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ENERGY UPDATE

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REPORT ON PAKISTAN MINERAL SUMMIT

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Head Office
Karachi
First Floor, Fakhri Trade Centre, Shahrah-e-Liaquat,
Karachi-74200, Pakistan, PO Box 677
UAN: +92 21 111 000 520
TEL: +92 21 3260 2200-07 (8 lines)

Regional Office
Lahore
House No. 20-A, Block G, Gulberg III, Lahore, Pakistan
UAN: +92 42 111 000 520
Tel: +92 42 3588 3360-61

Liaison Offices
Islamabad
Tel: +92 51 280 2167
Faisalabad
UAN: +92 41 111 000 520
Tel: +92 41 260 0741- 43

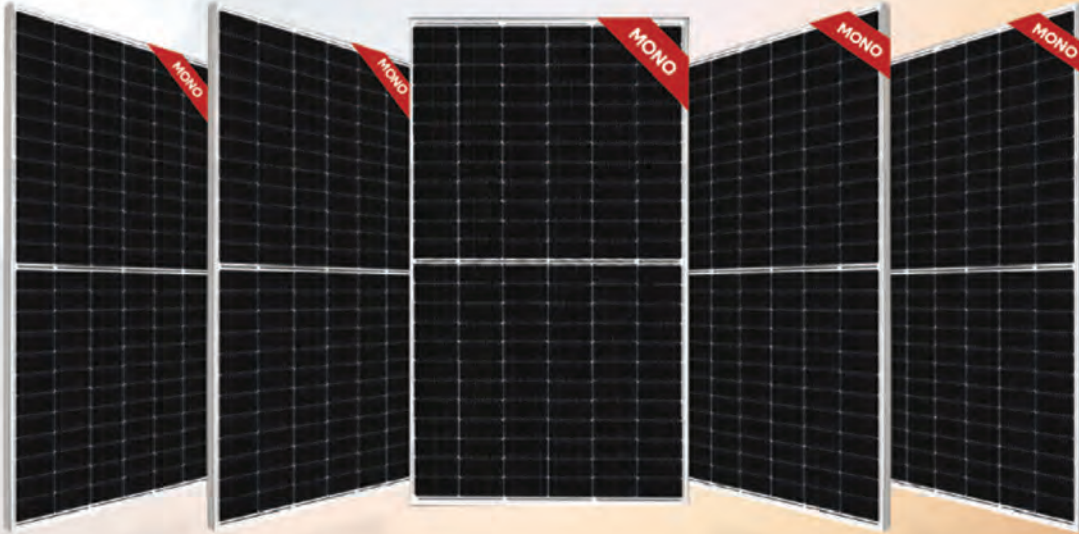
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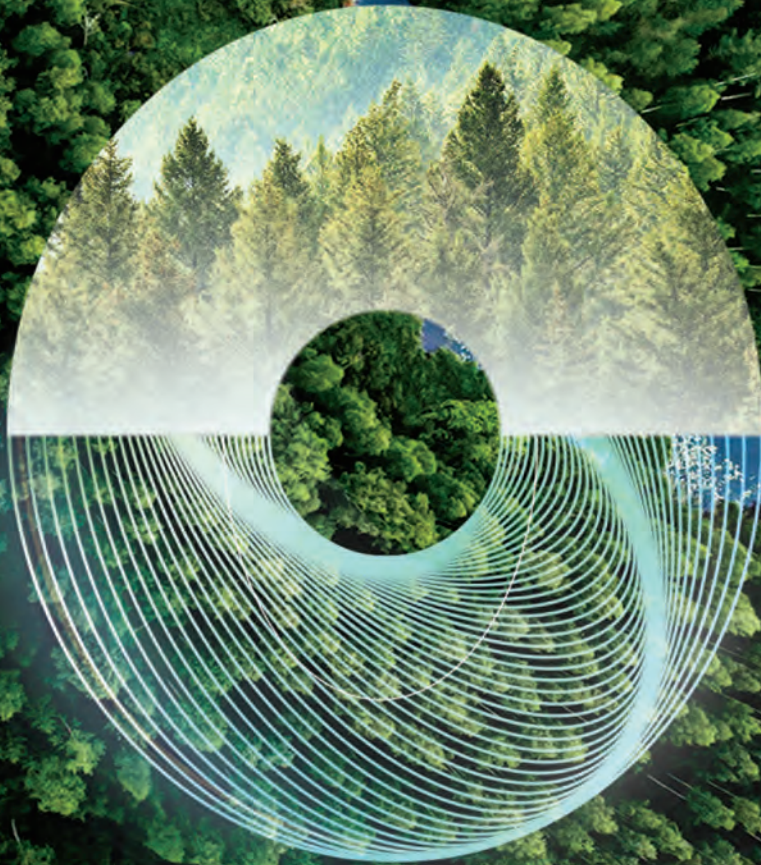
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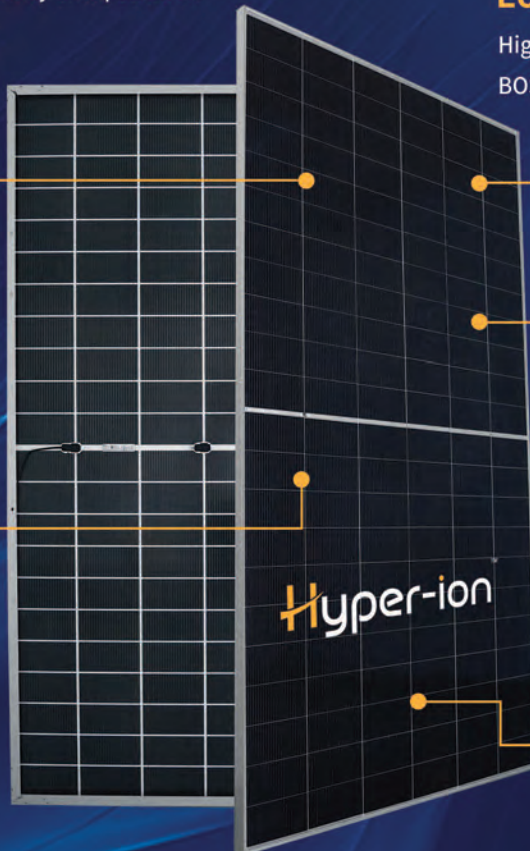
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Muhammad Ahsan

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Tel: **+92-3313585550**

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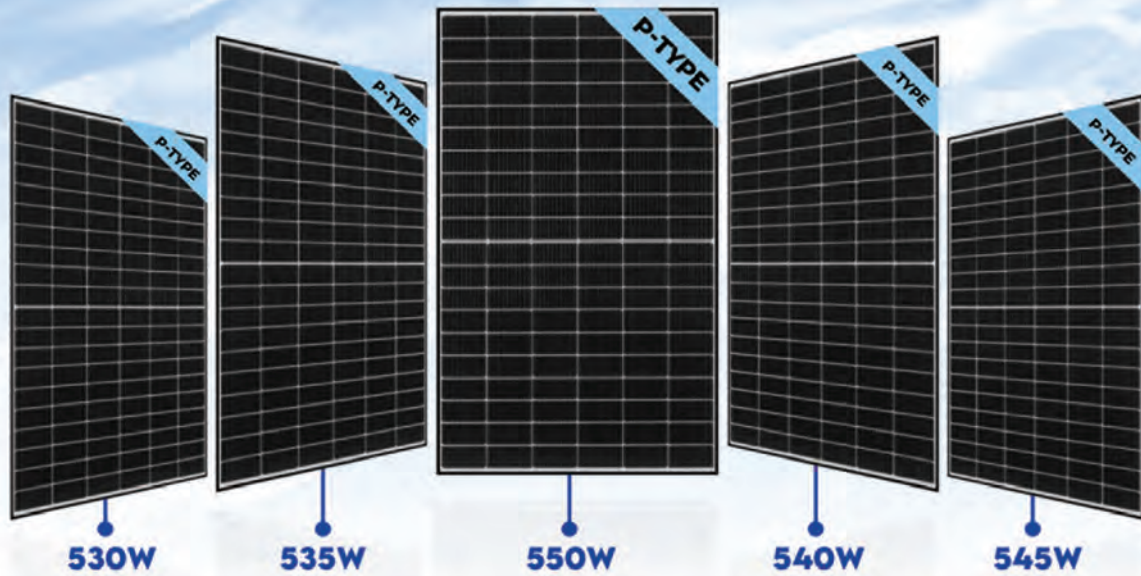
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Open Circuit Voltage(Voc) [V]	49.30	49.45	49.60	49.75	49.90
Maximum Power Voltage(Vmp) [V]	41.31	41.47	41.64	41.80	41.96
Short Circuit Current(Isc) [A]	13.72	13.79	13.86	13.93	14.00
Maximum Power Current(Imp) [A]	12.83	12.90	12.97	13.04	13.11
Module Efficiency [%]	20.5	20.7	20.9	21.1	21.3
Power Tolerance	0~+5W				
Temperature Coefficient of Isc(α_{Isc})	+0.045%/°C				
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Merciless power prices

Pakistan has once again raised power prices to a merciless level of up to Rs7.5 per unit, pushing people towards a quagmire of crippling inflation and compelling them to face food insecurity. The trouble-making power rates will also hit the business community hard as the cost of the business will continue to further rise.

But, ironically, businessmen are very intelligent and they will raise the prices of products to cover up the power tariff hike as the commodity price control system has already paralyzed. The ultimate sufferers will be people of the middle and lower classes.

Prime Minister's notion that the government has increased power tariffs again under an IMF deal to reduce unsustainable public debt in the power and gas sector is totally unwise and unjustified as it will hit people hard. Instead of it, the PM should have provided some relief to people from IMF loan and stop caretaker Punjab government from releasing a whopping Rs2.3 billion (public money) for the purchase of new vehicles for officers.

On one hand, people are crying against the unruly rise in commodity prices while on the other hand, the government keeps raising power tariff almost every month on IMF demand and as part of fuel adjustment charges, which is a great injustice in the history of Pakistan.

The government actually has tactics to arrange for its economic growth, leaving people to face starvation and commit suicide. The question is how people of middle and poor classes will save themselves from skyrocketing inflation coupled with electricity prices.

Instead of raising power tariffs, the government needs to abolish its luxuries, stop paying high salaries to certain bureaucrats, and end the provision of free petrol and electricity to those who are taking salaries in lacs. There is also a need to use local coal for fuel and provide more electricity to lifeline consumers instead of industrialists.



ENERGY UPDATE

Managing Editor

M. Naeem Qureshi

info@energyupdate.com.pk

energyupdate@gmail.com

Editor

Sajid Aziz

saziz75@gmail.com

Chief Financial Officer

Ruqiya Naeem

ruqiya.nfeh@gmail.com

Chief Marketing Officer

Engr. Nadeem Ashraf

marketing@energyupdate.com.pk

nadeem.event@gmail.com

Marketing Consultant

Khalid Iqbal

hikhaid@live.com

Marketing and Promotions Manager

Mustafa Tahir

mustafa_mt92@hotmail.com

Head of corporate Affairs and Sustainability

Halima Khan

mccm.energyupdate@gmail.com

Coordinator Lahore

Mohammad Asif

Art Director

Rizwan Ahmad

rizwanahmed55@gmail.com

Advisors

Zafar Sobani

Kalim. A. Saddiqui

Sohail Butt

Anwar Shahid Khan

Raziuddin Razi

Engr. Irfan Ahmed

Circulation & Subscription

Zahid Ali

Alizahid210@gmail.com

Shakeel Qureshi

Overseas Correspondents

Arif Afzal - USA

Kazim Wasti - Canada

Legal Advisors

M. Nadeem Sheikh Advocate

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#309, Al-Sehat Centre, Hotel Regent Plaza,
Shahrah-e-Faisal, Karachi-Pakistan.

Tel: 021-3565 3676, 3521 3853, 35674570

Email: *info@energyupdate.com.pk*

Web: *www.energyupdate.com.pk*

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The looming gas crisis

Finding the right balance between getting enough energy and taking care of the environment is very hard

—◆ Shujauddin Qureshi —◆

There may be an acute gas shortage during the next winter despite the fact that the state-owned Pakistan LNG Limited (PLL) last week received two bids to supply two Liquefied Natural Gas (LNG) cargoes for the months of January and February 2024 at \$22-24 per mmbtu.

The average contracted LNG price in the past was \$12-15 per mmbtu.

Earlier, in June the PLL had received no bids against tenders in the international spot market for the supply of at least three cargoes each for October and December 2023.

Experts say that although the recent bids are on the high side, Pakistan has no option but to accept those, given the international market situation. The government has to provide for the winter gas demand of domestic consumers as well as industry.

Pakistan had faced a similar situation last year when it failed to attract LNG suppliers with its international tenders. As a result, the consumers faced gas load-shedding for prolonged durations.

Spot market

The international spot gas market has become highly volatile after the Russia-Ukraine war started in February 2022. LNG prices have risen significantly because of the soaring gas demand in Europe. To support Ukraine, the NATO member countries have boycotted Russian gas. Most of the EU member countries therefore have to look for alternative sources.

Most of the traditional suppliers of LNG to Pakistan now prefer to sell their gas cargoes to the wealthy European countries where they stand to make windfall profits. Even some long-term suppliers to Pakistan have cancelled earlier contracts to divert their supplies to Europe.

In recent months, LNG prices have dropped in the international market significantly. Still, the suppliers seem reluctant to trade with Pakistan. A shortage of foreign exchange reserves in the country, coupled with

a drop in its credit rating, may explain this trend. "Pakistan is a very small market for LNG suppliers. Most gas suppliers don't respond to its international tenders," says Haneesa Isaad, an energy finance analyst at the Institute of Energy Economics and Financial Analysis (IEEFA).

According to her, Pakistan has faced an affordability problem for the last couple of years. Moreover, she points out that the country is facing a foreign exchange reserves problem. Many big importers have been unable to purchase foreign currency in the open market, leave alone the interbank market. After leading credit rating companies degraded Pakistan's credit rating, the suppliers were worried.

In July 2022, the PLL had floated a tender for the purchase of 10 LNG cargoes from the spot market. However, that tender was scrapped due to lack of response from the bidders. Recently, the spot price of liquefied natural gas (LNG) has dropped below \$10 per



mmBtu in the spot market from the highest level of \$70 per mmBtu in August last year and around \$40 per mmBtu in December 2022.

Consumers

Most of the imported natural gas is used by power generation companies and exporting industries.

To solve its persistent energy shortage problem, Pakistan needs to figure out first how to make energy affordable for all its citizens.

Currently, the share of LNG in power generation is low (10-12 percent) because of its higher cost. Earlier most power generation units had switched to LNG or coal due to an increase in the furnace oil prices. According to Gas Outlook, Pakistan's LNG demand will double, reaching 16 million tonnes in 2032 from 8 million tonnes in 2021.

As far as domestic consumers are concerned, LNG is one of the most cost effective options during the winter.

The gas load-shedding problem has aggravated. Domestic consumers in Karachi, Lahore and Islamabad are facing shortages during the cooking hours. The worst problems were experienced during the month of Ramazan this year when the gas distribution companies announced rationing of gas during Sehri and Iftar timings all over the country.

According to some reports, Pakistan is facing a gas deficit of 1.35 bcf/d (billion cubic feet per day).

Last week, the government reported that LNG was now the most expensive fuel for power generation in the country. (Furnace oil has a generation cost of Rs 48.56 per unit and LNG Rs 51.42.)

Pakistan's natural gas reserves are depleting fast and the demand is on the rise. According to government projections, the amount of gas available will decrease further and reach 1,659 mmcf/d in 2029-30.

"Domestic consumers are also using liquefied petroleum gas (LPG), whose prices also rise in winter," says Zeena Shaukat, The Knowledge Forum director. She laments that domestic consumers are paying inflated gas bills but still have to face gas load shedding for long hours.

Most people prefer LPG because electricity is too costly and use of wood or coal for cooking is environmentally unsafe.

Pakistan has been unable to build pipelines for sustained gas supply from Iran and Turkmenistan. As a result, it has to rely on indigenous energy sources like coal, which is cheaper but polluting.

It is really hard to find the right balance between getting enough energy and protecting the environment.

To solve this persistent energy shortage problem, Pakistan needs to do a few things. First, it has to figure out how to make energy affordable for every citizen. The country also needs to improve its credit rating and build foreign exchange reserves.

Pakistan should also invest in alternative energy sources like solar and wind power to have more sustainable and eco-friendly energy.

It is important to have a plan that addresses both short-term elements like importing LPG and long-term ideas for a more diverse energy mix.

By harnessing renewable energy and facing the problems head-on, Pakistan can make sure it has enough energy and a better future for everyone. ■

The writer is a senior journalist at a news channel in Karachi.

