin of economic and territorial security, some of these hastily crafted policies have birthed inefficiency and the mindless depletion of public resources.

This article reviews Pakistan's energy policy formulation, shedding light on its short-sighted nature, evaluating its impact on national economy and security, drawing insightful regional comparisons, and ardently advocating for a dynamic, environmentally conscious paradigm shift.

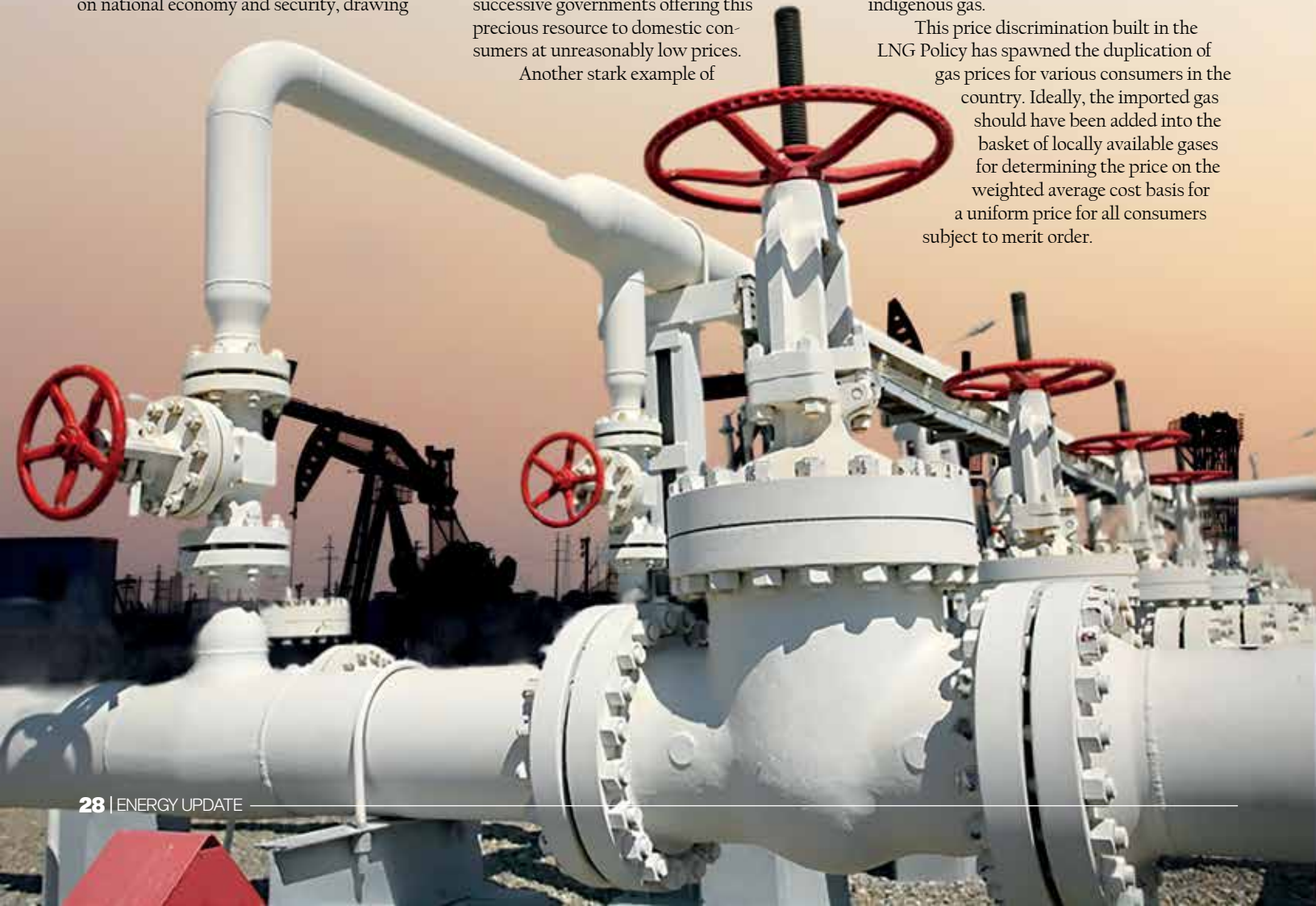
A glaring weakness in Pakistan's energy strategy lies in the myopic realm of policymaking. Many of our public policies are based upon 'brain waves and new ideas' by super bureaucrats or other political officeholders, which are put into practice without much deliberations and due diligence. The results are generally devastating as the policies hardly generate the desired results due to lack of proper thinking and effects of the policies at the conception stage. One such glaring weak policy or lack of it was how the untapped potential of vast natural gas reserves discovered in Sui in 1952 turned into a squandered opportunity, with successive governments offering this precious resource to domestic consumers at unreasonably low prices.

Another stark example of short-sighted policy measure was the promotion of natural gas in the transport sector, resulting in the proliferation of thousands of CNG stations.

The subsequent abrupt halt in gas supply to these stations, specially in Punjab, post the depletion of local natural gas, inflicted severe financial losses on investors in the CNG business, including the motorists who switched to this fuel at a considerable cost.

Chronic shortages now plague the nation, exacerbated by the absence of significant gas discoveries in over half a century. The freshly coined 2015 policy to import LNG seemed to be a progressive idea to address the situation. However, the imported gas was not deemed to be 'gas' and was priced differently than the indigenous gas.

This price discrimination built in the LNG Policy has spawned the duplication of gas prices for various consumers in the country. Ideally, the imported gas should have been added into the basket of locally available gases for determining the price on the weighted average cost basis for a uniform price for all consumers subject to merit order.



The cardinal mistake of ring-fencing LNG prices for the power sector forced the diversion of expensive LNG to domestic consumers at rates intended for cheap local gas.

This skewed policy has spawned a substantial circular debt, undermining the economy and compromising the safety and security of the country. Even after the promulgation of required legislation by the parliament in March 2022, we have not been able to introduce the WACOG system of gas pricing, which is a continuation of policy failure at a big cost to energy consumers with negative impact for the economy and security of the country.

Similarly, our failure to introduce a competent policy for least-cost electricity generation, despite having substantial potential for hydroelectricity, further exacerbated the issue. Although we had a great start when we built mega dams in Mangla and Tarbela, creating big reservoirs of water for irrigation and also generating cheap electricity as a byproduct.

But subsequently this emphasis was lost, giving way to short-term solutions of engaging private investors to set up power plants to produce electricity in the country. Lopsided policies such as inviting the private sector to set up Independent Power Production projects at hastily negotiated terms resulted in elevated electricity prices and drained precious foreign exchange.

Ironically, while the government introduced policy after policy since 1994, offering big incentives to private power producers, it overlooked to develop the electricity transmission and distribution network. Consequently, despite having the capacity to generate electricity at a high cost, the country lacks the infrastructure to transmit and distribute it efficiently nationwide.

The current quagmire in Pakistan's energy sector underscores the necessity for a paradigm shift. Policies must be meticulously crafted, considering all relevant issues and consulting all stakeholders. Short-term political gains should not dictate policy decisions; instead, they should be rooted in financial due diligence with a focus on long-term sustainability.

Historically, reliant on fossil fuels, particularly oil and gas, Pakistan's import-driven energy policy, importing nearly a third of its energy resources, is unsustainable. This vulnerability not only depletes foreign exchange reserves but also exposes the economy to international energy price shocks, threatening the nation's stability.

A comparative analysis with regional counterparts, especially India, reveals stark differences in approaches to energy policies. India's strides in diversification and renewables contrast with Pakistan's heavy reliance on fossil fuels. This disparity necessitates contemplation on the adaptability of Pakistan's energy policy in evolving geopolitical landscapes.

In contrast to Pakistan's challenges stemming from short-sighted policies, India's energy policy emerges as a beacon of success, marked by strategic diversification and foresighted initiatives. The key to India's achievement lies in its commitment to a diverse range of energy sources, including robust investments in renewable energy like solar and wind power.

This proactive approach not only contributes to environmental sustainability but also ensures stable and competitive electricity prices. India's example extends beyond source diversification to encompass an efficient transmission and distribution infrastructure that minimizes losses and facilitates smooth electricity transmission.

Moreover, regulatory reforms and market mechanisms drive competition and efficiency, containing electricity prices and attracting private sector participation.

Importantly, India's strategic energy policy extends to the oil and gas sector, where initiatives promoting refining and production efficiency address challenges comprehensively.

In summary, India's energy policy stands as a reflection of strategic planning, offering a blueprint for nations seeking to balance growth, security, and sustainability.

To fortify economic and territorial security, Pakistan must draw lessons from its policy follies and regional best practices. Implementing a diversified energy portfolio, incorporating renewable sources and strategic partnerships, can enhance resilience.

Strengthening regulatory frameworks, promoting technological innovation, and fostering international collaborations are imperative steps. In the face of rapid environmental changes, a static energy policy is akin to sailing uncharted waters without a compass. Recognizing the symbiotic relationship between energy security and environmental sustainability is crucial. Pakistan should actively integrate renewable energy sources into its policy, aligning with global efforts to mitigate climate change.

As Pakistan grapples with the intricacies of its energy policy, the imperative is clear – striking a balance between economic, territorial security, and environmental sustainability.

Learning from regional counterparts and embracing dynamic, responsive strategies will guide Pakistan towards a future where energy becomes a catalyst for sustainable national development. The redemption lies in a comprehensive and strategic overhaul of our energy policies, ensuring resilience and prosperity for generations to come. ■

Courtesy: Business Recorder

Unlocking Pakistan's Hydro Energy Potential:
Insights from the 3rd INTERNATIONAL HYDROPOWER CONFERENCE 2023

Engr. Nadeem Ashraf

A Group Photo with Speakers & Guest of Honors with Federal Minister for Energy Muhammad Ali, Senator Rukhsana Zuberi and MD PPIB Shah Jehan Mirza

The Energy Update (EU) has once again played a pivotal role in fostering dialogue and collaboration in the realm of Pakistan's energy landscape, this time focusing on the hydro energy potential of the nation. The recently concluded 3rd International Hydropower Conference in Islamabad brought together key stakeholders to delve into the progress, challenges, and future prospects of hydropower projects in the country.

The conference, organized in partnership with the Private Power Infrastructure Board (PPIB) and the International Hydropower Association, centered around the theme "Hydropower: a renewable energy source for a sustainable future." Caretaker Federal Energy Minister, Muhammad Ali, graced the occasion as the chief guest, expressing the government's commitment to increasing the share of hydropower and other renewables in the national energy mix.

Muhammad Ali highlighted the significant untapped potential in Pakistan, citing the capacity to generate approximately 64,000 megawatts from hydropower alone. Despite ongoing projects like the Dasu hydropower, Mohmand dam, and Diamer Basha dam, financing remained a challenge for these mega ventures. The minister also underscored the importance of Thar coal reserves, amounting to 175 billion tons, as a valuable resource for electricity generation.

Noteworthy was the emphasis on energy conservation, with the minister suggesting that 3000-4000 MW could be saved through the widespread adoption of energy-efficient fans across the country.

Panelists busy in discussion on Hydropower Potential and Challenges

PPIB Managing Director, Dr. Shahjan Mirza, shed light on the environmental and economic benefits of hydropower projects. Despite commissioning four projects with a capacity of 1100 MW, Mirza acknowledged the difficulty in attracting private investors due to the substantial financing and extended timelines required. The government's ambitious target of achieving 60% renewable energy and hydropower share by 2030 was highlighted as a catalyst for attracting approximately $100 billion in investment.

Engineer Muhammad Naeem, CEO of Pakhtunkhwa Energy Development Organization (PEDO), emphasized the transformative potential of renewable energy for Pakistan's future. He outlined the extensive hydro energy potential in the north and wind/solar potential in the south, with PEDO actively involved in developing small hydropower projects in remote areas. Naeem stressed the need to focus on removing hurdles to ensure affordable electricity for consumers and industries.

The conference also featured a video mes-

sage from Eddie Rich, CEO of the International Hydropower Association, emphasizing the importance and future prospects of hydropower energy.

Addressing the gathering, Chairman of the organizing committee, Naeem Qureshi, highlighted the conference's role as a dynamic platform for exchanging ideas and propelling the hydropower sector forward. He expressed gratitude to all state agencies and the caretaker government for their support.

Senator Rukhsana Zuberi advocated for the construction of more mini-micro hydropower stations in the hilly north, tapping into the vast run-of-the-river power generation potential. She called for the speedy expansion of the transmission system to provide grid connectivity to new hydropower projects.

In addition to discussions, the Energy Minister presented awards to recognize outstanding contributions to hydropower infrastructure development. The 4th extension of the Tarbela project by WAPDA and the 720 MW Karot project, sponsored by CSAIL, received accolades for their impactful contributions.

As Pakistan charts its course towards a sustainable energy future, the conference underscored the need for consistent government policies and concerted efforts to overcome challenges and harness the full potential of hydropower and renewable energy. ■

Caretaker Federal Minister Energy Muhammad Ali, Senator Rukhsana Zuberi, MD PPIB Shah Jehan Mirza, Azam Joya, NA Zuberi, Engr. Naeem Khan, Dr. Engr. Munawwar Iqbal, Engr. Imran Halim, M. Naeem Qureshi and Halima Khan

Chief Guest Federal Minister Energy Muhammad Ali & Senator Rukhsana Zuberi presenting Mementos to Sponsors include Azam Joya WAPDA, NA Zuberi CSAIL, Engr. Naeem Khan PEDO, Engr. Zafar Iqbal Watto RHC, Mr. Mubeen ur Rehman Al Bario Engineering, SK Hydro, Waqas Shahzad HUBCO, Abdul Rehman Khan OMS Pvt Ltd and Farhan Ali Jawa MM Pakistan.

