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ENERGY UPDATE



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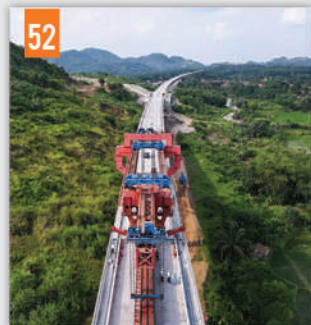
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FROM THE Editor's desk...

Expectations after Feb Polls

In a significant development, the IMF has recently stated that Pakistan's economic activity has stabilized and inflation has begun to gradually decline on the back of strong policy adjustment while external pressures have eased somewhat since June. The SBP has taken advantage of renewed inflows to begin rebuilding foreign exchange reserves. Fiscal performance has also improved, with the general government achieving a primary surplus in FY24Q1, but despite this welcome progress, the outlook is still challenging, and downside risks remain exceptionally high.

The IMF's economic outlook observation is good omen for Pakistan and its people who are undergoing crippling torments of inflation. It is now hoped that Pakistan's economic image worldwide will soften and new business trips will start globally. Pakistan's economy is expected to rebound with Gross Domestic Product to grow by 2.1% in the fiscal year 2024, after contracting by 0.17% in the previous year. The growth rate will likely accelerate to 4.8% in the fiscal year 2025, which is progressive trend.

The nation is expecting that after Feb 8 general elections, the country will recover from the impacts of the Covid pandemic, devastating floods, corruption, political unrest that have ruined its economy, compelling many industrial and other organizations to wind up parts of their businesses and cut employment force.

The new government will have to adopt a positive approach to ensure political stability, bring effective socio-economic reforms, reduce oil import bill, circular debt, oil prices and inflation. The most important thing to reduce is the inflation that is still skyrocketing despite the reduction in oil prices.

As the IMF, World Bank and State Bank of Pakistan have indicated recovery signs, the country needs to bring immediate structural reforms to remove inefficiencies in the economic structure, ensure effective resource allocations, increase industrial as well as agriculture productions. There is also a need to expand the tax net and fine tax thieves.

The government will have to adopt strict measures to reduce extra expenditures in all departments of the country, raise investment by facilitating international and national investors, and reduce the dollar rate to a significant level. The country also needs to take solid steps to control climate-induced losses in the form of floods and heavy rains as the climate change impacts and risks are becoming more harmful in Pakistan. It is mandatory to avert and minimize loss and damage through scaled-up, expedient and accelerated climate adaptation and mitigation strategies. The implementation of national adaptation plans, and expanding early warning systems and climate services is also the need of the hour to protect Pakistan from socio-economic losses.



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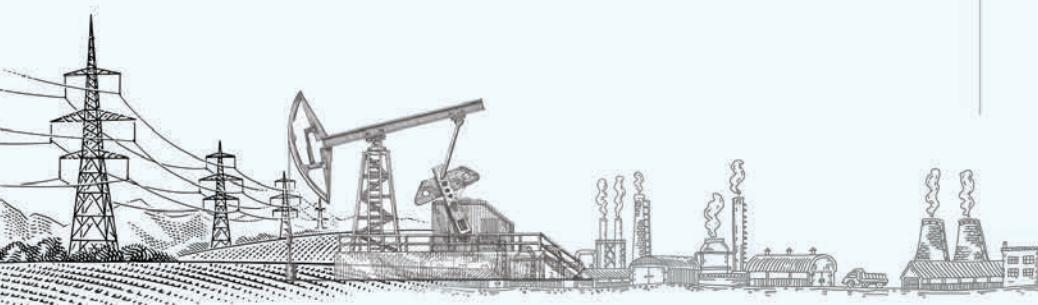
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Electricity shortfall still haunts nation

Economic constraints compel planners to limit electricity generation from expensive imported power plants

Dr Khalid Waleed



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

Pakistan is once again facing a shortfall of electricity in winter. Last year, there was a nation-wide electricity blackout on account of similar issues. It then becomes essential to discuss in detail the various conundrums and need for integrated planning in the power sector. The country's power infrastructure is primarily structured along the south-north, with major power lines connecting the southern and northern regions. These regions are not only geographically distinct but also differ in their electricity generation profiles.

The southern area, extending from the coastal belts of Sindh and Balochistan to the Guddo Thermal Power Station, includes diverse electricity suppliers like K-Electric, Hesco, Sepco, and Qesco. In contrast, the northern region, stretching from Gepco to

Gilgit-Baltistan, comprises areas serviced by Iesco, Hazeco, and Pesco. A closer look at power consumption patterns reveals the gravity of the situation. In 2022, the northern region consumed about 24,389 GWh of electricity, while the central region, which spans from Guddo to Gujranwala Electric Power Company and includes service areas of Mepco, Fesco, Lesco, and Gepco, consumed a staggering 71,721 GWh.

This geographical distribution of power generation and consumption leads to what can be termed as the 'consumption conundrum'. Each region has a heterogeneous mix of electricity generation sources: the north is rich in hydro resources, the south boasts coal, nuclear, and wind plants, and the central region, being the most urbanized, generates the majority of the electricity demand. Adding to this conundrum is the power generation mix predominantly reliant on fossil fuels. The majority of these fossil fuel-based power plants, except for a few like those in Kot Addu and Port Qasim, are located in the north. This region also houses major hydro dams like Tarbela and Mangla.

Concurrently, there is an increased demand for gas in winter, leading to what can be described as an 'energy-economics-conundrum'. Hydro dams, which are dependent on water availability, cease power generation due to canal closures in winter. Additionally, many fossil fuel plants undergo maintenance shutdowns in preparation for the summer peak season.

Economic constraints compel plan-

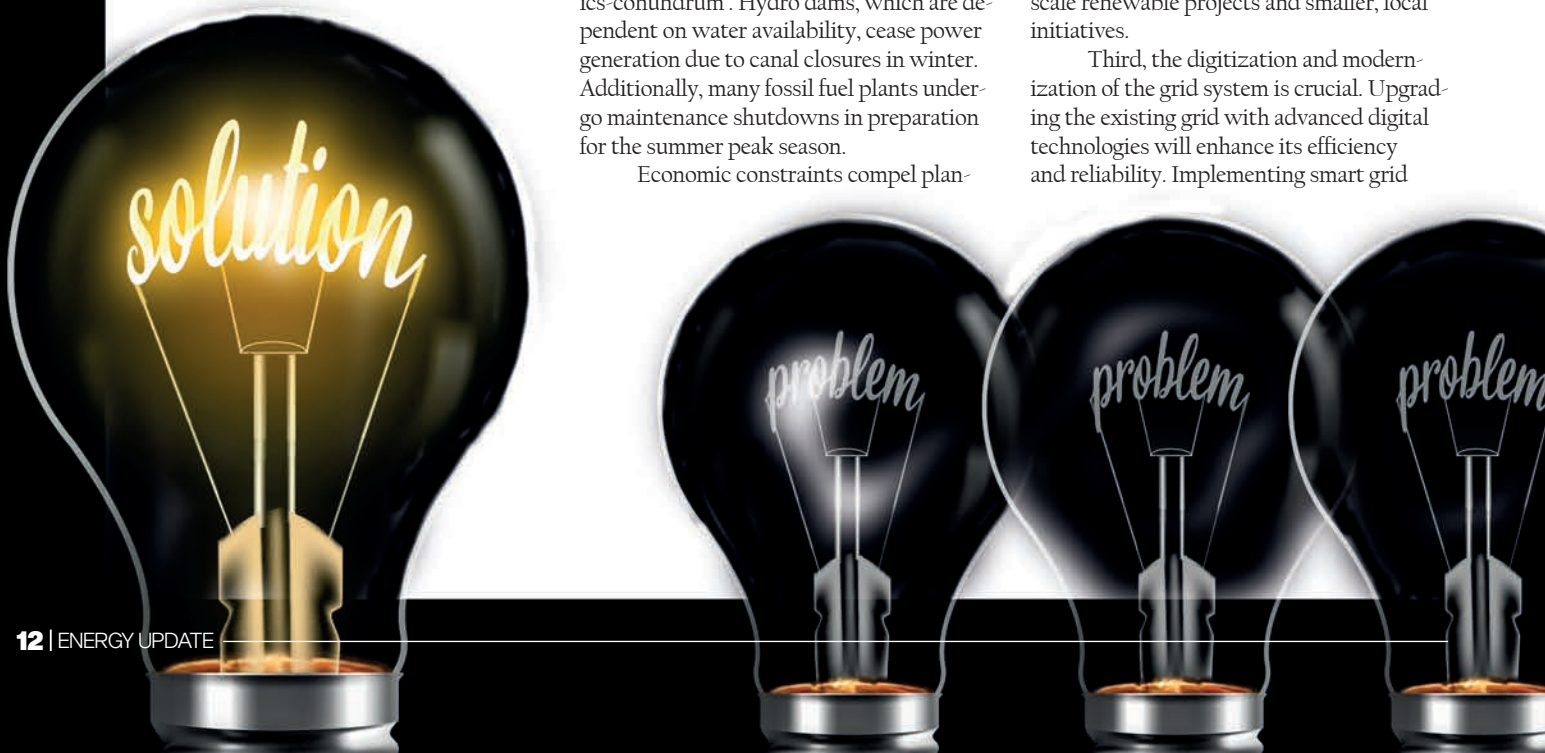
ners to limit electricity generation from expensive imported power plants (while still incurring capacity charges) and to rely more on indigenous coal-based plants. This strategy, while economically motivated, leaves the system vulnerable to tripping, widespread interruptions, and outages. The energy economics conundrum combined with the south-north transmission barrier and power consumption conundrum cause short fall and inefficient transmission of power in winter.

First, integrated planning is paramount. There is a need for a cohesive national energy strategy that harmoniously integrates the various facets of power generation, transmission, and distribution.

This plan should be sensitive to Pakistan's geographical and seasonal energy dynamics and aim for a well-balanced mix of energy sources, considering the regional disparities in energy production and consumption.

Second, a transition towards renewable energy should be prioritized. Pakistan's rich potential in solar and wind energy, particularly in its southern and central regions, offers a sustainable solution to the 'north-south generation conundrum'. This transition should encompass both large-scale renewable projects and smaller, local initiatives.

Third, the digitization and modernization of the grid system is crucial. Upgrading the existing grid with advanced digital technologies will enhance its efficiency and reliability. Implementing smart grid



technologies can lead to better demand management, reduced transmission losses, and a more responsive system in case of faults or emergencies.

Fourth, attracting Chinese investment into the transmission system can be a game-changer. Building on the China-Pakistan Economic Corridor (CPEC) partnership, Chinese expertise and funding can significantly contribute to upgrading Pakistan's transmission infrastructure, bringing in both capital and technical knowledge.

Fifth, implementing and upgrading the SCADA system at the National Power Control Center (NPCC) is essential. This upgrade will enhance real-time monitoring and control of the national grid, facilitating quick decision-making and efficient management of grid operations.

Sixth, promoting distributed generation can mitigate transmission losses and reduce dependency on the central grid. Encouraging small-scale renewable installations, like rooftop solar panels and local wind turbines, can contribute significantly to the energy mix.

Seventh, sector coupling is an innovative approach that needs exploration. Linking the electricity sector with other energy-consuming sectors, such as transportation and heating, can provide added flexibility and storage options for the energy system.

Eighth, transforming key institutions like the NTDC, CPPA, and distribution utilities to operate on more corporate and efficiency-driven principles is vital. This transformation will lead to better financial management, operational efficiency, and enhanced customer service.

Ninth, establishing a robust policy and regulatory framework will support these technical initiatives. Such a framework should incentivize investment in the energy sector, ensure fair energy pricing, and promote energy conservation and efficiency.

Tenth, fostering public-private partnerships can bring additional resources and expertise into the energy sector. Private sector involvement can introduce innovation and efficiency, especially in areas like renewable energy projects, grid modernization, and distributed generation.

Last, investing in capacity building and public awareness is critical. A team of engineers, economists and environmental experts can steer the power sector towards sustainability. Training programmes and awareness campaigns about energy conservation and the benefits of renewable energy will be key in the successful implementation of these policies.

A comprehensive approach that combines technological innovation, infrastructural improvements, strategic planning, regulatory reforms, and collaborative efforts across various stakeholders is essential for Pakistan to overcome its winter electricity transmission challenges and move towards a more sustainable and efficient energy future.

Mari Petroleum discovers new gas reserves



EU Report

Mari Petroleum Company Limited (MARI), one of the largest producers of natural gas in the country, has discovered gas reserves at Shewa-2 well, located in North Waziristan district of Khyber Pakhtunkhwa.

The development was shared by the company in its notice to the Pakistan Stock Exchange (PSX). "We are pleased to inform that Mari Petroleum Company Limited (MARI) has made a gas discovery at Shewa-2 appraisal-cum-exploratory well (in Waziristan block), located in North Waziristan district, Khyber Pakhtunkhwa Province," read a notice.

MARI is the operator of Waziristan Block with 55% working interest along with OGDCL and OPI as joint venture partners having 35% and 10% working interest, respectively. MARI shared that the well was successfully drilled down to 4,577 meters on November 01, 2023, to appraise the Lockhart and Hangu formations, which were previously discovered at exploratory well Shewa-1, as well as test the hydrocarbon potential of the well's exploratory targets i.e. Samanasuk and Kawagarh formations.

"During the Drill Stem Test (DST) carried out in the Kawagarh formation (exploratory target), gas flowed at a sustainable rate of 0.607 million standard cubic feet per day (MMSCFD) at wellhead flowing pressure (WHFP) of 97 pounds per square inch (Psi) at 32/64-inch choke size," added the company. MARI said that the discovery in Kawagarh formation is in addition to the previously discovered hydrocarbon-bearing reservoirs i.e. Lockhart and Hangu in exploratory well Shewa-1.

"The appraisal of the Lockhart and Hangu Formations has confirmed the extension of hydrocarbon play in these formations. The Hangu formation was tested at a gas flow rate of 0.274 MMSCFD at WHFP of 77 Psi at 32/64-inch choke size. "Further, the Lockhart formation in Shewa-2 well was tested (post-acid) at a gas flow rate of 51 MMSCFD and 391 barrels of condensate per day at WHFP of 5,972 Psi at 38/64-inch choke size," it added.

Last month, MARI successfully drilled and tested a horizontal well in District Daharki, Sindh. The company is an integrated oil and gas exploration and production company and around 70% exploration success rate, which is much higher than industry averages of around 33% national and 14% international. MARI's key customers include fertilizer manufacturers, power generation companies, gas distribution companies; and refineries.



COP28 Pledges, Agreements and Challenges

Time to move into action from decisions, intentions

Stop waiting until conditions are satisfactory; conference pledges did not provide clarity on the pathway to reaching net-zero emission by 2050; transition to renewable energy will cost Pakistan US\$101 billion by 2030 plus additional US\$65 billion by 2040; Who will pay this hefty amount?

Special Report Muhammad Naeem Qureshi

The recent UN's Conferences of Parties 28 (COP28) has provided one of the greatest outcomes for the first time that was the agreement to transit away from fossil fuels smoothly and orderly so as to achieve net zero emissions by 2050. The good thing of the moot was that its participants with consensus vowed to phase down unabated coal power. But, worrying thing is that energy demand is rising in all countries of the world including Pakistan.

At a time when the world leaders are advising to end coal usage, Pakistan has started using its indegious coal in an effort to overcome crippling energy crisis that has devastated its economy and forced its people to face highest-ever inflation.

It is estimated that transition to renewable energy will cost Pakistan US\$101 billion by 2030 plus additional US\$65 billion by 2040 as given costs involved in completing in-progress renewable energy projects, building additional hydropower (US\$50 billion by 2030 and US\$80 billion by 2040) and transmission lines (US\$20 billion), and phasing out coal (US\$ 18 billion to buy out Pakistan's coal power plants and US\$ 13 billion to replace the energy production capacity of coal power plants with solar). Pakistan's adaptation cost ranges of between US\$ 7-14 billion per annum to 2050.

Financing these initiatives is considered

a challenge in NDCs and Pakistan in the NDCs commits to employing the instruments on enhanced ambition provided in Article 6 of the Paris Agreement, public-private partnerships and international climate finance opportunities including Green Climate Fund (GCF) and Global Environment Fund (GEF). A summary of Pakistan NDCs 2021 is shown in

The UN and its rich partners need to provide sufficient financial aid to Pakistan and other countries to reduce coal use. They also need to provide financial aid to general solar, wind, and hydel energy. And in this case, the oil and coal exporting countries need to make much more investments and provide larger financial aids to ensure real clarity of their pledges.

At this conference, UN chief António Guterres had also stated: "Developing countries must be supported every step of the way and had also emphasized that the era of fossil

fuels must end with justice and equity.

The UN Secretary-General had also pointed out that the pledge did not provide clarity on the pathway to reaching net-zero emission by 2050, which is absolutely essential to ensure integrity. "Science is clear: we need to phase out fossil fuels within a timeframe compatible with limiting global warming to 1.5 Celsius," he reiterated, referring to one of the keystone targets set by the landmark 2015 Paris Agreement.

In 2015, the United States was among



195 nations that signed the landmark Paris agreement to hold the increase in the global temperature to a maximum of 2 degrees Celsius over preindustrial levels — and preferably below 1.5 degrees Celsius — in order to reduce the worst effects of climate change. The UAE, a major oil producer in the world, was the first country in region to sign the Paris Agreement. It had invested \$50 billion into clean energy internationally and promised an additional \$50 billion by 2030. In November 2022, the UAE agreed to partner with the United States to invest another \$100 billion in clean energy.

The main focus of efforts to curb global warming is carbon dioxide, which is emitted as a result of human activities such as generating power and clearing forests. Methane is a primary component of natural gas and is responsible for about a third of the planetary warming we see today. It is short-lived but is more powerful than carbon dioxide, the greenhouse gas most responsible for climate change. Without serious action, global anthropogenic methane emissions are projected to rise by up to 13 per cent between now and 2030.

At COP26 in 2021, the US and the EU had announced a global partnership to cut emissions of the greenhouse gas Methane by 2030. The Global Methane Pledge aimed to limit Methane emissions by 30% compared with 2020 levels. More than 100 countries had signed up to the initiative, first proposed by the US and the EU.

Science shows that greenhouse gas emissions must be reduced by 43% by 2030 compared to 2019 levels to limit temperature rise to 1.5 degrees Celsius and avoid the most severe consequences of climate change. COP 28 aims to identify global solutions to limit temperature rise, inform countries' revised and more ambitious climate plans, accelerate the green transition, and ultimately achieve the goals of the Paris Agreement.

COP28 negotiations resulted in an agreement to implement a Loss and Damage Fund, which will direct funding toward countries most vulnerable to the effects of extreme weather events, including droughts, flooding, and rising seas. Eighteen countries have now committed to the fund, with \$792 million pledged.