EDUCATION EVENT

PEC organizes Day Trip Learning event



— EU Report —

Pakistan Engineering Council (PEC) organized the Day Trip Learning ceremony at NUTECH Islamabad as part of its Pakistan Development Committee project.

This event was graced by renowned engineers, researchers, and academicians.

Speaking on the occasion, Engr Mir Masood Rashid advisor to chairman PEC and convener PPDC highlighted that "Day Trip Learning" initiative holds the potential to transform the way we educate and inspire the next generation of engineers.

As we all know, engineering is not merely about theory and equations; it is about practicality, innovation, and the drive to solve real-world problems. He also mentioned on the successful delivery of remarkable key projects launched by PPDC including Graduate Internee Training (6 months 75% sponsor by PEC), 17-UNSDG's adoption roadmap, Yearly CAPSTONE EXPO, Final Year Design Projects sponsorship (Industrially viable projects) and E-GATEWAY (e-procurement portal for engineering services export).

Engr Lt General Moazzam (Retd) rector NUTECH University, welcomed all being technical support partner University in this project, and appreciated the efforts of PEC and PPDC committee on launching such a great initiative as the biggest current challenge is engineers' exposure and right Jobs, with



such initiatives it will bridge the gap between Industry & Academia.

Engr Muhammad Najeeb Haroon Chairman PEC highlighted the efforts of PPDC to create a bridge between academia & industry for the excellence of the Engineers profession. Day Trip Learning is a revolutionary educational platform that transforms traditional learning into captivating, immersive adventures. Better understanding between academia and industry through students' awareness of industry problems; industry awareness of university experience and technical resources; establishing partnership between universities and industry to address their needs through R&D and design project; commercialization prospects for university research and semester projects; and creation of internship and employment opportunities for university graduates in the industry.

Engr Lt General Kashif Nazir, the chief guest of the ceremony appreciated the efforts of PEC and briefed the audience that through "Day Trip Learning" initiative students will have the opportunity to step outside the confines of traditional classrooms and textbooks, immersing themselves in the heart of engineering marvels and technological wonders. ■

Dilemma of Energy Planning

Pakistan faces the complex task of balancing its energy needs, economic development

—◆ Dr Khalid Waleed ◆—

Pakistan, like many countries, faces the complex task of balancing its energy needs, economic development, environmental sustainability, and social welfare. On one hand, we have to cater for cheaper energy sources which are economically affordable and accessible for masses while on the other hand we have to fight for climate injustice and make the case for climate financing or loss and damage fund.

In the context of Pakistan's energy sector planning, Buridan's donkey paradox highlights the difficulty of making rational decisions when faced with multiple viable options. Pakistan has various energy sources at its disposal, including fossil fuels (coal, oil, and gas), hydroelectric power, nuclear energy, and renewable sources such as solar and wind.

Each energy source has its advantages and disadvantages in terms of cost, availability, environmental impact, and energy security. For instance, coal power plants may be cheaper in the short term but contribute to pollution and climate change, while renewable energy sources have a lower environmental impact but may require higher upfront investments. In this scenario, decision-makers must consider multiple factors such as energy demand projections, cost-effectiveness, technological feasibility, environmental concerns, international commitments, and the country's long-term energy security. However, similar to Buridan's donkey, the decision-making process can become challenging due to conflicting priorities and uncertainties.

The paradox suggests that purely rational decision-making, focusing solely on maximizing one factor (e.g., cost or environmental sustainability), may lead to indecision and a failure to choose an optimal energy mix. It emphasizes the need for a comprehensive and balanced approach that considers various factors, weighs trade-offs, and incorporates stakeholders' perspectives. To overcome the decision paralysis in Pakistan's energy sector planning, it is essential to establish a robust framework that integrates scientific analysis, expert opinions, public consultations, and policy considerations. This can involve conducting thorough cost-benefit analyses, assessing the long-term impacts of different energy sources, promoting research and development for innovative solutions, and engaging in international collaborations to leverage

best practices.

Furthermore, policy coherence, effective governance, and a long-term vision are crucial for ensuring consistent decision-making in the energy sector. Regular review and adaptation of energy policies based on emerging technologies and changing circumstances can help navigate the complexities and uncertainties associated with planning Pakistan's energy sector. Ultimately, by acknowledging the challenges inherent in decision-making and adopting a holistic approach, Pakistan can strive to strike a balance in its energy sector planning that aligns with its economic, environmental, and social objectives.

In terms of actionable policy solutions, following recommendation can help in formulating more forward looking rational framework for integrated economy, energy and environmental concerns. Firstly, Pakistan should conduct a comprehensive energy analysis to assess its energy demand projections and analyze the cost-effectiveness, environmental impact, and energy security of various energy sources. This analysis should consider factors such as economic growth, population dynamics, and sector-specific requirements. Additionally, promoting energy efficiency and conservation should be prioritized as a second step. Implementing energy efficiency standards, raising awareness about energy conservation, and supporting the adoption of energy-efficient technologies can significantly reduce overall energy demand and optimize consumption. To serve this purpose, academia, research think tanks, policymakers and big data analysts must join their hands.

Secondly, Pakistan should prioritize the transition to renewable energy sources. Setting renewable energy targets and establishing a clear roadmap for increasing the share of renewables in the energy mix will promote long-term environmental sustainability. Incentives such as feed-in tariffs, tax breaks, and subsidies should be provided to attract private investments in renewable energy projects. Concurrently, research and development efforts should focus on enhancing the efficiency, storage capabilities, and grid integration of renewable energy technologies.

Thirdly, while promoting renewable energy, Pakistan should also optimize the use of fossil fuels. Gradually phasing out inefficient and environmentally harmful fossil fuel power plants and replacing them with cleaner technologies is crucial. The adoption of cleaner coal technologies, such as ultra-supercritical and carbon



capture, utilization, and storage (CCUS) technologies, should be encouraged coupled with generation licenses to reduce emissions from existing coal power plants. Additionally, exploring opportunities for domestic gas exploration and development can improve energy security while minimizing environmental impact.

Fourthly, strengthening international collaborations is essential. Pakistan should engage in partnerships and collaborations to access climate financing, technology transfer, and capacity building support for sustainable energy projects. Active participation in global climate change negotiations will enable Pakistan to advocate for climate justice and seek international assistance for climate mitigation and adaptation efforts. Sharing knowledge and best practices with other countries facing similar energy and environmental challenges will further enhance progress.

Fifthly, enhancing governance and policy coherence is crucial. Establishing a dedicated energy planning body or strengthening existing institutions will ensure coherent and evidence-based decision-making in the energy sector. Regular reviews of energy policies should be conducted to align them with emerging technologies, changing circumstances, and international commitments. Transparency, accountability, and stakeholder participation should be prioritized, involving experts, industry representatives, civil society organizations, and the general public.

Lastly, Pakistan should promote green financing and investment. Facilitating access to green financing mechanisms such as climate funds, green bonds, and international development assistance will provide support for sustainable energy projects. Encouraging local and foreign investments in renewable energy infrastructure through favorable policies, streamlined approval processes, and reduced regulatory barriers will further accelerate progress. Public-private partnerships should be fostered to mobilize resources for sustainable energy initiatives. ■

The writer is Research Fellow - Energy Unit.

— Syed Akhtar Ali —

A new source of Hydrogen has been discovered recently. It has been named Natural/White Hydrogen. It is extracted from earth's crust through drilling as Natural Gas is extracted. That is why it is called Natural Hydrogen also a la Natural Gas.

Oil and Gas E&P explorers have now a new task and opportunity to get a find of another type. We will discuss in this space the relevance of White Hydrogen to Pakistan and its E&P companies.

And now Hydrogen from Earth

White Hydrogen is just the same as normal Hydrogen. It is being called by two names; Natural Hydrogen and White Hydrogen to distinguish it from other sources or methods to make Hydrogen. For example, Green Hydrogen is produced by electrolysis of water and electricity produced from such renewable sources as solar, wind or even hydro.

White Hydrogen was first discovered accidentally in Mali in 2014 while looking for oil or gas. It turned out to be Hydrogen. Not much attention was paid to it for developing it. However,

the pursuit of Green Hydrogen and its targets has provided a new impetus to this one, called White Hydrogen. Also, the Ukraine war has driven the motives to acquire independent gases.

White Hydrogen if developed widely can be an additional source to Green Hydrogen releasing pressure on water sources and solar space requirements. As its production technology is extraction through boreholes as is done in case of oil and gas, a lot of lead time may not be required for its wide-scale development and adoption. It should be widely available by 2030.

The main advantage of White Hydrogen is that it will be cheap, under 1 USD per kg as opposed to the current going rate of 4-6 USD/kg of Green Hydrogen. Green Hydrogen is expected to cost 2 USD/kg by 2030 and 1 USD/kg by 2050. There are more optimistic cost projections as well.

Hydrogen has usages in many sectors: transportation, domestic cooking and heating, industrial boilers and furnaces, electricity generation and chemicals and petrochemical production. There may be many chemical, geo-chemicals, biological and other routes for Natural Hydrogen generation.

However, a lot has been researched about iron ores wherein Hydrogen is produced through ionic reaction with water. Fortunately, there are many Iron deposits totaling 1.42 billion tons in Pakistan at Chiniot, Kalabagh, Nokundi, Haripur and elsewhere.

There can be multiple benefits. If Hydrogen is found near iron ore sites, there would be no need of coal in iron-making. Green Steel can be produced, which is the most sought-after subject in industrial metallurgy. Otherwise, as we have mentioned elsewhere, there are multiple uses of Hydrogen.

Our mining and Oil companies should start exploratory studies on the subject of Natural/White Hydrogen along with the coordination with universities. It may be noted that Fraunhofer Institute has organized an R&D project (HyAfrica) with a consortium of six countries (Morocco, Mali, Mozambique, South Africa, etc.) in Africa with companies. A similar consortium-like effort should begin in Pakistan. ■

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





PAKISTAN'S ENERGY OUTLOOK



Country heavily relies on fossil fuels for electricity production by 21.9%, transportation sector 78.5%

—◆— Tehmina Asad —◆—

Pakistan has been facing an ongoing balance of payment crisis, which can primarily be attributed to the substantial import bill incurred for fossil fuels used in power genera-

tion. The country heavily relies on fossil fuels for electricity production [21.9%] and the transportation sector [78.5%], which has put a strain on the economy. However, Pakistan is actively addressing these challenges and ensuring long-term energy security by exploring alternative energy sources and implementing

energy efficiency measures.

In recent years, Pakistan has faced significant challenges in the power generation domain. The country has witnessed a surge in electricity demand spurred by economic development, industrial use, and rapid population growth. As a result, the installed capacity of electricity in Pakistan has witnessed a notable increase, rising from 33,000 MW in 2017 to 41,000 MW in 2023.

The household sector stands as the largest contributor to the increased electricity consumption, accounting for approximately 46% of the total consumption during FY 2022-23 (decreased from 49% in FY 2020-21). Following closely, the industrial sector contributed around 28% in 2022-23, recorded at 26.3% in 2020-21, of the overall consumption. Although there has been a slight decrease in demand from the household sector, the industrial sector has experienced a slight increase in electricity demand.

Thermal power generation continues to dominate the energy mix in Pakistan, con-



Pakistan invites Chinese companies to join solar program

—◆— EU Report —◆—

Minister for Planning Ahsan Iqbal met senior Chinese business officials and invited them to become part of a new 'National Solar Energy Initiative,' state media reported.

Pakistani Prime Minister Shehbaz Sharif announced the initiative in September last year, saying the program would help generate 10,000 MW solar power and "substitute costly energy with cheap solar power, which will provide massive relief to people and save precious foreign exchange." The solar initiative aims to start off by switching government buildings and tube wells from diesel to solar power, while power plants operating on diesel, coal and furnace oil will also be partially replaced.

"Iqbal briefed the Chinese companies about Prime Minister 'solar energy initiative' for which foreign investors were offered special incentives," the APP news agency reported about the planning minister's meeting with Chen Diming, chairman of the China Apollo Holding Group, and Xu Hao, a senior representative of the China Ocean Engineering Construction Company.

Pakistan Refinery, Air Link look to buy Shell Pakistan

—◆— EU Report —◆—

Pakistan Refinery Ltd (PRL) and Air Link Communication Ltd has said that they want to buy majority shareholding and control of Shell Pakistan Ltd, which is the third-largest oil marketing company (OMC) with a share of roughly eight per cent in volumetric sales.

The two acquirers are initially eyeing the 77.42pc stake that the foreign sponsor of Shell Pakistan put on sale in June as part of "simplifying" its global portfolio.

In line with the prevailing regulations for takeovers, the second leg of the acquisition will consist of a public offer for up to 50pc of the remaining shareholding in Shell Pakistan that's controlled by the general public, public-sector companies, banks and mutual funds.

As such, the two acquirers will be bound to extend a public offer for 11.29pc shareholding in the target company after successfully striking a deal with its current sponsor at an equal or higher share price.

At the going market rate of Rs115.05, the value of the foreign sponsor's entire shareholding in the OMC is around Rs19 billion. The regulatory filing by Next Capital, which is the manager to the offer, didn't mention the respective shareholding that the two acquirers are eyeing in the OMC.

PRL is one of the five refineries operating in the country while Air Link Communication is a publicly listed distributor, manufacturer and retailer of smartphones. Pakistan State Oil Company Ltd (PSO), which holds more than half of the market share among all OMCs, also owns 63.5pc shareholding in PRL.

stituting 58.2% of the total installed capacity. However, there has been a gradual decrease in the country's reliance on thermal energy, indicating a growing shift towards other renewable energy sources.

In an effort to reduce dependence on imported fuels and optimize indigenous resources, the government of Pakistan has been actively promoting private investments in power generation, particularly in coal and solar power, along with many other renewable energy, and hydel projects. However, the indigenous coal power plants are subcritical types, an outdated technology which other countries have phased out or are in the process of.

The government of Pakistan enabled the facilitation of power generation by establishing the Private Power & Infrastructure Board (PPIB) to manage the electricity shortfall crises. PPIB, under the Ministry of Energy, has played an enabling role in driving the expansion and diversification of Pakistan's power generation by facilitating private investors in creating Independent Power Projects (IPPs).

The IPPs contributed over 50% of the installed capacity, attracting significant foreign direct investment. However, we cannot ignore that the IPPs played a role in accumulating Pakistan's circular debt. How the awardees of these projects have exploited the situation is a matter better discussed separately.

Notable projects such as Thar coal-based plants, hydropower projects, RLNG-based Punjab Thermal Power, and the Suki Kinari project have been successfully implemented as a result of this collaboration between the Ministry of Energy and private investors. Thermal power generation has with nearly 60% share in total power production, and has, on the one hand, strengthened Pakistan's power generation capabilities. While on the other hand, it has raised serious concerns as these projects are costly, relying largely on imported fossil fuels allowing the government to think of other cheap renewable energy solutions.

The government of Pakistan has set ambitious targets to address the country's energy shortfall and reduce its reliance on expensive energy production methods. The goal is to achieve 60% of power generation from clean energy sources within the country by 2030, focusing on renewable options. To achieve this goal, the government has launched the Fast Track Solar Ini-

tiatives, aiming to add approximately 6,000 MW of solar photovoltaic (PV) capacity. This significant investment in solar energy will help reduce the country's dependence on expensive imported fossil fuels.

Furthermore, decentralized solar PV projects are being implemented to improve local power infrastructure, reduce power losses, outages, and voltage issues. By procuring small-scale solar PV projects at the 11 kV feeder level, the government can enhance cost-efficiency and increase electricity supply without major upgrades to the grid infrastructure (which is another big challenge in Pakistan's energy transmission domain).

Additionally, the solarization of public buildings through competitive bidding will not only decrease electricity bills for public offices but also alleviate long-term dues on electricity utilities and provide some relief in the circular debt, another bigger challenge that keeps the country in fiscal crises.

The government's proposed budget includes increased PSDP, signaling ongoing support for the power sector. Additionally, plans to increase gas prices are expected to positively impact gas utilities and exploration and production (E&P) companies operating in the country.

The subsidy announced for implementing uniform tariffs and addressing tariff differentials poses numerous problems, as highlighted in a study on electricity tariff design conducted at the Pakistan Institute of Development Economics. The study recommends eliminating the subsidy to enhance the efficiency of each DISCO and reduce the circular debt. The study also proposed to increase the public sector investment in the power sector through PSDP.

To summarize, Pakistan's incessant balance of payment crisis, primarily caused by the extensive import bill for fossil fuels used in power generation, has required a shift to other cheap & renewable alternatives, improvement in the transmission and distribution system, and serious steps to manage the circular debt crisis. The allocation of PKR 205 billion for the power sector demonstrates the government's dedication to addressing the challenges faced within the power sector domain and improving its structure.

The writer is a Research Associate at the Pakistan Institute of Development Economics (PIDE), Lahore.