Pakistan hunkering down despite abundant gas discoveries

Khurram Husain

The writer is a business and economy journalist

Today almost a quarter of gas consumed in country is imported; the country began importing gas for the first time in 2015

A good example of how Pakistan is hunkering down further and further in the face of increasing scarcities is provided by natural gas. Pakistan has been blessed with abundant gas discoveries from a very early age, and one of the first public sector enterprises created in the country was Pakistan Petroleum in 1950.

From a country with barely any energy sources, and practically no power generation capability at birth, Pakistan built an industrial base for itself in large measure due to its abundant endowment of domestic natural gas. In fact, few people know this, but the country's oldest fertiliser manufacturer — Engro — got its start in the early 1960s when its original parent company called Esso was prospecting for oil and found gas by accident in the Mari field, which was out in the middle of a desert at that time.

Since Esso was an oil company, they could not figure out what to do with their gas find and left it for a few years. It was not until later that somebody somewhere figured out that they could manufacture fertiliser instead, if only the government could negotiate an appropriate price with them, given that fertiliser was a controlled price product.

This was in the early to mid-1960s, and Esso fertiliser was born, probably the second fertiliser manufacturer in the country at the time. Since then, more discoveries were made, and more fertiliser manufacturers cropped up, especially in the late 1970s with the arrival of Fauji Fertiliser into the same business. The first thermal power plants had also come up in the 1970s, alongside the large-scale hydroelectric power generation capability that was coming online between the commissioning of the Mangla and Tarbela dams, spanning the mid-1960s to the late 1970s.

The Guddu thermal power station was the earliest and largest such plant, running entirely on natural gas and commissioned in 1974. It was situated in Khandkot, almost exactly equidistant from three major population centres that it was supposed to serve: Karachi, Lahore and Quetta. It is operational to this day, although some of its turbines have been replaced since its first commissioning.

Today, almost a quarter of the gas consumed in the country is imported. Alongside fertiliser and power generation, natural gas was also being given in large quantities to domestic consumers until the 1990s when Pakistan had arguably one of the world's largest piped gas distribution infrastructure. Other industrial claimants arose along the way, in cement for example, and textiles, especially in processing where gas made a good fuel to power the boilers.

The IMF was urging such a pricing reform, but the regime of Gen Ziaul Haq was in no mood to oblige, arguing instead that doing so would have ramifications for food security, which had only recently been attained after a hard-fought couple of decades. But as the decade of the 1980s wore on, awareness kept spreading, and in the middle of the 1980s, a commission was formed with the express purpose of bringing about price deregulation across the board. It was headed by AGN Kazi, a senior and seasoned civil servant from Ghulam Ishaq Khan's inner circle, signalling the seriousness of intent. The commission began by looking at fertiliser, before moving into other areas like oil, and agriculture products such as wheat and cotton.

The commission failed to deregulate fertiliser pricing for a variety of reasons. The manufacturers said the price of fertiliser should be a function of the price at which a new plant will be set up. The commission found that fertiliser was linked with gas, and also food pricing, and adjusting this key price would produce large impacts on other prices. To this day, fertiliser remains a controlled price.

Then in the Seventh Five-Year Plan a new awareness began to creep in: that Pakistan's gas reservoirs were likely to run out, and no new discoveries were being made or likely to be made. In the early 1990s, the first projections appeared showing Pakistan's gas fields entering their period of decline around the year 2008 or 2010. Given the number of industries that were not dependent on gas as a primary fuel, and its salience to agriculture and food production, this projection was like forecasting a catastrophe.

To avoid this catastrophe, action had to begin then, the plan warned. Ramp up exploration, curb consumption, and above all, reform pricing. None of this happened. The pricing regime remained. No new discoveries were made that could put off the date when declines were set to begin. And instead of curbing consumption, in the early 2000s, the regime of Gen Musharraf opened a whole new sector as a claimant on domestic natural gas: vehicular fuel. And soon after that came captive power, especially for the textile industry.

The decline began on schedule around 2010. Five years later, Pakistan began importing gas for the first time in 2015. And today, almost a quarter of the gas consumed in the country is imported, meaning it is priced on purely market terms. So now begins a period of sharp and steep adjustments to this new reality. Last year saw massive gas price hikes. This year has seen another. Next year will see yet more. This is what happens when you hunker down rather than reform. ■

Unveiling the Unspoken:
Environmental toll of Israel's aggression in Gaza ignored at COP28

Naeem Qureshi

The Writer is Managing Editor of Energy Update and Environment Activist

The COP28 missed a crucial opportunity to delve into the environmental fallout of Israel's relentless assault on the Gaza Strip. As the violence unfolded in the very region where the annual UN environmental conference took place, discussions on the Israeli military aggression and its profound impact on climate change should have been at the forefront of COP28's formal talks.

The devastation of civic infrastructure, loss of farmlands and woodlands, and the environmental harm caused by the continuous use of arms and ammunition were some of the critical issues that warranted detailed consideration at COP28. Furthermore, damage inflicted upon solar energy systems, wastewater treatment plants, and water supply systems in Palestinian areas due to constant Israeli aggression should have been highlighted.

It's imperative to recognize that implementing climate mitigation measures in war-ravaged Gaza is a Herculean task, given its highly dense population and the massive destruction caused by Israeli bombardment. The conference should have brought attention to the fact that the global petroleum prices might surge due to instability in the Middle East resulting from the ongoing Israeli aggression.

Civil society organizations took to the sidelines of COP28 to protest against the Israeli war on the people of Gaza. Their demands for an immediate ceasefire echoed the sentiment that talks on climate justice lose meaning amid the massacre of an oppressed community in the same region. Such demonstrations on geopolitical issues are uncommon in the Middle East and particularly noteworthy in the United Arab Emirates.

Several world leaders, addressing COP28, condemned the Israeli aggression against Gaza and called upon the UN to intervene and halt the killing of Palestinians. However, some campaigners argued that COP should adhere strictly to its basic principles, focusing solely on environmental and climate change issues, without delving into geopolitical conflicts. They expressed concern that discussing the Israel-Hamas war might overshadow the original agenda of the annual global climate change talks.

This edition of COP marked Palestine's official attendance, with a separate pavilion. Palestinian officials, while not participating in COP28 negotiations, highlighted the challenges faced by Palestine in transitioning away from fossil fuels and fortifying defenses against climate change amidst war, occupation, and persecution. Financial constraints further impede the implementation of climate mitigation measures in Palestinian areas.

The UN Framework Convention on Climate Change acknowledged that Israel's continued occupation and the Gaza siege have hindered environmental mitigation measures in Palestine. Officials from Palestine attending COP28 stressed that Israel's latest war against Gaza has further frustrated efforts to improve environmental conditions.

Despite the grave threat to their lives and safety, environmental campaigners commended the courage of organizations and activists advocating for climate mitigation measures in Palestine. They urged the global community gathered in Dubai for environmental protection to play a role in ending violence and aggression against the oppressed people of Palestine. In their view, climate justice in Palestine remains an elusive goal amid the constant bombardment by Israel. ■

Dollar-based contracts described responsible for electricity rate hike

Caretaker Federal Energy Minister, Muhammad Ali, has said the dollar-based power generation contracts signed in the past are the main reason behind the recent increase in the electricity rates.

The Caretaker Federal Energy Minister stated this while talking to media persons after he inaugurated the 3rd International Hydropower Conference organised by the Energy Update at a hotel in Islamabad.

He said that till a few years back the dollar exchange rate in the country had been Rs 100 which was later increased to Rs 170. At present the exchange rate is around Rs 285, he said.

Due to the constant increase in the dollar exchange rate, there was an increase in capacity payments by the governments to power generation contracts of the past, said the Interim Federal Minister.

He said the government couldn't change the contracts signed in the past, which were responsible for the recent increase in the electricity rates. "We have to

live with these contracts. While we adhere to these contracts, we will do tariff adjustment in such a manner that there will be a decrease in overall rates of electricity," said Mr Ali.

He said the incumbent interim government had started working on this issue to increase its fixed revenue and bring down the variable rates in the power sector.

"This policy is going to benefit the power sector consumers, especially the industry," he said.

The Caretaker Energy Minister said that economic growth was important for Pakistan for generating employment opportunities for its eligible youth and increasing exports from the country. He said the dollar exchange rate would be decreased after increase in exports from Pakistan.

"We have to lower our tariff for our economic growth as we are working on this issue," said Mr Ali. Answering a question, he said that there was a marked improvement in the economic indicators of the country during the current interim regime.

He said that there was a marked reduction in the dollar exchange rate after it had increased up to Rs 325. Moreover, there were no further increases in the interest rate and inflation in the country, the minister said.

He told media persons that there was a phenomenal reduction in petroleum costs after the decrease in global oil prices. The per litre price of petrol was decreased by Rs 64 while the diesel prices were reduced by Rs 50 to Rs 52 in the present caretaker regime, he said.He said that there was an overall improvement in the economic indicators of the country. He hoped that those indicators would further improve in the upcoming elected regime in the country if the hard work in the economic sector continued in the same manner. ■

UBG and BMP progressive sweep FPCCI elections for 2024-25 term

In the recently held elections for the Federation of Pakistan Chambers of Commerce and Industry (FPCCI) term of 2024-25, candidates from the United Business Group (UBG) and Businessmen Panel Progressive (BMP) secured a majority of victories. Unofficial results revealed late Saturday night indicate that the UBG and BMP Progressive successfully claimed key positions, including the presidency and senior vice presidency.

Atif Ikram Sheikh, the UBG's presidential candidate, emerged as the unofficial winner, defeating Muhammad Ali from BMP. Saquib Fayyaz, another UBG nominee, secured victory over Abdul Ghani of BMP for the position of senior vice president.

Qurat ul Ain of UBG was elected for the reserve seat of Women's Chamber, while Nasir Khan of BMP secured the Balochistan chamber seat. In the four seats for vice presidents of the Association Class, Asif Inam, Aman Paracha, Asif Sakhi, and Zaki Ejaz, all from UBG, were elected.

Aun Ali Syed from BMP was elected as the vice president from Khyber Pakhtunkhwa, and Tariq Mehmood Jadoon (UBG) secured the seat for vice president from Small Traders. Zain Iftikhar (UBG) became the vice president from Punjab. The contest for the vice president seat from Sindh between Abdul Muhamin Khan (UBG) and Muhammad Yahya Memon (BMP) resulted in a tie, leading to the withholding of results for later announcement.

Massive Rs16 billion trade-based money laundering scandal unearthed in solar panel imports

The Directorate of Post Clearance Audit (PCA) South has exposed a trade-based money laundering scheme involving solar panel imports, costing the national exchequer over Rs16 billion. The investigation revealed a cartel of 12 fictitious importers connected to a suspicious company. Through misuse of customs procedures and trade-based money laundering, the cartel imported goods illegally, mis-declared items, and exploited the green channel. Two individuals, one already arrested, are implicated for facilitating the process. Raids are ongoing to apprehend the second accused. The PCA South has initiated sectoral audits, uncovering fraud in the solar panels sector, leading to the lodging of FIRs against the cartels. ■

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CPEC Phase II:
Pakistan needs to recognise the true potential of the CPEC

Tahir Ali

The writer is an Islamabad-based journalist specialising in security issues, minorities, and regional politics

Gohar Ijaz, the interim Federal Minister for Commerce, spearheaded a 20-member delegation of Pakistani businessmen to Beijing in the second week of December. The delegation spent extremely busy time interacting with multiple stakeholders including government officials, business leaders, and investors. The main agenda of the visit was to showcase Pakistan's investment-friendly environment, strategic location, Special Economic Zones (SEZs), and skilled workforce across sectors like textiles, agriculture, technology, infrastructure, and energy.

The minister's fruitful interaction with Chinese officials led to considerations for amending the Free Trade Agreement (FTA), granting Pakistani products preferences akin to ASEAN countries. China has also committed to supplying trade finance in Yuan, offering a $5 billion loan for industry relocation to Pakistan's SEZs or Export Processing Zones, and an additional 30 RMB for immediate trade finance. The development underscores Pakistan's readiness to unlock the full potential of the China-Pakistan Economic Corridor (CPEC), an integral component of China's Belt and Road Initiative (BRI), catalysing boosting exports and meeting debt and investment obligations.

Having navigated the initial milestones, the CPEC has entered phase II. This phase, also known as CPEC 2.0 is poised to build upon the initial infrastructure development, ushering in a new era of collaboration that spans diverse sectors including, mining, industry, green and low-carbon development, health, space cooperation, digital economy, development cooperation and export of agricultural products to China.

A decade since President Xi Jinping proposed the BRI, its flagship project, the CPEC, stands as a testament to the collaborative success between China and Pakistan. The corridor has played a significant role in propelling Pakistan's economic and social progress, orchestrating a substantial upgrade to the nation's infrastructure. Beyond the tangible improvements, the CPEC has not only enhanced the well-being of the populace but also fortified people-to-people contacts, fostering deeper regional connectivity.

In April 2015, during the visit of President Xi to Pakistan, he emphasised that the construction of the CPEC should play a leading role in the practical cooperation between the two countries.

The CPEC's initial emphasis centered on generating electricity and developing infrastructure, laying the ground for subsequent mega projects aimed at socio-economic development. China has invested nearly $26 billion in direct projects in Pakistan.