Pledges made to the Loss and Damage Fund.

The total value of pledges made to the Loss and Damage Fund is 661.39 million dollars, and it was reported by COP28 Presidency to the UN, as Canada pledged 11.60 million dollars, Denmark 25.50 million dollars, Estonia 0.50 million dollars, European Commission 27.10 million dollars, Finland 3.26 million dollars, France 108.90 dollars, Germany 100.00 million dollars, Iceland 0.60 million dollars, Ireland 27.30 million dollars, Italy 108.90 dollars, Japan 10.00 million dollars, Netherlands

16.30 million dollars, Norway 25.00 million dollars, Portugal 5.45 million dollars, Slovenia 1.63 million dollars, Spain 21.70 dollars, United Arab Emirates 100 million dollars, United

Kingdom 50.60 million dollars, and United States of America 17.50 million dollars.

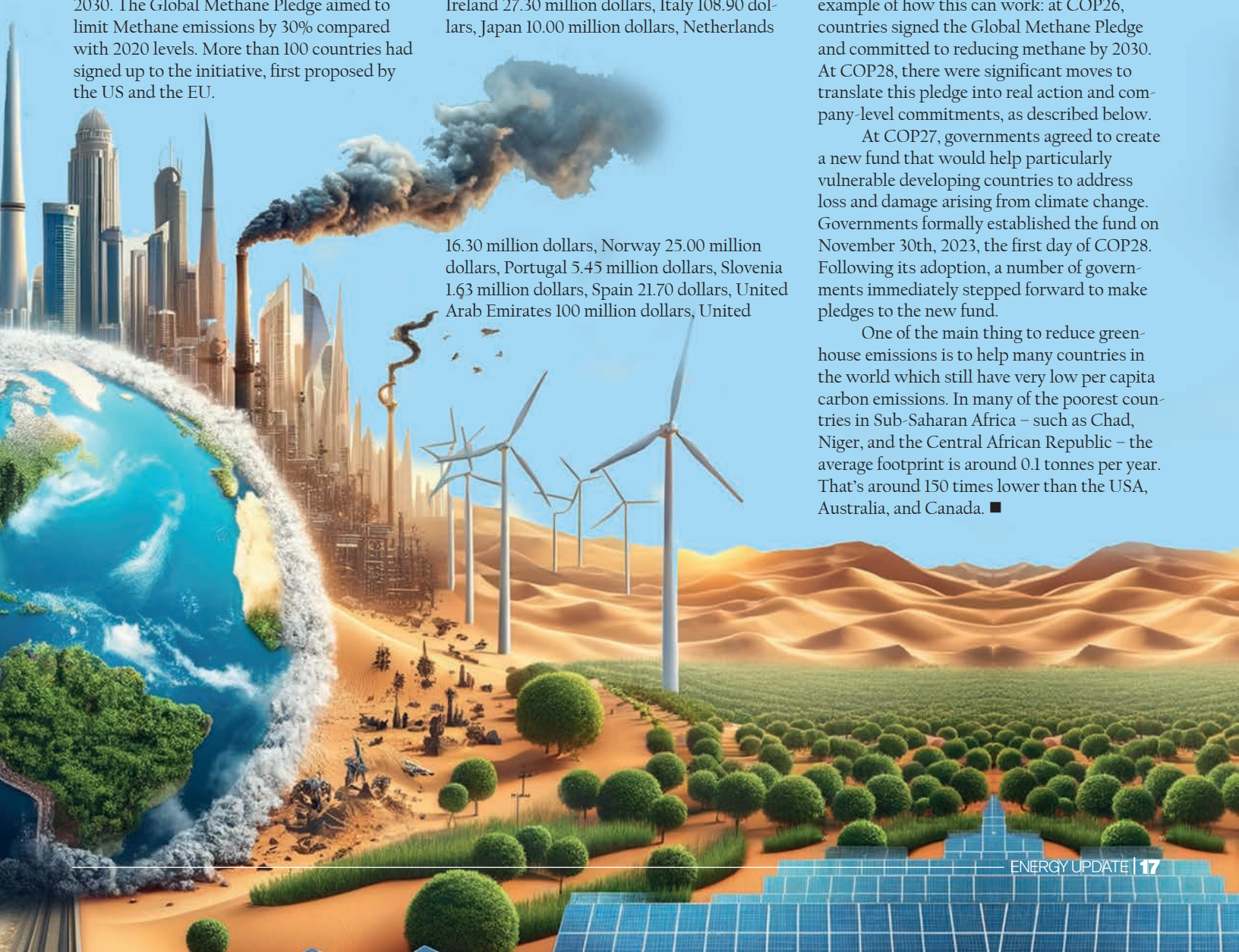
According to IEA, the world's capacity to generate renewable electricity is expanding faster than at any time in the last three decades, giving it a real chance of achieving the goal of tripling global capacity by 2030 that governments set at the COP28 climate change conference last month.

The amount of renewable energy capacity added to energy systems around the world grew by 50% in 2023, reaching almost 510 gigawatts (GW), with solar PV accounting for three-quarters of additions worldwide. The largest growth took place in China, which commissioned as much solar PV in 2023 as the entire world did in 2022, while China's wind power additions rose by 66% year-on-year. The increases in renewable energy capacity in Europe, the United States and Brazil also hit all-time highs.

As with other COP outcomes, the agreement is non-binding, and the mechanisms for implementing this commitment will be critical. However, including this language in the COP agreement is expected to trigger initiatives and actions at future COPs, and intended to spur "real-world" action by companies and other stakeholders. Methane provides one example of how this can work: at COP26, countries signed the Global Methane Pledge and committed to reducing methane by 2030. At COP28, there were significant moves to translate this pledge into real action and company-level commitments, as described below.

At COP27, governments agreed to create a new fund that would help particularly vulnerable developing countries to address loss and damage arising from climate change. Governments formally established the fund on November 30th, 2023, the first day of COP28. Following its adoption, a number of governments immediately stepped forward to make pledges to the new fund.

One of the main thing to reduce greenhouse emissions is to help many countries in the world which still have very low per capita carbon emissions. In many of the poorest countries in Sub-Saharan Africa – such as Chad, Niger, and the Central African Republic – the average footprint is around 0.1 tonnes per year. That's around 150 times lower than the USA, Australia, and Canada. ■



A global energy crisis is coming. There's no quick fix

Julia Horowitz

A global energy crunch caused by weather and a resurgence in demand is getting worse, stirring alarm ahead of the winter, when more energy is needed to light and heat homes. Governments around the world are trying to limit the impact on consumers, but acknowledge they may not be able to prevent bills spiking.

Further complicating the picture is mounting pressure on governments to accelerate the transition to cleaner energy as world leaders prepare for a critical climate summit in November.

In China, rolling blackouts for residents have already begun, while in India power stations are scrambling for coal. Consumer advocates in Europe are calling for a ban on disconnections if customers can't promptly settle what they owe.

"This price shock is an unexpected crisis at a critical juncture," EU energy chief Kadri Simson said Wednesday, confirming the bloc will outline its longer-term policy response next week. "The immediate priority should be to mitigate social impacts and protect vulnerable households."

In Europe, natural gas is now trading at the equivalent of \$230 per barrel, in oil terms — up more than 130% since the beginning of September and more than eight times higher than the same point last year, according to data from Independent Commodity Intelligence Services.

In East Asia, the cost of natural gas is up 85% since the start of September, hitting roughly \$204 per barrel in oil terms. Prices remain much lower in the United States, a net exporter of natural gas, but still have shot up to their highest levels in 13 years.

"A lot of it is feeding off of fear about what the winter's going to look like," said Nikos Tsafos, an energy and geopolitics expert at the Center for Strategic and International Studies, a Washington-based think tank. He thinks that anxiety has caused the

market to break away from the fundamentals of supply and demand.

The frenzy to secure natural gas is also pushing up the price of coal and oil, which can be used as substitutes in some cases, but are even worse for the climate. India, which remains extremely dependent on coal, said this week that as many as 63 of its 135 coal-fired power plants have two days or less of supplies.

The circumstances are causing central banks and investors to worry. Rising energy prices are contributing to inflation, which already was a major concern as the global economy tries to shake off the lingering effects of Covid-19. Dynamics over the winter could make matters worse.

The crisis is rooted in soaring demand for energy as the economic recovery from the pandemic takes hold, and a carefully calibrated system that's easily disrupted by weather events or mechanical problems.

An unusually long and cold winter earlier this year depleted stocks of natural gas in Europe. Soaring demand for energy has impeded the restocking process, which typically happens over the spring and summer. China's growing appetite for liquified natural gas has meant LNG markets can't fill the gap. A decline in Russian gas exports and unusually calm winds have exacerbated the problem.

"The current surge in European energy power prices is truly unique," energy analysts at the Société Générale bank told clients this week. "Never before have power prices risen so far, so fast. And we are only a few days into autumn — temperatures are still mild."

The dynamics are reverberating globally. In the United States, natural gas prices have risen 47% since the beginning of August. The scramble for coal is also triggering a spike in the price many European companies have to pay for carbon credits so they can burn fossil fuels.

Additionally, the energy crunch is supporting oil prices, which hit seven-year highs in the United States this week. Bank of America recently predicted that a cold winter could push the price of Brent crude, the global benchmark, past \$100 per barrel. Prices haven't been that high since 2014. ■

Courtesy CNN





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Engro Elengy Terminal fulfills 15% of Pakistan's daily natural gas requirements



Mazhar Hasnani says expansion of existing terminals should be expedited to tackle the ongoing gas crisis; states opening of LNG market to private players is key for development of natural gas sector; signifies the importance of expansion in the regional LNG supply for Pakistan's energy security

Engr. Nadeem Ashraf

The CEO of Engro Elengy Terminal (Private) Limited, Mazhar Hasnani, said in an interview with Energy Update that Engro Elengy Terminal currently fulfills as much as 15% of Pakistan's daily natural gas requirements.

"Since the start of its operations in March 2015, the Terminal has completed the transfer of over 34.7 million metric tons of

LNG by handling over 563 LNG cargoes. This is the highest volume handled by any floating LNG import terminal in this time frame globally, adding that Engro Elengy Terminal derives its Health, Safety and Environment (HSE) standards from its two parent companies, Engro Corporation and Royal Vopak of The Netherlands," he said. He added that safety has always been a top priority for Engro Elengy Terminal, with the Terminal designed to ensure the highest level of safety for its staff and surrounding environment.

Mr Mazhar stated that considering the

current energy crisis, Pakistan is in dire need of importing more LNG to meet its energy needs.

Engro Elengy Terminal understands this issue and is eager to expand its capacity, under the Third Party Access (TPA) regime, by swapping the existing FSRU with a larger capacity FSRU.

The detailed interview is given below:

Q. What role has Engro Elengy Terminal (Private) Limited played in fulfilling the increasing energy needs of the industrial sector in Pakistan through its LNG import capacity?

ANS: Before answering this question, let us go back in history and look at the circumstances in which Engro Elengy Terminal was set up and how it has helped resolve the energy crisis, which was one of the most pressing issues faced by Pakistan at that time.

In the early 2010s, Pakistan was in the middle of a severe energy crisis as the electricity shortfall reached its peak when the difference in the supply and demand of power hit 8,500 MW or more than 40% of the national demand. One of the contributing factors for power shortfall was the country's depleting indigenous gas reserves amidst increasing gas demand. At that time, natural gas account-



ed for nearly 40% of Pakistan's total energy supplies, while expensive, imported furnace oil was also another key component of the energy mix. However, the indigenous gas production of Pakistan was insufficient, and has been dwindling by around 10% per annum to meet the country's growing energy needs.

As a result of the energy shortages, many areas faced around 12 hours of load shedding that crippled daily lives of citizens, capacity utilization in key industries fell to 50%, and half a million jobs and exports worth over USD 1 billion were lost. Overall, it is estimated that Pakistan lost 3-4% of GDP (USD 6-8 billion) every year due to energy shortages.

To overcome this crisis, Pakistan had primarily four options – develop transnational pipeline projects, import LNG, increase indigenous gas production, or build large-scale hydel power projects.

The Turkmenistan-Afghanistan-Pakistan-India (TAPI) and Iran-Pakistan agreements had been signed in the early 2000s, but limited progress was achieved in view of the complex geo-political situation and financing challenges. Meanwhile, the construction of dams also required several billions of dollars and a time range of 5 to 10 years for completion, while the power generation would have varied largely due to weather and the seasonal impact. In this scenario, LNG import was the fastest solution to Pakistan's crippling economic needs.

Given Engro's credentials as a project developer with a multi-decade footprint in Pakistan, a Special Purpose Vehicle (SPV) was set up to allow it to solely focus on developing the LNG sector. Built in a record time of 330 days, Engro Elengy Terminal is recognized as one of the fastest built and most utilized LNG regasification terminals in the world with a utilization factor of -98% to ensure consistent gas supply to the country. Engro Elengy Terminal takes immense pride in being the first LNG operating terminal that has put Pakistan on the global map of LNG trade.

Engro Elengy Terminal currently fulfills

as much as 15% of Pakistan's daily natural gas requirements. Since the start of its operations in March 2015, Engro Elengy Terminal has completed the transfer of over 34.7 million metric tons of LNG by handling over 563 LNG cargoes. This is the highest volume handled by any floating LNG import terminal in this time frame globally. The Terminal has also achieved another milestone through the send-out of more than 1.7 trillion cubic feet (TCF) of natural gas, equivalent to energy required to generate around 325 million MWh. This would not have been possible without close collaboration and support of Port Qasim Authority which ensures smooth operations at the port to receive LNG carriers, excellent coordination with PSO for sourcing the shipments and Sui Southern Gas Company for managing the flow of regasified LNG (RLNG) to the gas transmission grid, thus, enabling high pressure RLNG to be delivered to Sui Northern Gas Pipelines. All these stakeholders manage the LNG value chain to ensure round-the-clock availability of RLNG for end customers.

Engro Elengy Terminal utilizes the floating storage and regasification unit (FSRU) Exquisite, which is co-owned by Excelerate Energy Inc (NYSE: EE) and Nakilat (Qatar). The Terminal has a storage capacity of 150,900 cubic meters and guaranteed regasification capacity of 630 million standard cubic feet per day (mmscfd). As a result, more than USD 3 billion of foreign exchange savings have been generated for the national exchequer through import substitution of expensive furnace oil.

Q. How safe have the operations of Engro Elengy Terminal so far been pertaining to the safety of staff and infrastructure involved in LNG import and the surrounding environment?

Ans: Engro Elengy Terminal derives its Health, Safety and Environment (HSE) standards from its two parent companies, Engro Corporation and Royal Vopak of The Netherlands. Safety has always been a top priority for Engro Elengy Terminal, with the Terminal

designed to ensure the highest level of safety for its staff and surrounding environment. This includes adhering to international safety standards and implementing robust safety protocols. Moreover, we have implemented various measures to minimize our environmental impact by reducing greenhouse gas emissions and promoting energy efficiency.

We also actively engage with local communities to raise awareness about the importance of safety and environmental protection in LNG import and distribution. Furthermore, the Terminal operates under the oversight of relevant regulatory authorities, ensuring compliance with all applicable safety and environmental regulations.

Overall, Engro Elengy Terminal has demonstrated strong adherence to safety and environmental standards in its operations, along with the well-being of the local community. The Terminal was also awarded the highest HSE award in the LNG Division for achieving the best safety record in the Vopak global network. Furthermore, the Terminal has safely completed 1.8 million man-hours in 3,202 days of operations without any Loss Time Injury (LTI) and zero TRIR (Total Recordable Incident Rate) since inception, which is a testament to the focus of Engro Elengy Terminal's compliance with HSE standards and emphasis on safety protocols.

Q. Is there any plan to expand the LNG import capacity of Engro Elengy Terminal in future if the private sector is also involved in the import of LNG?

Ans: Considering the current energy crisis, Pakistan is in dire need of importing more LNG to meet its energy needs. Engro Elengy Terminal understands this issue and is eager to expand its capacity, under the Third Party Access (TPA) regime, by swapping the existing FSRU with a larger capacity FSRU. Against the backdrop of slow development of planned new LNG terminal projects in Pakistan, we believe that the expansion of the existing

terminals is the fastest way to bring additional LNG into the country to ease the ongoing gas crisis. TPA will pave the way for opening up the gas market of Pakistan for the private sector to capture the merchant market demand of LNG in Pakistan, without any additional burden on the national exchequer. Furthermore, this will also facilitate additional investments in the LNG value chain of the country through attracting Foreign Direct Investments (FDI) and set the groundwork for new LNG projects.

In the long-run, we believe that a shift from FSRU-based terminal towards an onshore LNG terminal will ensure energy security to Pakistan by building a strategic national asset. The onshore LNG terminal, built on an open access regime, with larger capacity and inventory management capabilities can help optimize LNG supply chain, while also offering additional propositions of breakbulk, trans-shipment, bunkering services and LNG trucking.

Q. What policies and strategies can be adopted by the government to support the entities involved in LNG import?

Ans: We believe that opening the LNG market to private players is key for development of the LNG sector in Pakistan. Ministry of Energy and Oil & Gas Regulatory Authority (OGRA), in close coordination with relevant stakeholders in the LNG value chain, are already working on operationalizing Third Party Access (TPA) in line with the approvals granted by the Economic Coordination Committee (EEC) in 2019, 2020 and again in 2022, which were also ratified by the Federal Cabinet.

The implementation of TPA would allow private players to acquire capacity in the existing and future LNG terminals. As a result, there will be greater efficiency in the overall LNG supply chain, competition to procure cheaper LNG through spot and term contracts and sharing of responsibility by the private sector players as well to ensure consistent gas supply. Furthermore, private LNG shippers should also be allowed to take pipeline capacity through a fair, transparent and competitive process. This will encourage greater foreign investments in the overall LNG value chain.

The government should also constitute and operationalize an LNG Task Force comprising all regulatory and relevant stakeholders to fast-track impending matters related to approvals, licenses and permits between different regulatory bodies to steward the LNG projects, unify the overall gas licensing rules and regime, and remove redundancies in regulatory approval processes to expedite the projects. This will improve the overall regulatory framework of LNG/RLNG in the country and create an enabling environment for import, regasification, sale, and marketing in Pakistan.

Q. Should there be a greater role of the private sector in the import and



handling of LNG in Pakistan?

Ans: The private sector's greater involvement in the import of LNG in Pakistan has been a topic of discussion for a long time. The government has been considering measures to allow private companies to import LNG, potentially relieving the government of circular debt issues. As of end 2023, the gas circular debt reached an unprecedented level, standing at a staggering PKR 3 trillion which is expected to increase even further. However, we believe that opening the market for private sector participation will help curb the growing circular debt.