— Special Report by Mansoor —

Rains continue to expose weak sanitation in cities and towns; flood control system badly fails to save crops from destruction; people urgently need rescue and relief operations at national and international level.

Rains and floods, which are significant indicators of Climate Change, have started exposing Pakistan's weak sanitation and water control systems, as the recent floods have destroyed thousands of acres of crops and displaced thousands of people across the country.

Despite last year's devastation across the country, the government could not take effective steps to control climate change-induced floods' implications while rains usually flooded roads and streets in Karachi, Lahore, and many other cities. The people urgently need rescue and relief operations at the national and international levels.

Climate change has been badly affecting social, environmental and developmental activities across the country due to the non-availability of effective projects to tackle this situation. The effects of global climate change in Pakistan are already evident in the form of the growing frequency of droughts, floods, erratic weather behavior, changes in agricultural patterns, reduction in freshwater supply, and the loss of biodiversity.

Despite visible funds allocation in

No Solid steps yet to tackle climate change in Pakistan

Water, sanitation and Hygiene (WASH), the drains and gutters have been seen overflowing in streets, roads and other places in Karachi, Lahore, Sukkur, Hyderabad, Gujranwala, Sialkot, and many other cities and towns even recent rain were of low intensity. It seems that this amount has not been used properly. Since June, torrential rains in Pakistan have killed 173 people and injured 260 others including 69 men, 32 women, and 72 children, while 110 men, 76 women, and 74 children were hurt.

"During last year's floods and rains, over 33 million people were affected overall, or one in seven Pakistanis, while eight million were displaced and 13,000 injured. Around one million livestock animals perished in the flood waters, which damaged 4.4 million acres of agricultural land and 2.2 million houses. Critical infrastructure, including hospitals, schools, water and sanitation facilities, roads, bridges, and government buildings, were left in ruins," according to a UN report.

It is an irony that despite such huge losses, no solid steps have been taken yet to tackle the ongoing flooding that has damaged crops

and displaced many people amid the worst economic crisis in the country.

During FY2023, the government allocated Rs265 billion for WASH services in the provincial and federal budgets of Pakistan. A review of the budget documents showed an upwards trend of WASH allocations from 2018 to 2023. There is an increase of 152 percent in budgetary allocations for WASH in FY2023 as compared to FY2019.

An overview of overall WASH allocations for FY2023 in Pakistan reveals that highest allocations have been made in Sindh province (38.3 percent), followed by Punjab (24.5 percent), Khyber Pakhtunkhwa (20.6 percent) and Balochistan (16.4 percent), respectively.

There is a need to save people and their crops and other infrastructure from the floods of the Indus and other rivers of Pakistan.

More than 80% of Pakistan's population lives in the Indus Basin that has served as the core of the region's socio-cultural and economic life for over a documented 5,000 years. Indus Basin is facing multiple threats ranging from Climate Change due to poor resource management, environmental hazards, and unsustainable use of this valuable resource. Unaddressed, the economic cost to Pakistan of poor water resource management is estimated to be USD \$12 billion per annum (4% of GDP). In addition, the Indus Basin faces an existential threat in the wake of Climate Change, which is the biggest longer-term and currently unmitigated external risk to Pakistan's water endowment.

Climate change is expected to bring about an increase in the frequency and intensity of extreme weather events, coupled with the increased variability in South Asian Summer Monsoon (SASM) rains causing frequent and intense floods and droughts in the country.

United Nations in Pakistan is assisting the Ministry of Climate Change, Government of Pakistan in developing a vision and agenda which aspires to an Indus Basin that can sustain a thriving civilization from its sources to the ocean whose natural resources and ecosystems have been repaired and restored, and are resilient in the face of climate change. Through this initiative, it is intended to establish the health of the Indus Basin at a higher level of

urgency and ambition, both through the implementation of a series of new and innovative interventions in the short term and through the identification and deployment of as-yet-untried approaches drawn from and adapting approaches tried in other parts of the world.

In Pakistan, the existing meager forest resources need serious interventions supported with a commitment to adequate financial flows to improve and enhance the overall forestry, wildlife, and biodiversity sector.

According to the National Forest Reference Emissions Level (FREL) findings, the country is maintaining 4.786 million-hectare (5.45 percent) area under forest cover. Within the forest cover area, dry temperate forests hold the largest share (36 percent), followed by sub-tropical broadleaved shrub (19 percent), moist temperate (15 percent), Chir Pine (13 percent), Riverine (4 percent), irrigated plantation (4 percent), thorn (3 percent), mangrove (3 percent) and subalpine forests (2 percent).

The meager forest cover area due to growing population, and dependence on the natural resources coupled with deforestation have rendered the country one of the most vulnerable to climate change effects. As a result, natural resources are under tremendous pressure owing to change of land use and habitat destruction and consumption of fuel wood and timber extraction. Such pressures have rendered most of the forests of poor and medium density in need of drastic restocking on a war footing.

Pakistan is facing growing environmental challenges, which have obvious socioeconomic consequences. Heat waves, impacting crop cycles, floods, drought, and degradation of water and air quality pose a negative impact on quality of life. To cope with the challenge of climate change matters should be addressed on both mitigations and remedies front. ■



FUEL RISE

Oil-gas production soars in Sindh



—◆ EU Report ◆—

Oil and Gas Development Company Limited (OGDCL) has registered a significant increase in oil and gas production from four of its wells located in Sindh.

The oil and gas exploration company shared the details of its production enhancement recorded in the month of July via notice to the Pakistan Stock Exchange (PSX). OGDCL attributed the production enhancement to the use of “cutting-edge technologies for production optimisation”.

Significant enhancement in production were witnessed in Nim East-1, an exploratory well in a joint venture with OGDCL as Operator (95%) and Government Holdings (Private) Limited (GHPL) (5%) is located in District Tando Allah Yar, Sindh.

“After injecting it into the system through a 6”-12.5 Km pipeline, the well resulted in an additional production of 585 BPD oil, 7.4 MMSCFD gas, and 32 MTD LPG. OGDCL said the gas is being injected into Sui Southern Gas Company Limited (SSGCL) network with effect from July 20, 2023 and remained under observation till July 28, 2023.

Significant production increase was recorded in Pasakhi-11, OGDCL informed that it installed an Electrical Submersible Pump (ESP) in its 100% owned Pasakhi Oil

Field, Well -11, situated in District Hyderabad, Sindh.

“The intervention resulted in an incremental impact of 1010 BPD oil. The well is currently producing 1,810 BPD (barrels per day) oil and still under observation for optimum flow rates,” OGDCL said in a notice. The enhanced production from the well commenced with effect from July 28, 2023.

The production of hydrocarbon also registered an uptick in Chak 2-1, an already producing exploratory well in a joint venture with OGDCL as operator (62.5%), GHPL (22.5%) and Orient Petroleum Inc. (OPI) (15%) located in District Sanghar, Sindh.

“Rigless intervention with additional perforations resulted in an increment of 140 BPD oil, 4.7 MMSCFD gas, and 11 MTD (Metric Ton per Day) LPG.” OGDCL said the gas is being injected into SSGCL network with effect from July 20, 2023 and remained under observation till July 28, 2023.

Lastly, oil and gas production also increased in Chak-V Dim South-3, an on-production development cum exploratory well located in Chak-5 Dim South Block, District Sanghar, Sindh, with OGDCL 100% working interest. “Rigless intervention with new perforations resulted in incremental production of 130 BPD oil, 3.8 MMSCFD gas, and 8 MTD LPG. The gas is being injected into SSGCL network with effect from July 24, 2023 and remained under observation till July 28, 2023,” said OGDCL.

World Bank assisting Sindh govt's drive to maximise use of solar power under Sindh Solar Energy Project

◆ M. Naeem Qureshi ◆

The details and progress so far achieved in implementing the US \$ 100 million Sindh Solar Energy Project (SSEP) were shared with the audience of the recently held 3rd International Solar Clean Energy Conference & Exhibition organized by the Energy Update.

SEEP Project Director, Mehfooz Ahmed Qazi, informed the audience that the project aimed at promoting the use of solar power in Sindh was funded by the World Bank.

It has a total of four components: Component-1 stands for utility-scale solar project with a cost of \$ 15 million, component-2 is for distributed solar system with a cost of \$ 50m, component-3 is for installing solar home systems having \$ 33 million cost, while the component-4 is for capacity building with an expense of \$ 2m.

The SSEP is an initiative of the Sindh Government whereas the World Bank's board approved a concessional loan of \$ 100m in June 2018 for funding the project.

The SSEP envisages the development of solar parks to facilitate at least 400 MWs of utility-scale solar through the process of competitive bidding. Another component of the project is the installation of 50 MWs of distributed solar systems at and around public sector buildings in Karachi and Hyderabad. The project also includes the plan to provide solar home systems for providing electricity access to at least 200,000 off-grid rural homes in Sindh. Two comprehensive household energy surveys were also conducted under the SSEP to implement the above components of the project.

Three sites have been identified having 1462 acres of total area for constructing utility-scale solar projects that could generate up to 400 MWs of clean electricity.

The sites are 250 acres of land at Manjhand in District Jamshoro for 50 MWs solar project, 612 acres of land in Deh Halkani,

Murad Band in District West of Karachi for 175 MWs project, while 600 acres of land have been reserved in Deh Mitha Ghar in District Malir for generating 175 MWs electricity.

The feasibility study has been conducted for component-1 of the project with support from the World Bank. The environmental impact and grid interconnection studies have also been completed for building the project. The transactional adviser has also been hired while the prequalification process for implementing the project has been completed. The audience at the conference were told that under component-2 of SSEP, some 33 hospitals dealing with COVID-19 emergency were solarized including JPMC, Civil Hospital, LMC Hyderabad, and Abdullah Shah Institute Sehwan.

Contracts have been awarded for installing solar energy systems at Sindh Assembly, central jail, Shehbaz Building, Sindh Secretariat no 2, Sindh Museum, KDA building, etc.

The SSEP project once implemented will generate 2,371,000 kWh of clean electricity with 1851 tonnes avoidance of CO₂. The SSEP will also result in 30 per cent reduction in

grid import. The project will also generate Rs 48,000,000 in revenue each year.

The audience was told that rooftops of over 30 public sector buildings had so far been used for installing solar systems capable of producing 21 MWs of clean electricity. Approximately two billion kWh of electricity has so far been generated under the rooftop component of the project. The per unit price of electricity at the time of the project's approval in 2018 was Rs 18/kWh, which is Rs 33/kWh and now with an average increase of Rs 4.5/kWh by the NEPRA, the project's payback period will be reduced to around two years. Earning carbon credits is an additional incentive for the project for safeguarding the environment.

This component-3 of the SSEP will further the Sindh government's electrification programme to help provide modern energy services to people in remote rural areas not connected to the grid. This component will be implemented in the districts of Badin, Ghotki, Jacobabad, Kashmore, Khairpur, Qambar Shahdadt, Sanghar, Tharparkar, Sujawal, Umerkot, for providing electricity access to at least 200,000 underprivileged households. ■





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Net Metering Policies and Status Empowering Renewable Energy Adoption

—◆— Engr Abubakar Ismail —◆—

Net metering is a crucial policy that fosters the adoption of renewable energy sources by allowing consumers to generate their electricity and sell excess power back to the grid. In Pakistan, as the nation grapples with energy security and environmental concerns, net metering policies have emerged as a promising solution to encourage the growth of solar and other clean energy technologies. This article delves into the net metering policies in Pakistan and the current status of its implementation.

Net metering is not new in Pakistan. Pakistan has made significant strides in renewable energy, and the government has introduced various initiatives to incentivize solar energy adoption. The National Electric Power Regulatory Authority (NEPRA) has played a pivotal role in shaping net metering policies to promote decentralized renewable energy production. Under the net metering framework, consumers with rooftop solar panels can offset their electricity bills by feeding surplus energy into the grid.

When their solar system generates more

electricity than they consume, the excess energy is credited to their electricity bill, effectively reducing their net consumption cost.

The National Electric Power Regulatory Authority (NEPRA) first issued net metering regulations in 2015. However, the policy has not been widely adopted, due to a number of challenges, including: High upfront costs of solar and wind systems, Lack of awareness about net metering and Inconsistent implementation of the policy by distribution companies (DISCOs).

Despite these challenges, there is growing interest in net metering in Pakistan. In recent years, the government has taken a number of steps to promote the policy, including: Providing financial incentives for solar and wind projects, Reducing the import duty on solar panels and Training DISCOs on how to implement net metering. The policy has empowered individuals, businesses, and industries to become active contributors to the energy grid while reducing their carbon footprint.

As a result of these efforts, the number of net metering installations in Pakistan is slowly increasing. In 2022, there were an estimated 10,000 net metering systems in the country. However, despite the progress, some challenges

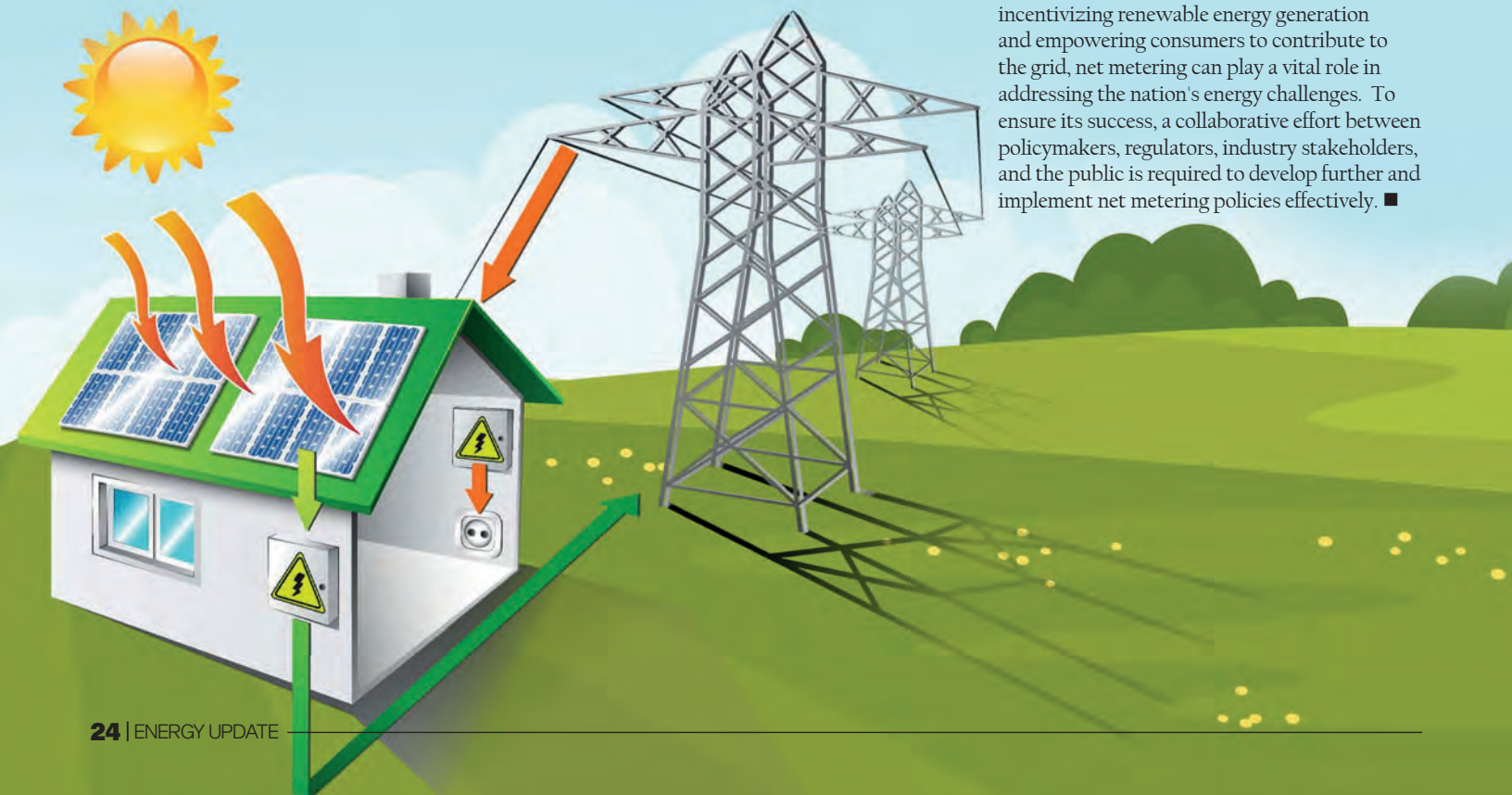
remain. The uptake of net metering varies across regions, with more significant adoption in urban areas compared to rural regions. This disparity is due to factors such as awareness, accessibility to solar technology, and financial capacity.