The commercial operations have been successfully initiated for a total of 13 power generation projects, boasting an installed capacity of 8,020 MW. Additionally, a High-Voltage Direct Current (HVDC) transmission line, capable of evacuating 4,000 MW, has been accomplished. The ongoing progress includes the anticipated completion of the 884 MW Suki-Kinari hydropower Project by mid-next year.

Other projects, such as the 700.7 MW Azad Pattan Hydro Power project, 1,124 MW Kohala, and the 300 MW Gwadar Coal Power Project are currently in the pipeline. In the realm of infrastructure, six significant connectivity projects have reached completion, including the Havelian-Thakot section of the Karakoram Highway, the Multan-Sukkur (M-5) Motorway, and the Hakla-D.I. Khan Motorway, the Optical Fiber Cable network, the Eastbay Expressway, and the Orange Line Metro Train.

The Gwadar Port is the centerpiece of the CPEC and a key to Pakistan's emerging role as the hub of regional connectivity. The New Gwadar International Airport Project, a contemporary and globally oriented airport initiative, is steadily progressing towards its completion with support from the Chinese government.

Numerous projects have been undertak-

en for the benefit of the local community in Gwadar like the establishment of a cutting-edge Pak-China Friendship Hospital, Technical and Vocational College, and water desalination plant in Gwadar among other endeavours. These transformative projects aim to enhance the infrastructure, education, and health facilities, contributing to the overall prosperity and well-being of the people in the region. In the initial stage of CPEC development, around 236,000 job opportunities have been generated for the local people of the country, including hi-tech jobs for engineers.

Over the past decade, numerous Chinese enterprises have actively engaged in efforts to contribute to the economic and social development of Pakistan. These endeavours have not only strengthened the deep connection with the Pakistani people but have also played a pivotal role in advancing the stable growth of the all-weather strategic cooperative partnership between China and Pakistan. Chinese companies provided state-of-the-art training to Pakistani students. Initially hired as interns and trainees, these individuals were later offered permanent employment with attractive packages. They now actively contribute to projects like CPEC and others, earning substantial and competitive salaries.

In addition to training students, Chinese companies have also provided vocational and technical training to less educated individuals in Pakistan. Moreover, to address the gender gap, these companies have actively promoted female representation in their workforce. Notably, at the That Block-II Open-Pit Coal Mining Project, approximately 50 female drivers operate large dump trucks — an extraordinary and unprecedented development in Pakistan's history.

Pakistan must recognise the true potential of the CPEC as a catalyst for boosting exports and meeting debt and investment obligations. As part of the BRI, China has agreed upon over 3000 projects totaling $1.2 trillion. Out of these, projects amounting to $800 billion are already underway. Out of China's $62 billion investments, Pakistan only succeeded in materialising $ 26 billion. To fully realise the benefits of the $62 billion investment, Pakistan needs to expedite the development of SEZs and ensure a secure and conducive environment for investors. ■

HYDEL POWER

Hydel development and green hydrogen

Hammad Ahsan

The writer is an energy expert

Pakistan is a country that is significantly blessed with hydropower potential because of its distinct topography and extensive river system. According to conservative estimates, Pakistan's potential for hydropower generation is more than 60GW, of which Pakistan has only been able to harness about 10.6GW. The benefits of hydropower are enormous, which can be ascertained from the fact that hydrocarbon resources-rich countries like

Norway and Iran also prioritise the development of hydel power, with Norway having an installed capacity of more than 30GW and Iran having 12GW. The hydel generation dovetails with Pakistan's demand patterns, which are primarily driven by the summer cooling load. Pakistan has seen demand peaks during the summertime period of up to 25.5GW observed on 21st August this year; at that time, hydel was generating at its peak of more than 9GW.

During winters, this power demand is usually reduced to half of the summer peak, and hydel is curtailed as well. As hydel is an indigenous and sustainable resource, it also helps to conserve foreign exchange reserves. The current debate of contracting excess generation capacity has been going on for some time, and one of the key outcomes of this is the amplified focus towards long-term planning to avoid such scenarios in the future. The indicative generation capacity expansion plan ('IGCEP') is a sacred document that dictates the capacity to be added in the coming 10 years. The criterion for inclusion of projects into the IGCEP is the least cost. Only projects included in the document are granted regulatory consent.

On the other hand, the gestation time for developing private hydro is at least eight to 10 years. For a project to successfully achieve fruition within this time, it has to solicit a set of approvals in a cascaded manner. Failure to receive any of the consents derails the project's overall progress, consequently causing delays. The implication of the non-inclusion of the project into the IGCEP is that its development progress gets stalled. The process for developing IGCEP for the next year has been reinitiated. It has also been reported in the media recently that authorities concerned foresee that the 4,500MW Diamir Basha project is expected to reach its commercial operations (COD) in 2029. Additionally, the 1,200MW Chashma-5 nuclear power project is also forecasted to achieve COD in the same year. It is critical to mention here that both of these projects were not considered to come online together during the previous iteration of IGCEP. Due to this variation, it is highly likely that a significant number of candidate hydropower projects that had been selected purely on the basis of least cost will be dropped in the upcoming version. Hydel, being a base load power, has the unique advantage of providing electricity at higher capacity factors than IRE, thus enabling greater utilisation of hydrogen generation assets. It can then be converted to green ammonia and transported to other parts of the world, just like how LNG is currently shipped.

Hydel is mostly concentrated in the northern parts of the country, with Khyber Pakhtunkhwa having at least about 30GW of potential and Azad Jammu and Kashmir also having another about 8GW. Thus they have the potential to become hydrogen exporting hubs. Pakistan is strategically located at the centre of sea routes for Europe and East Asian economic giants like Japan, Korea and China, who are all eager to decarbonise their energy sources.

Further, within the recently approved National Electricity Plan 2023-27, it has been stated that the long-term hydrogen development strategy will be developed by December 2025. It will be highly prudent to consider the development of hydel power and inland waterways as the key drivers for achieving the competitive advantage for the development of green fuel of the future, making Pakistan a hydrogen exporting hub for the entire region and the world. ■

Sleepwalking into the darkness

Investors – both at home and abroad – are not as stupid as the Pakistani elites

Mosharraf Zaidi

The writer is an analyst and commentator

Venal and rent-seeking elites are a global phenomenon, but most countries don't have to deal with the lack of imagination and basic incompetence that Pakistanis do. Every day the evidence continues to mount. Last week, the unelected, caretaker commerce minister repeated the delusional $100 billion target for exports with a self-referential announcement that would make even the most indulgent narcissist blush.

Over the weekend, the caretaker chief minister of Punjab announced a plan to improve air quality without disrupting the flow of traffic. His brilliant climate-altering solution is to hose down the entire city of Lahore with four teams of one hundred cleaners each, using high-pressure water jet streams to reduce 'dust'.

Advocates of privatization in Pakistan argue, with no sense of irony, that the task of privatizing state-owned enterprises (SOEs) must be conducted urgently – with one caveat: it must ensure job security for the low-skilled, burdensome labour employed by those SOEs (in short, retain the one facet of SOEs that is the definitive reason for why privatisation has become so urgent).

The federal government continues at least a quarter-century run of borrowing valuable dollar-denominated money from the World Bank and the Asian Development Bank to, among other things, help the Federal Bureau of Revenue (FBR) raise more revenue, in... you guessed it: rupees, from... you guessed it: salaried middle-class suckers and the helpless and growing ranks of GST-paying poor people.

Among the elite, the delusions of normalization of ties with India continue to be the primary layer of new ideas: except that this is one new idea that is as old as Pakistan itself. In the bargain, India has rewarded this idea with its occupation and annexation of Kashmir, the murder of thousands of innocent Kashmiris, the expansion of a global network of terrorists and terrorism financing targeting vulnerable aspects of Pakistan's polity, the use of Afghanistan as a staging ground for violent extremist actors targeting Pakistani soldiers and the weaponization of UNSC 1267 through both a sustained campaign of South Block revisionist fictions, and material measures such as the grey list sanctions that the FATF has imposed twice in the last decade and a half.

Despite all this, Pakistan's elite wants to restore the now dead and buried 'composite dialogue' format with India. Of course, India's 'peaceful' intentions don't end with the lawfare, information operations, legalised occupation and annexation in the boardrooms and on the airwaves. They cut deeper.

Errant BrahMos missiles, aerial attacks into Balakot, so-called surgical strikes across the border, and constant LOC fire on the ground are all meant to signal the seriousness of India's capability to enact 'Cold Start' operations as and when India chooses. Here too

Pakistani elites insist on burying their heads in the sand.

Perhaps the most obvious of India's actions that signal its intentions are the most meaningless of them – efforts to exclude Pakistan and Pakistanis from the world cricket calendar, bans on Pakistani entertainers and artists from partaking in India's massive domestic consumption market and attempting to exclude Pakistani leaders at every turn at international fora.

It is with this same India with whom Pakistani elites want to reach some kind of bargain. Right-wing, hatred-laced, historically delusional national discourses do not make for good dance partners – but this is difficult to explain to boomers who are stuck in 1999. The SIFC is supposed to be the new stability play through which the most important sectors and agendas in the country will be protected from the travails of whatever this version of democracy is going to manufacture on February 8, 2024.

The larger question might be who will protect the SIFC from the Pakistani elite's insatiable appetite for mediocrity and incompetence. Investors – both at home and abroad – are not as stupid as the Pakistani elites. They follow how the tax authorities in Pakistan try to bully the largest investors in Pakistan – the country's telecom companies – into paying more taxes by locking the offices of telcos. They see how multinationals are prevented from taking their money abroad by finance ministers obsessed with fictional notions of low exchange rates.

They see how the most important and largest privatization in the country's history stands incomplete – a full 17 years after the Etisalat deal for PTCL was signed. When the commerce minister of the same country promotes fictions like $100 billion in exports – and is rewarded with glowing coverage for doing so – those watching the circus are laughing. The really polite ones do so whilst they take off from Islamabad Airport. Most don't wait that long.

Serious people have spent nearly the last two years thinking carefully about how the country can find a path to exit from a state of permanent polycrisis. The traditional wave of optimism that seizes the discourse after a cataclysm hasn't yet caught on – outside of some very carefully curated bubbles.

It is exactly this gap that is the most perplexing and worrying of all. Democratic rights, free expression and even basic rule of law questions can be left unanswered as they have in fits and starts throughout the last seven decades. There are hardly any takers for these – East or West. The difference between places that will barely survive and places that will thrive is economic growth.

The places that will thrive are already focused on life sciences, artificial intelligence, organic seed technology, water-scarce agricultural innovation, climate adaptation, materials sciences, data science and analytics-driven public sector service provision, supply chain innovation, bespoke content consumption, and escalation on the manufacturing value chain. The places that will barely survive? They are sleepwalking into the darkness. ■

COAL POWER

$2bn Thar power plant achieves financial close

Capacity of five Thar coal-based power projects has reached 3,300MW

EU Report

The Private Power and Infrastructure Board (PPIB) — a one-window facility of the federal government — has announced the $2 billion financial closing of the country's largest Thar coal-fired power project, currently operational at Thar, by Shanghai Electric Corporation, China.

In a statement, the PPIB said the financial close agreement was signed by PPIB Managing Director Shah Jahan Mirza, Chief Executive of the project company Meng Donghai, Chief Executive Officer of Industrial and Commercial Bank of China (ICBC), Karachi Branch Zhou Bo.

Having a generation capacity of 1,320MW, the project has been implemented under the China-Pakistan Economic Corridor (CPEC). The PPIB chief commended that to meet stringent timelines agreed by the governments of Pakistan and China, the project company commenced construction work in a crunch situation of Covid-19 by leveraging its equity and bridge financing and completed the project on Feb 5, 2023.

Shanghai Electric Group Corporation is the main project sponsor of the project, while Sino-Sindh Resources Ltd (SSRL) is the coal supplier from Thar Block-1 whereas ICBC, China Development Bank, Bank of Communications Co. Ltd., China Minsheng Bank Corporation, Postal Savings Bank of China Co Ltd. and Agriculture Bank of China are the lenders to the project. Chinese Sinosure is the insurer of the project.

The plant is based on state-of-the-art supercritical technology and is equipped with the latest equipment to fulfil environmental obligations and fully compliant with the environmental standards of the World Bank and International Finance Corporation (IFC) and Pakistan Environmental Protection Agency, the PPIB said, adding that the project is the second cheapest power project from the fuel cost point of view (i.e. Rs4.98/kWh).

Through its operations, the country saves precious foreign exchange of around $500 million annually. The project significantly contributed to reducing the overall basket price of electricity which may be translated to around Rs200bn annually while expected to generate nine billion units of electricity per year, according to the statement.

With the induction of this project, the total installed capacity of five commissioned Thar coal-based power projects has reached 3,300MW, a sign of increasing indigenous fuel-based power generation. ■

Energy use in region: comparisons odious

Shahid Sattar | Muhammad Mubasal

Energy is pivotal for growth, yet Pakistan's situation is grim. Despite possessing abundant resources, its energy landscape is plagued by inefficiencies and distorted consumption pattern. This complex issue is multifaceted that intertwines to shape the current energy paradox.

The energy to GDP conversion rate serves as a key metric to gauge an economy's energy efficiency and measure how effectively a country uses energy to generate output and income. A higher rate in this regard means the country is more efficient at converting energy into economic output. To put things into perspective, Bangladesh's conversion rate of $6.13 million/ktoe is twice that of Pakistan's, which stood at $3.3 million/ktoe. This significant difference underscores Bangladesh's superior energy efficiency and effective allocation of resources, setting a regional benchmark. Interestingly, a key factor in Bangladesh's higher efficiency is the declining energy demand within its industrial sector. This trend indicates greater energy efficiency in industrial processes, contributing to the country's overall energy performance.