Historically, private sector companies in Pakistan have refrained from importing LNG due to various obstacles, including the government's ownership of all capacity and the monopoly of state-owned companies in the LNG trade. However, there is a growing consensus that greater involvement of the private sector in LNG import and local sales could introduce efficiencies in the overall value chain and help address the challenges associated with natural gas pricing and governance in Pakistan.

The potential privatization of LNG imports and the utilization of idle capacity by private players have been under consideration to benefit from the international market's low gas prices. We must note that the LNG supply in the region is set to expand rapidly, with Qatar expanding by an additional 50 Million Tonnes Per Annum (MTPA) of LNG by 2027, which is only a three-day voyage to Pakistan. Global LNG prices are also expected to drop below \$10/MMBTU which makes it more viable than current market prices. Therefore, the move towards a greater role for the private sector in LNG import and handling in Pakistan is being actively explored to address existing challenges and improve the efficiency of the country's energy sector.

Q. Brief us about the CSR activities of Engro Elengy.

Ans: Engro Elengy Terminal has been actively involved in community investments and

activities related to corporate philanthropy and CSR. Over the years, we have supported and encouraged social development initiatives, especially in the healthcare and education sectors.

Last year, as part of flood rehabilitation efforts, we reconstructed 146 houses in partnership with SRSO (Sindh Rural Support Organization) in two villages of bordering areas of Qambar Shahdadkot District in Larkana Division Sindh.

In 2022, we launched Uraan Associate Trainee Program, a one-year community-based employment initiative that aims to empower young women living in the Bin Qasim locality. In the first batch, we hired 17 females out of 300+ applicants through a rigorous recruitment process, who were given more than 200 hours of technical training on key operational aspects of the Terminal and soft skills. In the second batch, 11 females were hired who are currently undergoing training.

Moreover, we launched Tech Karo Initiative in 2018 which is a digital and life skills program for youth, especially women, from underserved communities where girls and young women learn digital skills including coding, graphic designing and digital marketing with life skills and mentoring sessions. From 2018 to 2023, 1,000+ students graduated out of which 65% are women, and 40% of them have secured jobs as interns, contract, and permanent employees in leading IT firms.

Lastly, since 2015, Engro Foundation and IUCN have been in partnership for building sustainability of Pakistan's coastal ecosystem through restoration of mangroves along the Karachi coast. We cultivated 1,235 acres of mangroves to capture 120 tons of CO₂ emissions per year, thus improving coastal environment and enriching marine biodiversity. We have also partnered with WWF Pakistan to promote sustainable fishing practices and empower coastal communities in Ibrahim Hyderi and Rehri villages of Karachi through the Sustainable Fisheries Entrepreneurship Program (SFEP). ■

POST-COP28 OUTLOOK

Pakistan stands at environmental crossroads

Umar Farooq

The writer is a senior researcher at The James Hutton Institute

POST-COP28, it is imperative to examine Pakistan's unique stance in the climate change dialogue. Pakistan now faces a new kind of challenge — one that is environmental in nature but deeply rooted in its sociopolitical fabric.

Pakistan, despite its minimal contribution to global greenhouse gas emissions, is at the forefront of climate change impacts. The country's vulnerability to environmental disasters is not solely due to global climatic changes; it is also profoundly exacerbated by local factors. Rapid urbanisation, characterised by subpar housing societies and an obsession with cars and expansive urban highways, along with rampant deforestation and excessive reliance on fossil fuels, have collectively precipitated a series of environmental crises.

These developments, while possibly benefiting the bureaucracy and enabling politicians to exploit taxpayer funds, have led the country towards a situation that is nearly irreparable. These local issues, often eclipsed by the broader narrative of global climate politics, are the actual catalysts for Pakistan's escalating environmental degradation.

At the heart of these challenges lies Pakistan's persistent dependence on inefficient and hazardous fossil fuels. Additionally, environmental protection regulators, run by an ad hoc bureaucracy that is adept at nothing except staging price control photo ops against street vendors, have

failed to establish procedures to control emissions effectively.

For Pakistan, the global shift towards environmental justice is a challenge. The problem with Pakistan's approach to environmental issues is a deeply ingrained dependency mindset. Traditionally, the country has sought external aid to address its problems. While bureaucracy and NGOs continue to receive aid, these funds often merely suffice to support the lifestyles of a few profiteers, offering negligible benefits to the community or the environment. However, in a world increasingly focused on environmental integrity and sustainable development, this dependent approach poses a significant threat to Pakistan's future.

Triggered by the greenwashing controversy, there is focus on a more stringent approach that prioritises substantial emission reductions before considering the trading of carbon credits. This global trend towards 'green conditionalities' poses a new challenge for countries like Pakistan. With the carbon credit market more competitive and stringent, without regulations we are out of the park.

Another emerging dimension in the global environmental paradigm is the focus on natural capital credits. European and UK policymakers are currently developing new codes that place greater emphasis on ecosystem services, such as tokens and credits derived from river catchment areas and the blue economy. For countries like Pakistan, this presents an opportunity and a challenge. The opportunity lies in harnessing its rich biodiversity and

aquatic resources for ecological restoration and economic benefit. The challenge, however, is in developing the necessary frameworks and capabilities to participate effectively in these emerging markets.

The implications of this global shift are profound for nations like Pakistan. Despite promises of famous 'climate aid' cheered by a few toadies, the reality is that funds often fail to materialise. Furthermore, controversies surrounding 'junk' carbon credits have led to a significant focus shift towards high-integrity environmental codes. The future is likely to see a discouragement of secondary market trading of these credits. Even if Pakistan embarks on extensive reforestation for carbon sequestration, the absence of a robust mechanism to validate and trade these credits renders them virtually valueless in the global market.

This scenario mirrors the plight of Pakistan's textile industry, which suffered when the world moved towards more water-efficient textile production methods, rendering Pakistan's traditional, water-intensive methods obsolete.

For Pakistan, a country where human rights issues and displacement concerns are significant and where the human rights index ranks low, the global shift towards environmental justice presents a profound challenge. Future climate aid and environmental investments are likely to come with stringent green conditionalities that demand not just local initiatives but also adherence to the principles of environmental justice.

As Pakistan stands at this environmental crossroads, the message is clear: the time for meaningful action is now. The country must break free from the shackles of dependency and chart a new course towards environmental sustainability.





Navigating energy sector challenges amid next polls

Crippling circular debt of over Rs4.5 trillion from power and gas sectors haunts country; encouraging investments in technological infrastructure development by offering incentives and tax rebates is mandatory to come out of energy crisis

Saleha Qureshi

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As Pakistan approaches its upcoming elections in February, the energy sector remains a critical challenge for the country's economic sustainability. With a staggering circular debt of over PKR 4.5 trillion from the power and gas sectors, coupled with transmission and distribution challenges, import costs, subsidy constraints, and system inefficiencies, the sector continues to impede the country's socio-economic growth. This, combined with the recent doubling of energy prices due to subsidy removal (as per IMF conditions), has created a complex dilemma involving affordability and the financial stability of the energy sector.

The shift to captive power by both residential consumers and industries has further strained the national grid. Approximately 48 million Pakistanis lack access to reliable

grid electricity, and nearly half of the population lacks access to clean cooking fuels and technologies. Against these circumstances, it is imperative for the upcoming government to comprehensively address the challenges in the energy sector. As Pakistan shifts towards captive energy, ensuring affordability and accessibility becomes paramount.

While recent policy reforms have been documented in Pakistan's energy sector, misalignments in goals and regulatory measures have triggered debates within government institutions. The lack of policy consistency and frequent regulatory changes have deterred both private and international finance, resulting in a significant decline in investments crucial for expanding energy sector projects. To overcome these challenges, a holistic approach is necessary, aligning with IMF conditionality.

Considering the energy reform agenda, two crucial aspects come to the forefront: ensuring energy affordability and accessibility for all, aligning with the SDGs. Alternative fuels, renewables, and conservation practices are essential components of this agenda. The skyrocketing electricity prices across various

sectors is a formidable challenge awaits the new government. This predicament, crucially poised on the government's agenda, prompts a meticulous exploration of mechanisms aimed at alleviating the burden on both the state and its citizens.

In this quest for balance, the concept of average billing emerges as a potent tool. The government, cognizant of the need to provide relief to consumers in the domestic sector, is considering innovative approaches such as demand-side management and the adoption of average billing concepts. This strategic move aims not only to ease the financial strain on households but also to ensure a sustainable and predictable energy pricing model.

Amidst the scorching peak summer temperatures, a formidable challenge arises – the energy-intensive cooling of buildings. Recognizing the environmental and economic implications, the government should now turn its focus towards the implementation framework of energy-efficient buildings and sustainable architecture. This forward-looking initiative seeks to strike a balance between the growing demand for cooling and the impera-

tive of energy conservation.

The transport sector presents a unique set of challenges for the government, particularly concerning the rising trend of electric vehicles (EVs). Establishing an efficient network of EV charging stations and the accompanying infrastructure demands careful planning. Simultaneously, the government is exploring alternatives for fuel, with a keen eye on the potential of hydrogen. This dual approach aims not only to address the current energy needs of the transport sector but also to pave the way for a cleaner and more sustainable future.

As Pakistan stands at this critical juncture, the energy landscape is both a challenge and an opportunity. The new government's commitment to tackling rising electricity prices showcases a dedication to fiscal responsibility and consumer welfare. The exploration of innovative solutions like average billing, sustainable architecture, and alternative fuels positions Pakistan on the global stage as a proactive participant in the pursuit of a greener and more resilient energy future.

In the transport sector, the shift to electric vehicles (EVs) raises questions about infrastructure readiness. Regulations for charging stations need to be established, and the potential scaling up of hydrogen fuel should be explored. The industrial sector faces policy challenges, and initiatives such as IPPs heat rate audits and the implementation of the Energy Conservation Building Code 2023 are crucial.

Technological infrastructure development, incentivization, and tax rebates are avenues the new government could explore to attract investments. Addressing uncertainties in carbon trading policies and lack of investors in carbon reduction initiatives is vital. The cement industry, a major taxpayer, faces pressure due to government policies, potentially leading to increased prices for consumers.

As Pakistan shifts towards captive energy, ensuring affordability and accessibility becomes paramount. Preparations for the Carbon Border Adjustment Mechanism (CBAM) demand well-coordinated efforts. Despite economic challenges, the upcoming government can address energy sector issues through a comprehensive approach. The following recommendations outline the path forward for Pakistan:

Encourage investments in technological infrastructure development by offering incentives and tax rebates; Create a stable regulatory environment by addressing uncertainties in carbon trading policies and attracting investors to carbon reduction initiatives; Implement measures to promote energy conservation, including the adoption of the Energy Conservation Building Code 2023; Develop strategies to enhance accessibility to reliable grid electricity and clean cooking fuels for the population; and Establish regulations and infrastructure to support the adoption of electric vehicles, ensuring a smooth transition to cleaner transportation. ■

SolaX Power executes its initial public offering



EU Report

SolaX Power, an industry trailblazer in the solar and storage sector, has announced the successful culmination of its Initial Public Offering (IPO) and subsequent listing on the Shanghai Stock Exchange STAR Market, trading under the stock code 688717. This notable accomplishment marks a pivotal milestone in the company's decade-long trajectory.

Founded in 2012, SolaX Power is dedicated to actualizing a clean and sustainable future through solar energy. As a leading global provider of solar and storage solutions and one of Asia's pioneering hybrid inverter manufacturers, SolaX Power has matured into a multinational corporation, boasting a workforce exceeding 2,000 employees worldwide. With its headquarters situated in Hangzhou, China, and additional branches strategically located in the Netherlands, Germany, the UK, Australia, Japan, and the US, SolaX Power extends its services to customers across more than 80 countries.

Positioned as a high-tech enterprise, SolaX Power showcases formidable research and development capabilities, seamlessly amalgamating R&D, production, sales, and service functions. Since its inception, the company has obtained authorization for over 100 international patents, encompassing more than 30 invention patents. Currently, SolaX Power products hold over 500 international

mainstream market certifications. Significantly, SolaX Power stands as the inaugural Chinese manufacturer to achieve the Japanese S-Mark certificate for its residential energy storage system. In the year 2023, the company garnered 20 EUPD awards globally, including distinctions such as Top Brand PV Inverter and Top Brand PV Storage, conferred by EUPD Research.

SolaX Power's expansive product portfolio encompasses Photovoltaic (PV) inverters, energy storage solutions, Electric Vehicle (EV) chargers, and advanced smart energy management systems. The company's energy storage solutions have earned esteemed recognition, including the distinguished 'Red Dot Design Award 2021' and the TÜV Rheinland 'All Quality Matters' award for the X-ESS G4. Tailored to cater to residential, commercial, industrial, and emerging utility applications, SolaX Power's PV inverters are characterized by exceptional efficiency, reliability, adaptability, and intelligent control, positioning the company at the forefront of technological innovation.

Demonstrating an unwavering commitment to sustainability, innovation, and customer satisfaction, SolaX Power strategically situates itself to address the growing demand for clean energy solutions. The Initial Public Offering (IPO) signifies a critical strategic initiative, with the objective of strengthening partnerships, expanding market presence, and making substantial contributions to the global transition towards a greener future. ■

Coal power plants: early retirement?

This is like asking a young recruit to retire or think about retiring.

Syed Akhtar Ali



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

Recently, a conference was held in Islamabad on the proposal of “Early Retirement of Coal Power Plants”. Those who are aware of Pakistan’s energy problems went into a shock to hear the proposal. We have hardly begun to start using coal power plants. And now these signals and sounds of early retirement. This is like asking a young recruit to retire or think about retiring.

Reportedly, IFIs (international financial institutions) have financed the conference. Asian Development Bank (ADB) has been negotiating with Indonesia for a similar proposal. However, Indonesia is in totally different situation than Pakistan is.

It is a rich and energy abundant country and has many choices. It is one of the largest exporters of coal. Pakistan is a wretched poor country suffering from energy deficit, high inflation and circular debt, having barely escaped financial default. It is highly inappropriate to initiate such proposals in such circumstances. It reflects either ignorance, or simple insensitivity, many people I have spoken to, have said so.

Negotiations have been going on among Indonesia and IFIs for early retirement of one or more coal power plants. However, these have been in a larger context of a NetZero programme, requiring 20 billion USD of financial assistance under which Indonesia would implement a variety of smart energy programme.

The proposal has not been accepted by the JETP (Just Energy Transition Programme) negotiators. The response of the

latter has been in negative. They said that they would rather finance Renewable energy programmes than financing early retirement of coal power plants. It should be noted that the plants under consideration in Indonesia are quite old; more than 10 years.

The Indonesian government’s response has been equally terse. IESR (Institute of Essential Services Reforms) of Indonesia reported thus on November 23, 2023: “Indonesia will not put the early retirement of coal plants at the forefront of its emission reduction ambitions and instead will focus more on controlling emissions from coal plants, which will remain operational until the end of their operational life spans, the government said.” Both responses appear to be appropriate rejecting the Early Retirement proposal.

Apart from undesirability and inappropriateness of the early retirement proposal, it is not cheap. It costs precious money, which can be diverted to much better and paying projects (in environmental and climate terms); paying off debt and present value of equity holders and present value of the losses Pakistan would suffer in having to accept more expensive energy choices.

Most of the proponents may be ignoring the last item — the government of Pakistan. If they thought about it, they would not have proposed their proposal. They are probably thinking of concessions from financiers and equity holders as well. And for Pakistan, they may be thinking of reallocating some finances of other budgets. Given Pakistan’s conditions, it is a non-starter and highly inappropriate and untimely.

What might have impelled the proponents to propose the early retirement of coal power plants may be the current financial issues of payables and receivables of imported coal power plants? Reportedly, GoP has not been able to finance the import of coal for the imported coal power plants and CPPA-G

(central power purchasing agency-guaranteed) has been levying capacity charges due to the consequent non-supply. The matter has to be resolved. Also earlier, the imported coal power plants could not run due to very high international coal prices.

However, there are negotiations among stakeholders underway for converting the imported coal power plants to the local Thar coal. The government of Pakistan has approved a rail track project, which would enable transport of Thar coal to the North and South of the country.

It is hoped that this would solve both the technical and financial problems of these power plants. The more desirable response could be to assist Pakistan in this endeavor. This would have enabled Pakistan to finance improvements in the energy sector (T&D projects), which would enable it to install renewable energy projects. The latter would have been the right approach, which would have gradually reduced the share of fossil energy in its energy portfolio. This is what JETP and others are arguing as well.

But why target Pakistan in the first place. Next door, India is operating more than 200 GW of coal power plants and intends to add more than 80GW by 2031-32(www.livemint.com, India). What impact would reduction of 2-3 power plants in Pakistan’s power generation capacity make to the global or even regional balance of Climate equations? Why disturb Pakistan and create more problems for it?

Concluding, it would be wiser to utilise international financial resources to more useful ends and schemes. Resources are limited. Committed international multilateral and bilateral financing has not been provided. These have been limited to just words. These are our sentiments. It is hoped that IFIs would be fair and would not initiate and support project ideas, which may create unnecessary uncertainties. ■



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Shifting sands of oil politics

US is presently world's largest oil producer; there is a desperate Saudi drive to invest in sectors other than oil

Syed Rashid Husain

New details and statistics continue to emerge, pointing to the shrinking geopolitical clout of major Arab oil producers. The countries in the Organisation of Petroleum Exporting Countries (Opec) and its allies in the Opec+ are no longer the sole arbiters of the supply side of the global energy dynamics. Markets are no longer in their absolute control. And this carries major geopolitical consequences for them.

The changing trends are becoming more evident by the day. Courtesy of the shale revolution and resultant its crude output touching 13.4 million barrels per day (bpd) in recent months, the United States is today the world's largest oil producer. In contrast, Saudi Arabia's output is roughly around 9m bpd. Roughly speaking, the US output is 1.5 times the Saudi output.

And while the US is the world's largest producer, one needs to concede that its consumption is also the highest in the world. This means that despite producing at unprecedented levels, the United States is still an oil importer. However, unlike the gone-by era, Washington no longer depends on Arab oil

producers, Saudi Arabia, the UAE, Kuwait, and the like, to meet its requirements. Roughly 80 per cent of its imports are from the Western hemisphere, says Ken Roberts in a recent Forbes piece.

Imports from Saudi Arabia and Iraq, two of the largest oil producers in Opec, are expected to account for roughly only 10pc of the total US demand. Canada and Mexico alone are now supplying about two-thirds of the US oil imports. Canada is, by far, the largest source of US oil imports, at 55.67pc through October. Mexico is second, at 12.09pc — meaning these two countries account for over two-thirds of all US oil imports by value. Colombia, Brazil, Ecuador, Venezuela, and Guyana are also in the top 10, pushing the total from the Western Hemisphere above 80pc.

On the other hand, in 2023, US oil imports from Saudi Arabia and Iraq — two of the largest Opec oil producers — are expected to account for roughly only 10 per cent of the total US demand. That's the second lowest percentage on record, according to the latest US Census Bureau data, through October.