Another challenge is the bureaucratic red tape and delays in the net metering approval process. Streamlining administrative procedures and reducing approval time is crucial to expedite solar installations and encourage more consumers to participate in net metering. Moreover, uncertainties regarding net metering regulations and tariff structures have affected investor confidence. Establishing long-term and stable policies with clear guidelines is essential to boost investment in renewable energy projects.

Here are some of the benefits of net metering in Pakistan: It can help consumers save money on their electricity bills, It can reduce reliance on fossil fuels, It can help to improve air quality and It can create jobs in the renewable energy sector.

To fully realize the potential of net metering in Pakistan, certain measures can be taken, Launch public awareness campaigns to educate citizens about net metering benefits, procedures, and available financial incentives, Streamline the net metering approval process by introducing online applications and reducing bureaucratic hurdles, Establish uniform feed-in tariff structures to provide clarity and attract more consumers and investors and Incentivize solar technology providers to reach rural areas and promote net metering among marginalized communities.

Net metering policies hold tremendous potential in Pakistan's transition towards sustainable and clean energy sources. By incentivizing renewable energy generation and empowering consumers to contribute to the grid, net metering can play a vital role in addressing the nation's energy challenges. To ensure its success, a collaborative effort between policymakers, regulators, industry stakeholders, and the public is required to develop further and implement net metering policies effectively. ■



Top leadership seeks mining potential, investment

First-ever mineral summit hosted in Islamabad as the govt eyes new earning opportunities

—◆ EU Report ◆—

With new gas reserves discovered by Mari Petroleum in Bannu, and another copper and gold mine in Waziristan as claimed by Dr. Samar Mubarakmand, Pakistan is all set in making a headway in the mining industry. Unfortunately, despite being rich in resources, Pakistan may not have the financial or the scientific resources to reap the benefits of these discoveries by itself.

For this very purpose, Pakistan hosted its first ever mineral summit “PAKISTAN MINERALS SUMMIT – DUST TO DEVELOPMENT: INVESTMENT OPPORTUNITIES IN PAKISTAN”, on August 01, 2023. The event was aimed at paving the way towards unlocking the vast mineral potential of Pakistan.

Prime Minister Muhammad Shehbaz Sharif served as the chief guest, with Chief of the Army Staff General Syed Asim Munir gracing the event as the guest of honour. The summit was a collaborative effort between the Special Investment Facilitation Council (SIFC), a council jointly set by Pakistan’s civil and military leadership, and Barrick Gold Corporation. The Ministry of Petroleum provided additional facilitation for the event.

The gathering attracted a diverse range of attendees including federal and provincial ministers, foreign dignitaries, investors, and technical experts. The summit assembled industry leaders, specialists, and key stakeholders from both public and private sectors onto a common platform.

The comprehensive, day-long agenda included four sessions, four solo speeches, panel discussions, a keynote address, along with special messages from the Prime Minister and the Army Chief.

Prime Minister Shehbaz Sharif, in his address, lauded the resilience and hope of the Pakistani people. He saw initiatives like the summit as a means of transforming that hope into tangible reality. The mineral wealth of Pakistan, he emphasised, presents an incredible opportunity for the country to leave its mark on the global economic stage. He also praised



the SIFC as a pivotal mechanism to leverage opportunities for Foreign Direct Investment in Pakistan.

The Army Chief, General Syed Asim Munir, shared his vision for the evolving mining landscape in Pakistan. He underscored the influential role of the SIFC as a catalyst for this change. He further remarked, “Difficult times test a nation’s resilience. Through unity, determination, and positivity, we will surmount current challenges.”

Some of the key panellists of the event included the Assistant Deputy Minister for mining enablement of Saudi Arabia, Mr Abdul Rehman Belushi, the Deputy Energy Minister of Azerbaijan, Kamal Abbasov, CEO Barrick Gold (a stakeholder in the Reko Diq project)

Mr. Mark Bristow, Managing Director Jefferies- Mr. Oliver Dachshell, The Energy and Petroleum Minister, The Finance Minister and the Minister of Planning and Development of Pakistan.

The event also brought to the table some of the leading businessmen of Pakistan like Muhammad Ali Tabba (Lucky Group), Arif Habib (Arif Habib Corporation) Ghias Khan (Engro Corporation) and Amir Paracha (CEO Unilever and President Overseas Investors Chamber of Commerce).

Talking to the event, the Planning minister, Prof. Ahsan Iqbal stated that despite political and financial challenges, the current government has been able to “stabilise the ship” and Pakistan is now open for business. ■

Methane leakage upsets ecosystem, causes disease

Govt's apathy near LNG terminal and gas plant sites is appalling

—◆ Afshan Subohi ◆—

The poor suffer helplessly as the greed of investors and the ignorance/ apathy of rulers adds to their load of crushing problems. The emission and leakage of methane, a colourless, odourless, highly combustible greenhouse gas, in areas surrounding ports and plants handling or using fossil gas, has been upsetting the ecosystem, increasing the incidence of diseases and accelerating the adverse impact of climate change on livelihoods.

No response to questions regarding the government's stance on the merits of opting for fossil gas at a current juncture when the market is volatile was readily available. The government's apathy towards the people residing in localities near LNG terminal and gas plant sites is appalling.

ShahidKhaqanAbbasi, a former prime minister and power minister, has publicly taken the responsibility of initiating and sealing initial LPG deals and mobilising the private sector to set up LPG terminals. He was brief and direct in his response. Talking over the phone, he insisted that the adverse impact of fossil gas on communities and the environment was negligible. "Benefits by far outweigh losses, if any. The net impact of gas use is positive in Pakistan. In the absence of sufficient avail-

ability of sustainable energy, mills and households use electricity and burners sourced from fossil oil/ coal. The environmental footprints of oil and coal are more pronounced than gas".

He did not see Pakistan backtracking on its global commitments on climate change. "We are treading the path that leads towards global goals of sustainable energy. If we continue our journey, by 2030, over half of the country's energy needs will be met by environment-friendly wind and solar power".

Commenting on the pledge to cut back on carbon emission levels, he said: "Pakistan is one of the most environment-friendly states. She contributes barely 0.8 percent to the global carbon footprint but is found to be among the 10 most climate-stressed nations. So those responsible for the 99.2 percent pollution of the globe carry the blame and should be obligated to help nations under stress to deal with the costly fallouts of climate change. This fact doesn't give us a licence to disregard our own responsibility. We are keen to actualise our promises on climate change."

DrShamshad Akhtar, the former governor of State Bank, is currently the chairperson of the Sui Southern Gas Company. Her position on the issue is close to KhaqanAbbasi's. "It would be best for Pakistan to shift to a renewable energy mix. Our dependence on other sources of energy will continue though, given the rising energy demand. Pakistan is

highly climate vulnerable but its contribution to emissions is low."

The landmark Paris Agreement of December 2015, ratified now by 195 states, adopted a common cause: to combat climate change, accelerate efforts and intensify investments for a sustainable carbon-free future. The pact reaffirmed the goal to limit the global temperature increase to below two degrees Celsius while pursuing efforts to limit the increase to 1.5 degrees. Among other pledges, signatories agreed to enhance understanding, action and support for corrective measures for the loss and damage associated with adverse effects of climate change.

Eight years later, however, fossil gas in Pakistan is considered safe and environment-friendly. Besides the interest groups, it continues to be the preferred option of urban households and industry for comparative price advantage. The lack of attention by policymakers and scarce media coverage depicting its adverse impact on human lives, particularly in the vicinity of excavation and terminal sites, helped in creating and perpetuating this false perception. Besides, the intervals between cycles of crises in Pakistan have been too short for the leadership to plan long-term and bust the myth surrounding fossil gas.

The fact that two provinces that produce gas and have built liquified petroleum gas terminals are at the bottom of the UN human

development index should be treated as evidence, sufficient to initiate a policy rethink on gasification at the cost of encouraging alternative energy options.

“Sindh contributes 56 percent oil and 55 percent of Pakistan’s daily gas production. Despite these significant resource endowments, Sindh’s rural and semi-urban areas that lie close to oil and gas fields are underdeveloped, and the villages and settlements are afflicted with poverty and deprived of civic facilities. According to a 2021 UN report, Sindh has the highest prevalence of food insecurity, malnutrition and poverty,” states The Knowledge Forum Report, Natural gas infrastructure and local communities in Sindh, a case of three settlements in Sanghar district.

Several other entities and civil society groups are chipping in to improve the public understanding of climate change and how they can help protect the planet and sensitise policy/ opinion makers and the corporate sector to the adverse impact of climate change on lives and livelihoods. The Knowledge Forum, a social firm, also advocates a fact-based scientific approach to the issue. “Besides theoretical work we are engaged with the affected communities for a deeper insight. This helps to establish, based on evidence, how the promotion of gas as a viable energy source hurts more than it helps,” says ZeeniaShaukat, Director of TKF.

Some senior business executives were requested to share their views on the issue. Privately, they admit that fossil gas plants entail heavy social and environmental costs but, on the record, they defend their companies. Gas companies sidetrack the issue of adverse externalities of gas by boasting about their social work projects in their reports.

For many legislators, the negative impacts on lives and livelihoods were news. Higher-ups in the energy and related ministries did not believe the issue merited attention.

Fizza Naz Qureshi, associated with the Indus Consortium, complained of the inaccessibility of relevant officials to civic forums dissecting the climate change agenda in Pakistan. “Sometimes it is hard to believe these are the very people who speak eloquently at global forums and project themselves as rights champions. When back home, they are arrogant and consumed by their own agendas,” she said recalling her interaction with government officials in Sharm el Sheikh at the 27th UN Climate Change Conference COP27 (Conference of Parties) in November last year.

In the absence of sufficient pressure on the government to honour its commitment made on global forums to respect human dignity and safety, and the ecological balance for a better future, it is likely to flip-flop on key issues, including the energy policy. ■

The writer is a Karachi-based senior journalist, currently freelancing for various newspapers

FOREIGN FUNDING

France to provide 180m euros for NTDC

Funding will also help enhance transmission of green energy, efficient power distribution



◆ EU Report ◆

France has signed a credit facility agreement of 180 million euros with Pakistan to finance the National Transmission and Dispatch Company (NTDC) for improving the transmission of electricity in the country.

The Federal Secretary of the Economic Affairs Division (EAD) Dr. Kazim Niaz, Ambassador of France to Pakistan, Mr. Nicolas Galey, signed the agreement in the presence of the Country Director of the French Development Agency (AFD), at a reception held today.

“The credit facility is for three NTDC projects located in Punjab in the vicinity of the cities of Vehari, Arifwala, and Sialkot. This soft loan will support the NTDC in its transmission mandate and provide reliable and efficient power in major cities in Punjab,” said a press release issued by the French embassy.

“The funding will also help enhance the transmission of ‘green energy’ and efficient power distribution in Pakistan. Such benefits will contribute to improving affordability and scaling up the energy supply. These will be achieved while also mitigating the impacts of climate change, in line with the policies of the Government of Pakistan,” the press release added. The AFD funding will help enhance the reliability of the power supply and climate change mitigation and adaptation as it will benefit and improve the quality of power supply for 26 million inhabitants and will also provide a reliable power supply to Sialkot, the

biggest industrial and sports city of Pakistan, the French Embassy said.

Under this agreement, a new 220 KV substation and 50 km of new 220 KV transmission lines will be connected in Arifwala, and the new substation will be connected to the MEPCO grid.

In Vehari, the existing 220 kV substation will be upgraded to 500 kV level, and 48km of new 500 kV transmission lines will be connected to it. This substation is also connected to the MEPCO grid, while in Sialkot, the construction of a new 500 kV substation, 55km of new 500 kV transmission lines, and 36km of new 220 kV transmission lines will be connected to it. The new substation will be connected to the GEPCO grid.

The project will contribute to the Government of Pakistan’s strategy to develop green energy and reduce greenhouse gas emissions, in line with the French Government’s agenda of promoting climate-friendly projects. It is also part of the pledge and commitments announced by France at the International Conference on Climate Resilient Pakistan, which took place in Geneva on January 9, 2023, the French Embassy press release said. “France, through the French Development Agency (FDA), is providing technical and financial support in several sectors such as energy, water and sanitation, urban development, rural development, health, and cultural heritage. Since 2006, €1.232 billion has been committed to Pakistan. The clean energy sector alone has mobilised a total of €930 million,” the French Embassy said. ■

An elite-led economy

The elite-led model of national economy presents significant challenges for sustainable and inclusive development

—◆ Tahir Kamran ◆—

The elite description refers to individuals or groups having the ability to manipulate a state's distributive system, thereby gaining private advantage. In Pakistan, the state distributes land and money among the dispossessed and the landless. However, this can also serve as a cover-up for diversion of resources to the elite.

The Capital Development Authority in Islamabad and some other land development authorities, have long been accused of allocating prime property to senior civil and military bureaucrats, politicians and elite journalists. A three-star general allegedly took prime property from a cricket stadium in Karachi to distribute among fellow officers.

To understand this debate, it is important to consider the following points. First, every society has an elite; there is no elite-less society. In a highly class-oriented society, the

elite can appear particularly sinister.

Second, the concept of the elite is not fixed; it keeps evolving. Historically, in Pakistan the elite has referred to the landed class due to the dominance of the agrarian economy. However, new elite groups have emerged, replacing or merging with the older ones, thanks to state patronage and changing circumstances.

Third, the elite is not just a group. It is also a process that drives societal change.

In Pakistan, the state is all powerful but easily manipulated. The formation of the elite is directly linked therefore to the group's ability to manipulate the state and its resources. Consequently, what was considered the middle or lower middle class in the past can become a part of the elite today. Many individuals, who came from modest backgrounds have become powerful millionaires and members of the elite. Some religious leaders from various denominations also hold positions of power within the elite.

Now we turn our gaze to the elite-led economy model peculiar to Pakistan. The concept refers to an economic system that caters primarily to the needs and interests of a privileged few, while neglecting most of the population. The model has been subject to scrutiny and analysis by prominent economists, including Hamza Alvi and Ishrat Hussain. Both have shed light on the dynamics and consequences of this model as well as suggested some remedies.

Elite concentration of wealth and power

Hamza Alvi highlights the significant concentration of wealth and power in the hands of a small elite in Pakistan. This concentration is often attributed to factors like land ownership patterns, the dominance of powerful families and the influence of the military establishment. The elite's control over economic resources, political institutions and decision-making processes exacerbates inequality and hinders social mobility.

Neglect of human development

Ishrat Hussain, a former governor of the State Bank of Pakistan, has emphasised the detrimental impact of the elite economy model on human development indicators. He argues that the model has prioritised large-scale infrastructure projects, such as highways and energy plants, while neglecting investments in education, healthcare and social welfare. As a result, Pakistan has struggled to achieve inclusive growth, leaving a large portion of the population marginalised and deprived of basic services.

Rent seeking and corruption

Both Alvi and Hussain draw attention to the prevalence of rent-seeking behaviour and corruption in the elite economy model. The collusion between the political and business elites often leads to favourable policies, monopolistic practices and the exploitation of public resources for private gain. Such practices create barriers to entry for new businesses, stifle competition and impede economic progress.

Lack of investment in productive sectors

A critical aspect highlighted by Alvi and Hussain is the limited investment in



productive sectors of the economy. The elite's focus on rent-seeking activities, speculative investments and real estate development diverts resources away from sectors that could foster job creation and sustainable economic growth. This contributes to a lack of industrial diversification, overreliance on imports and widening of current account deficit.

Economist Akmal Hussain holds that the Pakistani elite represent a complex web of power and influence, deeply entrenched in the country's socio-political fabric. He argues that the Pakistani elite comprises several segments, each with its own vested interests and sources of power.

Akmal Hussain emphasises the existence of economic, political and military elites, all with significant roles in shaping the dynamics of power in the country. He suggests that the economic elite, often associated with industrialists, landlords and business tycoons, wield substantial control over resources, investment and policymaking. Their influence extends beyond economic realms, affecting political decision-making and societal structures.

Akmal Hussain also highlights the role of political elite – influential politicians, bureaucrats and technocrats. This group holds sway over the levers of governance, manipulating state institutions and policies to serve its interests. Hussain underscores the need for political reforms to ensure a more equitable distribution of power and prevent the consolidation of authority in the hands of a few.

Akmal Hussain also points out the role of the military elite. While recognising the importance of a strong defence establishment, Hussain stresses the need for civilian oversight.

His analysis highlights the connectedness of the various elite groups and their symbiotic relationship. He argues that alliances and collaborations between economic, political and military elites perpetuate the existing power structures, often at the expense of the broader population. He argues for a more inclusive and participatory system that ensures the accountability of the elite and empowers the marginalised sections of society.

The following are some of the potential remedies to address the issues:

Promoting inclusive growth: Prioritise policies and investments that foster inclusive growth and address the needs of the majority. This includes allocating resources for education, healthcare, social welfare programmes.