A further analysis reveals that the largest share of Bangladesh's gas consumption, about 40%, is by its power sector, followed by industry (19%) and captive power (18%), with domestic consumption trailing at 13%. The pattern shifts for electricity, where the domestic sector emerges as the primary consumer, accounting for 52%, followed by commercial 25% and industrial use 13%.The gas, being a more affordable energy source, is allocated to industries, while the more expensive energy sources are directed towards households. This approach achieves a balance and results in a higher conversion rate compared to regional counterparts.

Meanwhile, India, although not leading in the conversion rates, has demonstrated noteworthy progress in its energy efficiency. The country's GDP per unit of energy used increased from $2.30 million/ktoe in 2010 to $2.94 million/ktoe in 2022. This improvement can be partly attributed to India's service sector-led economic growth, which is inherently less energy-intensive than industrial sectors.

However, a large portion of India's energy—approximately 41%—is consumed by its industry, compared to 26% for domestic use. Despite India's effective resource allocation, its transport sector, marked by high inefficiency, is a major contributor to the country's overall low energy efficiency, consuming a substantial share of its energy resources.

In contrast, industries receive more costly energy forms and incur higher expenses due to subsidies provided to households for energy cost reduction. Moreover, the policy of providing energy to households at very low prices strains the industries through a higher tariff which, as a consequence, includes cross-subsidy, adversely affecting their competitiveness in the global market. Despite having a lower industrial energy consumption than India, Pakistan's industry exhibits greater efficiency.

A consequence of ineffective and below-cost energy pricing strategies leading to severe misallocation of resources. It's imperative to acknowledge the substantial role of energy prices in diminishing energy intensity via efficiency improvements.

Ration-alizing energy prices is crucial to incentivizing energy conservation and efficient use through, for instance, adoption of more efficient appliances. As energy prices are rationalized, any increase in prices should be counterbalanced by improved energy efficiency. Hence, it is urgent and essential to aggressively implement pricing policies that will curb the excessive energy demand of the domestic sector.

In line with these efforts, in 2023, the government took a decisive step by banning the manufacturing and sale of old, high electricity-consuming bulbs and traditional fans as part of its broader energy-saving initiative. These actions are targeted at achieving significant energy savings, potentially up to 9300MW. Adhering to the new MEPS, newly manufactured fans are now designed to consume only 60W of electricity, which is half of what traditional fans used, while the energy consumption of light bulbs has been capped at 12W.

The shift towards energy-efficient appliances must be urgently mandated, particularly replacing gas geysers with solar alternatives. This measure alone can save up to 500 MMcfd of gas, thereby providing much needed relief to the balance of payments by reducing the import bill by over $1 billion per annum. Additionally, upgrading gas burners is critical for further

domestic energy savings, offering a potential gas conservation of 200 MMcfd at a one-time cost of Rs 2 billion. The proven success of solar water heating systems, like those in Nathiagali conserving 500 tons of fuelwood annually, illustrates the urgent need for a nationwide adoption.

Furthermore, industries and companies can play a crucial role in energy conservation. Implementing an Energy Management System (EMS) allows companies to monitor energy consumption data in real-time and identify opportunities for energy savings. Another effective approach is the use of Building Automation System (BAS), which optimizes heating, cooling, ventilation, lighting, and other systems in offices and industries. It uses advanced technologies like AI and machine learning to identify energy consumption patterns and implement energy-efficient measures. For instance, the Ministry of Energy and Mineral Resources in Indonesia saved 318,700 KWH in 2019 by implementing BAS in their buildings.

In light of these recommendation, Pakistan's journey towards resolving its energy paradox requires a multifaceted approach. Given its limited resources, the affordability of energy emerges as a looming challenge. Pakistan's path to economic stability and growth is intricately linked to enhancing its energy efficiency.

The country must urgently address the misallocation of energy resources, incentivize efficient energy use, and adopt innovative technologies and practices across all sectors. By prioritizing energy efficiency, not only can Pakistan meet its economic goals it will also contribute to global environmental sustainability. ■

Courtesy Business Recorder

AWARD CEREMONY

PSE honors top 25 companies for excellence

EU Report

In a prestigious event, the Pakistan Stock Exchange (PSX) recently unveiled the winners of the highly anticipated Top 25 Companies Awards for the year 2022. The awards celebrate businesses that have demonstrated outstanding financial performance, operational excellence, and a commitment to sustainability and ESG initiatives.

The Top 25 Companies Awards highlight PSX's commitment to steering listed companies toward financial growth while emphasizing environmental, social, and governance factors. PSX has also demonstrated its dedication to sustainability by signing UN Women's Empowerment Principles and joining the United Nations Sustainable Stock Exchanges (UN SSE) Initiative.

The top three firms in the 2022 winners' list are Fauji Fertilizer Company Limited, Engro Corporation Limited, and Systems Limited. The remaining 22 companies solidified their positions as leaders in Pakistan's corporate sector, showcasing exceptional financial performance and strategic vision. The awards ceremony, graced by Chief Guest Prime Minister Anwar ul Haq Kakar, not only celebrated the success stories of these corporations but also emphasized the symbiotic relationship between government policies and business prosperity. The Prime Minister urged businesses to embrace Corporate Social Responsibility (CSR) as a moral obligation and encouraged digital evolution and collaboration with higher education institutions. ■

The future is bright, and it's powered by the sun

Mian Fahad

The Writer is Country Head Growatt PK

An exploration of the future of solar energy in 2024 is comprehensive and optimistic, highlighting key trends and predictions that align with the ongoing push towards sustainability and renewable energy.

Let's delve a bit deeper into some of the points you raised:

1 Solar Energy Storage Solutions:

Enhanced Battery Technologies: Developments in battery storage, such as higher energy density and faster charging capabilities, will contribute to a more stable and reliable energy supply. This is especially important for maximizing the utilization of solar energy during periods of low sunlight.

Innovative Storage Systems: Beyond traditional batteries, innovative storage solutions, such as thermal energy storage or advanced grid management systems, may play a significant role in improving the overall efficiency and reliability of solar energy storage.

2. Advancements in Solar Technology:

Perovskite Solar Cells: These have gained attention for their potential to boost efficiency and reduce manufacturing costs. Continuous research and development in perovskite technology will likely lead to more reliable and cost-effective solar cells.

Bifacial Modules: These modules capture sunlight from both sides, enhancing overall energy yield. As their adoption grows, we can expect improvements in design and efficiency, making them more accessible to a broader range of applications.

Advanced Energy Storage: The focus on energy storage is crucial for overcoming the intermittent nature of solar power. Continued advancements in battery technologies will likely result in more efficient and cost-effective solutions, contributing to the overall reliability of solar energy systems.

3. Decentralized Solar Power:

Microgrid Technology: Advances in microgrid technology empower local communities to manage their energy production and consumption efficiently. This decentralization trend enhances energy resilience and reduces dependency on centralized power grids.

Peer-to-Peer Energy Trading Platforms: These platforms enable individuals and communities to trade excess energy directly. As these systems become more sophisticated and widely adopted, they contribute to a more democratized and resilient energy infrastructure.

4. Policy Support and Incentives:

Sustainable Practices: Governments' emphasis on sustainable practices aligns with global efforts to combat climate change. Continued policy support and incentives will likely accelerate the transition to solar energy and other renewable sources. Tax Credits and Feed-in Tariffs: Financial incentives are crucial for attracting investments in solar projects. Governments offering tax credits, feed-in tariffs, and other favourable regulations create a conducive environment for businesses and individuals to adopt solar technologies.

5. Integration of Artificial Intelligence (AI):

Optimized Solar Panel Positioning: AI algorithms can enhance the efficiency of solar installations by optimizing the positioning of solar panels based on real-time weather conditions and sunlight patterns.

Energy Production Prediction: AI can predict energy production, allowing for better grid management and planning. This capability is particularly valuable for balancing the intermittent nature of solar energy.

Enhanced System Efficiency: The integration of AI-driven technologies can lead to more efficient energy systems, reducing waste and improving overall performance.

Conclusion: The holistic approach presented in your blog post paints a promising picture of the future of solar energy. As technology, policy, and societal attitudes continue to evolve, the solar industry is well[1]positioned for sustained growth and positive environmental impact. Continued collaboration between governments, industries, and communities will be key to realizing the full potential of solar energy in 2024 and beyond. ■

Aramco's Landmark Deal in Pakistan

A boost for energy sector and economic revitalization

Mustafa Tahir

The Writer is Deputy Editor of Energy Update

In a groundbreaking move, Saudi Arabia's integrated energy and chemicals giant, Aramco, has announced its first foray into the Pakistani fuels retail market with the planned acquisition of a 40% equity stake in Gas & Oil Pakistan Ltd. ("GO"). The strategic move, signed in definitive agreements in December, is poised to reshape the landscape of Pakistan's energy sector and generate positive economic impacts.

The acquisition of a substantial stake in GO, a prominent downstream fuels, lubricants, and convenience stores operator with over 1,100 retail outlets across Pakistan, signifies Aramco's commitment to strengthening its downstream value chain internationally. The move aligns with Aramco's broader downstream expansion strategy, encompassing refining, marketing, lubricants, trading, and chemicals.

Mohammed Y. Al Qahtani, Aramco Downstream President, highlighted the significance of this acquisition, stating, "Our second planned retail acquisition this year aligns with Aramco's downstream expansion strategy, with a clear path ahead for growing an integrated refining, marketing, lubricants, trading, and chemicals portfolio worldwide."

The transaction is subject to regulatory approvals and customary conditions, underscoring the meticulous approach taken by both parties to ensure a seamless integration.

Economic experts have welcomed the move, viewing it as a positive development for Pakistan's economy, which has faced challenges, including a reliance on debt to address fiscal concerns. Mustafa Pasha, Chief Investment Officer at Lakson Investments, emphasized the importance of attracting Foreign Direct Investment (FDI) to reduce debt sustainably.

"Transactions like these would pave the way for other large companies to invest in Pakistan," remarked Amreen Soorani, Head of Research at JS Global.

Attracting FDI has been a persistent challenge for Pakistan, and experts believe that Aramco's investment could have a ripple effect, attracting other global players to explore opportunities in the country.

Pakistan has been grappling with economic challenges, and this deal could serve as a catalyst for change. Pasha noted that the country's FDI model needs to evolve to be less extractive, emphasizing the need for productive use of investments to attract further interest from the global business community.

"This announcement by Aramco can have a knock-down effect, leading to greater interest from other global players. The thing to see now is that the upcoming investment is put to productive use and used as a showcase for other investors," added Pasha.

With Aramco's entry into the Pakistani fuels retail market, the nation's oil and gas industry stands to benefit significantly. The acquisition provides Aramco with additional outlets for its refined products and opens new market opportunities for Valvoline-branded lubricants.

The deal also underscores Pakistan's attractiveness as an investment destination in the energy sector, offering growth potential and high-quality assets to international players.

In conclusion, Aramco's acquisition of a significant stake in Gas & Oil Pakistan marks a transformative moment for Pakistan's energy sector and economy. As regulatory processes unfold, the country anticipates a positive economic impact, increased FDI, and potential growth in the oil and gas industry. The successful implementation of this deal could serve as a beacon, attracting further international investment and fostering economic revitalization in Pakistan. ■

COP28 deal: Beginning of end for fossil fuels

The agreement tackles only fossil use in energy, not in industrial areas such as the production of plastics and fertiliser

EU Report

The world for the first time on Wednesday approved a call to transition away from fossil fuels as UN negotiations in Dubai tackled the top culprit behind climate change, but at-risk countries said far more action was needed.

After 13 days of talks and several sleepless nights in a country built on oil wealth, the Emirati president of the COP28 summit quickly banged a gavel to signal consensus among 194 countries and the European Union.

"You did step up, you showed flexibility, you put common interest ahead of self-interest," said COP28 president Sultan Al Jaber, whose role as head of the United Arab Emirates' national oil company had raised suspicion among many environmentalists.

Describing the deal as bringing "transformational change", Jaber said: "We have helped restore faith and trust in multilateralism, and we have shown that humanity can come together."

EU climate chief Wopke Hoekstra called the agreement "long, long overdue", saying it had taken nearly 30 years of climate meetings to "arrive at the beginning of the end of fossil fuels".

But with the UN talks requiring consensus, Jaber carefully calibrated the text to bring onboard countries from islands that fear extinction from rising sea levels to oil giant Saudi Arabia, which led the charge to keep exporting its petroleum.

Toughening language from an earlier draft that was roundly denounced by environmentalists, the agreement calls for "transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner". It asks for greater action "in this critical decade" and recommits to no net greenhouse gas emissions by 2050 in hopes of meeting the increasingly elusive goal of checking warming at 1.5 degrees Celsius above pre-industrial levels.

The planet has already warmed by 1.2°C and scientists say 2023 was likely the warmest in 100,000 years, as storms, droughts and lethal wildfires expand around the world. John Silk, the negotiator from the Marshall Islands, had warned that the earlier draft marked a "death warrant" for his Pacific archipelago, which is just 2.1 metres above sea level.

Silk likened the final agreement to a "canoe with a weak and leaky hull, full of holes" but added: "We have to put it into the water because we have no other option." The small islands did not block the Dubai deal, but a representative from Samoa criticised the language as too weak after contending the group had not arrived yet in the room at Dubai's sprawling Expo City when Jaber declared consensus.

"We have made an incremental advancement over business as usual when what we really needed is an exponential step change in our actions," Samoan chief negotiator Anne Rasmussen said on behalf of the island nations, drawing a standing ovation and polite applause from Jaber.