Providing some context, Mr Roberts said that for six of the seven years between 2012 and 2018, just the Saudi's and Iraqi's accounted for more than 20pc of US oil imports. Today, it is 10pc — roughly half its share of the US oil

market in the last decade. The Opec+ policy of cutting output to balance the markets and putting a floor beneath it is also proving to be a double-edged sword, contributing to the drop in its global market share. It may have helped bring in some support to the crude markets, yet it has also reduced the Opec share in the market, Charles Kennedy said in a recent Oilprice.com piece.

Opec could potentially face further loss of market share in early 2024 following the recent departure of Angola, weakening global crude demand, and the rising output by non-Opec producers, a Reuters recently underlined based on its calculations. Reuters is of the view that Opec's production is set to slip below 27m bpd without Angola, good for less than 27pc of the total global supply of 102m bpd.

Traditionally, Opec has managed to maintain a market share in the 30-40pc range. However, record shale production by the United States has cut into that deeply, Reuters added. To protect its market share, Opec cannot sustain cutting its output for long. At some point shortly, it may be forced to change its direction, some assert.

While analysing Opec's market share, one also needs to point out that the US Department of the Interior has signed off on three new oil and gas lease auctions in the Gulf

of Mexico. This also indicates that the Saudi and the Opec grip on the oil markets could loosen further, Simon Watkins pointed out in a recent write-up. These auctions will augment many other new explorations and developments of conventional and shale projects announced over the past year by the US's big oil and gas firms. This includes the greenlight for US oil giant ConocoPhillips's \$8 billion Willow oil and gas drilling project in Alaska, he emphasised.

Consequently, Saudi Arabia and its Arab oil-producing allies are losing some of their political clout and leverage in Washington. The first indications of this began emerging during the Obama era. In 2015, despite the insistence of the Saudis to actively help the Syrian opposition to get rid of Bashar Al-Assad's regime, Obama refused. Further, the Saudis were also baffled by the lack of support by the Obama administration in 2011 to the beleaguered Hosni Mubarak regime in Egypt. Riyadh kept requesting Washington to help prevent the downfall of Mubarak, yet, to no avail.

And the reason behind not conceding to the Saudi requests was apparent. The US was no longer dependent on Saudi oil. Hence, staying oblivious to the requests of the oil-rich Saudi Arabia, Washington preferred taking an independent approach in its policy directions. The missing oil factor was evident in the US calculations.

These were eye-openers to Riyadh. The ongoing shift in Saudi foreign policy, drifting away from the US and striving to foster a still closer relationship with the Chinese camp, is also noteworthy. Riyadh is paying back the US in the same coin. Further, China, and not the United States, is now the world's most important and largest crude buyer. Financially speaking, to Saudi Arabia and Opec, Chinese crude purchases are now their lifeline.

And then alternatives to oil are also on the horizon. Electric vehicles are taking over from traditional internal combustion engines in a big way. This is beginning to put pressure on global crude consumption dynamics. Consequently, the ongoing emphasis throughout the energy-rich Arab world is to diversify their economy away from oil. Most oil producers now realise that to ensure their prosperity, they cannot rely on oil as their sole source of earning. They need to earn through other sources.

Hence, there is a desperate Saudi drive to invest in sectors other than oil — from golf to soccer and Nintendo in Japan to Vale Basic Materials in Brazil. Interestingly, Saudi Arabia's Public Investment Fund (PIF) was the top spender among global sovereign wealth funds last year, accounting for about a quarter of the \$124bn splashed by state-owned investors, according to a preliminary report by research consultancy Global SWF, CNBC reported.

The research said the Saudi fund boosted its deal activities from \$20.7bn in 2022 to \$31.6bn in 2023. The PIF, controlled by Saudi Crown Prince Mohammed bin Salman, currently has estimated assets of \$776bn, the CNBC report added. Oil is losing its glitter. It will still be in use for decades, yet it will not remain a strategic product for long. Its implications will be felt in every sector — from economics to politics. We are a witness to this ongoing transition. ■

Courtesy Dawn

Pakistan starts another year with growth challenges

Country continues to rely on IMF loans; policy errors and political instability could put this support at risk; interim govt fails to recover Rs95bn from power sector companies

Dr Hafiz Muhammad Usman Rana

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Pakistan has started another year with a bevy of medium- to long-term challenges. The elections scheduled in February are unlikely to result in significant changes if they continue to be described as rigged and not having provided an equal opportunity to parties.

The integrity of the democratic system in Pakistan is being tested by various factors. There are significant challenges to the citizens' ability to elect their leaders and ensure their accountability. This year is expected to be just as eventful as the previous ones. More than 70 countries worldwide are holding elections in 2024. These include some of the largest economies — the USA, the UK, India, China and Taiwan — are among them. The outcomes can have significant domestic and global consequences. Four years after the Covid-19 pandemic, Pakistan's economy faces many challenges and uncertainties. The pandemic exposed and exacerbated the structural weaknesses and vulnerabilities in Pakistan's financial system. Given the challenging conditions, the country has to seek external assistance to stabilise its economy. This has frequently entailed a heavy reliance on global lending institutions, such as the International Monetary Fund and friendly countries, such as China and Saudi Arabia.

We must recognise that the IMF offers member countries only a framework for building their fiscal policies and managing macroeconomic variables to achieve prosperity and resilience.

Country governments are responsible for defining priorities and choosing where to generate revenue from and how to spend it. In Pakistan, successive govern-

ments have failed to reform the tax collection system through which governments generate income for public expenditure.

During the first half of the current fiscal year, the salaried class was a significant contributor to income tax. They paid Rs 158 billion in taxes, 243 percent more than the tax contribution of the wealthiest subsidised exporters.

The interim government has failed to recover approximately Rs 95 billion from publicly owned power sector companies. Instead, it released Rs 131 billion without first deducting its receivables. We are also encountering difficulties in tackling the climate threat. Recent climate catastrophes have shown Pakistan's vulnerability to severe weather events.

Policymakers need to acknowledge the interest of Saudi Arabia and other Gulf countries in investing in Pakistani assets. It is crucial to have competent individuals on the Pakistani side to effectively handle and execute financial transactions to bring these investments to fruition. The public sector in Pakistan is facing significant challenges in harnessing this opportunity.

To regain the trust of both domestic and foreign investors and pave the way for a gradual economic recovery, we must address the law-and-order situation and implement necessary judicial reforms to protect the rights of all individuals.

Moreover, there is a need to implement reforms that will significantly reduce tax exemptions and expand the tax base by increasing taxes on agriculture, property and retailers. The quality of public spending needs to improve to cause a reduction in distorting subsidies, ensure the financial sustainability of the energy sector and encourage greater private sector involvement in the management of state-owned enterprises.

Given the need for external funding, Pakistan continues to rely on the IMF. Policy errors and political instability could put this support at risk. ■

Karachi grid unable to connect new solar power systems

PV360 CEO

Nabil Bari

says solar energy growth has doubled since 2017; asserts numerous upcoming solar energy projects being installed for industrial consumers; states substandard panels import issue brought under control to a large extent



Naeem Qureshi

The Writer is Managing Editor of Energy Update and Environment Activist

The local grid in several residential and industrial areas of Karachi has run out of capacity to support the installation of new solar power systems due to a lack of improvement.

This was disclosed by the CEO of PV360, Nabil Bari, in an exclusive interview with the Energy Update, in which he talked at length about the past, present, and future of the renewable power sector of Pakistan as a solar industry expert. Following are important excerpts from his interview for our readers:

Energy Update: Tell our readers about the latest scenario of Pakistan's clean energy sector.

Mr Bari: There have been multiple growth in the solar energy sector in the last couple of years. The growth has doubled since 2017.

The current policies of the government have been helpful for the solar power sector. The challenges for the solar power industry that emerged in the last year have been resolved to a large extent.

The solar power industry in the country is going to become the ultimate beneficiary of this situation. The solar panels are available in the market in massive numbers. The prices of solar panels in the market have decreased because imports are much more than the local demand. However, the industry has still been facing the issue of the subdued purchasing power of the consumers.

Numerous upcoming solar energy projects being installed for industrial consumers are capable of generating up to 10 to 15 MW of clean electricity. In the residential sector, consumers are generally opting for an extension of their solar power systems. Those who earlier installed a 10 KW system are now expanding to solar panels of 20 KW capacities, so the size of the residential market in the country has been increasing mainly due to the use of the

net-metering system.

EU: What is the main issue hindering the expansion of solar power systems in Pakistan?

Mr Bari: There is also the issue of the grid's capacity to provide connectivity to the new renewable energy systems. We have been facing limitations in this regard at certain places due to the lack of improvements in the grid systems. There are many residential and commercial areas in Karachi where grid capacity is full and doesn't allow the installation of new solar power projects. There are several grids in DHA areas, several PMTs in the SITE area, and various feeders in the Port Qasim area that have run out of capacity for the installation of new solar systems.

EU: Why consumers are opting for expanding the capacity of their home solar systems?

Mr Bari: Whoever has seen the shortened payback period of solar systems says that there is nothing better than the solar power option.

The energy cost of a household is decreased by around 50 per cent after the payback period. The one who has experienced the utility of the solar systems becomes keen to take more advantage of the cheap renewable electricity. I have been in this industry for over the last 12 years. I have seen multiple clients whose solar systems paid back in just two years.

The payback period of these systems was originally four years but it was halved due to a sharp increase in the utility costs of electricity. Such pleased clients approach us for the installation of more solar systems. But to their utter dismay, it is shortly revealed in the feasibility phase that grids around their houses have run out of space.

EU: What system should be adopted to promote the usage of solar power in Pakistan?

Mr Bari: We are foreseeing the possibility of launching the wheeling system in the year 2024. We are very positive that this development will take place very soon. The NEPRA has already given the nod to launch the system as the distribution companies are yet to finalise certain rates.

The wheeling system is going to ensure a lot of improvement in the renewable energy sector. The industries have been facing difficulties due to the constant increase in utility rates of electricity. The prospective buyer and seller of electricity will be at liberty to mutually decide the electricity rates after the launch of the wheeling system. This system will only involve payment of wheeling charges to the DISCOs. This is going to emerge as the most suitable overall scenario both for the power sector and industries. We are hopeful that the issue of grid charges in this regard will be resolved in the current year.

EU: What is the updated scenario of the solar panels market in Pakistan?

Mr Bari: There were multiple fluctuations in the prices of solar panels in 2023. Certain importers and traders tried to exploit the situation by jacking up the panel prices. However, the prices came down after the consumers boycotted high-priced panels in the local market.

The panel price went beyond Rs130 per watt last year but it came down to Rs 72 to 73 just in a few weeks. The consumers in the local market have also become the beneficia-

ries of the phenomenal decline in panel prices in the international market. The consumers have emerged as the ultimate winners in this market.

EU: What is the latest development on the front of quality control of solar panels available in Pakistan?

Mr Bari: The substandard panels import issue has been brought under control to a large extent. This development has also taken place last year. Under the revised regulations adopted by the government, it has become binding upon the importers to import only the solar power equipment of tier-one companies.

The importers who are left with no option but to purchase from producers that are not tier-one companies, due to the specific needs of their clients, should have to go through the process of third-party inspections to ensure quality.

The solar equipment being imported into the country since last year is largely quality-controlled. I would like to congratulate the local businessmen in this regard who have started dealing only in tier-one products instead of importing cheaper equipment. ■

USAID signs MoU with three firms

EU Report

The United States Agency for International Development (USAID) has signed a memorandum of understanding (MoU) with three Pakistani firms aimed at raising \$53 million foreign direct investment within the next 9-12 months.

The MoU was signed during the "Investment and Climate Summit", organised by the USAID under its Investment Promotion Activity (IPA). The three Pakistani firms with whom the MoU was signed included Shams Power, Walee Technologies, and Al Hadeed. The MoU is set to raise \$53 million FDI within the next 9-12 months.

The Summit also underscored the US government's commitment to fostering foreign direct investment (FDI), elevating bilateral trade between Pakistan and the US, and addressing Pakistan's climate change challenges.

While expressing gratitude to the US government, caretaker Federal Minister for Commerce Gohar Ejaz stated that the USAID has been a partner in assisting Pakistan in the development sector and this support is greatly appreciated. He said that the government of Pakistan is committed to establishing a conducive environment for investment, nurturing innovation, and streamlining trade processes.

King coal to lose crown for electricity production: IEA

EU Report

Renewables are set to displace coal as the top source of energy for electricity production globally in 2025, the International Energy Agency said.

In its annual report on the electricity market, the IEA said that renewables -- in particular from solar panels -- should see their share of total electricity production surpass a third of the total, passing from 30 percent last year to 37 percent in 2026.

If nuclear power, which the IEA sees hitting a record next year, is included, almost half of the world's electricity will be generated by low-emissions sources by 2026, up from a share of just under 40 percent in 2023.

The strong growth in renewables will outpace the increased demand for electricity in industrialised countries as part of efforts to reach carbon neutrality, said the IEA.

"The power sector currently produces more CO2 emissions than any other in the world economy, so it's encouraging that the rapid growth of renewables and a steady expansion of nuclear power are together on course to match all the increase in global electricity demand over the next three years," said IEA Executive Director Fatih Birol.

That may also turn out to be the case in China, where coal produces more than half of electricity, but much depends on hydroelectric production and the pace of the economic recovery.

Nevertheless, the IEA sees a slow structural decline in coal use, even if developing nations will account for most of the increase in electricity demand in coming years. ■



Huawei ME&CA Smart PV Partners Summit at China Shenzhen 2024

EU Report

In a groundbreaking initiative to propel "green power" into the forefront of the global energy landscape, Huawei recently hosted ME&CA Smart PV Partners Summit and Headquarters Tour in Shenzhen and Dongguan, China, from the 17th to the 19th of January, 2024. The event brought together key players in the solar energy sector, showcasing Huawei's commitment to innovation and sustainable energy solutions.

Bahum, a distinguished partner of Huawei Pakistan FusionSolar Business, took center stage during the summit, presenting a dedicated journey that highlighted the collaborative efforts between the two entities. This presentation underscored the importance of partnerships in driving the adoption of green energy solutions globally.

A significant highlight of the event was the recognition and awards ceremony for outstanding partners, acknowledging their exemplary contributions to the success and growth of Huawei Pakistan FusionSolar Business. The recipients of these prestigious awards are as follows:

1. Bahum: Best Commercial Performing VAP

Bahum was honored with the "Best Commercial Performing VAP" award, recognizing their exceptional performance in the commercial sector. This acknowledgment underscores Bahum's commitment to excellence and its pivotal role in promoting Huawei Pakistan FusionSolar Business's vision of making green power a primary energy source.

2. AE Solar: Best New Partner

AE Solar was awarded the "Best New Partner" accolade, acknowledging their remarkable achievements as a newcomer to the Huawei Pakistan FusionSolar family. This award recognizes AE Solar's rapid integration and outstanding contributions to the partnership.

3. Diwan International Pvt Ltd: Best Collaboration Partner

Diwan International Pvt Ltd received the "Best Collaboration Partner" award, a testament to their exceptional collaboration with Huawei Pakistan FusionSolar Business. This recognition is a result of their exemplary efforts in fostering a strong and mutually beneficial relationship, reflecting the true spirit of partnership.



The awards not only celebrate the achievements of these distinguished partners but also highlight the crucial role played by collaborative efforts in advancing the renewable energy landscape. Huawei Pakistan FusionSolar Business's commitment to innovation and sustainability is clearly reflected in its choice to acknowledge and reward partners who share the vision of a greener future.

As we move into a new era of energy

solutions, these partnerships serve as beacons of inspiration, driving the collective efforts toward a more sustainable and environmentally friendly world. The Huawei Pakistan FusionSolar Business Partner Summit and HQ Tour 2024 not only recognized excellence but also provided a platform for knowledge exchange, networking, and the exploration of future opportunities in the dynamic field of green energy.

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Pakistan Gains Global Recognition for Progress in Clean Energy, WWEA Commends Efforts

Mustafa Tahir

The Writer is Deputy Editor of Energy Update

The World Wind Energy Association (WWEA) commended Pakistan's

strides towards increasing clean electricity production, emphasizing the need to leverage abundant renewable sources. WWEA Secretary General, Stefan Gsanger, lauded Pakistan's commitment during an online seminar celebrating the International Day of Clean Energy. Gsanger highlighted Pakistan's early support for the International Renewable Energy Agency and pledged ongoing support in acquiring cutting-edge technology for clean energy production.

He encouraged Pakistan to build on its progress, expanding the clean energy market to attract international investment. Gsanger drew parallels with China's rapid advancements in wind power, suggesting Pakistan could benefit from a similar trajectory. Syed Aqeel Hussain Jafri from the Private Power Infrastructure Board outlined efforts to facili-



Syed Aqeel Hussain Jafri
Director (Policy), Private Power & Infrastructure Board



Stefan Gsanger
Secretary General, WWEA



Engr. Mehfooz Kazi
Director Solar Projects Sindh



Waqas Moosa
Executive Committee Member, Pakistan Solar Association



Engr. Irfan Ahmed
Energy Expert



Naeem Qureshi
Managing Editor Energy Update



Owais Mir
CEO Dynamic Engineering Automation



Tanveer Mirza
Director Operations & Company Secretary UEP Wind Power

tate private sector initiatives in achieving the 2030 target of 30% clean power production.

Waqas Moosa, Executive Committee Member of Pakistan Solar Energy Association, discussed challenges faced by local clean energy companies due to import restrictions. He proposed initiating indigenous production of smaller, cost-effective solar panels. Mehfooz A Qazi, Project Director of Sindh Solar Energy Project, highlighted World Bank-funded initiatives in the province, offering opportunities

for private sector investment in clean energy.

Irfan Ahmed, an energy expert, recommended the development of mini and microgrids to optimize solar energy for remote rural communities, emphasizing local production of solar panels. Naeem Qureshi of Energy Update expressed the webinar's aim to assess Pakistan's progress in increasing clean electricity's share and announced future seminars to address issues in the local clean energy market. ■

No payment of Rs20bn to 14 WPPs

EU Report

The incumbent caretaker government has discontinued ongoing negotiations with 14 Wind Power Plants (WPPs) as they are unwilling to amend their power purchasing agreements (PPAs), negating agreements they inked with the government of the day.

"The government will not pay Rs20.728 billion which was earlier earmarked for 14 WPPs as they didn't show respect to the

agreements they initialed for making way to amend their power purchase agreements. Since they have not altered the PPAs, the government will now reallocate Rs20.728 billion to clear outstanding liabilities of Government Power Plants (GPPs) and release the same as equity in DISCOs," a senior official at the Energy Ministry told The News.

However, the government will deliberate on the possibility of initiating a fresh negotiation process with Wind IPPs with a new mandate to explore alternate options to ensure cost reduction of wind power generation. This issue will be taken up in

the Cabinet Committee on Energy (CCOE), which is to meet on Friday (January 26).