Strengthening accountability and transparency: Implement effective measures to combat rent-seeking, corruption and undue influence of the elites. This can be achieved through comprehensive anti-corruption strategies, robust legal frameworks and indepen-

dent oversight institutions.

Political reforms: Introduce reforms that promote a more level playing field and ensure a more equitable distribution of power. This may involve measures such as campaign finance regulations, electoral reforms and reducing the influence of money and vested interests in the political system.

Encouraging diversification: Promote investment in productive sectors of the economy to foster job creation, reduce reliance on imports and stimulate sustainable economic growth. This can be achieved by providing incentives and support for small and medium-sized enterprises, innovation and entrepreneurship, while discouraging speculative investments and excessive focus on real estate development.

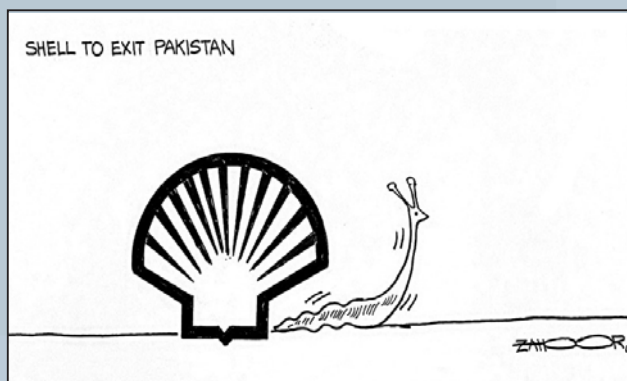
Civil-military balance: Strive for a healthy balance between civilian and military institutions, ensuring civilian oversight and strengthening democratic institutions. This can be achieved through constitutional reforms, transparent defence budgeting and the promotion of a culture of dialogue and consensus-building between the military and civilian leadership.

Empowering the marginalised: Create avenues for the participation and representation of marginalised sections of society in decision-making processes. This includes promoting inclusivity, diversity and equal opportunities in all spheres of society, giving voice to underrepresented groups and addressing systemic inequalities.

Public Discourse and Awareness: Foster public awareness and engagement in discussions around elite power dynamics and their impact on society. This can be achieved through an open and free media, access to information and platforms for dialogue that encourage informed citizen participation.

Implementing these remedies requires a comprehensive approach involving the political will, institutional reforms and active participation from various stakeholders, including the government, civil society and the private sector. ■

The writer is Professor in the faculty of Liberal Arts at the Beaconhouse National University, Lahore. He can be reached at tahir.kamran@bnu.edu.pk



Enjoy these **Punchlines!**

- ▶ **As I said before, I never repeat myself.**
- ▶ **A conscience does not prevent sin. It only prevents you from enjoying it!**
- ▶ **Living on Earth may be expensive but it includes an annual free trip around the Sun.**
- ▶ **Best way to prevent hangover is to stay drunk.**
- ▶ **Doesn't expecting the unexpected make the unexpected become the expected?**
- ▶ **A bus station is where a bus stops. A train station is where train stops. On my desk, I have a work station. What more can I say!**
- ▶ **If it's true that we are here to help others, then, what exactly are the others here for?**
- ▶ **How come abbreviated is such a long word?**
- ▶ **Sometimes I need what only you can provide: your absence.**
- ▶ **Your future depends on your dreams. So go to sleep !!**
- ▶ **Can you do anything that other people can't? Sure.. I can read my handwriting.**
- ▶ **I'm a nobody, nobody is perfect, and therefore I'm perfect.**
- ▶ **I've got to sit down and work out where I stand.**
- ▶ **If I save time, when do I get it back...???**
- ▶ **I am free of all prejudices. I hate everyone equally.**
- ▶ **Take my advice, I don't use it anyway.**
- ▶ **Statement below is true. Statement above is false.**

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EVENT REPORT

3RD INTERNATIONAL



Group Photo of Sponsors, Speakers and Team Energy Update with Chief Guest Imtiaz Shaikh Minister Energy Government of Sindh and Guest of Honor CG UAE H.E. Bakheet Ateeq Al Remeithi.

Energy Update hosts 3rd Solar Clean Energy Conference

Experts urge need to boost clean energy

The Energy Update (EU), the only proper publication of Pakistan's energy sector, has been keeping alive its tradition of doing its best to promote the usage of renewable energy sources in the country.

The EU knows very well that greater Pakistan's reliance on green energy will achieve the stage of self-reliance in the power sector. With this noble cause in mind, the EU regularly conducts events to gather at one place with all the relevant stakeholders whose solemn responsibility is to promote wind, solar, hydropower, and other green energy sources in the country. The deliberations of these events are aimed at suggesting the most effective ways and means to curtail Pakistan's reliance on fossil fuels as early as possible for the good of both the national economy and the environment. Conventional energy sources should be replaced by renewable means of power generation abundantly available in Pakistan.

In this connection, the latest event the EU hosted in Karachi was the 3rd International Solar Clean Energy Conference & Exhibition which was organized in collaboration with the Sindh government's Energy Department and Alternative Energy Development Board (AEDB).

Also on the occasion, top local and foreign clean energy companies



Imtiaz Sheikh Minister Energy Sindh inaugurating 3rd International Solar Clean Energy Expo 2023

got the opportunity to showcase their latest technology and products aimed at greater use of solar power in Pakistan.

Speakers at this latest conference emphasized the need to maximize solar energy production in Pakistan, especially by establishing utility-scale renewable energy projects to provide uninterrupted power supply to every



From L to R Minister Energy Imtiaz Ahmed Shaikh, Bakheet Ateeq Al Remeithi, Consul General, UAE, Naeem Memon, Director, AEDB, M. Naeem Qureshi, Managing Editor – Monthly Energy Update, Syed Salman Mohiuddin, Country Manager, Goodwe, Usman Waheed, Country Manager, Sungrow Power Supply Co. Ltd, Engr. Mehfooz Kazi, Project Director Sindh Solar Energy Project, Shoab Asif Sipra, Vice President, Energy Solutions, Wateen Energy.



Irfan Ahmad, Energy Expert, Farheen Irfan, COO, ACT Engineering, Dr. Mohsin Aman, Director ASURE centre Associate Professor NED University, Ruqiya Naeem, Chief Financial Officer – Monthly Energy Update, Dr. Nasim A. Khan, Engr. Nadeem Ashraf CMO, Anis Younus CSR Club of Pakistan and Yogi Wajahat are addressing at the Conference.

household in the country at the cheapest rates.

Speaking as the guest of honor, the Consul General of the United Arab Emirates, Bakhteer Ateeq Al Romaithi, said the UAE would fully support the development of renewable energy projects in Pakistan in line with its assistance for improving health, educational facilities, and infrastructure projects in the country.

He said the students in Pakistan should be properly educated about the importance of renewable energy in their lives.

The Consul General assured the fullest assistance by the UAE for all efforts in Pakistan to ensure uninterrupted electric supply to every citizen at the most affordable rates.

Speaking as the Chief Guest, Sindh Energy Minister Imtiaz Ahmed Shaikh said the present provincial government had planned to formally establish the provincial power sector regulator in the remaining part of its tenure to facilitate the maximum production of renewable electricity in the province. Shaikh told the audience at the conference that Sindh had the required infrastructure and policy frameworks in place to ensure maximum utilization of clean energy sources.

He said the only missing mechanism for the fast execution of clean energy projects was the availability of Sindh's own power sector regulator. He informed the audience that the landmark bill for setting up the Sindh Electric Power Regulatory Authority (SEPPRA) had already been passed.

While efforts are underway to make sure that the proposed SEPPRA is formally established and starts functioning before the expiry of the current tenure of the Sindh government. He said that Sindh had already adopted the policies for setting up hybrid power generation projects involving both solar and wind energy and B2B power projects involving private sector companies. AEDB's Director of Solar, Naeem Memon, said the solar power option had massive potential to generate an abundance of clean electricity in the country at the cheapest rates for the concerned power consumers. He lamented that solar energy resources despite being one of the cheapest power production sources in the country had the least contribution to the national energy mix.

Mehfooz Qazi, Director of Sindh Solar Energy Project, told the audience about the World Bank-funded drive of the provincial government



Panel discussion on Everchanging Renewable Energy Policy's, Regulatory issues and its impact on Solar Industry Chaired by Abu Bakar Madani, Secretary Energy Department, Government of Sindh and panelists include Irfan Ahmed Energy Expert, Shaaf Mehboob, CEO, Adaptive Technologies, Nabil Bari, CEO, PV 360, Faaz Diwan, Director, Diwan International Pvt Ltd and Yousuf Irfan Allahwala, Director, Mesol Solar

to build utility-scale solar energy projects and install solar panels on the rooftops of public sector buildings. He said the Sindh government would soon complete the project of energizing 200,000 off-grid rural homes using the option of solar power. Energy expert, Irfan Ahmed, lamented that Pakistan had the potential of producing 2,200 GWs of clean electricity using solar power but this renewable energy source was merely producing 1 GWs electricity in the country.

Guest of Honor Abu Bakar Madani, Secretary Energy Department, Government of Sindh, Syed Salman Mohiuddin, Country Manager, Goodwe, Usman Waheed, Country Manager, Sungrow Power Supply Co. Ltd, Dr. Mohsin Aman, Director ASURE centre Associate Professor NED University, Shoab Asif Sipra, Vice President, Energy Solutions, Wateen Energy, Farheen Irfan, COO, ACT Engineering, Anis Younus, MD, EMBA Corporation, Shaaf Mehboob, CEO, Adaptive Technologies, Nabil Bari, CEO, PV 360, Faaz Diwan, Director, Diwan International Pvt Ltd, Yousuf Irfan Allahwala, Director, Mesol Solar and others also spoke on this occasion.



Group Photo of Speakers at Concluding Session with Guest of Honor Mr. Abu Bakar Madani, Secretary Energy Department, Government of Sindh.

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—◆ Mian Fahad —◆



Renewable energy is a revolutionary concept that centers on harnessing natural and virtually infinite sources of power to create a sustainable future. Unlike finite fossil fuels that contribute to climate change, renewable energy emits minimal greenhouse gases during production, making it a crucial component in the global fight against climate change.

In recent years, the global renewable energy market has seen significant growth, with its value reaching \$881.7 billion in 2020. Experts predict it will soar to \$1,977.6 billion by 2030, with a remarkable CAGR of 8.4% from 2021 to 2030. This surge reflects the increasing investments made by governments, businesses, and individuals worldwide, recognizing the urgent need for a cleaner, greener planet for generations to come. Notably, countries like China, Pakistan, and several South Asian nations have emerged as leaders in the renewable energy market.

China, in particular, stands out with its remarkable advancements in hydropower, onshore wind power, solar photovoltaic, and bioelectricity production. The benefits of renewable energy are diverse and far-reaching, making it an attractive choice for businesses and individuals committed to sustainability: ● **Sustainability:** Renewable energy sources significantly reduce greenhouse gas emissions, mitigating air pollution and safeguarding the environment.

● **Cost Savings:** While initial investments in renewable energy technology may be required, the long-term cost savings are substantial. Solar and wind technologies have become increasingly cost-competitive, making now the opportune time to transition toward greener energy sources. ● **Job Creation:** Embracing renewable energy paves the way for economic growth and job creation. In 2022 alone, the renewable energy sector witnessed an increase of 700,000 new jobs

globally, reaching a total of 12.7 million jobs.

Unlike fossil fuels, renewable energy relies on natural resources like sunshine, wind, and tides, which are continuously replenished, ensuring a long-lasting and sustainable energy supply. **Positive Public Image:** Businesses that adopt renewable energy practices display responsibility and commitment to environmental well-being, appealing to environmentally-conscious consumers and stakeholders.

The solar energy segment shows the highest growth rate, with a projected CAGR of 13.3% from 2021 to 2030. Additionally, the industrial sector is expected to experience the highest CAGR of 8.9% during the forecast period. Geographically, the Asia-Pacific region is forecasted to experience the most substantial growth in renewable energy demand, driven by industrialization and population increase. Wind energy plays a significant role in renewable energy production. Wind turbines convert kinetic energy into mechanical energy, which is then transformed into electrical energy. Offshore and onshore wind energy are two main types, with onshore turbines situated on land and offshore turbines located in the ocean.

The rising concern over greenhouse gas emissions, a quest for energy security, aversion to traditional nuclear power, and limited progress in nuclear power applications are among the factors driving the demand for geothermal power. Consequently, the demand for renewable energy is set to escalate during the forecast period.

The International Energy Agency predicts that renewable energy's share in meeting global energy demand will reach 12.4% in 2023, further emphasizing the importance of embracing renewable resources. Renewable energy aligns with sustainable development goals, especially by providing affordable and clean energy to rural and remote areas, contributing to a more equitable world.

While the transition to renewable energy requires substantial initial investments in building infrastructure, the long-term benefits far outweigh the costs. By investing in renewable energy, individuals and businesses can embrace responsibility and give back to the environment, making a positive impact on the world. The future of renewable energy is bright, promising transformative possibilities. Together, we must reduce our dependence on fossil fuels and unite in the fight against climate change. By making continued investments in renewable energy, we can create a sustainable energy system for future generations, leaving a mark for a cleaner and brighter tomorrow. ■

Writer is Eco Expert & Country Head – PK, Shenzhen Growatt New Energy.



Switzerland, Pakistan aim to mitigate natural disasters' impact

Essential Role of Civil-cum-Environmental Engineers in Disaster Risk Reduction is mandatory

◆ Dr Basharat ◆

Switzerland and Pakistan have united in a shared endeavor to bolster their response to natural disasters. On a momentous occasion, Ignazio Cassis, the Swiss Foreign Minister, and Inam Haider Malik, Chairman of the National Disaster Management Authority, affixed their signatures to a Memorandum of Understanding (MoU). This significant agreement was forged in Nathiagali, with the presence of Pakistan's Prime Minister, Shehbaz Sharif.

The primary objective of the MoU is to promote cooperation and strengthen disaster risk management, preparedness, and response. By working together, Switzerland and Pakistan aim to mitigate the adverse impact of natural disasters on their people and national economies. Prime Minister Shehbaz Sharif has emphasized the importance Pakistan attaches to its relationship with Switzerland and expressed heartfelt gratitude for the support extended by the Swiss government in the aftermath of devastating floods that struck the nation in the previous year.

Recognizing the vital role of collaboration, the two countries also agreed to engage in joint efforts to promote tourism and develop

the necessary infrastructure. Furthermore, the Swiss foreign ministry, in a statement from Bern, acknowledged the daunting challenge of climate change for the South Asian region. Pakistan, in particular, grapples with rising sea levels, intensified monsoon rainfalls, and the accelerated melting of glaciers.

The MoU signifies a renewed commitment to cooperation and the pooling of resources, knowledge, and experience in disaster risk management. Switzerland's solidarity and support for Pakistan were evident in the visit of the Swiss delegation, which included a comprehensive presentation by Sherry Rehman, Pakistan's Minister for Climate Change. The presentation shed light on Pakistan's vulnerability to climate change and the crises accelerated by its impact. Despite the high costs of adaptation, Pakistan remains steadfast in its determination to rebuild and strive for resilience.

The visit to Islamabad provided a crucial opportunity to address pressing concerns. In addition to climate challenges, the discussions encompassed various critical issues such as infrastructure investment, respect for religious minorities, tourism development, and scientific cooperation. A delegation of Swiss legislators engaged in fruitful exchanges with their Pakistani counterparts, including discussions

on child rights and women's parliamentary caucus. Matters of global significance, including the recent desecration of the Holy Quran in Sweden and the rights of minorities, were also raised, along with the situation in Afghanistan and human rights violations in India-held Kashmir.

The collaboration between Switzerland and Pakistan holds great promise for promoting resilience in the face of natural disasters. Through the MoU, the two nations are committed to joint efforts in disaster risk management, as well as addressing broader challenges posed by climate change and regional crises. This partnership signifies a shared dedication to fostering stronger ties, enhancing response capabilities, and safeguarding the well-being of their respective populations.

In addition to the existing cooperation, it is essential for the Swiss government to emphasize the necessity of appointing Environmental Engineers and Climate Change Mitigation and Adaptation Specialists within key institutions such as the Ministry of Climate Change, Planning Commission, PM Secretariat, and President's Secretariat. These specialized professionals would play a vital role in strengthening Pakistan's capacity to effectively address climate change challenges



and implement sustainable strategies.

By incorporating Environmental Engineers, who possess expertise in environmental management and engineering solutions, the government can ensure the integration of environmentally friendly practices across various sectors. These professionals would contribute to the development and implementation of policies that promote sustainable development, reduce environmental degradation, and mitigate the adverse effects of climate change.

Similarly, the appointment of Climate Change Mitigation and Adaptation Specialists would enhance Pakistan's ability to adapt to and mitigate the impacts of climate change. These specialists would bring valuable insights and knowledge regarding best practices and innovative approaches to combat the challenges posed by a changing climate. Their expertise would contribute to the formulation and implementation of effective strategies, including resilience-building measures, sustainable infrastructure development, and the integration of climate change considerations into national planning processes.