But US climate envoy John Kerry hailed the deal as the clearest endorsement yet of 1.5°C and indicated he worked to win over Saudi Arabia.

"I think there were times in the last 48

hours where some of us thought this could fail," Kerry said. But he said: "A number of countries that produce oil and gas — you know who they are — they stepped up and said, you know, we want this to succeed."

Saudi Energy Minister Prince Abdulaziz bin Salman, speaking to Al Arabiya Business, praised the final language and said there was "no agreement on the immediate or gradual end of fossil fuels, but on a process of transition". Seeking to avoid the geopolitical tensions that have strained cooperation on other issues, Kerry also met ahead of COP28 with his counterpart from China, leading to a joint call by the world's two largest emitters to step up renewable energy. A Chinese envoy said on Wednesday that wealthy nations must still do more to help the developing world, a stance shared by Brazil, which will hold the 2025 climate talks in the Amazon. But the Dubai summit at its opening reached an agreement on another major part of the accord — setting up a loss and damage fund to compensate countries hit hard by climate change.

'Elephant in room'

The text stopped short of backing appeals during the summit for a "phase-out" of oil, gas and coal, which together account for around three-quarters of the emissions responsible for the planetary crisis. Environmentalists virtually all saw the agreement as a step forward, although many cautioned that there will still be far more to do.

"We are finally naming the elephant in the room. The genie is never going back into the bottle and future COPs will only turn the screws even more on dirty energy," said Mohamed Adow, director of the Power Shift Africa think tank, referring to the annual UN climate meetings known as Conferences of the Parties.

"Some people may have had their expectations for this meeting raised too high, but this result would have been unheard of two years ago, especially at a COP meeting in a petrostate," he said. The agreement also made more explicit the near-term goals in the goal of ending net emissions by 2050. It called for the world to cut greenhouse gas emissions by 43 per cent by 2030 compared with 2019 levels.

But Jean Su of the Centre for Biological Diversity, while seeing progress, said there were still "cavernous loopholes" including recognition of a role for "transitional fuels" — seen as code for natural gas.

The agreement tackles only fossil use in energy, not in industrial areas such as the production of plastics and fertiliser. The deal backs a phase-down of "unabated" coal power — meaning it preserves a role for the dirty but politically sensitive energy source if there is the use of carbon capture technology, panned by many environmentalists as unproven. ■

Courtesy Daily Dawn

INFLATED BILLS

Time for privatization?

DISCOs billing offers critical examination of the sector

Muhammad Wali Farooqi

The writer is an energy economist and works as a research officer at the Institute of Policy Studies (IPS)

The National Electric Power Regulatory Authority's (Nepra) recent report on the billing practices of Pakistan's distribution companies (DISCOs) for July and August 2023 offers a comprehensive and critical examination of the sector.

This in-depth analysis, focusing on the operational challenges and inefficiencies within various DISCOs underscores an urgent need for systemic reforms in Pakistan's power sector.

The report's findings are a cause for significant concern. For instance, the Multan Electric Power Company (Mepco) charged over 5.7 million consumers for billing cycles exceeding the standard 30 days in July 2023. This practice led to inflated bills and unfairly pushed consumers into higher tariff slabs. Similarly, in August 2023, the Gujranwala Electric Power Company (Gepco) impacted around 1.2 million consumers with extended billing cycles.

Further, the report highlights substantial issues with invalid meter readings and snaps. Major contributors to this problem included Mepco, Lahore Electric Supply Company (Lesco), Quetta Electric Supply Company (Qesco), and Sukkur Electric Power Company (Sepco). The prevalence of defective meters, especially in Mepco, further complicates the issue, leading to overbilling and financial strain on consumers.

A particularly alarming aspect revealed in the report is the age-wise analysis of defective meters across DISCOs, impacting billing accuracy. Mepco, for example, had a staggering 272,370 defective meters by August 2023. The delay in replacing these meters resulted in consumers being inaccurately charged on an average basis for extended periods.

Moreover, the report uncovers discrepancies in sample bills checked across various DISCOs. A high percentage of bills were found to have discrepancies, such as differences in meter readings, incorrect slab charges, and issues with meter snapshots. This reflects not only poor operational practices but also a lack of transparency in the billing process.

In contrast to these challenges, K-Electric (KE), operating under a privatized model, demonstrates a different scenario. While the report does not primarily focus on KE, its relative efficiency and fewer issues compared to the public DISCOs subtly indicate the potential benefits of privatization in the power sector. KE's example suggests that privatization can lead to improved service delivery, enhanced accountability, and better resource management. The Nepra report's findings serve as a stark reminder of the need for reform in Pakistan's power sector and the need for privatization in DISCOs. The inefficiencies and irregularities in the billing practices of DISCOs like Mepco and Gepco directly impact the financial wellbeing of millions of consumers. These findings highlight the urgent need for reforms and improvement in the management and operational practices of these companies. ■

Corporate Window: The shift away from fossil fuels

Syed Rashid Husain

A consensus on how to combat global climate issues and the rising greenhouse emissions at the recently concluded United Nations Climate Change Conference — also known as Conference of the Parties (COP28) that had signed the original UN climate agreement in 1992 — remained elusive until Wednesday, some 24 hours later than the scheduled close of the conference on December 12.

After two weeks of deliberations and several sleepless nights, the delegates finally managed to agree on the language of the final communiqué. In the process, the draft had to be altered several times. And the outcome was a compromised communiqué. From "phasing out fossil fuels" to settling for "transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner," it was a long and arduous journey.

Although the compromise fell short of promising an end to oil and gas use, it acknowledged for the first time ever in any UN climate agreements that the world must begin "transitioning away" from fossil fuel, starting this year.

The issue was contentious. A clash of interests was apparent. The question was: what to do about greenhouse gas emissions from burning oil, coal and gas? The growing global consumption of fossil fuels is resulting in warmer temperatures around the globe. The planet has already warmed by 1.2-degree Celsius and scientists are underlining that 2023 was likely the warmest in 100,000 years, resulting in storms, droughts and lethal wildfires around the world.

The compromise at COP28 fell short of promising an end to the use of oil and gas, even though it acknowledged for the first time in any UN climate agreements that the world must begin moving away from dirty fuels

The rising temperatures are resulting in dire climatic changes. Glaciers in Himalayas, for example, are melting, resulting in flash floods. Pakistan's flood last year was attributed to the melting glaciers. "The people of Pakistan are the victims of a grim calculus of injustice," the UN Secretary General António Guterres told the General Assembly in October 2022 after visiting Pakistan. He then reminded the world that while the country was responsible for less than one per cent of global greenhouse gas emissions, it was paying a "supersized price for man-made climate change."

On December 8, the Guardian reported that OPEC+ had already warned its member countries that "pressure against fossil fuels may reach a tipping point, with irreversible consequences" at COP28. In the letters sent to its members, OPEC had urged the oil states to "proactively reject any text or formula that targets fossil fuels, rather than emissions," underlining this would "put our people's prosperity and future at risk".

Wire services Bloomberg and Reuters also cited the news, adding the letter was shared with OPEC allies, including Russia and Mexico. In a letter dated December 6, and seen by Reuters, OPEC Secretary General Haitham al-Ghais also urged OPEC members to reject any deal targeting fossil fuels rather than emissions. OPEC's emphasis during the entire debate was to target emissions through carbon capture and other similar possibilities, not fossil fuel.

It was at this stage that energy diplomats went into overdrive at the Expo City of Dubai, resulting in the draft and agreeing on "transitioning away from fossil fuels". The mention of phasing out was taken off the agreement. No date though was agreed upon to complete the "desired" transition process. The agreement also made more explicit the near-term goals of ending net emissions by 2050. It further called for the world to cut greenhouse gas emissions by 43pc by 2030 compared with 2019 levels.

For countries like Pakistan, a loss-and-damage fund was agreed upon at the summit. This was a hard-won victory by developing countries, signalling a commitment by the developed ones, the major polluting nations, to provide financial support to the hard-hit countries. But commitments to the funds remain vague. Despite concerns about the lack of commitment to provide more money, Singapore's environment minister told the media

that she was glad the topic had risen up on the agenda.

The sharper focus on finance followed a landmark November UN report showing that developing nations would need up to 18 times more funding than they currently receive to build resilience into their economies to withstand the impacts of climate change.

Till now, money flow remains sluggish. The biggest news announced at COP28 was a commitment of $3 billion in new money from the United States to the Green Climate Fund (GCF), which aims to put at least half of its investment dollars into adaptation projects.

"At COP28, the international community made progress in righting the scales," GCF chief Mafalda Duarte told Reuters, pointing to a total of $12.8bn in new capital raised for the fund to support climate action across the developing world. Some $700 million was also agreed upon by the developed world at the plenary session. While speaking at the summit, Caretaker Prime Minister Anwaarul Haq Kakar called for immediately executing the $100bn in commitments for climate finance to ensure the implementation of climate change actions by developing countries and mitigate the climate change impacts. ■

Courtesy Dawn

DISCOVERY

OGDCL discovers another gas and condensate in Sindh

EU Report

The Oil & Gas Development Company Limited (OGDCL) has discovered gas and condensate at a well in the southern province of Sindh, the company said.

he Dars West Well #02, located in the Tando Allah Yar district, is part of a joint venture between OGDCL, the operator with a 77.5 percent stake, and Government Holdings Private Limited (GHPL) with a 22.5 percent carried interest.

The well, drilled to a depth of 2081 meters, hit the "C" Sands of the Lower Goru Formation, resulting in a major discovery, OGDCL said in a statement. The well tested at a production rate of 8.51 million standard cubic feet per day (MMSCFD) of gas and 360 barrels per day (BPD) of condensate, the statement said. The company said the discovery of Dars West Well # 02 is the result of its aggressive exploration strategy. "It would add to the hydrocarbon reserves base of the OGDCL, joint venture partners and of the country." "These impressive results were obtained through a choke size of 32/64" at a Well Head Flowing Pressure of 1947 Pounds per Square Inch (PSI) from the Lower Guru C-Sand in the exploratory zone," the company said.

The discovery will add to OGDCL's hydrocarbon reserves and help meet the country's growing energy demand, it added. "This discovery underscores OGDCL's commitment to pioneering exploration in pursuit of national energy security," OGDCL's Managing Director and Chief Executive Officer Ahmed Hayat Lak said.

"OGDCL remains steadfast in its commitment to leveraging innovative strategies and technical expertise for the benefit of our nation," he added. Last month, OGDCL completed the Khewari Project in Sindh, with a potential gas production of 10 mmscfd. ■

A policy for plastic bag use

Effective action required to control the production and use of plastic bags

Zahid Majeed

The writer is a lecturer at COMSATS University, Islamabad, Lahore Campus

Excessive use of plastic bags in recent years is a serious threat to the environment. Public health and livelihoods are already suffering on account of it. The production of plastic bags is faster than any other material that can be used as an alternative.

According to the United Nations Environment Programme, compared to 2016, plastic consumption is projected to double by 2040. This will generate approximately 400 million tonnes of plastic waste annually. Worryingly, only 36 million, out of this 400 million, will be recycled — leaving 364 million tonnes of plastic non-cycled every year.

Pakistan is among the top 10 plastic polluter countries. According to a report by the United Nations Development Programme, it generates approximately 20 million tonnes of solid waste annually. 3.3 million tonnes out of that is plastic waste. This is the highest in South Asia. About 90 percent of this is disposed of improperly. The average person is eating plastic about the size of a credit card every weak. This poses serious health hazards to mankind. Currently, Pakistan has no robust policy framework to counter plastic pollution. Given the lack of fiscal resources and due to high vulnerability to climate change, plastic pollution is a significant threat to the country.

To control plastic pollution and its market effects in Pakistan's capital, Islamabad, the government imposed a plastic bag ban in August 2019. In the race to development, unchecked plastic waste acts as setback for sustainable development, especially in developing countries. This has far-reaching health, economic and environmental consequences.

Implementing plastic bag bans is an important step towards environmental sustainability and reducing the bad impacts of plastic pollution. Despite imposing a ban on plastic bags to prevent plastic use, the government has failed to control the use of these bags. A major reason for this can be the lack of proper policy formation and implementation process.

The plastic bag ban is largely a policy issue. Lack of knowledge and awareness of the impacts of existing policies and how effective they have been at reducing plastic pollution is one of the major reasons. Non-availability of suitable alternatives is another major concern. Most of the retailers and customers do not have any alternative if they do not use plastic bags.

The cost of some alternatives is much higher. This discourages the retailers from adopting those alternatives. The cost of paper bags, for instance, is much higher than the cost of plastic bags. This cost difference is also a big challenge to persuading both consumers and retailers.

The reluctance to change is not limited to retailers. The customers too do not have any incentive to adopt alternatives like paper bags and cloth bags. Carrying paper bags is much more inconvenient compared to plastic bags. Lack of awareness is another issue. Many customers do not understand the impact of plastic bag pollution on the environment, health and on the economy.

Effective action requires synergies between upstream and downstream interventions. Public support, acceptance and buy-in are paramount for effective plastic policies. Coordinated policy approaches are more effective than isolated, standalone actions. Plastic bag bans have been implemented in several regions around the world. The outcomes of the interventions have provided valuable lessons. Some key points to consider when evaluating the impacts of plastic bag bans are outlined below.

Recycling the waste is another way of dealing with plastic waste. The authorities should collaborate with local recycling programmes and organisations to facilitate proper disposal of packaging materials that cannot be easily replaced by affordable alternatives. Authorities must rethink the prevailing linear model of production and consumption (extraction, manufacturing, disposal) and propose frameworks of circular economy (rethink, recycle, reuse) to reduce the size and impact of plastic waste.