Earlier, Memoranda of Understanding (MoUs) were signed with 47 IPPs as a consequence of negotiations during 2020. After a series of negotiations, the then Implementation Committee succeeded in converting 46 MoUs into initialed agreements as a report for approval by CCOE. Out of these 46 IPPs, binding agreements with 32 IPPs (20 Thermal IPPs, 7 Bagasse IPPs, 3 Wind Power Producers (WPPs), and 2 Solar IPPs) were executed and payments were made after due approval by CCoE and ECC.

Unveiling Power Grid Debacle Lack of SOPs Exposes Vulnerabilities

Jan 2023 power breakdown exposes operational failures and sacrifices junior officers

Mustafa Tahir

The Writer is Deputy Editor of Energy Update

In a shocking revelation following an extensive probe into the unprecedented a 20-hour power breakdown that crippled the nation on January 23, 2023, it has been exposed that the country's electric power transmission system, which is responsible for transmitting a staggering Rs3,000 billion worth of electricity annually, operates without essential standard operating procedures (SOPs). The investigation highlights a systemic failure that has been concealed, with the blame unfairly shifted onto three junior officers while sparing the higher-ups.

The electric power transmission system, deemed 'highly vulnerable' by the inquiry committee, is revealed to be functioning based on verbal instructions rather than established SOPs. Despite gravity of the situation, the top officials in the system have managed to escape accountability, raising questions about the fairness and transparency of the investigation.

The scapegoats identified by the inquiry committee include two deputy managers, one shift in-charge, and one manager from the National Power Control Centre (NPCC). However, the resignation of Zain Ali, Deputy Managing Director (DMD) of the National Power Control System, suggests that even some high-ranking officials are not immune to the fallout.

The power breakdown, which caused a colossal loss of over Rs80 billion, prompted the Federal Cabinet to seek strict action against those responsible. A four-member committee was constituted to conduct an inquiry, ultimately pinpointing the blame on junior officers and

sparing higher-ranking officials.

One notable resignation comes from Zain Ali, the Deputy Managing Director, who chose to step down to avoid the repercussions of the breakdown. This move raises questions about the overall accountability and integrity of the power transmission system's leadership.

The inquiry committee's proceedings shed light on the events leading up to the breakdown, revealing that the transmission system operated without SOPs. The accused junior officers were held responsible for their roles in the breakdown, but the committee's conclusions appear to be inconsistent and have sparked controversy.

A critical analysis of the committee's findings raises concerns about the fairness of the investigation. While junior officers have been made scapegoats, the higher-ups seem to have evaded accountability despite their apparent lack of adherence to SOPs. The discrepancy between the responsibilities assigned to the accused officers and their knowledge of the power transmission system's status adds complexity to the situation.

The committee's decision to hold junior officers accountable for a breakdown caused by systemic failures raises questions about the true state of the power transmission system. The lack of SOPs and the reliance on verbal instructions suggest a fundamental flaw in the system's governance and operational procedures.

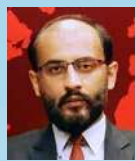
As the nation grapples with the aftermath of the worst-ever power breakdown, the need for a comprehensive review and overhaul of the power transmission system's management and operational protocols becomes evident. The public deserves transparency, accountability, and a commitment to implementing SOPs that can prevent such catastrophic failures in the future. The January 2023 power breakdown serves as a stark reminder of the urgent need for reforms to ensure the stability and reliability of the country's power infrastructure. ■

EQUITABLE AND GREEN



This venture has potential to propel Pakistan into new era of development

Dr Khalid Waleed



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

The China-Pakistan Economic Corridor (CPEC) is a transformative project which will be potentially reshaping the landscape of Pakistan and the contours of its future. CPEC, a cornerstone of Beijing's ambitious Belt and Road Initiative (BRI), is not just a series of infrastructure projects, but it is a catalyst for a fundamental shift in the region's economic

dynamics. This venture has the potential to propel Pakistan into a new era of development, provided it navigates the complex interplay of growth, sustainability, and inclusivity.

Rostow's model of economic growth aptly describes Pakistan's journey. The nation, traditionally bound by limited investment and savings, has been nudging towards a takeoff stage, primarily aided by Chinese investments. This infusion of capital and resources is pivotal. However, the path ahead is not just about reaching a state of takeoff but sustaining it towards maturity, a stage where mass production and consumption become the norm. The challenge for Pakistan is to blend economic growth with holistic development. This dichotomy – vertical growth versus horizontal development – is crucial. While growth often

signifies quantitative economic enhancements, development encapsulates a broader spectrum, including social, environmental, and cultural dimensions.

The recent COP28 conference underscores a global pivot towards green growth and sustainable development. The EU's carbon border adjustment mechanism exemplifies this shift. For Pakistan and China, this global trend presents both a challenge and an opportunity. The second phase of CPEC, with its emphasis on human development and sustainable practices, aligns well with these emerging global norms. The key to success lies in integrating growth with sustainable practices. This

integration, refers to as inclusive green growth, is not merely an environmental or economic agenda; it is a comprehensive framework that encompasses everything from cultural exchanges to financial governance.

In the evolving narrative of Pakistan-China cooperation, particularly under the ambit of CPEC, a series of foundational elements, articulated as alphabets, paints a vivid picture of this multifaceted partnership. These alphabets, from A to I, encapsulate the essence and aspirations of this alliance, weaving a story of development, sustainability, and mutual growth.

At the heart of this cooperation lies 'A', representing the crucial role of people-to-people exchanges as 'a lot of people talking to a lot of people'. These exchanges transcend mere diplomatic interactions, fostering deep cultural engagement and understanding between the citizens of both nations. This human connection forms the bedrock of the partnership, ensuring that the ties between Pakistan and China are rooted in mutual respect and shared experiences. It is a recognition that beyond the realms of high-level politics and economics, the true spirit of collaboration is nurtured in the hearts and minds of the people.

'B' stands for the bankability of investment projects, a cornerstone in ensuring the economic viability and sustainability of initiatives under CPEC. This focus on bankability means that every project, particularly those in the realm of green investment, is not just a financial venture but a testament to the long-term commitment of both nations towards sustainable and profitable development. It is a balance between economic pragmatism and visionary investment, ensuring that the fruit of this cooperation are ripe for harvest for generations to come.

The narrative then shifts to 'C', which encompasses climate-smart policies, a testament to environmental consciousness at the

core of Pakistan-China cooperation. In an era where climate change poses one of the greatest challenges to humanity, these policies reflect a shared commitment to a development path that is in harmony with the environment. It is a strategic alignment, ensuring that the march towards economic growth does not come at the expense of the planet.

'D' brings in a blend of diplomacy and development, intertwining foreign relations with the goal of sustainable growth. This approach, often referred to as green diplomacy, is a nuanced way of ensuring that international engagements and developmental agendas are mutually reinforcing and are aligned with global environmental goals. It is a statement that in the corridors of power where decisions are made, sustainability is not just a buzzword but a guiding principle.

Moving on to 'E', we see an emphasis on the efficiency of economy, energy, and environment. This triad is critical in addressing the multifaceted crises that Pakistan faces, from economic challenges to energy shortages and environmental degradation. It is an acknowledgment that these issues are interconnected and that solutions must be holistic and integrated, striking a balance that catalyzes growth while preserving the ecosystem.

'F' focuses on financial governance, particularly in the realm of green investments. With China initiating green finance partnerships, a clear signal is sent about the direction of future investments. This move, contrasting with traditional energy investment models, underscores a commitment to pioneering a path of financial governance that is aligned with global trends towards sustainable development.

'G', the greening of CPEC, is perhaps the most vivid illustration of the shift in developmental philosophy. It is a transformative step, integrating environmental considerations into the heart of one of the most ambitious infrastructural projects of the 21st century. This greening process is not just about reducing

carbon footprint but also about reimagining development in a way that is in sync with nature.

'H' is about human development through communities. This aspect ensures that the benefits of CPEC and the broader BRI percolate down to the grassroots level. It is a shift from viewing development through the narrow lens of economic metrics to understanding it as a tool for improving the lives of people, evident in the transition from coal to more sustainable energy sources.

Lastly, 'I' stands for integration, a vision that transcends bilateral relations and encompasses regional integration in economic, environmental, and energy affairs. This broad perspective fosters a collaborative spirit that goes beyond the borders of Pakistan and China, envisioning a region that is economically integrated and environmentally conscious.

Together, these alphabets weave a narrative of a partnership that is dynamic, multifaceted, and forward-looking, setting a precedent for international cooperation in the modern era. In this story, Pakistan and China are not just neighbours linked by geography, but partners embarked on a journey towards a future that is prosperous, sustainable, and inclusive.

CPEC is pivotal for Pakistan's economic transformation, but its success depends on integrating sustainable and equitable development in line with Rostow's model of growth. This approach transcends mere economic growth, emphasizing the importance of environmental sustainability and social inclusivity.

Adapting to global sustainability trends, CPEC's focus on human development, green policies, and regional integration is essential. Ultimately, blending economic progress with sustainable and inclusive practices is key to ensuring CPEC's role as a driver of comprehensive and long-term growth in Pakistan. ■



Pakistan steadily recovers from worst economic crises

The path to growth may be challenging, but the goal is achievable

Zahra Niazi

The writer is a research assistant at the Centre for Aerospace & Security Studies (CASS), Islamabad

The year 2023 began on a dismal note for Pakistan's economy as the country's foreign exchange reserves were fast-depleting, remittances and exports were declining, the rupee was depreciating, industrial production was decreasing, and inflation surged – resulting from a confluence of multiple internal and external factors.

In the months leading up to June 2023, newspaper and media headlines continued to warn that the country's economic crisis could soon morph into a sovereign default if Pakistan failed a bailout loan from the International Monetary Fund (IMF).

Fortunately, this worst fear did not materialize, as Pakistan secured the critical \$3 billion IMF bailout loan in July. Improvement in many key economic indicators in the concluding months of 2023 points out that Pakistan has already passed the tumultuous phase and is now headed towards a gradual and measured economic recovery.

After record depreciation in May, August, and September, the Pakistani rupee is on an upward trajectory against the US dollar, thanks to an increased crackdown against the illegal hundi and hawala operations and foreign currency smuggling. Inflows from friendly

nations and the recent IMF review success are also being attributed to this trajectory.

On the external front, Pakistan posted a current account surplus of \$9 million in November. The value of the country's exports increased to \$2,764 and \$2,732 million in October and November, respectively, helped by a smooth supply of raw materials resulting from some ease in import restrictions after remaining below \$2,500 million in the preceding months of the year, except in May.

Similarly, the monthly inflow of workers' remittances increased marginally to \$2,208, \$2,463, and \$2,250 million in September, October, and November, respectively, after remaining below \$2,200 million in the preceding months of the year, excluding March when the remittance inflow increased due to Ramazan.

Crackdown against hawala dealers and the convergence of interbank and open market rates majorly underpin this marginal rise in remittances. Net Foreign Direct Investment (FDI) reached an eight-month high in September as Chinese investment in the country rose.

In the fiscal sphere, the Federal Board of Revenue (FBR) reported historic revenue collection growth in the first five months of FY23-24 (July-November) after failing to achieve the FY22-23 revenue target. The national Consumer Price Index (CPI) based inflation fell to 26.8 per cent in October on a year-on-year (YoY)

basis – the lowest in ten months, as authorities cracked down on currency hoarders and slashed fuel prices and global commodity prices fell back from their peak.

It increased to 29.2 per cent in November, as the government imposed gas tariffs to qualify for the next IMF bailout loan, but remained below the monthly CPI recorded between February and June and the four-month high in September. Moreover, the country's manufacturing and agricultural sectors also show signs of recovery.

However, while this is an encouraging outlook, a deeper dive suggests that much more substantial and long-term commitment to reforms and robust efforts will have to be undertaken if Pakistan is to translate its economic recovery into sustainable economic growth.

Take exports, remittances and FDI, for example. Data for the first four months of FY23-24 reveals that exports of textiles and textile articles amounted to \$5,543.98 million, representing 45.5 per cent of the total exports of goods and services, which were valued at \$12,193.27 million. In comparison, the export of all services combined totalled \$2,416.35 million, accounting for just 19.8 per cent of the total exports.

Likewise, data on workers' remittances shows that during the first five months of



the current fiscal year, four destinations, including the US, the UK, Saudi Arabia, and the United Arab Emirates, accounted for \$7,043.9 million or 63.8 per cent of the total \$11,045.2 million remittance inflows to Pakistan.

Excessive reliance on the textile sector for export proceeds, which has already been witnessing weakening global demand, and a few destinations for the bulk of remittance inflows do not bode well for the sustainability of the country's foreign exchange earnings. Additionally, in terms of FDI as well, China alone accounted for more than 30 per cent of the country's net FDI during the first three months of FY23-24, underscoring the need for targeting additional sources of FDI to make its inflow sustainable, for which improving the country's investment climate will be imperative.

Another case in point: while the recent increase in revenue generation is commendable, a significant taxation burden continues to fall on the salaried class, which has reportedly been paying nearly 300 per cent more tax than Pakistan's wealthiest exporters. Unless these wealthy exporters are determinedly brought into the tax net, sustainability of the tax system cannot be guaranteed.

As Pakistan steadily recovers from one of its worst economic crises, it has an opportunity to 'build back better' and ensure that the economic recovery is long-term, durable and resilient. This necessitates that all actions taken today are complemented by measures that incorporate a longer-term perspective. As we enter 2024, this is the goal that we must keep in mind and take all steps possible to strive towards. The path may be challenging, but the goal is not unachievable. ■

ENERGY NEWS

NEPRA awards Licence to PPIB to run auctions

This will facilitate registration of additional market

EU Report

The National Power Regulatory Authority (NEPRA) has granted a 10-year licence to the Private Power & Infrastructure Board (PPIB) to act as an independent auction administrator (IAA) in the country's power sector.

The licence will allow PPIB to implement a competitive market regime, known as the Competitive Trading Bilateral Contract Market (CTBCM), to procure electricity through transparent and efficient bidding. PPIB will be intended to facilitate state-run ex-Wapad distribution companies (XW-DISCOs)/Suppliers of Last Resorts (SoLR) in meeting their capacity obligations by procuring new capacity and energy to fulfill their load requirements.

The licence is for ten-year period expiring on 11 Jan 2034. Notably, the legislature, through amendments to the Regulation of Generation, Transmission, and Distribution of Electric Power Act, 1997 (the "NEPRA Act"), envisioned the establishment of a competitive electric power market in the country. This was achieved by introducing new categories of licenses and facilitating the registration of additional market participants and service providers.

The detailed design of CTBCM envisions the establishment of a registered entity to serve as an Independent Auction Administrator (IAA). This entity is intended to facilitate



XW-DISCOs/Suppliers of Last Resorts (SoLR) in meeting their capacity obligations by procuring new capacity and energy to fulfill their load requirements.

In alignment with the comprehensive design of the competitive market, the Private Power & Infrastructure Board (PPIB) has formally approached the Authority seeking registration as an IAA. Under Section 25A of the NEPRA Act, PPIB applied on October 11, 2021, seeking Registration as an Independent Auction Administrator (IAA). The purpose of this application is to facilitate the implementation of the competitive market/CTBCM.

NEPRA said that on March 05-06, 2022, a public consultation was conducted to solicit comments from the general public, interested parties, and affected individuals on the matter. Subsequently, on March 08, 2022, separate letters were dispatched to various stakeholders, requesting their input to assist the Authority in its deliberations.

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Caretaker prime minister Kakar calls for collective action to exploit Pakistan's oil and gas reserves



Caretaker Prime Minister Anwaarul Haq Kakar urged concerted efforts for the exploration of onshore and offshore oil and gas reserves during his address at the Petroleum Conference held on Tuesday. Emphasizing the abundance of natural resources in the country to meet domestic and industrial needs, Prime Minister Kakar expressed the government's commitment to supporting infrastructure development, logistics, and security to enhance oil and gas exploration and production.

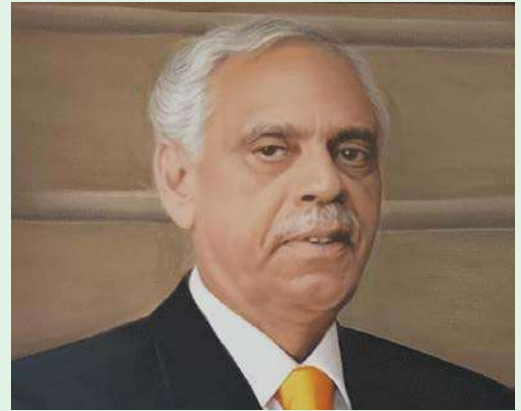
The conference, organized by the Ministry of Petroleum, saw Chief of the Army Staff General Syed Asim Munir as the guest of honor. Prime Minister Kakar highlighted the collective commitment showcased at the conference to fully harness Pakistan's mineral potential, aiming for energy self-sufficiency and transforming the nation into a regional energy exporter.

Acknowledging the efforts of the Special Investment Facilitation Council (SIFC) and the Federal Ministry of Energy in creat-

ing an investor-friendly environment, Prime Minister Kakar stressed the importance of reforms in the criminal justice system. He commended the collaboration of stakeholders in formulating policy recommendations to boost investment in the petroleum sector.

Ali Taha Al-Temimi, Country Manager of Kuwait Foreign Petroleum Exploration Company, appreciated the Pakistan government's initiatives in bringing together stakeholders and streamlining regulations. The conference saw the participation of provincial chief ministers, the minister for energy, petroleum secretary, government representatives, policymakers, and foreign and domestic investors from the energy and petroleum sector, along with international delegates.

The event marked a significant step towards promoting collaboration and investment in Pakistan's petroleum sector, with a focus on leveraging the country's rich oil and gas reserves for economic growth and energy sustainability.



Malik appointed FPCCI body convener

EU Report

FPCCI President Atif Ikram Sheikh has appointed Malik Khuda Bakhsh as the convener of FPCCI Central Standing Committee on Energy for the year 2024-2025. Mr Malik is Chairman/Chief Executive of Khuda Bakhsh Malik Group of Companies, Leader of Petroleum and CNG Industry, Member of UBG Core Committee, Director of Lions Club International. President FPCCI advised Mr Malik to include well-experienced and professional people in his committee and maintain close contact with all authorities concerned and facilitate the business community. Malik has served as President of National Education Society of Pakistan Senior Vice Chairperson of the Pakistan Petroleum Dealers Association, President / Chairman of CNG Station Owners Association of Pakistan, and Chairman of FPCCI Standing Committee on Petroleum Products.