Furthermore, the presence of such specialists in key government institutions, including the Ministry of Climate Change, Planning Commission, PM Secretariat, and Presidents Secretariat, would ensure the mainstreaming of climate change considerations into policy and decision-making. It would facilitate informed and evidence-based decision-making processes, leading to more effective and targeted actions to address the impacts of climate change.

By emphasizing the appointment of Environmental Engineers and Climate Change Mitigation and Adaptation Specialists, Switzerland can support Pakistan in building a robust institutional framework for climate action. This collaboration would enhance Pa-

kistan's capacity to respond to climate change challenges, strengthen resilience, and pave the way for sustainable development in the face of an ever-changing climate.

Furthermore, it is crucial to emphasize the necessity of appointing Civil cum Environmental Engineers in addition to the aforementioned positions within key departments such as the Ministry of Climate Change, Planning Commission, PM Secretariat, and Presidents Secretariat. These professionals possess a unique blend of skills and expertise that are essential in effectively mitigating the risks of disasters, including the failure of dams and other civil and environmental engineering structures during high floods or other natural calamities.

Civil-cum-Environmental Engineers bring specialized knowledge in both civil engineering and environmental engineering disciplines. Their expertise in civil engineering equips them with the understanding of designing, constructing, and maintaining critical infrastructure, such as dams, levees, and flood control systems. This knowledge is paramount in ensuring the structural integrity and safety of such engineering structures during extreme weather events and natural disasters.

Simultaneously, their proficiency in environmental engineering equips them with an understanding of environmental management principles, sustainable development practices, and ecological considerations. This expertise is vital in designing and implementing disaster reduction strategies that are not only effective in mitigating risks but also environmentally sustainable. Civil-cum-Environmental Engineers can assess the potential environmental impacts of infrastructure projects and propose innovative solutions that minimize negative effects on ecosystems and enhance overall

resilience.

By appointing Civil-cum-Environmental Engineers in these departments, Pakistan can strengthen its disaster risk reduction efforts by incorporating a comprehensive and multidisciplinary approach. These professionals would play a pivotal role in conducting risk assessments, developing robust disaster management plans, and implementing strategies to enhance the resilience of critical infrastructure and communities. Their expertise would enable the integration of climate change adaptation measures, sustainable practices, and advanced engineering techniques in disaster preparedness and response activities.

Moreover, Civil-cum-Environmental Engineers can collaborate closely with relevant stakeholders, including disaster management authorities, environmental agencies, and local communities, to ensure effective coordination and communication. Their ability to bridge the gap between civil engineering and environmental considerations would facilitate holistic decision-making processes and the implementation of sustainable solutions.

In conclusion, the appointment of Civil cum Environmental Engineers within key departments and disaster reduction entities is crucial to mitigating the risks of disasters, particularly in relation to civil and environmental engineering structures such as dams. Their combined expertise in civil engineering and environmental engineering would contribute to the development of resilient infrastructure, environmentally sustainable practices, and effective disaster management strategies. By integrating their knowledge and skills, Pakistan can enhance its capacity to reduce the impacts of disasters, safeguard critical infrastructure, and protect the well-being of its citizens in the face of natural calamities. ■

Ranking Karachi amid current situation

Controlling pollution can become starting agenda; Even if all seven BRT lines are operational, they would cater to only nine per cent of total passenger trips

The Economist Intelligence Unit's rating of Karachi as one of the world's least livable cities is not surprising. Five categories were reviewed to arrive at this conclusion: stability, healthcare, education, culture and environment, and infrastructure. Karachi's ranking was an abysmal 169th out of a total of 173 cities.

Karachi may be Pakistan's largest city, but it has an uneasy existence in this context. It comprises a third of the total population of Sindh. The bulk of monetary resources and revenues originate in Karachi. In order to benefit economically, successive rulers have worked out controversial administrative arrangements to deprive Karachi of self-governing options.

After the 18th Amendment in 2010, Sindh's chief minister and cabinet have acted like the mayor, deciding on almost every development and management prerogative — from garbage collection to running public transport. City inhabitants have hardly any say in decision-making that is pertinent to their daily lives.

Karachi's political affairs are complex. It may appear that it is political groups and parties and the military and civilian establishment that call the shots. In reality, there are many more godfathers. Formal and informal developers ensure that whatever they need to keep their businesses going is made available without interruption. So we see unabated land supply for investment, albeit at the cost of farmlands, orchards and dwellings as indigent settlements are uprooted and people

evicted from planned localities and katchi abadis. While a few thousand investors accrue exponential profits, millions of people see their lives altered for the worse. Realtors are ably assisted by the city administration, professional engineers, architects, contractors and service providers. Utility agencies bend the rules to extend their services to their schemes.

People in central city neighbourhoods are affected by erratic water supply while some of the remote real estate developments along the M-9 Motorway have no problem in receiving piped water supply. In public transport, the old-fashioned transporters who ran buses and minibuses are now being replaced by trading enterprises that procure expensive buses and hardware for visibility on the city streets.

Officialdom claims that the bus rapid transit system will revolutionise city mobility, but the reality is otherwise. Even if all seven BRT lines were operational, they would cater to only nine per cent of total passenger trips at a hefty cost of over Rs170 billion.

In fact, BRT benefits large consulting firms, civil and other contractors, suppliers, service providers, etc. Ordinary citizens, especially along University Road and allied locations, are braving the inconvenience caused due to work on the BRT, which will significantly reduce active road space for all manner of vehicles. Given that thousands of motorcycles and cars are registered every day and carry millions of commuters, how can one justify the exclusive right of way for BRTs ferrying a few thousand? Karachi's roads are in a state of disrepair, with vehicles and passengers facing huge problems. Commuters frequently display road rage, frustration and helplessness.

Karachi has an 'elected' mayor, town council chairmen, union committee chairmen, councillors and other elected representatives who must operate under a legal regime that empowers them. If they are lucky, some funds will be granted to them to operate. These funds are expected to foot essential expenditure.

For management, repair and rehabilitation work, the local government entities will have to approach the provincial government. A familiar tug of war will begin between various tiers of government.

It is, however, possible that elected local entities take a different approach and change the situation to their as well as the city's advantage. Using the status of their elected office, councillors and UC chairs may consider reaching out to their respective constituents, listening to their problems, and engaging with them. These elected representatives can also liaise with civil society activists, public-spirited professionals, business and commerce leadership and academia to evolve a platform where core city matters can be debated.

To improve Karachi's livability, the administration, political elite and business leadership would have to evolve a consensus on core matters.

Defining the metropolitan boundaries of the city, regulating the built environment, documenting and safeguarding heritage, repairing roads, engaging with communities for maintaining law and order, with the assistance of the agencies concerned, and improving water and air quality by controlling pollution can become the starting agenda for this broad-based conversation. ■

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Rupee devaluation impact on energy sector

Weak currency makes imported goods, including oil and gas, more expensive for Pakistan

—◆ Mustafa Tahir —◆

Pakistan, like many other developing nations, heavily relies on its energy sector to fuel economic growth and meet the demands of its rapidly growing population. However, the country has faced numerous challenges in maintaining a stable economy, one of which is the fluctuation in its national currency, the Pakistani Rupee (PKR). This blog will delve into the consequences of rupee devaluation on Pakistan's energy sector and explore the various implications it has on the nation's energy landscape.

Increased Cost of Energy Imports

Rupee devaluation results in a weakened currency, making imported goods, including oil and gas, more expensive for Pakistan. Since the country is a net importer of energy, any depreciation of the rupee against major foreign currencies like the US Dollar will lead to an increase in the cost of energy imports. This, in turn, contributes to rising energy prices domestically.

Inflationary Pressures

As the cost of energy rises due to devaluation, it cascades throughout the economy, impacting the prices of goods and services. The increased cost of production and transportation of goods put inflationary pressures on the overall economy, affecting households and businesses alike. High inflation rates can reduce consumers'

purchasing power and discourage investment in the energy sector.

Energy Subsidy Burden

In response to rising energy prices, the government may choose to subsidize energy for consumers to ease the financial burden on the population. However, maintaining subsidies in the face of rupee devaluation can become increasingly challenging. The depreciated rupee means that the government has to allocate more funds to maintain the same level of subsidies, straining its budget and potentially leading to fiscal deficits.

Impact on Energy Projects

The energy sector heavily depends on foreign investments and financing for infrastructure projects such as power plants, renewable energy facilities, and oil refineries. Rupee devaluation can deter foreign investors as it reduces the value of their returns in their home currency. Consequently, this may lead to delayed or canceled energy projects, impeding the country's progress towards energy self-sufficiency and cleaner energy sources.

Financial Stress on Energy Companies

Energy companies operating in Pakistan, especially those with significant foreign debt, face financial stress when the rupee devalues. Their foreign currency-denominated debt becomes more expensive to repay in local currency terms, leading to increased financial costs and potential

risks of default. Such financial challenges could adversely affect their operations and investments in the sector.

Impact on Renewable Energy Adoption

As the cost of conventional energy sources rises due to the rupee devaluation, the appeal of renewable energy sources becomes more evident. Despite initial investment costs, renewable energy becomes comparatively more attractive as it offers a stable, locally-sourced alternative. The devaluation can potentially accelerate the adoption of renewable energy technologies, promoting sustainable development in the long run.

Conclusion

The devaluation of the Pakistani Rupee has far-reaching implications for the energy sector in Pakistan. It affects energy prices and raises the inflation rate, besides posing financial challenges to energy companies and projects. While rupee devaluation presents numerous hurdles, it also presents an opportunity for the country to accelerate the transition towards renewable energy sources, mitigating its dependence on costly imports and promoting sustainable development. To mitigate the impact of the rupee devaluation, the government needs to focus on economic reforms, attract foreign investments, and prioritize energy efficiency and renewable energy initiatives. ■



GOODWE

driving world's smart energy future

Company has more than 4,600 employees situated in over 20 different countries

◆ EU Report ◆

GoodWe is a world-leading PV inverter manufacturer and smart energy solution provider that was founded in 2010. The company was listed on the Shanghai Stock Exchange (Stock Code: 688390) in 2020, solidifying its corporate reputation as a company that achieves sustainable growth in all markets it operates in.

The company offers a wide range of inverters, spanning from 0.7kW to 250kW, catering to various solar system sizes and applications. With a long-standing and strong presence in the solar market, GoodWe's PV inverters have been installed in over 100 countries, with a cumulative installation of 52 GW. Additionally, GoodWe's annual PV inverter capacity and battery capacity have reached 30 GW and 2.1 GWh, respectively, making it one of the leading companies in the global renewable energy industry.

It now is committed to being a comprehensive solution provider by offering an extensive product portfolio that includes inverters, lithium batteries, PV building materials, EV chargers, and smart energy management systems.

The company caters to residential, commercial and industrial, and utility-scale applications, ensuring that its solutions are suitable for a wide range of energy needs. By providing a diverse range of products, GoodWe aims to be a one-stop-shop for all energy-related needs.

With a team of over 850 professional R&D employees, GoodWe is constantly innovating and expanding its product portfolio to ensure that production capacity and quality are consistently high. Currently, GoodWe employs more than 4,600 individuals across 20 countries and was recently ranked as a global top three hybrid inverter supplier by Wood Mackenzie in 2021. GoodWe is committed to driving the world's smart energy future and becoming a significant driving force in the global energy transition to contribute

to a sustainable future. To learn more about GoodWe's products and solutions, please visit GoodWe website. About GoodWe GoodWe is a world-leading PV inverter manufacturer and smart energy solution provider listed on Shanghai Stock Exchange (Stock Code: 688390).

The company has more than 4,600 employees situated in over 20 different countries and was regarded as the Global Top 3 hybrid inverter supplier by Wood Mackenzie in 2021. The company has an accumulative delivery of more than four million inverters and installation of 52 GW in more than 100 countries and regions. Having achieved seven consecutive TÜV Rheinland "All Quality Matters" awards and consistently being ranked at the top in terms of overall product quality,

GoodWe's comprehensive portfolio of products and solutions for residential, commercial, and utility-scale PV systems is guaranteed to deliver high performance and reliable quality across the board. For more information, please visit goodwe.com.

Pakistan inks LNG supply pact with Azerbaijan

EU Report

Islamabad: Pakistan and Azerbaijan have signed an agreement for the procurement of liquefied natural gas (LNG) on highly flexible terms. This agreement aims to bolster energy cooperation and foster economic growth between the two countries. The framework agreement, signed between Pakistan LNG Limited (PLL) and the State Oil Company of the Azerbaijan Republic (SOCAR), promises to pave the way for strengthened bilateral ties. Masood Nabi, the PLL managing director, and Mariam Almaszade, the CEO of SOCAR Trading, signed the agreement in Lahore on July 24. Prime Minister Shehbaz Sharif, who recently visited Baku in June to boost relations, hailed the agreement as a "major milestone" for both countries. He said that the LNG agreement "will help ease the gas shortage in the country and provide relief to the people and industry." Under the agreement, Azerbaijan will offer 12 low-cost LNG cargoes to Pakistan on flexible terms for a period of one year. Importantly, Pakistan retains the right to decline any offered cargo without incurring any penalties.



Irfan Iqbal Sheikh, President FPCCI, is presenting the commemorative shield to H. E. Mr. Rudiger Lotz, Consul General of Germany in Karachi. Shabbir Mansha, Muhammad Yaqoob, Sultan Rehman, and others were also present on the auspicious occasion

Renewable energy and Pakistan's budget

Pakistan's limited focus on renewable energy raises concerns

—◆ Dr Iqra Mushtaq —◆

Pakistan's federal budget for the fiscal year 2023-24 was unveiled on June 9, heralding the commencement of another financial year with an anticipated deficit. Pakistan has grappled with persistent deficits throughout its budgetary history, with the previous two decades proving particularly arduous, as a balanced budget has eluded the nation.

Nevertheless, amidst this backdrop, Pakistan has achieved significant milestones over the years that have bolstered its revenue base. Notably, the country has undertaken substantial budgetary reforms geared towards fortifying fiscal management, bolstering transparency, and fostering sustainable economic growth. Key among these reforms is the focus on fiscal responsibility and debt management, which aims to curb fiscal deficits, reduce reliance on external borrowings, and exercise control over public debt. The implementation of fiscal responsibility legislation and the establishment of debt management offices have been instrumental in formulating prudent fiscal policies and ensuring debt sustainability. To enhance

government revenue, Pakistan has introduced tax reforms designed to broaden the tax base and promote tax compliance. Crucial reforms in this regard include the introduction of a computerized tax system, automation of tax collection processes, and the documentation of the economy. These measures have played a pivotal role in augmenting tax revenues.

Budgetary reforms have also placed significant emphasis on social safety nets and poverty alleviation programs, such as the Benazir Income Support Program (BISP), which aims to reduce poverty and provide a safety net for vulnerable segments of society. Recognizing the pivotal role of infrastructure development in driving economic growth, increased allocations for infrastructure projects in sectors such as energy, transportation, and communication have been proposed. These endeavours seek to improve connectivity, attract investment, and generate employment opportunities. Additionally, the government has encouraged public-private partnerships and foreign direct investment to support infrastructure development.

Public-private partnerships should be fostered to leverage expertise, technology, and financial resources for successful project implementation.

For the Fiscal Year (FY) 2023-24, the total budget outlay amounts to Rs 14,460 billion, with an expected deficit of Rs 6.54

per cent of GDP. The budget anticipates tax revenue of Rs 9,200 billion and non-tax revenue of Rs 2,963 billion. A significant portion of the budget will be allocated to defence (Rs 1804 billion), flood relief projects (Rs 578 billion), and mega projects (Rs 161 billion). Moreover, the government has allocated Rs 2709 billion for development expenditures, including Rs 1150 billion for federal development and Rs 1559 billion for provisional development. The Public Sector Development Program (PSDP) has been allocated Rs 950 billion, with Rs 200 billion designated for public-private partnerships and Rs 89 billion allocated to the energy sector.

Regarding the energy sector, the current budget proposes an allocation of Rs 205.38 billion to enhance the electricity system in the country. This initiative aims to diversify the energy mix, thereby adding 1782 MW of electricity to the national grid. The plan includes the generation of 682 MW of solar power, 100 MW of wind power, 254 MW of hydroelectricity, and an additional 32 MW from bagasse, a byproduct of sugarcane processing. Despite concerns regarding the environmental implications of coal-based power plans, the budget for FY 2023-24 proposes the inclusion of 660 MW of power generated from imported coal.