Plastic bags may seem durable, cheap, accessible and easy to carry but have significant negative effects on our environment, health and economy. By making eco-friendly choices and spreading awareness, authorities can reduce their use. ■

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Green presidency targets 42.5% energy cut

The Green Presidency of Pakistan is a flagship initiative that is expected to lead to a 42.5% reduction in energy usage at Aiwan-e-Sadr, equivalent to a decrease of 3,144 tonnes of greenhouse gases or the planting of 142,090 mature trees, the president, Arif Alvi said while addressing an event at Aiwan-e-Sadr.

The president highlighted that transitioning to renewable energy sources, improving energy efficiency, and reforestation are key to curb the adverse impacts on the planet's climate and ecosystems. He said the modern world with changing priorities and attitudes, was becoming dangerous which must be stopped to curb the adverse impacts of climate change, as APP reported.

"It is a matter of great pleasure that, out of 129 projects from around the world, the Green Presidency Project of Pakistan has been conferred with the prestigious award of "International Energy Project of the Year 2023", he added. He also expressed gratitude to the Association of Energy Engineers USA for recognizing with the esteemed Best International Energy Project of the Year Award for 2023.

Moreover, he also called for promoting peace in the world and discouraging wars that were a big cause of deviating the world's focus on mitigating global warming. Depite contributing less than 1% in carbon emissions, Pakistan suffered huge losses in last year's devastating floods that occurred due to global warming and climate change.

He recalled that by mid 20th century, the people were conscious about utilizing the natural resources despite abundant resources, but now the priorities had been changed, the needs and wants had been mixed due to which they started using abundant resources for their ease. He said the Prophet Muhammad (PBUH) had also taught for consuming the natural resources with utmost care by demonstrating the same in his life.

Baithak, DASTAK leaders win awards

Ayesha Amin, Founder and CEO of Baithak-Challenging Taboos, and Hira Amjad, Founder and Executive Director of DASTAK Foundation, have won the prestigious Gender Just Solutions Award at COP28 in Dubai for their work in climate and gender justice with grassroots communities in Pakistan.

The Gender Just Climate Solutions Awards have become a highly anticipated event at each COP and are granted every year to three grassroots initiatives tackling the climate crisis while promoting gender equality. These solutions are examples of climate-resilient and transformative development models that bring multiple social and environmental benefits. They contribute to raising the ambition for the achievement of the 1.5-degree target by 2030.

These awards were announced during an official, high-level ceremony at the 28th session of the United Nations Climate Change Conference (COP) in Dubai, UAE. The ceremony was attended by ministers from Germany and Chile, activists, and civil society leaders from across the globe.

MARI joins $1 billion club as gas exploration pays off

Mari Petroleum Company Limited (MARI), one of the country's largest natural gas producers, became the seventh listed company to cross $1 billion in market capitalisation, as its share price soared on the back of successful exploration activities.

MARI, which operates gas reservoir at Mari Gas Field in Daharki, Sindh, saw its market value rise to Rs288.95 billion ($1.02 billion) at the close of trading at the Pakistan Stock Exchange (PSX), according to PSX data. The company's share price has surged 43 percent since the end of June and analysts said this comes on the back of increased exploration activity by the company in recent months. Earlier on Monday, MARI announced that it had successfully drilled and tested a third horizontal development well in Habib Rahi Limestone reservoir of Mari Gas Field, which will be put on regular production immediately.

"We are pleased to inform that MARI has successfully drilled and tested a third horizontal development well Mari-124H in Habib Rahi Limestone (HRL) Reservoir of Mari Gas Field in Daharki, Sindh Province," the comapny said in a filing to the PSX.

"The well is part of the Mari Field Revitalization Project aimed at better managing the delivery pressure, sustaining the gas production, and optimal reserves recovery, all leading to the arrest of the depletion in production." The company said well was drilled to a total measured depth of 1,740 meters with a horizontal section length of around 750 meters. "After completion, the well was tested at a rate of around 17 million standard cubic feet per day (mmscfd) of gas at a flowing wellhead pressure of 470 pounds per square inch gauge (psig)."

The company said the well will be put on regular production immediately after releasing the drilling rig. "The company is evaluating opportunities to drill additional horizontal wells in due course." Last month, MARI commenced gas production from its appraisal well in Sindh, which was also part of its Mari Field Revitalization Project aimed at sustaining gas production and optimal reserves recovery.

Navigating Pakistan's energy transition

The country holds the 107th position out of 120 countries in the Energy Transition Index

Shafqat Hussain Memon

The writer is research scholar at MUET Jamshoro

Amidst the challenges of soaring energy prices, escalating impacts of climate change, and economic hurdles, Pakistan confronts a complex trilemma encapsulated by the three interlinked challenges of energy, environment, and economy. Presently, the country is grappling with inflated energy costs due to imported fuels, worsening local air pollution, economic instability, and challenges in delivering reliable electricity to a burgeoning population.

This complex interplay of issues calls for deep introspection into major loopholes in the current policy framework and the holistic development of sustainable policies to address the multifaceted crisis of energy, environment, and economy. An imperative at this critical juncture is a paradigm shift towards a sustainable and indigenous solution through a transition to clean energy for sustainable progress. This pivotal step not only fosters economic growth but also enhances energy security and ensures environmental sustainability.

In the Green Future Index (2023) by MIT Technology Review, Pakistan is ranked 67th among 76 countries, dropping from its 55th position in 2022. The index evaluates the countries across five key pillars: carbon emission reduction, energy transition, green society, clean innovation, and climate policy. The focus has traditionally remained on capacity expansion rather than conservation, resulting in increased capacity payments and inefficient energy use

According to the World Economic Forum's June 2023 report on Fostering Effective Energy Transition, Pakistan holds the 107th position out of 120 countries in the Energy Transition Index (ETI), with 46.9 ETI score for 2014-2023. These indices highlight a lack of sufficient initiatives aligning with the county's commitment to energy transition efforts, which calls for accelerating its clean energy transition. This not only helps curb carbon emissions but also offers substantial long-term socioeconomic benefits through reduced energy generation and consumption costs.

In this regard, the country needs to strategically shift Pakistan's energy mix by reducing reliance on imported fossil fuels, prioritising renewable energy, enhancing policy support for renewables, and promoting the local manufacturing of energy goods for greater use of indigenous resources.

This energy transition demands finance mobilisation for developing countries such as Pakistan, fostering both technology transfer and indigenous development. Pakistan is blessed with huge renewable energy potential to generate clean energy, but the ageing power grid infrastructure with limited network capacity is a major bottleneck to supporting the integration of renewables while maintaining grid stability.

In order to enable the power grid to evacuate power from both renewable and non-renewable energy projects, more investment is needed to upgrade the power network infrastructure, including its modernisation and digitalisation. Energy storage is also vital for a renewable-powered energy future. It bridges the gap between intermittent renewable energy generation and stable energy demand in terms of energy supply and grid reliability.

Nowadays, batteries have gained considerable ground as they power many of the technologies that will enable the transition towards net zero. Research, development, and infrastructure investments in energy storage are vital for the widespread adoption of renewable energy. When it comes to electrifying remote regions, decentralised renewable energy systems (off-grid energy schemes, mini/microgrids) are considered to be a promising alternative in pursuit of a sustainable society. They benefit the underprivileged communities trapped in energy poverty.

Energy efficiency has also gained global attention among policymakers in recognition of its pivotal role in enhancing energy security, affordability and environmental sustainability. Addressing Pakistan's energy challenges also requires a strategic shift towards energy efficiency. In response to growing energy demand, the focus has traditionally remained on capacity expansion rather than conservation. This approach has led to increased capacity payments and inefficient energy use.

Enhancing energy efficiency presents a significant opportunity to curtail energy imports, offering a cost-effective solution to address national energy challenges. This approach not only mitigates environmental concerns but also eases production costs and fosters economic growth.

The International Energy Agency (IEC) reveals that energy efficiency, the 'first fuel' in clean energy transitions, offers swift, cost-effective CO2 mitigation, reducing energy bills and enhancing energy security. Institute for European Energy and Climate Policy (IEECP) released a recent study, "Out of sight, out of mind: let's make energy efficiency visible in the energy mix". If something isn't visible, it won't be prioritised — which is one of the reasons energy efficiency does not come first in planning, policy-making and investment.

For energy efficiency to be considered on a level playing field with other energy resources, energy efficiency improvements need to be monitored, and then energy efficiency data needs to be integrated into the overall energy picture. The energy transition will also open doors for green job creation, enable businesses, attract foreign investment and stimulate economic growth.

As a climate-vulnerable nation, Pakistan can mobilise substantial global funding under a 'Just Energy Transition Partnerships (JETPs)'. These partnerships facilitate targeted and catalytic funding, mobilising resources from various channels to support the energy transition. This requires a comprehensive action plan based on a holistic approach, along with clear targets, timelines, policy continuity, and stakeholder engagement. In this way, Pakistan can pave the way for a sustainable and green energy future. ■

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SOCIAL AND BUSINESS ROUND UP

Pakistan Business Group hosts a gala dinner and award ceremony at PAF Museum Karachi. A group photo captures the guests alongside President Faraz ur Rahman

President Karachi Chamber of Commerce & Industry Iftikhar Ahmed Sheikh presenting crest to Consul General of Germany Dr. Ruediger Lotz during his visit to KCCI. Senior Vice President Altaf A. Ghaffar, Vice President Tanveer Ahmed Barry, Former President Majyd Aziz and KCCI Managing Committee Members are also seen in the picture.

Energy Update's Managing Editor, Mohammad Naeem Qureshi, presents a bouquet to PBGO President Faraz ur Rahman and GS Ali Arsh at the award ceremony, where Energy Update was the media partner

German Consul General Rüdiger Lotz hosted a sustainable future day at the German Consulate in Karachi last week

Diwan International signed distribution agreement with Tongwei (TW Solar) for the supply of first ever HJT PV modules in Pakistan

School, Canal View, Lahore, distributing 100% recycled school supplies and organizing a symbolic tree plantation drive

Faaz Diwan, Sarmad Wahab, and MD NEECA pictured alongside the President of Pakistan at the Green Presidency Award Ceremony

NFEH, FPIP, and Justice Helpline Unite in Urgent Press Conference: Strategizing Effective Measures to Combat Fire Incidents in Karachi

MCB Bank, AE Power ink business deal

In a significant move toward sustainable energy solutions, MCB Bank and AE Power have recently signed an agreement for the delivery of cutting-edge Huawei inverters. This strategic partnership promises to revolutionize the landscape of energy efficiency in the region.

The signing ceremony, graced with the presence of key representatives from both MCB Bank and AE Power, marks the beginning of a partnership dedicated to advancing clean energy technologies. The collaboration emphasizes a shared vision for a greener future and the commitment of these two industry leaders to drive positive change.

The Huawei inverters, renowned for their reliability and innovation, are set to play a pivotal role in enhancing the efficiency of energy systems. This collaboration not only aligns with the global shift towards renewable energy but also positions MCB Bank and AE Power as active contributors to the adoption of cutting-edge solutions for sustainable development. Witness the historic moments captured during the signing ceremony in the attached pictures, reflecting the enthusiasm and commitment of both parties. Stay tuned for updates on this brand-new partnership as we collectively embark on a journey towards a more sustainable and eco-friendly future. ■

MOU Signing Ceremony for Tree Plantation in Karachi: NFEH, Community Policing Karachi, and Plant a Million Pakistan join forces to plant 100,000 trees in Karachi throughout 2024. The campaign, set to commence in mid-February 2024, was formalized at a signing ceremony held at a local hotel. Murad Ali Soni (CE CPK), Razzak Pardesi (Chairman PMP), and President NFEH M. Naeem Qureshi signed the MOU in the presence of Caretaker Sindh Minister of Local Government Mubeen Jumani, Ruqiya Naeem, Engr. Nadeem Ashraf, and other distinguished officers

CSAIL's Karot Power Project Clinches Prestigious Energy Award from Energy Update: Advisor NA Zuberi Recognized for Outstanding Achievement in Hydropower Sector at 3rd Hydropower Conference, Award Presented by Caretaker Minister Muhammad Ali.

Energy Update Recognizes WAPDA's Tarbela 4th Extension Project with Best Achievement Award in Hydropower Sector: GM Azam Joya Honored by Caretaker Minister Muhammad Ali at 3rd Hydropower Conference.

"Nepra grants 20-year suppliers of last resort licences to seven DISCOs"

The National Electric Power Regulatory Authority (Nepra) has issued 20-year Suppliers of Last Resort (SoLR) licences retrospectively, effective from April 27, 2023, to seven electricity distribution companies (DISCOs). The licences, valid until April 26, 2043, were granted to Faisalabad Electric Supply Company (Fesco), Gujranwala Electric Power Company (Gepco), Lahore Electric Supply Company (Lesco), Multan Electric Power Company (Mepco), Hyderabad Electric Supply Company (Hesco), Peshawar Electric Supply Company (Pesco), and Quetta Electric Supply Company (Qesco). Nepra took this action to avoid a legal vacuum after the deemed supplier status, provided by the 2018 Amendment Act, lapsed on April 26, 2023. ■

Indus diverted

We have fallen short in harnessing our potentials, such as water, sun, wind

Lt-Gen Muzammil Hussain (retd)

The writer is the former Chairman of WAPDA

The recent positive development of "Indus Partial Diversion" for the construction of the Diamer-Bhasha Dam has prompted this writer to provide an overview of the water sector. This sector holds the key to turning around our current fragile economy and addressing the core issue of food security for our rapidly growing population.