OGDCL announces crude oil discovery in Hyderabad

EU Report

Oil & Gas Development Company Limited (OGDCL) has announced that the development well Sono-9 in Sono Development & Production Lease has been successfully tested, completed, and brought into the production stream using OGDCL's in-house expertise. The well was drilled to a depth of 2350 meters, targeting the hydrocarbon potential in the Upper Sand (1B) of the Lower Goru formation. OGDCL holds a 100% stake as the operator in Sono Development & Production Lease. Sono-9 well is located in district Hyderabad, Sindh. It is pertinent to mention that Sono-9 is the first well to be directly completed with Electrical Submersible Pump (ESP) after due diligence through well logging and pressure testing. During testing, the well produced 1850 BPD Oil. OGDCL is implementing cutting-edge artificial lifting technology of ESP, and seven wells have been equipped with the ESP technology, resulting in a noteworthy improvement in production levels.

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Anjum Ibrahim

The narrative of the stakeholders today is that there has been a noticeable uptick in various macroeconomic indicators – those that relate to the productive sectors (agriculture, industry), those that relate to the general public (inflation, employment opportunities) and last but not least those that relate to the government's performance (higher than ever tax collections, contracting current account deficit, and law enforcement agencies proactively targeting smugglers, utility thieves and currency speculators).

The three oft-cited tangibles to claim the economy is improving at present are the bullish stock market, stabilization of the rupee-dollar parity at higher than 281 and less than 284, the latter parity projected by the International Monetary Fund (IMF) under the ongoing Stand By Arrangement (SBA) to ensure no tranche release is stalled and a significant rise in tax collections.

There are a few big players on the stock market, under a 100, who have exhibited a capacity to collectively manipulate the market especially when faced with the prospect of a possible levy of higher taxes which, in turn, raises the distinct possibility of complicity with the policy makers. Pakistani finance ministers constantly refer to the index as a yardstick for measuring the trust reposed by the market in his/her policies and it is conveniently propitious that the stock market becomes bullish during periods when the performance of a policy maker is the subject of considerable and rising criticism. The nexus between the stock market players and the policy makers, so argue independent economists, explains the reason for the Pakistani stock market generating no more than 4 to 5 billion rupees in annual taxes while in contrast the Indian bourse generates close to a 100 billion rupees in revenue.

A complicity based on mutual self-interest between a political government and a potential tax paying group is not a new phenomenon in Pakistan. There are a proliferation of associations in

Claims of economic improvement

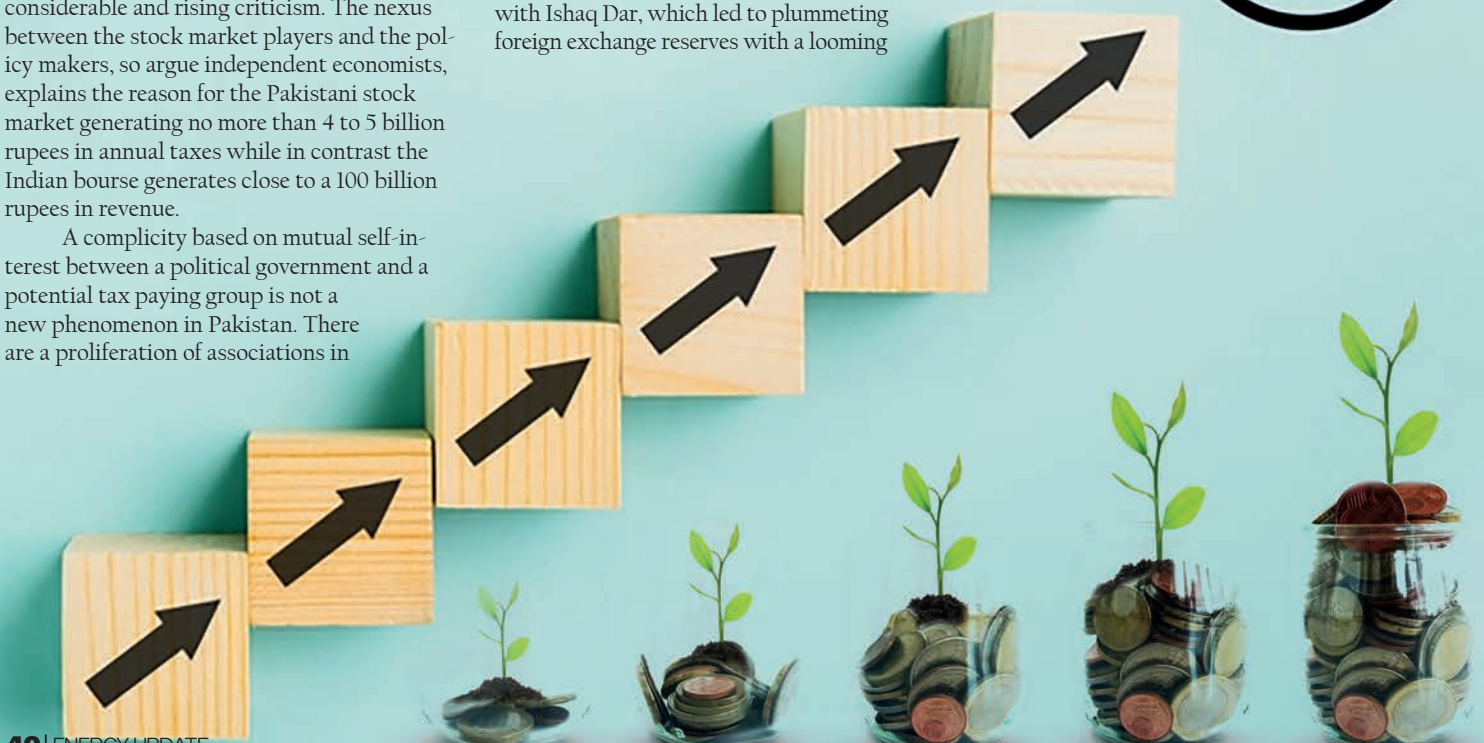
this country - more than a 100 are listed with the Securities and Exchange Commission of Pakistan (SECP), including the more visible All Pakistan Textile Mills Association, All Pakistan Cement Manufacturers Association, All Pakistan Sugar Mills Association - tasked to safeguard and promote the interests of their members be it in the form of setting a market price higher than the market rate (even for products that operate under perfect market conditions where the seller by definition should have no influence over price) or be it to seek an export subsidy at the taxpayers' expense with the most obvious recent example relating to the sugar industry.

Empirical studies show that there is no documented alignment between the stock market and the Pakistan economy. In an article, researchers Husain and Tariq Mehmood conclude that "a disturbing feature of Pakistan's stock market is that it cannot be characterised as a leading indicator of economic activity and in the absence of other strong indicators shooting up stock prices may indicate a speculative bubble."

Pakistan's foreign exchange market is subjected to even greater manipulation than the stock market by several players: (i) the government may decide to artificially control the inter-bank rate, a disastrous policy associated with Ishaq Dar, which led to plummeting foreign exchange reserves with a looming

prospect of default as the IMF refused to engage with Pakistan till the reversal of this policy on 26 June 2023; (ii) eight commercial banks were identified as illegally speculating on the market mid-2022 but more than a year and half later they have not yet been penalized. The government imposed a tax on banks' profits in the budget for the current year but this tax is across the board and not limited to the eight banks; and (iii) after the establishment of the Taliban government Afghans were reportedly remitting about 2 million dollars a day to their country however this adds up to 720 million dollars a year, which is perhaps not such big a factor in the Pakistani rupee erosion as claimed by the administration.

Federal Board of Revenue (FBR) made three claims recently, which can be easily disputed: (i) collections were higher by 43 billion rupees than the target assigned by the



IMF under the ongoing SBA – 4468 billion rupees against 4425 billion rupees. This claim does not take account of the fact that inflation was budgeted at 21 percent (budget speech) while the SBA report projected it at 25.9 percent for the current year. Pakistan Bureau of Statistics (PBS) calculated the July-December average Consumer Price Index at 28.79 percent though there is clearly an upward trajectory, given that it registered 29.7 percent in December 2023 - higher than the November figure of 29.2 percent. The rise in tax collections therefore could well be mainly due to inflation; (ii) ratio of direct to indirect taxes was 49:51 percent – a ratio that sadly does not take account of the FBR resisting calls by independent economists as well as the Auditor General of Pakistan to credit collections correctly, i.e., withholding taxes in the sales tax mode, currently comprising of 70 percent of all direct taxes collected, should be credited under indirect taxes; and (iii) non-filers will face disconnection of utilities as well as freezing of bank accounts. While in the past increasing the number of filers has contributed little to increasing collections as many filed their returns who were not eligible to pay income tax (widows, students etc.) because that enabled them to take advantage of paying a lower withholding tax on goods purchased.

Some intangibles are also cited to show an improvement in the state of the economy: (i) an improvement in consumer and business confidence, a claim substantiated by rather propitious perception surveys; (ii) resorting to jargon not backed by evidence for example claiming signs of potential recovery in the industrial sector by the Finance Division by claiming “positive trends in high frequency indicators”, a claim at odds with negative 0.44 percent large scale manufacturing growth July-October 2023; and (iii) routine data manipulation.

While one can at some level understand why economic team leaders need to show a performance that is infinitely better than that of their predecessors, yet what should be a source of concern is that this approach takes away their capacity to take timely remedial measures required to safeguard the interests of the general public.

To conclude, all recent finance ministers this country has been subjected to – from Hafeez Sheikh to Ishaq Dar – were inducted in the cabinet/parliament on a technocrat seat. And it is extremely disturbing that their sustained failure to arrest the worsening economic impasse, can be sourced to their inability to stand up to their political masters (best reflected by Miftah Ismail's ji to Maryam Nawaz instructing him to end the tax on traders).

Dar could perhaps have been the exception given his relationship with the PML-N party supremo Nawaz Sharif; however, his lack of knowledge of economics as a subject has done even more damage to Pakistan's economy than the others collectively. One can only hope that the next finance minister not only has the requisite academic credentials but also a backbone that would not allow him/her to resign instead of backing down just to keep his/her job. ■

Courtesy Business Recorder

Sindh CM hails quality education of Dawood University

VC Professor Dr Samreen Hussain says with CM support in running the affairs of the university, we have got facilities



DUET VC Professor Dr Samreen Hussain presenting a honorary shield to Sindh Caretaker Chief Minister Justice (Retd) Maqbool Baqir at a two-day international conference titled "Remove Obstacles: The Importance of Architecture in Other Interdisciplines", recently held at Dawood University of Engineering and Technology (DUET) Karachi. DUET Pro-Vice Chancellor Prof Dr Abdul Waheed Bhutto is also present on this occasion.

A two-day international conference titled "Remove Obstacles: The Importance of Architecture in Other Interdisciplines" began at Dawood University of Engineering and Technology (DUET) recently, in which DUET VC Professor Dr Samreen Hussain welcomed the national, international and other distinguished guests.

Addressing the conference as a special guest, Sindh Caretaker Chief Minister Justice (Retd) Maqbool Baqir said that Dawood Engineering University is recognized for its contemporary vision after its establishment. Dawood Engineering University (formerly Dawood College) is the first institution in Pakistan which

introduced degree programs about 63 years ago, laid the foundation of fields such as electronic engineering, architecture, industrial engineering and management.

The chief minister said that the university produced great and famous students all over the country, and they left their mark in PTV, Radio Pakistan, SPARCO, PTCL and other institutions. On the international front, Dawood University has made its mark in the field of architecture. Mr Baqir further said that he was satisfied to see the reconstruction and quality education of Dawood University. The daily routine life is gradually changing, and the role of artificial intelligence has made the discussion on interdisciplinary cooperation necessary, he added.

Second phase of CPEC faces specific challenges

Shakeel Ahmad Ramay

The writer is a political economist and a visiting research fellow at Hebei University, China

The China-Pakistan Economic Corridor (CPEC) holds the potential to assist Pakistan in revitalising its economy and setting the stage for sustainable development.

Following the successful completion of the first phase, CPEC has now entered its second phase. The long-term document of CPEC outlines industrialisation and agricultural cooperation as driving forces during this stage – fortunately, these align with Pakistan's current focus on rapid industrialisation and agricultural development. However, the second phase of CPEC faces specific challenges unique to its framework, in addition to those discussed in the previous article.

Firstly, the decision was made for Pakistan to construct Special Economic Zones (SEZs) for industrial cooperation. Unfortunately, after 10 years, Pakistan has been unable to establish these zones within the agreed timeframe.

Currently, the Faisalabad economic zone is partially functional, while the remaining SEZs are in the early stages, hindering the industrialisation process as the Chinese

industrial sector awaits the operationalisation of these zones.

Secondly, there is confusion regarding the functioning modalities of SEZs. Potential investors lack information about the incentive structure and policy framework regulating revenue from these zones.

Thirdly, potential investors are keen on government policies and actions to create inward and outward linkages of the SEZs. Unfortunately, Pakistan currently lacks a plan to share with investors regarding these linkages.

Fourthly, Pakistan has not produced any study or analysis to help investors understand the comparative advantages of SEZs. On the agricultural side, the picture of cooperation is more intricate. China has offered Pakistan the opportunity to collaborate in multiple allied and sub-sectors of agriculture, spanning from production to the trade of commodities.

China is willing to invest in modernising Pakistan's agricultural production system. Additionally, it has shown interest in cooperating in the input sector, including seed and fertiliser production, agricultural machinery, and manufacturing.

Research and scientific cooperation are other areas where both countries have signed many memorandums of understanding (MoUs).

Moreover, Pakistan can benefit from China's emerging food market. China is a growing

market, with food imports increasing from \$14 billion in 2003 to \$140 billion in 2023. China has offered Pakistan the opportunity to exploit the potential of the food market, expressing interest in importing meat, rice, onions, and processed food. However, to benefit from the food market, Pakistan will need to ensure quality and meet international safety standards.

In addition to these areas, Pakistan can benefit from emerging opportunities from the Belt and Road Initiative (BRI). For example, during the third BRI Forum, President Xi announced a new initiative – a small and beautiful programme. China will invest in small projects that positively influence people's livelihoods and the environment.

Secondly, Pakistan can explore opportunities in the e-commerce and digital economy field, which is a vast market that can open new avenues for the business community.

The second opportunity comes from the Gulf region, which is crucial for Pakistan due to various reasons, including its economy.

On the one hand, it is home to millions of Pakistani labourers, who send billions of dollars yearly, helping shore up foreign currency reserves. On the other hand, it offers numerous economic, investment, and trade opportunities.

Firstly, Pakistan can benefit from the food markets of GCC countries. The Gulf region is recognised as one of the most food-scarce regions due to its geography and water



scarcity limiting agriculture and food production.

The current statistics show that Saudi Arabia has to import 80%, Kuwait 90%, the UAE 85%, and Qatar 90% of food to satisfy the demand of the local population. Anticipated increases in food demand due to population rise and diversification drive force these countries to seek reliable partners that can provide Halal food. Secondly, Pakistan can attract investment from the Gulf region. Prominent countries in the region are undergoing a diversification drive, seeking new sectors and markets to invest in.

For example, all GCC members – Saudi Arabia, the UAE, Qatar, Kuwait, Oman and Bahrain – have devised visions to diversify their economies. Pakistan is already in talks with GCC countries and has finalised two major deals. Pakistan has signed MoUs of \$25 billion and \$10 billion with the UAE and Kuwait, respectively. It is also negotiating a deal with Saudi Arabia.

Moreover, it is close to signing a free trade agreement (FTA) with the GCC. Investment is a key area of the FTA. However, to benefit from these MoUs, Pakistan must comprehend the Vision documents of all GCC countries and remain conscious of the region's changing dynamics in terms of economic and geopolitics. This is crucial as some GCC members are competing to gain dominance in the economic and political landscape of the region.

In conclusion, alongside implementing reforms and identifying economic opportunities, Pakistan must also focus on three things to fully exploit the poten-

tial of opportunities and reforms. Firstly, there is a need to clearly define the role of state-owned enterprises and the private sector. We should avoid overemphasising the private sector's role and undermining the SOEs' role. Thus, we must stop the privatisation of SOEs and run them with economic rationale.

Secondly, Pakistan should define economic security by learning from three examples: the US, the USSR, and China. USA defined economic security through the lens of national security, leading to the creation of the military-industrial complex. In the case of the USSR, the concept led to the militarisation of the economy, ultimately resulting in the fall of the USSR. China defined it through the lens of economic growth and development, turning it into a global power.

The lessons from these models will help Pakistan understand the concept of economic security, determine the role of institutes, and avoid the mistakes committed by others.

Pakistan needs to redefine the structure of its economy in accordance with the vision of the Quaid-e-Azam: "We must work our destiny in our own way and present to the world an economic system based on the true Islamic concept of equality of manhood and social justice. We will thereby be fulfilling our mission as Muslims and giving to humanity the message of peace, which alone can save and secure the welfare, happiness, and prosperity of mankind."

He never liked the liberal economic order, considering it one of the most unequal systems that would not deliver prosperity and equality among humans. ■

Pollution risks by petrol pumps

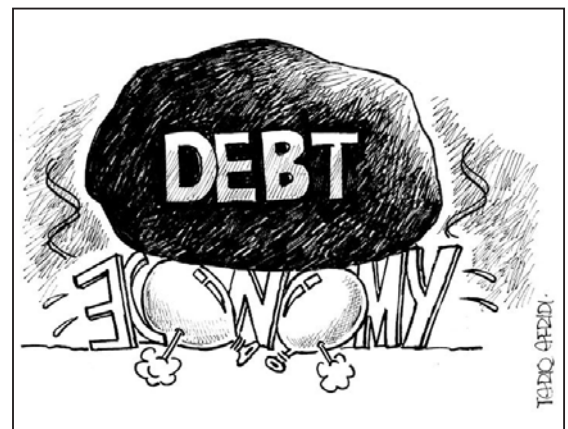
Syed Akhtar Ali

We pass through a smog season every winter which impairs social and economic life in our major cities, especially in Punjab. Schools are closed and the children and the elderly fall sick. We have, in the recent past, described the source of problems and the solutions thereof in a number of pieces. In this space, we will discuss the pollution and health impact of petrol pumps and the need for introducing controls in this respect.

Petrol pumps sell gasoline, diesel and a variety of petroleum products like lubricants. Petrol pumps are usually responsible for a considerable emission of gasoline vapours, which are toxic and carcinogenic. Varying amounts of gasoline vapours are emitted from cars' fuel tanks during the filling of gasoline. Also gasoline vapours are emitted during the filling of underground storage tanks when being filled by gasoline bowsers and make their way through a vent shaft, which is usually provided in storage tanks.

Gasoline vapours contain volatile organic compounds (VOCs), which affect human health and cause ozone pollution. NO_x and VOCs can undergo a number of chemical reactions with sunlight, heat, ammonia, moisture, and other compounds to form the noxious vapours, ground-level ozone and particles that comprise smog. It should be noted that the ground-level ozone is dangerous and toxic while sky-level ozone has a positive function, which blocks ingress of violet rays into the human atmosphere. Chlorofluorocarbons (CFCs), which are used in sprays, have been banned because CFCs break the protective ozone layer.