Govt report shines light on Pakistan's natural gas issues

—◆ Khalid Mustafa —◆

The government has earmarked specific allocations for various energy projects, such as Rs 12 billion for the Jamshoro coal project, Rs 16 billion to strengthen the Pakistan-Tajikistan 500Kv power project, Rs 5 billion to update transmission lines of NTDC and Rs 59 billion for the Dasu Hydro project. Recognizing the importance of water resources, Rs 20 billion have been allocated for the Dia Mir Bhasha Dam, and Rs 12 billion for the Mahmand Dam. Additionally, solar panels and batteries are exempt from customs duty.

While the current budget has allocated a significant budget to the energy sector, Pakistan's limited focus on renewable energy raises concerns in the face of global environmental challenges and Pakistan's vulnerability to climate change. With ample solar and wind resources, Pakistan has the opportunity to present a positive image in terms of environmental conservation. Achieving this necessitates the adoption of a comprehensive approach that addresses various aspects of the investment landscape, with a view to encouraging renewable energy investment. Firstly, clear, and stable policies and regulations that support the development of solar and wind energy projects should be established.

Financial incentives, including tax credits, grants, subsidies, and low-interest loans, should be allocated in the budget to reduce upfront costs and ensure a favourable return on investment for small-scale solar and wind energy projects. While many financial incentives have been proposed in the budget for 2023-24, they mostly target businesses. However, encouraging households to play an active role by installing solar systems and selling excess energy to the grid can be achieved through financial support programs, including low-interest loans. Establishing dedicated renewable energy funds that collaborate with financial institutions, international development banks, and private investors would further bolster household participation in solar and wind projects.

To address the limited awareness surrounding solar and wind energy systems, it is essential to initiate customer awareness programs through television and social media. Additionally, organizing workshops, seminars, and conferences to showcase successful projects and share best practices would enable informed decision-making and promote self-sufficiency.

Finally, public-private partnerships should be fostered to facilitate investment in solar and wind energy projects. The budget for 2023-24 has already allocated significant investment expenditure for public-private partnerships, particularly in the energy sector. By leveraging expertise, technology, and financial resources through joint ventures and partnerships, Pakistan can harness the benefits of renewable energy and propel its energy transition forward. The writer serves as a Lecturer in the Economics Department of Government College Women's University, Sialkot. ■

In the wake of increasing reliance on imported gas, Pakistan is left with no option but to go fresh long-term LNG import agreements at the GtG level with LNG-producing countries as the existing two import deals with Qatar may go in jeopardy in 2026 because of revision of the price cap clause that is due after 3 years. Under the agreements, Qatar, the LNG supplier, could demand in 2026 an increase in the LNG delivered price or just walk away from the existing contracts.

The state-owned Pakistan State Oil (PSO) inked a 15-year long-term agreement with Qatar in 2016 at 13.37 percent of Brent with a clause to revise gas price after ten years in 2016. It signed another for a 10-year contract with Qatar in 2021 at 10.2 percent of the Brent with a closure to open the price cap after 5 years also in 2016. The Pakistan LNG Limited is also in agreement with a 15-year term agreement with ENI.

The country's natural gas production is forecast to shrink alarmingly to 2.306 bcfd by 2030. The current gas production stands at 3.2 bcfd which was at 4.2 bcfd in 2012.

However, the balance of recoverable reserves reached the level of 20,951 Billion Cft in 2021 from the original recoverable reserves of 63,311 Billion Cft. That is why, Pakistan is needed to expedite the process of entering into fresh long-term LNG import contracts

starting from 2025-26. This has been recommended in "Pakistan Natural Gas: Policy Issues & Way Forward" report by the Energy Planning Resource Center (EPRC), Ministry of Planning, Development and Special Initiatives. In the report, ex-prime minister and chairman of Energy Task Force Shahid Khaqan Abbasi has also contributed his valuable input.

According to Abbasi, China has just inked a fresh agreement for LNG import with Qatar for 27 years and likewise, Bangladesh has signed a 15-year long agreement with Qatar to be effective from 2025. Pakistan also needs to initiate the negotiation for fresh LNG long terms deals.

The report also asked for introduction of a cost-reflective gas pricing regime that delivers the actual cost of LNG to its end consumers. Consumer prices should be revised regularly to bring them at 6 par with LNG delivered cost. The budgeted subsidy initiated in the gas sector should be continued to reduce differential accumulation. The Planning Commission has also stressed for development of Gas storage to store the imported RLNG. The EPRC report pinpoints future projections of LNG imports considering the seasonal variations in consumption, which show a sharp increase in the coming years. Based on peak demand in winter months like January, the country will need to import over 1,900 MMCFD by 2030. The net available supply for gas by 2030 is expected to be 3,828 MMCFD.

Courtesy: The News

Lions Club social services hailed

—◆ EU Report —◆

Governor Sindh Kamran Khan Tessori has said that although the economic situation in Pakistan is not much better and at the moment, we are suffering from economic and political instability while we are also directly facing climate change but we are sure that the country's economic conditions will improve soon.

He said: "We have to face the challenges with joint efforts. As the budget presented by the federal government is reasonable in the current situation, the business community should give us their suggestions for the improvement of the economy so that their suggestions could be taken into consideration. Important steps can be taken for the sectors of trade and industry."

Governor Sindh expressed these views in a meeting with the delegation of the business community under the leadership of Lion

Malik Khuda Baksh, the International Leader of Lions Club International and Leaders of the United Business Group at the Governor House.

The delegation included Chairman UBG Sindh Region Lion Khalid Tawab, PCC Lion Ayesha Malik, Deputy Chief Patron KATI, Zubair Chhaya, former Vice President FPCCI Ikram Rajput and Farzana Burney.

Mr Tessori said that the Lions Club is engaged in the service of God's creation and the welfare services of the Lions Club International are unparalleled in Pakistan. Malik Khuda Baksh and his team have built hundreds of houses for the flood-affected areas and given them to the victims.

Lion Malik Khuda Baksh told the Governor Sindh that the Lions Club is also leading in the welfare works in Pakistan and 248 houses were built in one year in the flood-affected areas and given to the victims.

The new energy world order



◆ Tabish Gauhar ◆

Modern lifestyle would not have evolved without the widespread use of fossil fuels over the past century. The burning of coal, oil, and gas increased overall global prosperity, but their unabated greenhouse gas emissions were hardly priced in the economic growth model. And as mankind grapples with climate change in the so-called Anthropocene Age, the energy sector is decarbonising and decentralising in a fundamental shift.

There are many who still believe that the climate debate is deliberately rigged by the 'liberal wokerati' to project a doomsday impact of a global average temperature exceeding 1.5 degrees Celsius above pre-industrial levels (we have already hit 1.1°C). However, the energy transition is not being spearheaded by starry-eyed, tree-hugging environmentalists but by hard-core private capital. And despite the recent political pushback against ESG financing and reducing carbon footprint as a form of virtue signalling, the global clean energy space continues to attract tons of institutional capital because it now makes pure economic sense to go 'long' on clean energy vis-à-vis hydrocarbons.

These billions of dollars are being put to work across the value chain, including in wind and solar power as Chinese 'economies of scale' manufacturing drives down installation costs. Although Covid and recent supply chain constraints have marginally arrested the declining cost curve, these mainstream green asset classes are still cheaper than thermal power even

without subsidies and carbon taxes.

Another hot investment theme is demand-side management to connect various consumer-distributed energy resources (such as rooftop solar PV, home and electric vehicle batteries) to the distribution grid. A bi-directional and AI-driven digitised relationship between multiple sellers and buyers of electrons not only reduces peak load but also the quantum of investment required to upgrade the transmission infrastructure as the energy sector further 'electrifies'. There is also now renewed focus in the West on developing a 'circular economy' to cut down on waste and improving energy efficiency.

The increasing adoption of electric passenger vehicles (primarily in China and Europe, and increasingly so in the US) will significantly depress future demand for petrol and diesel and associated crude oil refining. The e-mobility sector is growing rapidly due to falling battery costs, improving technology, regulations, subsidies, an expanding charging infrastructure footprint, and more EV manufacturers entering the space. Long-haul road transportation, shipping, and aviation are, however, unlikely to be electrified, but could be decarbonised with synthetic fuels derived from green hydrogen (such as ammonia, methanol, and other sustainable molecules) if their economics, logistics and scalability issues work out.

Geopolitics remains a key factor in the energy world, and increasingly so after the Russian invasion of Ukraine. For example, while it weans off its 'addiction' to cheap Russian gas and accelerates its energy transition, Europe is simultaneously competing against China's dominance of critical raw

materials supply chain, as well as President Biden's massive \$370 billion subsidies and tax incentive package for clean energy in the US. Re-shoring and friend-shoring, in the name of energy security and jobs creation, are also in vogue that may result in balkanising the global energy landscape through protectionism, and higher consumer prices ultimately.

While China and the US (the top two global economies and emitters) are strategically battling it out for clean energy supremacy, developing countries (including Chile, Indonesia, and Congo) that are endowed with clean metals and minerals such as lithium, copper, cobalt, nickel, manganese, and graphite, will soon rival the geopolitical importance of major oil and gas producers.

The availability and cost of climate finance required to achieve a 'just' energy transition for developing nations is a key agenda item at this year's COP28 climate conference. If, and when, we decide to structurally reform our energy sector with less (not more) role of the government, a fair share of this global climate capital will also gravitate towards Pakistan. With the right policy framework and minimal red tape, we could use this money to finance private projects across a wide spectrum including critical raw materials' mining, nature-based carbon offsets, e-buses and e-rickshaws, wind and solar hybrid power, and smart grids. We need more than just 'adaptation' financing to deal with annual floods and heatwaves. Time is of the essence and Pakistan can choose to be an also-ran, or a leading participant, in the emerging new energy world order. ■

The writer is former special assistant to the prime minister on power & petroleum.

Towards biogas policy

Industries in rural areas have started making and using biogas

— Syed Akhtar Ali —

Biogas has acquired a new fillip in the wake of the Ukraine conflict in Europe. The latter wants to acquire independence from imported gas from Russia. Climate change targets have also influenced higher biogas targets in Europe and elsewhere.

In Pakistan, biogas has remained at low key although its initiatives have been launched many decades ago. Technology has improved in the meantime. Gas availability has reduced and prices have been increasing. Industries in rural areas have started making and using biogas. Several large-scale projects are under consideration. Nothing happens in Pakistan without government policy support. We will discuss here the need and scope of the required biogas policy. There are following six biogas use areas that have to be addressed; 1. Biogas for rural homes; 2. Community biogas; 3. Industrial use; 4. Transportation use as CNG; 5. Biogas for gas networks; and 6. Integrated Biogas plants for large cities.

Biogas is of two types: (a) uncleaned and unprocessed gas containing Methane (60%) and CO₂ and other extra gases (40%). House and Community use does not require cleaning; (b) Biogas cleaned of extra gases is almost pure Methane and is usually referred to as Bio-Methane. We have used a commonly used terms biogas unless differentiation is required.

Biogas for households

PCRET is a technology and research centre

in Pakistan on Biogas and other RE subjects, while NRSP had been tasked for assistance in building small household Biogas units in rural areas. NRSP is reported to have built 5000 or so units and seems to be inactive now. There is a need to launch new initiatives by provincial and federal government.

New technologies have emerged in the meantime. Factory-made plastic cylindrical units have been developed, are cheap and have been found to be quite effective. This may decrease lead time and reduce logistics and skills requirement in the older type brick-made units. A plastic cylinder unit may cost under Rs 15,000 and brick type may cost around Rs 50,000. Credit and financial assistance can also help popularize biogas units in the household sector. A target of several million units in a five-year plan should be there. This would alleviate pressure in expanding gas system network and also would help alleviate tree-cutting.

Bio-mass cookers

Biomass cookers have come up in competition with biogas. Biogas units are usually installed where animal waste is available, while biomass cookers are used where solid agro biomass such as crop residue, tree and plant cuttings and shrubs etc.

Dry Biomass material is burnt in biomass cookers. It can be more popular where biomass is available almost free. However, biomass pellets are commercially available as well. Biomass cookers are available in the market at a price of Rs.2500- 5000. Unfortunately, it requires some electricity to run its mini-blow-

er. Biomass cookers are mobile, can be used in open areas with facility. Users are more at ease when using it.

Community gas

LPG-Air mix plants are being built, Biogas which costs less than 50% of LPG, can replace LPG or be used in consonance. LPG-Air-mix plants have been designed for 1000 households. Much cheaper and for smaller clusters of 100-200 units can be made where there is cattle population.

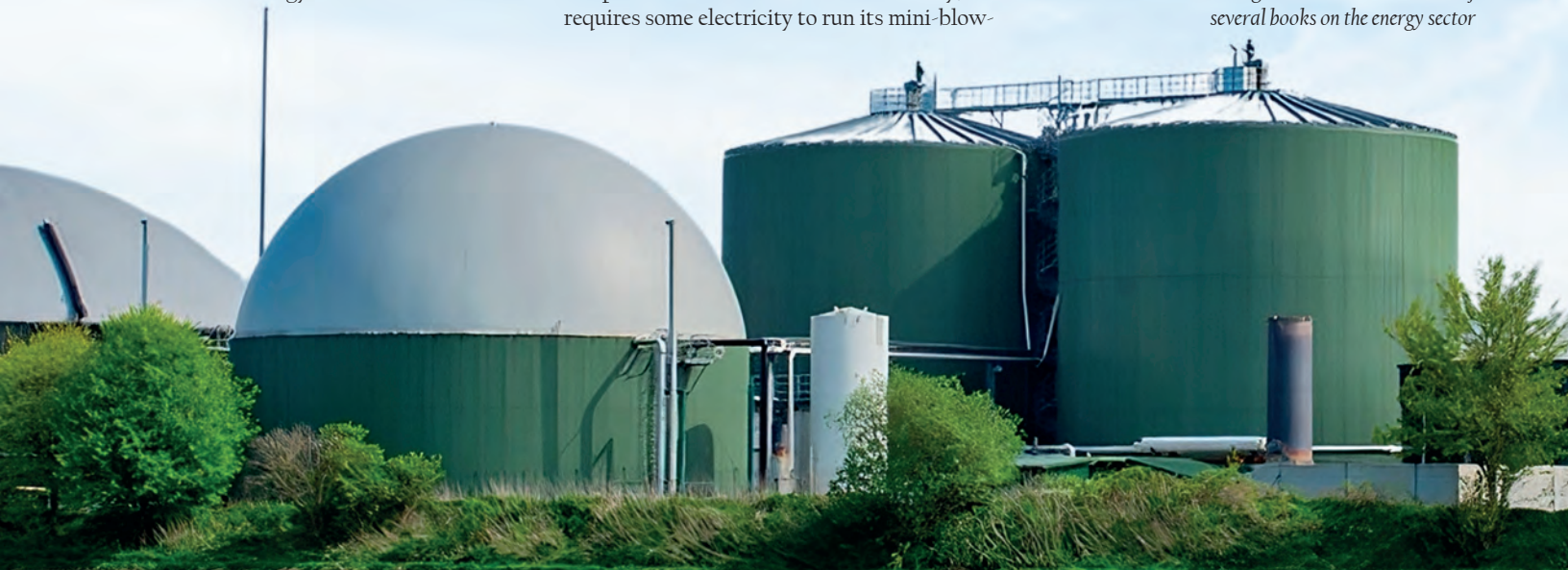
Integrated plants for large cities

Integrated units can be built in large cities combining solid waste and sewerage treatment and management. There are households generating solid and liquid waste, food outlets, vegetable markets, slaughter-houses and Milk-colonies, etc., which all can provide gas rich raw material that could economize all social cleaning services and provide fuels. City management, local bodies and gas companies may form a consortium.

Bio-CNG

A large number of CNG plants are lying unutilized due to lack of gas availability and falling economics. CNG can reduce pollution by substituting petrol and diesel in a significant way. Semi-urban-rural areas which may not have gas but having cattle population should attract investment in Bio-CNG. ■

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



Growatt: world's largest residential inverter supplier

—◆— EU Report —◆—

Growatt has secured its No.1 position in global residential inverter shipments in 2022, according to PV Inverter Market Tracker by S&P Global Commodity Insights. In addition, the company ranks among the global top 4 PV inverter suppliers, indicating its solid gain in the commercial and industrial (C&I) solar sector.

With over twelve years of experience and a robust R&D team comprising more than 1,100 engineers, Growatt is at the forefront of product and technology innovations for residential solar. "Our residential inverters combine reliability, intelligence and high efficiency, and their compact and lightweight characteristics facilitate seamless installation for installers," highlighted Lisa Zhang, Vice President of Marketing at Growatt. With sleek and user-friendly design, its products have gained immense popularity among households worldwide.

Beyond empowering homes, Growatt continues to make significant strides in the C&I and large-scale PV plants, reinforcing its position among the world's top 4 PV inverter



suppliers. The MAX inverter series, one of the standout portfolios from the company, delivers high yields and stable returns to investors while reducing operation and maintenance costs through its powerful and intelligent functions. With its reliable and robust inverter solutions, Growatt has increased its global market share to 4.7% in 2022, according to S&P Global Commodity Insights estimates.