Among the myriad economic and food security challenges facing Pakistan, the insufficiency of both energy and water stands out, with their multi layered impact on food and human security, exacerbated by either scarcity or high costs.

Our future is intricately linked with energy and food security, yet we have fallen short in harnessing our inherent potentials, such as water, sun, wind, and the capabilities of our youth. Globally, water and energy are recognized as fundamental to economic prosperity, and major economies such as the US, China, and India have significantly invested in water storages and renewable energy resources.

Particularly, water remains pivotal to our challenges, and we have not effectively tapped into this vital resource. The Indus River tributaries receive an average of around 145MAF of water annually. The Indus cascade offers ideal locations for storage and hydropower sites, spanning from Shyok through Skardu, Tungus, Yalboo, Bunji, Diamer-Bhasha, Dasu, Pattan, Thakot, Akhori, and up to Kalabagh. Despite this potential, we find ourselves yearning for both quantity and quality.

While Tarbela, developed in the '70s with the assistance of the World Bank, remains the backbone of our inexpensive hydropower and a guarantor of food security, the neglect and procrastination in developing mega storages and hydropower projects along the Indus cascade have hindered our progress. Political interference and institutional inefficiencies have plagued initiatives like Diamer-Bhasha and Dasu dams.

WAPDA, once synonymous with excellence, is now taking on the task of commencing work on mega projects such as Diamer-Bhasha and Mohmand dams. Serious bottlenecks in Dasu are being removed, and other projects, including Kurram Tangi, Nai Gaj, Tarbela 5th Extension, and Sindh Barrage are in progress. These projects have the potential to significantly increase water storage and add to our hydropower capacity. Some projects like Kacchi Canal in Balochistan and Neelum Jhelum Hydropower were delayed for years if not decades. The reasons are aplenty. Half-baked feasibilities, prolonged approval processes, poor financial closures, irregular cash flows, and ordinary supervision and management, and above all, the sector falling out of favor with the rulers. RDOB-II (Right Bank Outfall Drain) in Sindh commenced more than two decades ago and has no chance of seeing the light of day anytime soon.

Worse, at great perils for the people of Karachi, K-4 (a drinking water project) is yet another example of how not to do a project in the classical engineering and management sense (more on this later).

Our energy portfolio, with over Rs2.6 trillion of circular debt, has no clear signs of its control with any structural reforms or innovative strategies. It is perhaps the only sector with potential to implode or explode our economic edifice. Our energy mix with heavy reliance on damaging, expensive, and volatile fossil fuel is the key to our current lopsided energy profile.

Currently, WAPDA is contributing around 30% cheap energy to the basket (kudos to the teams lead by Engr Mohammad Zareen and Engr Arfan, who commissioned Neelum Jhelum and T4 in 2018, adding around 7 billion kWh units in 2018). Unless this mix crosses the minimum threshold of 50% anytime sooner, our economic growth will remain shackled by the monster called energy.

However, of utmost importance is the Sindh Barrage project, conceived in 2018 to address water availability, distribution, and combat sea intrusion in the province. Timely completion of this project can usher in a new era of development in the region and contribute to better water management strategies.

The financial aspect of these projects is critical, requiring robust, standalone financial models. WAPDA has successfully structured a portfolio of over $14 billion, incorporating a mix of Public Sector Development Programme (PSDP), WAPDA equity, local and foreign commercial financing, and a groundbreaking debut green Euro Bond. This financial ingenuity has garnered international credit ratings from Moody's, Fitch, and S&P, instilling confidence in the international donors.

While the participation of the private sector is crucial, the long-haul nature of hydropower development and storage construction necessitates a recalibration and reset of our development mechanisms. This should include capacity-building of our human capital and institutions, emphasizing a holistic approach for sustainable progress. It is an achievable task that requires concerted efforts from the government, WAPDA, and other stakeholders.

To sum up, the commissioning of these projects within scheduled timelines is imperative to prevent significant damage to the national economy. Balancing technology, policy, and the private sector involvement can play a pivotal role in ensuring our food security and sustainable development. ■

"Berlin Workshop Equips Pakistani Distribution Companies for Renewable Energy Integration Challenges"

In a collaborative effort under GIZ Pakistan's Renewable Energy & Energy Efficiency-II (REEE-II) Program, a specialized workshop was conducted in Berlin, Germany, focusing on the integration of renewable energy into Pakistan's distribution network. The workshop, organized in partnership with Reiner Lemoine Institute, aimed to equip distribution company officials with essential knowledge and tools to navigate the challenges posed by the increasing share of renewable energy, particularly from rooftop solar PV.

With approximately 1200MW of distributed generation already net metered in Pakistan, and ambitious plans under the PM Solar Initiatives 2022 to solarize 11kV feeders, the workshop addressed the imminent hurdles in smoothly incorporating variable renewable energy into the distribution system. Participants, representing distribution companies across Pakistan, delved into topics such as global clean energy transitions, policy measures, grid planning, and practical solutions like battery storage.

Field visits to Stromnetz Berlin and the

100% Renewable Energy Village in Feldheim provided real-world insights into the challenges and successes of integrating renewable energy into distribution networks. The workshop emphasized the crucial need for flexibility measures, including the use of battery energy storage systems and digitalization, to ensure the seamless adaptation of distribution networks to the increasing penetration of renewables. Participants expressed eagerness to implement the acquired knowledge, underscoring their commitment to driving positive change within their respective domains. ■

SCADA workshop advances power network management in Pakistan

EU Report

Pakistan's distribution utilities, facing challenges in monitoring and controlling power distribution networks, lack a comprehensive SCADA system. Currently managing infrastructure up to 132kV, they struggle with limited visibility and loss management. GIZ's Renewable Energy & Energy Efficiency-II program organized a three-day workshop in Islamabad to address this gap. The workshop covered SCADA's history, components, communication technologies, cybersecurity, and modern protocols. Emphasizing SCADA's role in managing power flows amid increased renewable energy integration, it aimed to create awareness among distribution company officers.

The event featured a field visit to an IESCO 132kV substation, where a GIZ-funded SCADA system showcased real-time status monitoring. Dr. Juergen Bender, a German SCADA expert, led the workshop, supported by Syed Faizan Ali of GIZ. Participants from all 10 distribution companies, along with representatives from the Ministry of Energy and Private Power Infrastructure Board, attended, gaining insights into the importance and effectiveness of SCADA for enhanced network management. ■

Coats Group inaugurates 120 KW solar power

Coats Group plc, the global leader in manufacturing threads and structural components for apparel, footwear, and performance materials, has inaugurated a cutting-edge 120 KW ground-mounted solar power facility at its Lahore factory in Pakistan.

This state-of-the-art plant annually produces 175.2MWh of solar energy, resulting in a 3.42% reduction in energy consumption from conventional sources and mitigating 75.3 tons of CO2 emissions.

Featuring advanced Bi Facial solar panels, the plant harnesses energy from both sides, enabling the factory to derive 18% of its power from renewable sources during daylight hours. Plans are underway to construct a similar solar power plant at the Karachi factory, further accelerating the transition to renewable energy sources.

As a participant in the UN Global Compact, Coats is dedicated to science-based sustainability targets for 2030 and beyond, and envisions achieving net zero emissions by 2050. The company has made substantial strides over the last few years in Energy, Materials, Water, Waste, and People, with a renewed focus on emissions reduction across its entire value chain. Mohammad Al Kashem, Managing Director, J&P Coats Pakistan Pvt Ltd, while inaugurating the 120KW solar power plant, reaffirmed the company's commitment to environmental responsibility and sustainability throughout its operations and supply chain. Installed by DSG Energy, the Lahore project marks a significant step towards a greener future for J&P Coats Pakistan Pvt Ltd, a subsidiary of Coats Group plc UK. Coats has been a stalwart supporter of the Pakistan ready-made garments industry since 1948, providing top-tier threads and technical services through its world-class manufacturing plants in Karachi and Lahore. ■

SolaX Power & Fronus Signed 300MW Strategic Partnership Agreement for Pakistan Market

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Power sector woes still unresolved

One thing is crystal clear now that power price increase is not the solution to power circular debt

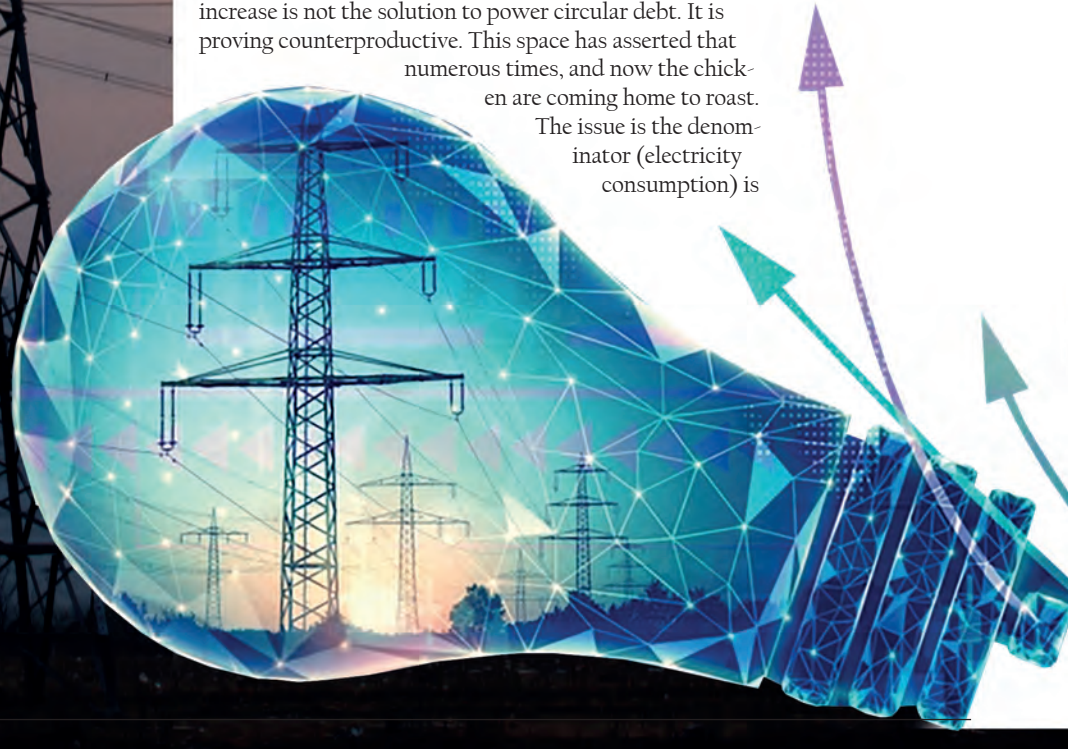
Ali Khizar

Ali Khizar is the Head of Research at Business Recorder

The power sector woes are not resolving despite successive and massive increases in the consumer tariffs – especially for industrial, commercial, and high consuming domestic users.

The overall consumption is falling due to tariff increases, and that is not letting the circular debt growth to stop, as the fixed capacity and other charges are not being fully recovered, and to plug the hole, high QTA (quarterly tariff adjustment) is expected soon to true up the tariff. And that will further exacerbate the problem, as consumption falls further, and result in another round of tariff increase. It is a vicious cycle.

One thing is crystal clear now that the power price increase is not the solution to power circular debt. It is proving counterproductive. This space has asserted that numerous times, and now the chicken are coming home to roast. The issue is the denominator (electricity consumption) is



low while the numerator (costs – mainly fixed cost) is high, and the denominator is falling further. The IMF's and other IFIs' solution of dumping every cost on good paying consumers is simply not working. An out-of-the-box solution is warranted.

The price increases formula works fine in the gas sector, as the domestic cost was previously very low; but not in the power sector where the fixed capacity and other costs are too high. The solution is to bring down the costs. That includes debt reprofiling of Chinese IPPs (nuclear, coal and others), government buying old plants (by one-time payment) and terminating them. The way PKR has depreciated, and the global interest rates have increased, the capacity payments have increased to an unsustainable level.

Moreover, the government has to do away with cross subsidies. The good paying consumer cannot take the onus of vulnerable consumers – Rs 600 billion cross subsidy is too much of an ask for industrial and other consumers to bear. Then there is a limit for high consuming domestic (and other) consumers to absorb Discos' inefficiencies, as Discos keep overbilling consumers to hide their recovery losses. The madness must end.

In November 2023, the power generation clocked in at 33 months low; it's down to 7,547 GWh – down by 10 percent YoY. As per industry sources, in the first 20 days of December, industrial power consumption fell by 20 percent (YoY) and domestic is down by 8 percent. In October, APTMA (All Pakistan Textile Mills Association) members' consumption was down by 49 percent and 36 percent, respectively, on LESCO and MEPCO networks.

The industries catering to domestic markets can still survive, as they have protection against imports and can pass on the increase in cost to prices (which is to fuel inflation); but for exporters, they cannot compete at such a high cost. The overall textile exports are falling. An informal survey of big textile players suggests that they expect exports to fall by 10-15 percent in 2024, due to cost escalation and exchange rate appreciation. Not a good sign.