Automotive exhausts also emit NO_x, CO₂ and VOCs due to incomplete combustion. Thus, both automobiles and petrol pumps' vapour emissions are responsible for the creation of ozone and smog. Vapour emissions from petrol pumps have been underestimated and often ignored. It has been shown by studies that vapour emissions from petrol pumps are indeed significant and can extend to a distance of more than 300 feet from the petrol pumps. Stay informed and join in the conversation.



Decarbonising cement industry

Cement industry responsible for seven per cent of world's total carbon dioxide emissions

Muhammad Fahim Khokhar

The writer is a professor at the Institute of Environmental Sciences and Engineering, SCEE-NUST, Islamabad. His area of expertise is climate change adaptation and mitigation

WHAT often slips through the cracks of environmental discussions is the staggering carbon footprint of the cement industry, responsible for a considerable seven per cent of the world's total carbon dioxide emissions. This environmental burden places the industry in a unique position, necessitating a collective, international effort to usher in a sustainable era. If the cement industry were considered a nation, it would rank as the third-largest global emitter of carbon dioxide, trailing only the United States and China. The industry's expansion, notably propelled by China, underscores the imperative for a united international effort to mitigate its environmental consequences.

In Pakistan, a nation always looking for an economic breakthrough, the cement industry can play a pivotal role in its search for growth. With an annual production capacity approaching 73 million metric tons, this sector could become a cornerstone of Pakistan's economic recovery and development. Yet, this journey will not be without its complexities. The cement industry, in fact, faces two simultaneous but seemingly divergent challenges: Pakistan's per capita cement consumption, at 182 kilogrammes, is lower than its regional counterparts, indicating untapped market potential. On the flip side, the cement industry's heavy reliance on coal, accounting for 66pc of its energy consumption, exposes it to the fluctuations of global coal prices and diverges from the worldwide trend towards the use of sustainable energy sources. If, however, local demand for cement is encouraged to increase, it is bound to have deleterious impacts on the environment and the climate.

The pressing need to reduce this industry's carbon footprint and a pivot towards its simultaneous growth and sustainability is, therefore, self-evident. This shift is not just an environmental imperative; it is also necessary to enhance the industry's resilience and global competitiveness. By reforming the energy usage practices of cement plants, not only will it reduce its environmentally toxic emissions, it will also be able to keep its energy costs lower. This, in turn, will help it expand domestic consumption of cement without endangering the environment and compete with other cement manufacturers in the international market.

Reducing the coal in cement production stands out as a promising strategy to achieve these goals. The incorporation of agricultural residues, such as rice husk, wheat straw, corn stover and rice paddy, holds the potential to replace 20pc to 35pc of coal being used in cement kilns. This transition, particularly with rice husk and paddy, can capitalise on the abundant biomass output of agriculture in both Punjab and Sindh, meeting substantial fuel requirements of the cement industry and reducing its costs per ton of cement produced. Beyond this economic advantage, this shift aligns with the industry's financial interests by decreasing its vulnerability to global coal price volatility and helps it improve its environmental standards by reducing air pollution through a controlled burning of rice paddy. This practical step towards a more sustainable future for the cement sector will also resonate with global efforts to combat climate change.

Reducing the coal in cement production stands out as a promising strategy.

Delving into the intricacies of cement production, however, makes it evident that our focus must extend beyond the reduction of coal usage by addressing the second most significant contributor to the industry's emissions — electricity. These emissions, though they are indirect as they emanate from grid stations, account for its considerable environmental impact. A strategic pivot towards electricity-efficient technologies, thus, emerges as a critical solution, ushering in an era of advanced machinery and processes that promise to significantly cut down on these indirect emissions.

Over and above these technological upgrades, the integration of waste heat recovery systems and the widespread adoption of solar panels could also serve as proactive measures to combat the environmental challenge. By capturing and repurposing waste heat and embracing solar energy, the cement industry will not only reduce its dependence on conventional electricity sources but it will also substantially trim its overall environmental footprint. This integrated approach, on the one hand, follows global sustainable practices; on the other hand, it fortifies the cement industry's resilience by diversifying its energy sources, ensuring an environmentally conscious and economically robust future for it.

Lastly, since the transportation of materials contributes significantly to the industry's carbon footprint, it can make use of the CO₂ Arrestor technology, a ground-breaking solution devised by the National University of Science and Technology. This solution presents a transformative approach by actively sequestering CO₂ (carbon dioxide) from vehicle emissions during transportation, thus mitigating the environmental impact associated with the movement of raw materials used by cement-producing plants. The implementation of CO₂ Arrestor and other similar technologies not



OGDCL, PPL, POL win four exploration blocks

EU Report

The ministry of Energy has provisionally awarded four new oil and gas exploration blocks to three local companies, according to a stock exchange filing by one of the winners. Oil and Gas Development Company Limited (OGDCL), Pakistan Petroleum Limited (PPL), and Pakistan Oilfields Limited (POL) won the blocks in a competitive bidding round held by the government in November 2023, the filing by OGDCL said. The blocks are located in Balochistan and Sindh, and cover a total area of about 4,000 square kilometers, the filing added.

OGDCL participated in the competitive bidding round for exploration blocks held by the Government in November 2023," the company said. "The DGPC has communicated the provisional award of new exploration blocks to OGDCL, PPL, and POL. These blocks have been awarded based on the work units committed by OGDCL and its JV partners.

OGDCL said it will be the operator of two blocks, Sehwan (2667-19) in Sindh and Zindan-II (3271-9) in Punjab, with a 100 percent working interest in both. PPL and POL will be the operators of the other two blocks, Khipro East (2768-7) and Khairpur (2872-2), respectively, with a 70 percent working interest each. OGDCL will be their joint venture partner with a 30 percent working interest. "The provisional award of the blocks is subject to the signing of exploration licenses and concession agreements with the government, as well as the execution of joint operating agreements among the respective joint ventures," the filing said. ■

NJ project closed till March

EU Report

The 969 MW Neelum-Jhelum Hydropower project (NJHPP) was recently closed down till the first week of March 2024 for inspection of its 3.5-km Tail Race Tunnel and maintenance of turbines. This will aggravate the ongoing electricity load-shedding. However, the period of closure will be revisited after the inspection of the tunnel, a senior official of Wapda told The News. "The closure of the project till the first week of March 2024 will not only cause more reliance on thermal power generation, which is costlier if compared with the electricity cost of NJHPP. It will also aggravate the electricity availability crisis in the country," he said. The country is already facing a power deficit mainly because of canal closures, leading to less production of hydroelectric power. Also, two LNG-based power plants are not operational due to lack of fuel and the closure of imported coal-based power plants. The loadshedding is also aggravated because of the faults that happen, every winter, in the Guddu power plant on account of tripping of multiple grid stations in the Multan region and other DISCOs. ■

only aligns with the industry's commitment to reducing carbon emissions, this will also help it mark a notable advancement towards circular economy and sustainable practices. By strategically incorporating such technological solutions, the cement industry can not only address its direct emissions, it can also reinforce its resilience against the broader challenges posed by its value chain emissions.

The government, too, can contribute significantly to this shift by offering preferential energy tariffs to plants that adopt alternative fuels. The government can also introduce robust carbon-pricing mechanisms to act as an incentive to accelerate the transition towards environmentally conscious energy usage.

The success of this shift, however, hinges upon collaborative efforts of all the cement industry stakeholders. Industry-government partnerships, informed by technology road-mapping and task forces, can align their strategies and pool resources. Funding support, whether through budgetary allocations, tax relief, or international aid, should be directed specifically towards sustainability initiatives and technology upgrades, ensuring a more inclusive and economically viable transition for both large corporations and smaller players. ■

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Petroleum import volumes see a sharp decrease

Pakistan's oil refining sector has faced a slew of challenges

Sarfaraz A Khan

The writer is a corporate consultant specialising in business and economic issues

Ants truly are extraordinary creatures, with behaviour that is particularly remarkable in adversity. When faced with floods, they don't falter; they float. Forming rafts with their bodies, they expertly navigate waters that would otherwise drown them. This ingenuity offers a valuable lesson in resourcefulness for Pakistan's policymakers as they steer through the country's tough economic landscape.

The Pakistani economy is currently facing its own flood of challenges, impacting everyone from major corporations to daily wage earners. This is underscored by recent data from the Pakistan Bureau of Statistics, revealing a troubling picture. Industrial activity remains subdued, as highlighted by the latest Large Scale Manufacturing Index, which shows a nearly 1 per cent decline for the July to November period compared to the previous year. Meanwhile, consumers are grappling with soaring inflation, persistently hovering around 30pc.

The state of business activities is further mirrored in the import and consumption trends of crude oil and refined petroleum products, which fluctuate with economic cycles. In the last half of 2023, Pakistan's petroleum import volumes saw a sharp decrease of about 24pc compared to the same period in the previous year, as per a report from a leading brokerage firm. Notably, imports of High-Speed Diesel (HSD), often a gauge for industrial activity, fell by 36pc, while petrol imports saw a 5pc reduction. HSD is extensively used in heavy machinery and large vehicles across various sectors, from agriculture to logistics, underlining its widespread significance in the country's commercial operations. During July-November 2023, Pakistan's five local refineries operated at only about 57pc of their capacity

A glance at the oil sector's sales data, encompassing both imported and locally pro-

duced petroleum products, also shows a large drop in demand. In the latter half of 2023, oil marketing companies registered a 15pc decline in sales volume. Specifically, petrol and HSD sales dropped by 7pc and 6pc respectively, illustrating the economic slowdown's tangible impact. However, every cloud has a silver lining. This dip in petroleum consumption has played an inadvertent but pivotal role in reducing Pakistan's import bill, consequently bolstering the current account balance. The second half of 2023 saw the current account deficit fall to \$831 million, a striking 77pc decrease from the year before, as reported by the State Bank of Pakistan. This positive shift can be credited in large part to a 15pc reduction in the dollar value of goods imports. The half-yearly figure includes a notable current account surplus of nearly \$400m observed in December, a significant improvement compared to the \$365m deficit in the same month of the previous year.

The improvement in the current account is a beacon of hope for a nation grappling with financial constraints. While primarily driven by the economic slowdown, it offers a crucial respite in these challenging times. Policymakers now face the task of capitalising on this opportunity, crafting strategies that not only sustain but also amplify the current account benefits, bolstering the country's foreign exchange reserves.

In the last half of 2023, Pakistan's petroleum import volumes saw a sharp decrease of about 24pc compared to the same period in the previous year. In the face of adversity, passive acceptance shouldn't be an option; proactive and intelligent policy-making is crucial to extract the best possible outcomes from this difficult situation. Measures should be focused on reducing imports and boosting exports while steering clear of draconian measures, such as the harsh restrictions on imports, which tend to backfire.

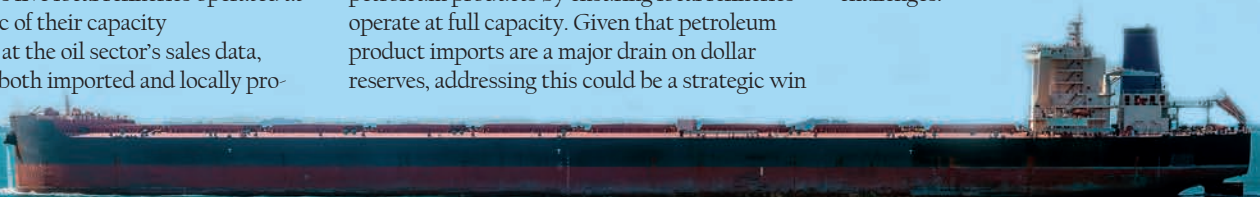
One pragmatic approach could be maximising the domestic production of refined petroleum products by ensuring local refineries operate at full capacity. Given that petroleum product imports are a major drain on dollar reserves, addressing this could be a strategic win

for economic planners. During July-November 2023, Pakistan's five local refineries operated at only about 57pc of their capacity, figures from the Oil Companies Advisory Council (OCAC) show. This underutilisation not only leads to a heavy reliance on imports but also highlights a key area for policy intervention.

The refinery utilisation rates should ideally hit 90pc to 100pc, particularly during peak demand times (eg during wheat harvesting season). A higher utilisation rate would significantly increase Pakistan's production of petrol and diesel, reducing the need for imports. The shift towards processing more crude oil, a less expensive alternative to refined products, should deliver substantial forex savings. In recent years, Pakistan's oil refining sector has faced a slew of challenges, from highly volatile furnace oil consumption to the devaluation of the local currency, all impeding its performance. The lack of a supportive policy framework for the refining sector only exacerbated these issues.

However, the recent introduction of a new oil refinery policy marks a promising change in direction. It's crucial for Pakistan to capitalise on this positive trend, developing policies that encourage capacity expansion and technological advancement in the oil refining space. Such measures could reduce import dependence and, in the longer term, potentially establish Pakistan as a net exporter of refined petroleum products, thus strengthening the current account and fortifying foreign exchange reserves.

Moreover, policymakers must also turn their attention to other key sectors requiring policy intervention. This includes areas like IT and related services, which can boost export earnings, and sectors capable of increasing the production of import-substitution goods, such as mobile phone assembly. Despite the tough economic situation, there's room for optimism. Policymakers in Pakistan can draw inspiration from the adaptability and resilience of ants, leveraging the nation's existing resources efficiently to navigate through these economic challenges. ■





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The primacy of economic power

Several issues of critical importance will be waiting for attention of new government as it assumes the reins of power

Javid Husain

The writer is a retired ambassador

As the nation gears up for the general elections, it is of the utmost importance for Pakistan's leadership and opinion-makers to debate and determine the priorities to be followed and the goals to be achieved by the elected government with the assistance of the public servants.

Several issues of critical importance will be waiting for the attention of the new government as it assumes the reins of power. Perhaps the most important of them is the perennial issue of guns vs butter, which determines the allocation of resources between the military and non-military sectors of society.

No independent and sovereign country can afford to ignore the legitimate demands of its security against external and internal threats. At the same time, no government can turn a blind eye to the imperatives of economic development and social welfare which directly affect the lives of the people it is supposed to serve. The challenge that any government faces is to strike the right balance between these two important aspects of national policy to ensure the country's short-term and long-term security as well as accelerate its economic growth and promote its social welfare.

The importance of economic strength in the calculation of a country's national power and the realization of its national goals cannot be overemphasized in the modern world. The Soviet Union collapsed not because of the shortage of conventional and nuclear weapons but mainly because its weak economy could not sustain the enormous burden of its extensive strategic commitments and heavy military superstructure.

Economic and technological development is not only an indispensable condition for a country's progress and the prosperity of its people but also an important source of strength to its military power and an essential ingredient in the calculus of its national security, especially in any long-term context.

The development of a country's economic and commercial relations with foreign countries, besides being beneficial from the economic point of view, produces an impact on the configuration of its security environment, both regional and global. Economic and commercial links provide strength and substance to friendly relations with foreign countries. The depth of the impact on the regional and global security environment would be determined obviously by the strength of a country's economy and the level and extent of its foreign economic and commercial relations.

It is noteworthy that China's rapid economic growth over the past four decades combined with its fast-growing economic and commercial links with the rest of the world, particularly with Central Asia, Africa, Latin America, West Asia, and ASEAN, are changing global alignments, thereby transforming the global security environment.

Paul Kennedy in his seminal book, 'The Rise and Fall of the Great Powers', elaborated at length on the importance of the relative economic rise and fall of a Great Power in determining in the long run its growth and decline as an important military power. According to him, the main issue facing a government was one of "balancing the short-term security afforded by large defense forces against the longer-term security of rising production and income." These conclusions have important strategic lessons for the US in

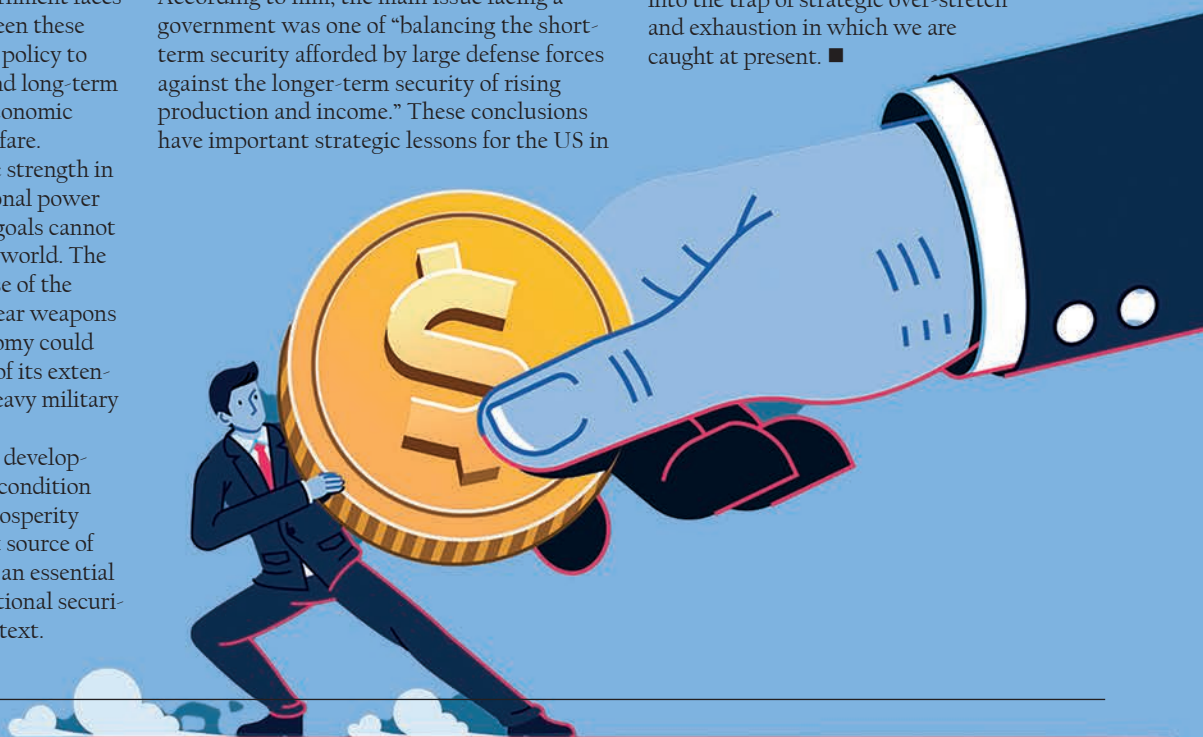
dealing with China's relatively fast economic growth and the consequent rapid buildup of its military power.

The foregoing analysis calls for a thorough review of Pakistan's economic and security policies. Ideally, at the initial stages of its development, a country should assign higher priority to the growth of its economic and technological power than to the building up of its military power because as noted above a sound military superstructure can be built only on the solid foundation of economic prowess. Reversing the order of priorities as Pakistan seems to have done since its independence can lead a country to disastrous consequences, which are now visible in the country.