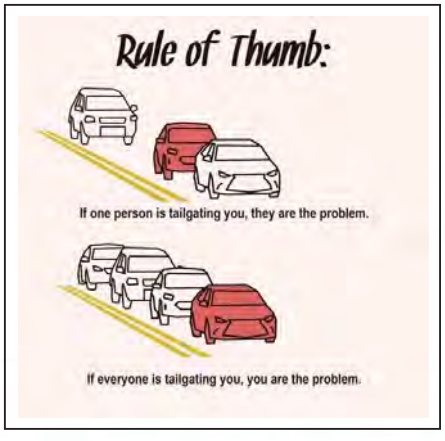
The players are moving away from the grid to alternate sources such as captive generation from gas even after the recent increase in the gas prices, as still it is relatively cheaper to produce on captive, and electricity tariffs for grid consumers are too high. This is evident from the fact that industrial sector consumption on Sui Northern network increased by 50 percent in Nov 23 from the numbers in July 23. And even in Sui Southern, some prefer captive on gas as the gas price increase is even higher. This is evident by the fact the on KE network, industrial consumption is down by 7 percent in 5MFY24, and it's on top of 9 percent decline in the same period previous year (5MFY23). Thus, it's over 15 percent decline from 5MFY22 levels.

Another evidence of lower textile production is of lower off-take of cotton. Fiber production has improved significantly this year; but the country is still importing yarn, as it is cheaper for players to import yarn, and not feasible for some local yarn players to produce due to high cost of energy. Thus, the country is losing its basic comparative advantage in textiles.

New factories built on TERF loans have not been brought online while many old plants are shutting down as well. The situation is going to worsen in the next quarter, as expected QTA of Rs6 per unit shall further increase the energy cost. The solution the energy minister is talking about is to have higher fixed charges in tariffs to compensate for higher fixed charges in costs. According to him, the total cost of electricity comprises of 72 percent fixed charges while the fixed charge in tariff stands at only 2 percent. As per him, balancing this could work.

However, industry sources think that this may further exacerbate the problem. The players keep both captive and grid connections and use a mix to optimize the costs. Some players go to the grid in non-peak hours and move to captive in peak hours. If fixed charges are raised, that incentive shall diminish, and costs will grow further. The point is that if the grid fixed charges grow, some may completely move to captive, as currently, the fixed charges for industrial players are at 5-10 percent and there is hue and cry on even this ratio.

The solution is to lower the power generation fixed costs where 57 percent is capacity payment and here debt reprofiling is becoming inventible. Moreover, 15 percent of cost in Discos is administrative, and transmission and market operator's cost. Here, privatizing Discos to lower these costs, and private players' innovative selling techniques can enhance the denominator. Thus, talking to Chinese lenders of IPPs and privatisation of Discos is perhaps the only way to bring the power sector out of the quicksand. ■



Kakar for focusing on climate resilience projects

Caretaker Prime Minister Anwaar-ul-Haq Kakar has stressed upon focusing the climate resilience and climate finance aspects in all the water projects of Balochistan and reiterated that progress and prosperity of the people of province were among the top priorities of the government.

The caretaker prime minister chaired a review meeting on the important matters pertaining to the Balochistan province.

The meeting was attended by Caretaker Balochistan Chief Minister Ali Mardan Domki, Education Minister Dr Qadir Baloch and Chief Secretary Shakeel Qadir, Caretaker Federal Minister for Planning Sami Saeed, Caretaker Federal Minister for Law and Water Resources Irfan Aslam, and relevant senior officials, the PM Office Media Wing said in a press release. The chief secretary gave a briefing over different projects of the province. The prime minister further directed for expediting the matters related to the construction of a two-lane highway from Khuzdar to Karachi and observed that with its construction, the different parts of the country would get an alternate leeway, besides strengthening of the linkages. He also asked for an immediate resolution of the financial issues faced by the universities in the province. The caretaker prime minister directed for the constitution of an inter-provincial committee with regard to the matters of Kachhi Canal project and the inclusion of caretaker minister for planning and caretaker chief ministers of Punjab and Balochistan.

Security of energy supplies

Pakistan's per capita energy consumption is far less than even Bhutan, Maldives, India or Sri Lanka

Muhammad Arif

The Author is a former Member Gas (OGRA), an energy lawyer, and an independent consultant

Ensuring reliable and uninterrupted access to energy resources, including electricity, oil, and gas, is critical for the energy security of any country. In Pakistan, this issue is complex and involves various factors. Pakistan's vulnerability is evident from its dependence on imported petroleum products (80 per cent of local consumption), natural gas (30pc of local consumption), and LPG supplies (65pc of local consumption), even under constrained consumption levels.

The world has fully recognised that without sufficient energy, economic development is out of the question. The importance of energy supplies is evident in the number of wars fought to acquire them. The concentration of primary resources in specific geographic locations has been a major cause of conflicts over natural resources, as resource-rich nations are often politically, economically or diplomatically weaker or disadvantaged or forced to remain as such.

Despite having a significant young workforce, experts, and abundant natural resources such as minerals, agriculture, mountains, rivers, forests, and four seasons, Pakistan primarily relies on imported energy. A logical strategy would be to first ensure sufficient supplies and then sustainability, given Pakistan's low carbon footprint

Additionally, the country has a strategic location with a significant coastline of 1,046 km, but it is yet to harness this potential resource for energy production. Factors such as corruption and mismanagement in the energy sector, political instability, uncertainty, and environmental concerns such as climate change and air pollution play significant roles in creating the current energy crisis.Instability, uncertainty and corruption have led to inflated costs for projects and contracts, as well as delays in implementation due to bureaucratic red tape. This has resulted in higher prices for consumers and lower returns on investment for private sector partners and affected the entire social-economic system of the country.

Another challenge is the increasing demand for energy due to population growth, urbanisation, and industrialisation. According to a report by the World Bank, Pakistan's energy demand is projected to increase by 70pc by 2030, while supply is expected to grow by only 45pc. This imbalance could lead to further power shortages and blackouts, hurting economic growth and social welfare. Pakistan is highly susceptible to the adverse impacts of climate change, including recurring droughts, floods, and extreme weather conditions. There is an urgent need for increased investment in renewable energy sources such as wind, solar, and hydropower, and effective policies should be put in place to mitigate the impacts of climate change, which have been increasing over a period of time.

Furthermore, implementing existing environmental laws effectively will help mitigate environmental hazards like fog, air pollution, deforestation, housing projects, energy-inefficient industries, smoking industries and vehicles. Access to reliable and affordable energy is also critical for improving health, supporting education and training programs,

and promoting economic opportunities for the rural population. To this end, there is a need for greater investment in off-grid solutions such as home solar systems, mini-grids, mini-hydro generators, bio-gas plants, etc, that can provide energy access to rural and remote areas.

Pakistan's per capita energy consumption is far less than even Bhutan, Maldives, India or Sri Lanka. Since Pakistan's energy security challenges are similar to those of some other countries, there is a need for greater international cooperation and support to promote sustainable economic development over the long term in developing countries like Pakistan.

While the USA continues to drill and produce as much fossil fuels as possible, it is seeking net zero compliance from other countries, as observed from its calculated statement at COP28. Pakistan's per capita energy consumption is far less than even Bhutan, Maldives, India and Sri Lanka, which have 100, 60, 23, and 17 million British Thermal Units (MMBTUs) per capita, respectively. In contrast, Pakistan has only 15.8 MMBTU per capita. Hence, Pakistan must go the extra mile first to secure its day-to-day energy needs and then make long-term sustainable energy supply arrangements for sustainable socio-economic development.

A logical instrumentalisation strategy should be adopted first to secure sufficient and then sustainable energy supplies while working with the world towards its joint obligations towards the net-zero target. Pakistan's contribution is negligible, having only 0.99 tons per capita CO2 emission, which is much less than numerous countries, but it is hugely affected due to changed weather conditions.

Pakistan must target to mitigate its currently ongoing energy crisis within three years with full sincerity by (i) creating organisational fit throughout the energy value chain; (ii) eliminating corruption/mal-administration; (iii) reducing losses/thefts and recoveries, (iv) consolidating institutions; (v) creating an enabling investment environment; (vi) inculcating research and development aptitude; (vii) focusing on development of solar, wind, bio-gas, and (viii) increasing investment in updating the country's electricity infrastructure.

Simultaneously, short-term measures such as (i) pushing domestic exploration and production activity; (ii) constructing additional petroleum (finished products, LPG, LNG) import terminals; (iii) creating strategic storage capacities, (iv) increasing refining capacities, (v) installing local solar panel, and accessories manufacturing units; (vi) executing thar coal based gasification-liquid project; and (vii) moving to Euro-VI and VII after consumption optimum systems/engines and machinery is in place, can also be put into place. ■

Ensuring grid readiness for renewable energy

Pakistan working to achieve up to 60% of electricity from renewable energy in line with UN SDG 7

Omer Rizwan

Pakistan is working to achieve up to 60% of electricity generation from renewable energy in line with UN SDG 7. For a country with a historic reliance on expensive, imported fuels whose prices are sensitive to USD/PKR parity, this is welcome news.

However, while an abundance of renewables in the energy mix may be beneficial for the environment, this addition also requires close attention to investments in the grid for stability and reliance.

Unstable grids can cause large scale power outages, such as that experienced by Pakistan's national grid on 23rd January 2023. According to Nepra's (National Electric Power Regulatory Authority's) own investigation report of the incident, 500MW of wind generation resulted in overloading of the transmission lines in the southern part of Pakistan.

Lower hydel generation in the northern section of the country also had a cascading effect across Pakistan's electrical network, eventually shutting it down. Interestingly, the report highlights that NTDC (National Transmission and Dispatch Company) issued dispatch instructions without adequate consideration of the prevailing network conditions.

Balancing generating units and channelling the energy to respective power consumption centres is a delicate act. A critical component is maintaining "grid inertia." Apart from the HVDC lines the electrical network in Pakistan mostly operates at a frequency of 50Hz.

Grid inertia ensures stability by maintaining this constant frequency. Changes or fluctuations in the system frequency can trigger loss of connectivity and interruption of power.

Over the course of a day, power generation is increased according to the merit order to cater to growing daytime demand. Increased demand without adequate supply causes system frequency to drop. The converse can also have a negative impact.

NEPRA's Performance Standards for Transmission state that the system frequency should stay between 49.5Hz and 50.50Hz. Any frequency swings beyond the tolerance limits results in activation of protection devices which isolate power plants from the electrical grid.

When we focus on adding renewable energy sources, we must ensure that there is adequate inbuilt protection so that grid operates at safe frequency levels. For renewable energy – particularly solar and wind – we must also consider including Battery Energy Storage Systems (BESS). These can store surplus energy from the grid and release when demand is low, creating a "synthetic inertia" acting as a stabilizing influence.

Nepra recently concluded a hearing on NTDC's PKR 510 billion transmission upgrade plan, which also involved the addition of BESS technology at its 220 kV Jhimpir Grid Station with a completion date of February 2024. Nepra has also held a public hearing on open competitive bidding for four renewable energy projects for which K-Electric will be the power purchaser.

The company envisions significant addition of renewable energy by 2030 and has also outlined an investment plan of PKR 484 billion to bolster the capacity of its transmission and distribution infrastructure supporting Karachi and its adjoining areas. An additional opportunity to secure the grid for both NTDC and KE lies in the exploration of BESS technology on the part of those project developers who are building renewable projects.

In this regard, KE is conducting an ongoing VRE study which will facilitate the incorporation of renewables as well. Simultaneously, increasing network visibility is part of KE's strategic goals for the future. Further integration of network management technologies such as SCADA will further add to the resilience and flexibility of the network.

Power sector planning is a complex process with multiple moving parts. Addition of generation capacity must be conducted in a systematic, balanced manner to maintain grid stability. We often focus on the potential cost impacts of renewable energy addition, but a prudent approach is required to ensure the grids fully equipped to handle the inflow as well. ■

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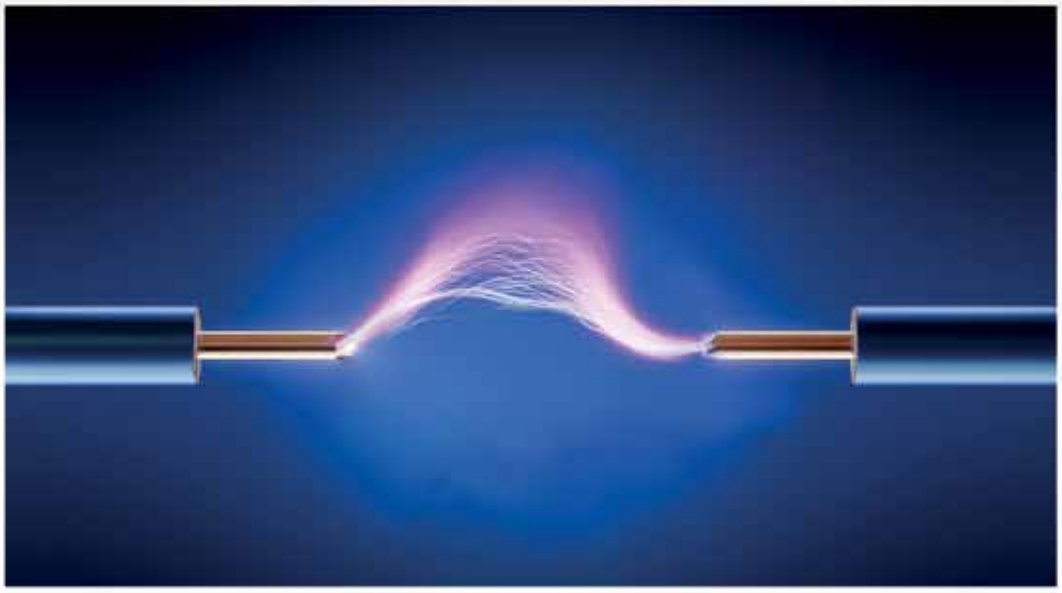

Traditional solutions are inaccurate and prone to false positives

False positives

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