Pakistan's GDP growth rate slowed down to 0.3 per cent in 2022-23 as against 6.3 per cent for India in 2023. The total size of India's GDP was estimated to be about \$3.73 trillion in 2023 as against only \$341 billion for Pakistan. We suffer from perennial current account deficits because of our tendency as a nation to live far beyond our resources, making us dependent upon doles from the IMF or friendly countries.

In a nutshell, the linchpin of Pakistan's grand strategy should be to assign the top priority to the goal of rapid economic growth and subordinate everything else to the attainment of this supreme national objective. This would require a single-minded focus on and maximum possible allocation of resources to the task of economic development.

However, this will be possible only if we have peace in our neighbourhood and avoid a major armed conflict allowing us to allocate the lion's share of our resources to economic development while maintaining a credible security deterrent. This in turn would require us to pursue a low-risk and non-adventurist foreign policy. Over-ambitious foreign policy goals should be avoided so that we do not fall into the trap of strategic over-stretch and exhaustion in which we are caught at present. ■



Transmission sector reforms and load-shedding

Power production will remain sub-optimal due to low forex reserves

Dr Fahd Rehman

The writer has worked at SDSB, Lahore University of Management Sciences (LUMS)

Electricity load-shedding is back in the last couple of weeks. Urban areas are observing around four to five hours of load-shedding, while the situation is worse in rural areas. The demand for electricity is around 14,500 megawatts while the system is generating around 10,000MW of electricity. The huge shortfall in generation is witnessed despite very high dependable capacity and low economic growth.

There is nothing special about the current demand for electricity since economic activities have slowed down. Here comes the question of reliability?

The system is bound to collapse during the peak of winter owing to transmission constraints. Technical description goes on to state that the outmoded equipment cannot withstand the dense fog. Fog protection devices which are made up of modern material are not available.

The interconnections among different components of the system are not synchronous. Transmission lines could not be connected to power plants in a timely manner. The functioning of a typical sub-station is complex as it increases and decreases voltage through transformers and acts as metering for electricity generated by power plants.

It also contains lightning arrestors which control a spike in voltage; circuit breakers act as a safety against overloading; switch gears control and isolate the power system, etc. All these components are neither properly maintained nor upgraded adequately. In addition, technical staff is not well-trained and lacks professionalism.

Moving away from the technical description, we discuss the political considerations. The government started structural reforms in the power sector in the early 1990s. Those reforms are still going on. Blackouts and outages are quite normal in the dollar-scarce Pakistan. For instance, the scarcity of dollars doesn't allow the government to contract furnace oil in advance. Hence, the import and delivery of furnace oil

would get delayed.

In addition, domestic gas is not abundantly available for power production. In that event, imported LNG will act as a substitute that would also require scarce dollars. Hence, electricity production will remain sub-optimal in the presence of low foreign exchange reserves along with usual outages.

However, these blackouts provide opportunity for furthering reforms in the transmission system. Proponents of reforms would come down hard on the government and recommend a market-based solution. For instance, they would state that transmission constraints could not be tackled by the government so there is an urgent need to bring the private sector in the transmission system.

Then a pre-feasibility study has commenced and a team of consultants provided a technocratic solution without taking into account the ground realities. Under the Transmission Policy of 2015, the private sector has already constructed a high voltage direct current (HVDC) transmission line as reported by the National Electric Power Regulatory Authority (Nepra) in the State of Industry Report 2022.

This newly constructed transmission line is still underutilised owing to coordination issues. However, the government is bound to pay a certain amount to the private operator as per the purchase agreement. Theoretically, this transmission line is better in terms of technology and cost. Practically, this turns out to be an expensive solution given resource constraints.

Similarly, the current centralised system of electrical grids is also under attack. Reformers have already proposed microgrids to back up the current system in the event of a blackout as these grids may complement the conventional system. In a nutshell, the power sector is in the grip of efficiency-driven reforms and the system is still not reliable. There are winners and losers attached with these reforms.

The lower and large strata of population are the losers while the people who are willing and able to pay are the winners. These reforms have ignored the paramount public interest. Hence, the reforms would entail a huge political cost for the future government. ■





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

Energy Update

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. ■



Belt and Road Initiative in 2024

China's agency and bank suspend debt service payments from 23 countries including Pakistan (\$500m), Cambodia (\$490m), Cuba (\$6bn); travel times along corridors will be cut by 12% by 2030; global growth into high gear expected

Yasir Habib Khan

The writer is the president of Institute of International Relations and Media Research (IIRMR)

Belt and Road Initiative (BRI), famed as engine of modern development on international landscape, will shift global growth into high gear in 2024 showing robust muscles of resilience and sustainability in everchanging geoeconomics, geo strategic and geopolitical environment.

China is expected to continue to green-align its overseas BRI projects, with a broader and more transformative focus on environmental sustainability. Greening the BRI emphasise China's firm commitment to encourage a low-carbon global economy as a responsible international stakeholder. China's endeavors to increasingly green-align the BRI are, in fact, the cumulative outcome of its sagacious policy measures put in force over the last several years. The share of green energy engagement is expected to see a radical rise in 2024.

Meanwhile, China will make more strides in trade facilitation in all dimensions regionally and internationally. A World Bank report revealed that if the proposed BRI projects are executed, travel times along the participating countries' transport corridors will be cut by 12 percent by 2030 due to improved transport infrastructure. This reduction in travel time would, in turn, decrease trade costs. China is also expected to enhance the BRI image with the vision of common good. Kribi, a small coastal town in Cameroon's south region, is gradually becoming a key logistical hub in central and western Africa. The Kribi Deep Seaport, which set into motion in 2018, today offers countries in the region convenient access to the sea. As a part of China's support for other countries under the framework of the Belt and Road Initiative (BRI), it is a shining example of this project. The BRI is likely to make more strides in this area.

As a partner of the BRI, Pakistan will continue to be beneficiary of greener BRI vision. Before

the start of 2024, Chinese solar solutions giant LONGi announced to achieve the magnificent goal of 2 gigawatts (GW) in Pakistan. With the help of more Chinese companies, it is highly likely that Pakistan's solar energy market size is expected to grow from 1.3GW to 9.77GW by coming years. Besides Chinese companies individually and in collaboration with Pakistan's local enterprises have launched numerous EVs projects in the country. Many Chinese EV brands are plying on local roads. Under the framework of CPEC, ML-1, mega rail transport project, is likely to come into action during current year in order to play a pivotal role to modernise Pakistan's trade, industry and commerce. Caretaker Prime Minister Anwaarul Haq Kakar has longed for start of Main Line-1 (ML-1) project on a priority basis as it would improve connectivity between the country's seaports with its economic zones, describing the ML-1 railway project under CPEC as most favourable transit route for the regional countries.

Three key words that may encompass the BRI's development in 2024 and next 10 years surround around global development initiative, global security initiative and global civilisation initiative. Reasoning is that these key words are next version of BRI in the face of impending challenges relating to ever-changing geopolitical, geoeconomic and geostrategic landscapes. Both BRI and new three initiatives are the masterstrokes of President Xi Jinping to chart new course of common development and shared destiny led by multilateralism, coexistence, rule-based world order, respect to one another sovereign boundaries, peace and harmony.

BRI, as engine of international development growth, has immense potential to keep shining on diverse global stage. It has many dimensions and vibrancies. Across the spectrum of its engagements, the BRI extends its influence into diverse array of domains,



spanning economics, culture and ecology. With focus on landbased roads, sea routes, airways and soft connectivity, BRI enhances rules and standards, people to people connectivity in various arenas like education, culture, sports, tourism, archeology. The Five Eyes alliance is an intelligence-sharing arrangement between five English-speaking democracies: the US, UK, Canada, Australia and New Zealand. It evolved during the Cold War. But recently it has straightened its guns towards China and Chinese projects especially BRI. Another forum named Quad, officially the Quadrilateral Security Dialogue, is a group of four countries: the United States, Australia, India, and Japan. The recent meeting of Quad can be interpreted as the beginning of the creation of an Asian NATO. The Quad's narrative is more tilted toward strategic balancing against China. Hideous media campaigns to dwarf role of BRI on global stage is also another challenge. The Belt and Road Initiative (BRI) has not been without its critics and challenges.

One of the major concerns raised is the issue of debt sustainability. Critics argue that some participating countries may face difficulties in repaying the loans obtained for BRI projects, potentially leading to a debt trap. The concept of the "Chinese debt trap" theory, often raised by Western media and critics, is a subject of debate in development discussions. China's involvement in the Belt and Road Initiative (BRI) through investments and lending has been accused of burdening developing countries with excessive debt. However, a closer look reveals that China's role in creating debt traps is often exaggerated.

In the case of Sri Lanka, for example, China is blamed for the majority of the country's debt burden. However, reports indicate that China only accounts for 10 per cent of Sri Lanka's debt, with the rest coming from other sources such as international currency markets, the Asian Development Bank, and Japan. While China has been accused of being a "neocolonial power," little is mentioned in Western media about China's debt relief efforts. Over the years, China has written off approximately \$9.8 billion of debt to other countries, particularly in Africa. China has also extended debt relief to poor countries under the G20 framework. The China International Development Cooperation Agency and the Export-Import Bank of China have suspended debt service payments from 23 countries, amounting to \$1.353 billion. Notable examples of debt forgiveness include Cuba (\$6 billion), Pakistan (\$500 million), and Cambodia (\$490 million). ■



GREEN HYDROGEN

NEECA green hydrogen study Clean fuel potential revealed for Pakistan



Mustafa Tahir

The National Energy Efficiency and Conservation Authority (NEECA) has released a pre-feasibility study on green hydrogen energy, aiming to unlock the vast potential of the clean fuel and pave the way for a more sustainable energy future.

The study, conducted in collaboration with international experts, analyzed 13 value chain cases for hydrogen production, storage, and utilization, and identified the three most promising ones for further exploration.

Currently, Pakistan relies heavily on thermal sources for its power generation, with a staggering 64 percent of its energy being sourced from imported fossil fuels such as RLNG, Coal, and RFO. The escalating global energy prices and the nation's dependence on imported fuel have presented formidable challenges, affecting both the reliability and cost-effectiveness of Pakistan's energy supply. Additionally, this reliance on fossil fuels has contributed to higher greenhouse gas emissions, exacerbating environmental concerns.

Hydrogen, with its high energy content, environmental compatibility, storage capabilities, and ability to address intermittency issues in RE sources, emerges as a crucial energy vector for ensuring a reliable and cost-effective harnessing of Pakistan's RE resources. Dr. Sardar Mohazzam, Managing Director of NEECA, provided insight into the motivation behind conducting this groundbreaking study, which aims to explore the potential of green hydrogen energy in Pakistan.

The event featured key presentations from Stephen B. Harrison, an International Expert on Green Hydrogen, and Dr. Nadeem Javed, the ex-chief economist, who outlined crucial aspects of the pre-feasibility study. In the study, 13 value chain cases for financial modeling have been meticulously analyzed to gauge their economic viability across current and potential future scenarios. The study focused on advancing sustainable energy solutions and identified and highlighted the three most promising value chains. Hydrogen Electrolysis from Ghazi-Barotha Dam: Researchers propose harnessing hydrogen through electrolysis from hydroelectricity at the existing Ghazi-Barotha dam. The innovative approach involves admixing the produced hydrogen at a low concentration into the local natural gas grid.

Solar-Powered Hydrogen Production at Quaid e Azam Solar Park: Utilizing solar power generated from the Quaid e Azam solar park, scientists envision producing hydrogen on an electrolyzer. The resulting hydrogen, generated through sustainable solar energy, would be admixed at a low concentration into the local natural gas grid. This application aims to decarbonize the gas pipeline network and enhance sustainability in heating, cooking, and CNG applications.

Run-of-the-River Hydropower Micro-Grid: A One MW Run-of-the-river hydropower remote micro-grid is proposed, allocating a portion of the generated power for hydrogen production during the 10 months of hydropower generation. The hydrogen would be stored and released to a fuel cell for two winter months when the hydro plant undergoes winterization, mitigating the risk of ice damage. ■

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Oil, Gas and Minerals Career Expo opens



Federal Minister for Energy, Muhammad Ali, inaugurated the first-ever national level 'Fuelling Futures Career Expo 2024' on January 31 at Pakistan China Friendship Centre IN Islamabad.

The two-day Career Expo was organised by the Ministry of Energy in collaboration with Pakistan Petroleum Limited (PPL). The event witnessed an overwhelming attendance of students, faculty and company representatives.

MD and CEO PPL Imran Abbasy welcomed the large number of students from across the country and thanked the participating companies and universities for making the two-day career expo a success.

The platform provides an opportunity for students to interact with the leaders of the energy and minerals industry and to

learn from their experiences with the view to selecting, pursuing careers in Oil, Gas and Mineral sector, he added.

In his keynote address, Federal Minister Ali emphasized that the event is planned for students to explore career opportunities with energy and minerals being showcased by respective companies today. He shared that there is massive transformation happening in the Energy sector globally. Energy should be affordable, accessible and sustainable, he underlined.

The minister highlighted that Pakistan is energy deficient and an oil importer. Hence there is opportunity to convert the energy deficiency to surplus. Also there are many in demand mineral resources in the country with opportunities for their extraction in future.



Shamshad chosen for SSGCL board chair

While still in the government, the Petroleum Division has announced the nomination of Caretaker Finance Minister Dr Shamshad Akhtar as chairperson of the board of directors of the state-owned Sui Southern Gas Company Ltd (SSGCL) for another three-year term. In recognition of her professional dedication and unwavering efforts, the government had nominated Dr Shamshad Akhtar for another tenure as chairperson of the board of directors for which elections will be held, said a statement issued by the Petroleum Division. She is already holding the same position on a temporary basis through repeated extensions while also working as finance minister. An official said the interim arrangement of the SSGCL board would be maintained until the first week of March because she could not contest elections to the chairperson position as finance minister.

Irteza Qureshi appointed PARCO MD

Federal cabinet has appointed Irteza Ali Qureshi as Managing Director of Pak-Arab Refinery Company (PARCO) for a three-year term.

Irteza Qureshi had also rendered his service in OGDCL as Chief Financial Officer and after that, he held his last position in PARCO as Deputy Managing Director (DMD-Finance).

For the post of MD PARCO, eight candidates were shortlisted. Of them, 7 candidates appeared for the interview. Mr Irteza Qureshi stood first on merit in the list of candidates.



OCAC hosts successful workshop on Pakistan Oil Supply Chain

In a significant stride towards industry collaboration, OCAC recently organized a workshop for oil industry professionals, providing a comprehensive overview of Pakistan's oil supply chain and product knowledge. The event, inaugurated by Mr. Waqar Siddiqui, Managing Director of SPL, saw the active participation of 25 professionals from OMCs and Refineries. Mr. Siddiqui encouraged attendees to leverage the insights gained and foster knowledge-sharing within their respective companies. Excitingly, similar workshops are slated for Lahore and Islamabad, promising further opportunities for industry professionals to enhance their expertise and foster collaborative growth.



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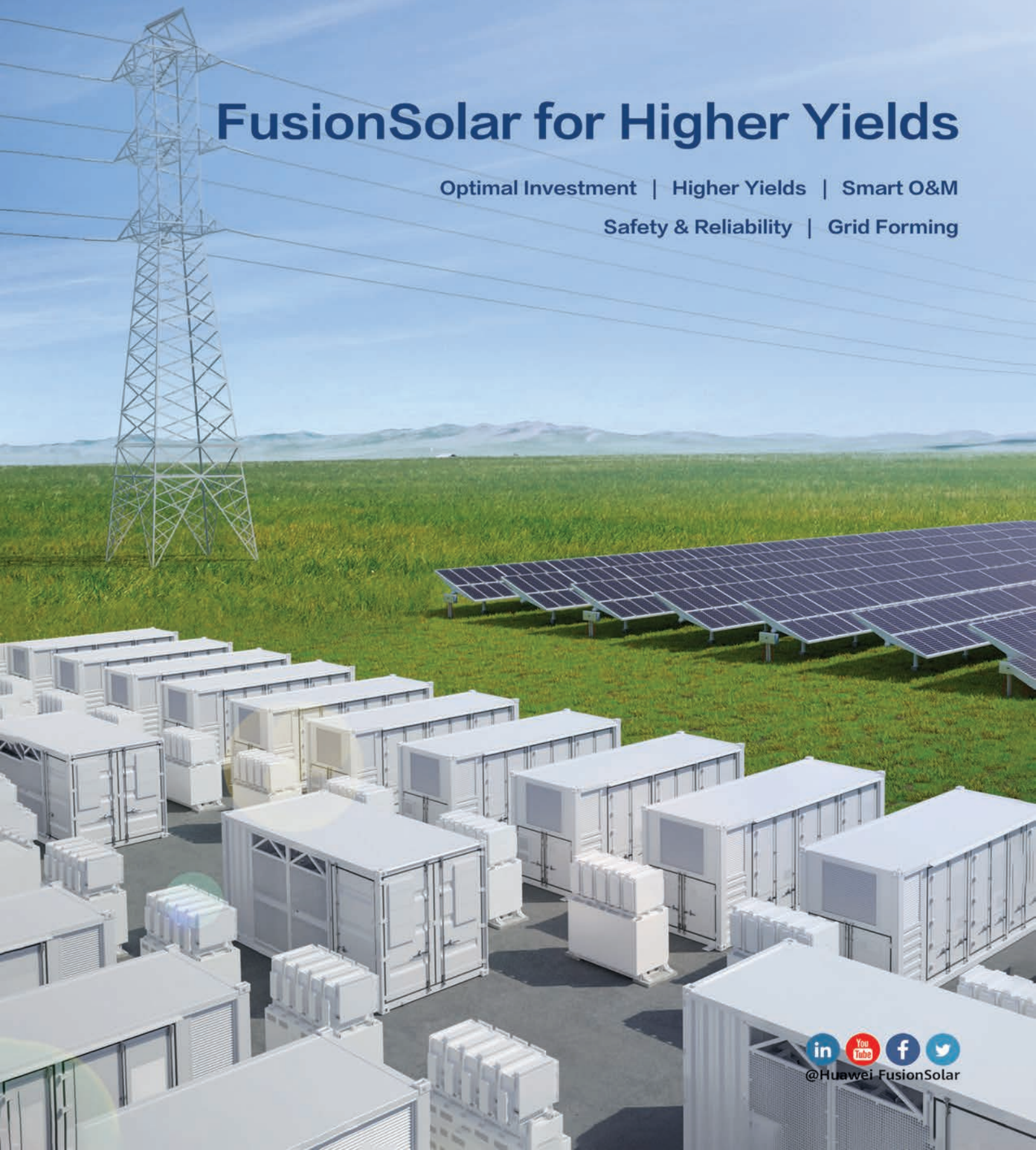


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