Commenting on the achievements, Lisa Zhang emphasized that with their products

installed in over 180 countries worldwide, Growatt has established a strong local support network of 42 representative sites globally to deliver efficient service support and provide ultimate customer experience for clients. "We aim to enable everyone to benefit from sustainable energy, and by providing reliable products and services, we build enhanced collaboration with like-minded partners worldwide to accelerate the energy transition," Zhang added.

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New World Record!

Risen Energy HJT Hyper-ion Solar Module's Power is 741.456W and the Efficiency is 23.89%

Risen Energy, a leading solar module manufacturer in China, announced that its HJT series solar module Hyper-ion has achieved a maximum power of 741.456W and a module efficiency of 23.89%. The results were verified by TÜV SÜD, a global provider of testing, inspection and certification services. This is an improvement from Risen Energy's previous record of 23.65% module efficiency achieved in December 2021, hence setting a new record for the highest power and highest module efficiency of HJT solar modules.

Risen Energy announced that the company's 210mm 700W heterojunction (HT) lineup - Hyper-ion series - has been tested and certified by TÜV SÜD, a global provider of testing, inspection and certification services, making it the first company around the world to be granted TÜV SÜD certification for its 210mm high-efficiency HT product with ultra-thin wafer.

We're proud to be the first manufacturer to obtain this important certification. This is the result of two years of unremitting efforts by Risen Energy's R&D team. During this period, we overcame a lot of technical challenges to achieve this critical innovation breakthrough for the solar industry," said Yafeng Liu, Senior Director of R&D at Risen Energy.

Certification of the 700W solar module assures customers that performance, safety, reliability, and cost of the product meet the challenges in the solar sector, further reducing the cost while boosting the power generation.

The introduction of Risen Energy's Hyper-ion series marks another giant stride in the evolution of solar technology. The Hyperion series provides a solution to meet the rising demand of high efficiency and large wafer PV modules for solar plants.

This improvement in efficiency is due to technological innovations like ultra-thin wafer, zero busbar technology, Hyper-link interconnection and encapsulation material. The module also features an extremely stable temperature coefficient and a high bifaciality of up to 85% ±10%, capable of maintaining its power output above 90% after 30 years of use. The module is



back by Risen Energy's industry-leading 100mm ultra-thin cell technology and low-temperature process, resulting in a carbon foot, value (CFP) lower than 400kg eq CO₂/kW which is far below the market average. We believed this product will help solar systems to achieve ultra-low CO₂ emissions, reduce the overall costs and improve returns for investors, making a significant contribution to a long-term reliable and affordable power supply."

About Risen Energy

Risen Energy is a leading, global, Tier1, "AAA" credit-rated manufacturer of high-perfor-

mance solar photovoltaic product provider of total business solutions for power generation. The Company, founded in 1986 and publicly listed in 2010, co value generation for its global customers. Techno-commercial innovation, underpinned by consummate quality and support encircle Risen Energy's total Solar PV business solutions which are among the most powerful and cost-effective in the With a local market presence, and strong financial bankability status, we are committed, and able, to building strategic beneficial collaborations with our partners, as together we capitalize on the rising value of green energy. ■



Foreign Minister Bilawal Bhutto inaugurated landmark project of the solarisation of the Foreign Affairs and its allied buildings as part of our efforts for transitioning towards a future powered by clean energy.

Russian oil in Pakistan: gambling or respite?

Pakistan met 80% of its energy needs from Gulf countries

—◆ Umme Farwa ◆—

Amidst economic woes, a shipment of Russian oil has arrived in Pakistan, which is considered a breath of fresh air. Pakistan and Russia signed a deal in April 2023, consisting of 100,000 metric tonnes of crude oil out of which 45,000 metric tonnes has docked at Karachi. The news received extensive international media coverage, generating a mixed range of reviews. Some experts hailed it as a respite for Pakistan as the deal may lower the domestic oil prices, which could help in mitigating the inflation rate. On the contrary, many experts viewed it as a risky gamble which to a large extent is a reality.

The deal for the purchase of crude oil at a discounted rate in Chinese currency has raised various queries about its potential impact on Pakistan's energy demands and the country's capacity to refine Russian hard crude oil in its refineries. Furthermore, there arises a question regarding Pakistan's ability to pay Russia in yuan, as it remains uncertain whether Pakistan possesses adequate currency reserves in yuan or not. Russian Foreign Minister Sergey Lavrov has cleared that Russia has not given oil to Pakistan at a discounted rate. However, it is also a fact that Russia sells its oil at different rates and does not disclose the rates.

Pakistan met 80% of its energy needs

from Gulf countries — the UAE, KSA, Oman and Kuwait. The port in the UAE is 1,300 km away from Pakistan whereas the nearest Russian port is almost 8,000 km away from the Karachi port. Thus the Russian oil is going to cost more in terms of transportation charges. Pakistan planned to buy discounted crude oil at the rate of \$50 per barrel, which is \$10 per barrel less than the price cap. Without a discount rate, if transportation charges and a \$4 refining cost are added to the \$60 price cap, the cost will increase up to \$68-70 per barrel. This indicates that Pakistan may have limited chances of significant savings in this deal.

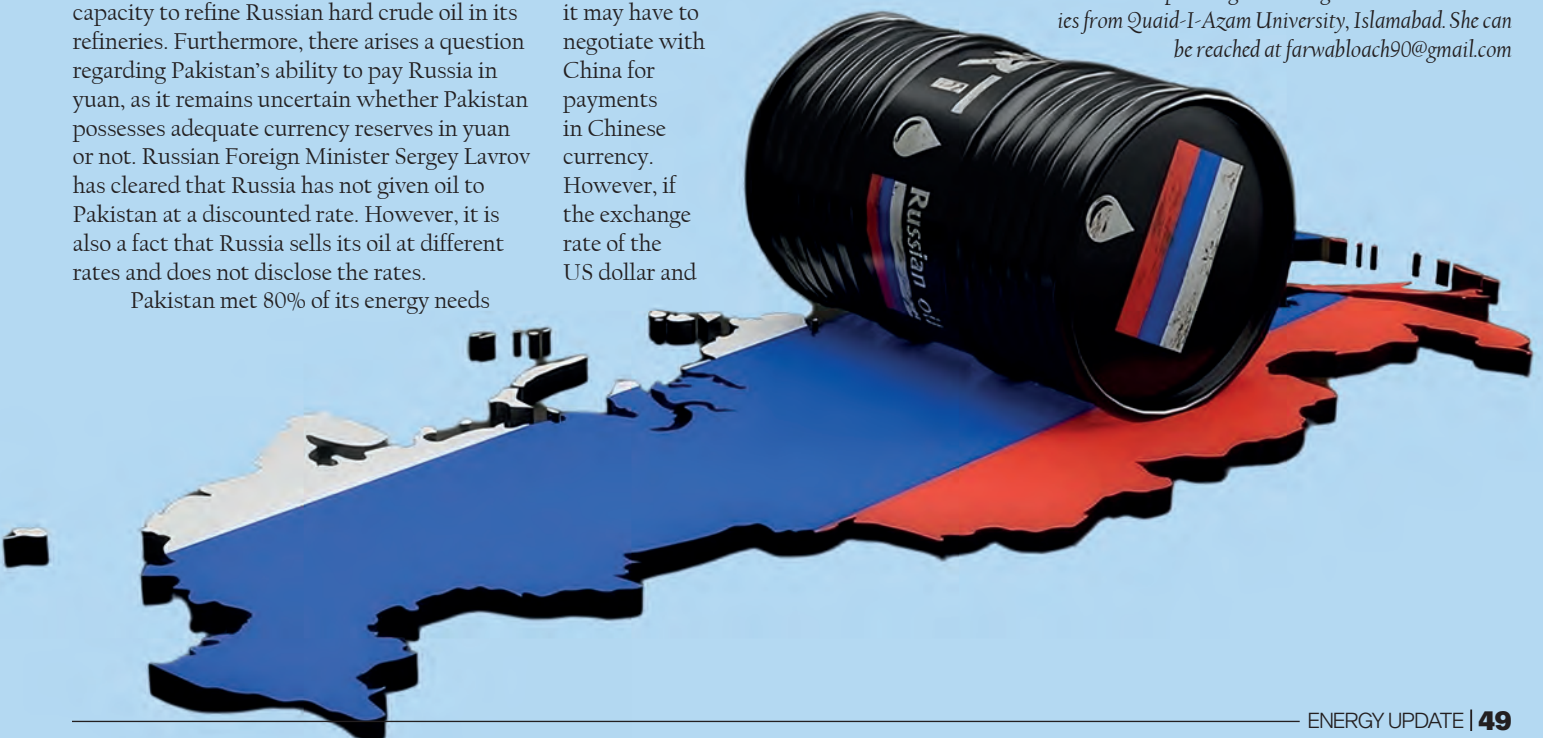
Moreover, Russian oil produces a high quantity of furnace oil up to 45% while Pakistan needs 15% for power generation. This means Pakistan had to find ways to utilize 30% of furnace oil which will have environmental implications. Also, Pakistan does not have enough yuan reserves to pay Russia, and it may have to negotiate with China for payments in Chinese currency. However, if the exchange rate of the US dollar and

yuan is compared, Pakistan saves some money to a large extent. The real figure cannot be predicted because no information regarding the exchange rate or discounted rate has been disclosed by Islamabad or Moscow. It is also expected that the regular consignments of Russian oil can create a split between Pakistan and the friendly Gulf countries.

Another significant aspect of the deal is that it has been cashed by both PTI and PDM to gain popular support. PTI tried to create a narrative that its government was dismissed because Washington orchestrated a regime change operation in Pakistan due to its resentment towards growing Pakistan-Russian relationship. The PTI also accused the PDM coalition government of being the protector of American interests in Pakistan. To save its face, the PDM government signed a 'popular deal' with Russia without taking into consideration its pros and cons. Most importantly, Pakistan's energy consumption per day is approximately 6 lakh barrels per day while the first Russian oil shipment has brought 45,000 metric tonnes (approximately 8 lakh barrels), which would barely be sufficient for one and a half days.

This highlights the limitations of the benefits and savings associated with Russian oil imports, exposing the exaggerated claims made by both PTI and PDM for political gains. The government's failure to disclose official details about the deal has created a sense of vagueness and uncertainty regarding its potential costs and benefits. Based on the available information, the absence of comprehensive research conducted prior to finalising the deal raises significant concerns about its viability, suggesting that it is a risky gamble. ■

The writer is pursuing M.Phil degree in American Studies from Quaid-I-Azam University, Islamabad. She can be reached at farwabloach90@gmail.com



LONGi Named 2023 Overall Highest Achiever in RETC PV Module Index for 5th Consecutive Year

LONGi, the world leading solar technology company, has been recognized as a “2023 Overall Highest Achiever” in the annual PV Module Index (PVMI) published by the Renewable Energy Test Center (RETC). This is the fifth year that RETC has published the highly respected rankings, and LONGi is the only company to be recognized as an Overall High Achiever in every edition.

Based in Fremont, California, RETC is a leading engineering service and certification testing provider for the solar industry, and the PVMI provides financiers and developers with a trusted reference for selecting high-quality modules. RETC tests modules for 12 months across 11 tests spanning the categories of quality, performance, and reliability, with the Overall Highest Achievement designation given to manufacturers with high scores across all three areas. In 2023, LONGi secured its Overall Highest Achiever award by receiving High Achievement recognition, such as module efficiency, light-induced degradation, PAN files, damp heat, and thermal cycle.

“We’re extremely proud to be recognized

as an Overall Highest Achiever by RETC once again,” said Steven Chan, LONGi’s general manager for North America. “Because RETC’s comprehensive bankability testing goes beyond baseline module safety and certification standards, this award validates our efforts to provide the greatest possible customer value by achieving superior quality, performance, and reliability.”

“For the fifth consecutive year, RETC has recognized LONGi as an Overall Highest Achiever in our annual PV Module Index Report,” said Cherif Kedir, President and CEO of RETC. “This outstanding year-over-year performance is an unprecedented achievement, as LONGi is the only module company RETC has recognized as the best of the best in every edition of its PV Module Index Report.”

“Given the industry’s accelerated pace of change and its short time frames between innovation and mass production, project stakeholders must remain vigilant to technical risks,” Kedir continued. “By demonstrating a consistent commitment to module quality, performance, and reliability, LONGi is mitigating technical sources of risk and uncertainty and

LONGi

helping to facilitate a safer and more sustainable solar-powered future.”

This fifth consecutive Overall Highest Achievement honor for LONGi reinforces the company’s hyperfocus on R&D and innovating processes to achieve the industry’s highest quality and reliability standards. Over more than two decades since its founding, LONGi has been a pioneer across multiple generations of solar technology, including monocrystalline wafers, PERC cells, and bifacial modules, and it developed some of the most rigorous performance and reliability testing standards in the industry. LONGi is the world’s most valuable solar technology company, with a 2022 production capacity of 133 GW of mono silicon wafers, 50 GW of cell capacity and 85 GW of module shipments amounting to a quarter of the global market demand.

Pak-China Huazi Green Energy set to unveil electric car

— EU Report —

Pak-China Huazi Green Energy Pvt Ltd is gearing up to unveil its first electric car in Islamabad next month, aiming to create public awareness and market its new Electric Vehicle (EV). The CEO, Khalid Mehmood, highlighted that the electric car will be easily chargeable at home. The assembly plant is expected to arrive from China in October, with



manufacturing set to commence in November 2023.

The company plans to start the booking process for EVs in January 2024, and their project encompasses two phases. In the first phase, they will introduce 2-door and 4-door cars targeted at the middle and lower middle class, featuring a lithium battery with a warranty of 100,000 km or 4 years. In the second phase, the company intends to launch Mini Pickups and 2-wheelers, specifically designed for women. The 2-door electric car will offer a range of up to 225 km on a single charge, while the 4-door model can travel up to 350 km. This USD 5 million Pakistan-China joint venture aims to achieve 100 percent technology transfer within two to five years. The company plans to export its manufactured products to various countries and regions, including Europe and Turkey.

New Chinese ambassador nominated

— EU Report —

China has nominated Jiang Zaidong as the new ambassador to Pakistan after six months.



According to reports, Jiang Zaidong will assume the charge soon. He is a senior official at China’s Ministry of Foreign Affairs and an experienced diplomat. The post of a permanent Chinese ambassador to Pakistan was vacant since the return of former ambassador Nong Rong to China. Pang Chunxue, Charge d’ Affaires of the Chinese Embassy in Pakistan, has been performing her duties as an acting ambassador. Pakistan’s ambassador-designate to China, Khalil Hashmi, will also take up his duties in Beijing in September next.

Get a Greener Lifestyle with SolaX X-ESS G4

◆ EU Report ◆

X-ESS G4, the advanced all-in-one solution from SolaX Power, combines a complete inverter and battery package, ensuring easy and efficient installation. Its sleek and space-saving design allows flexible integration into various environments, making it an ideal choice for the home. Backed by a robust 10-year warranty, consumers can trust its reliability and performance.

X-Hybrid G4: Power and Flexibility Redefined

Available both in single-phase (3-7.5kW) and three-phase (5-15kW), X-Hybrid G4 offers a wide power range to meet diverse energy demands. It is possible to achieve a remarkable maximum power output of 150kW by operating up to 10 inverters in parallel. Its 10ms switching time ensures a seamless transition to backup power in case of power failures.

Matebox: Simplifying Installation and Deployment

SolaX Matebox comes equipped with pre-installed components and cables, considerably reducing setup time. And for comprehensive whole-house emergency power supply requirements, the advanced X3-Matebox is the perfect solution.



T30 Battery: Scalable and Dependable

With T30 Battery, SolaX X-ESS G4 offers scalable energy storage solutions ranging from 3-12 kWh, allowing users to customize their storage capacity. With an operating temperature from -30°C to 50°C, T30 Battery can be a consistent and reliable energy supply even in extreme environments. SolaX X-ESS G4 is able to work with customers' existing solar panels, capturing and storing the electricity generated during peak sunlight hours. This stored energy becomes readily available during low-gener-

ation periods or power outages, providing a constant and reliable power supply for the home. With real-time data accessible through SolaX monitoring app, users can track energy usage and savings, from anywhere, anytime.

SolaX, a leading innovator in the renewable energy sector, empowers individuals and businesses to harness the sun's power for a more sustainable future. At the forefront of SolaX's innovative offerings is X-ESS G4. With this system, consumers can finally say goodbye to unpredictable energy bills and embrace a greener, more sustainable lifestyle. ■

Energy Update greets its readers on Pakistan's 76th Independence Day

While wishing its readers a happy Independence Day of our beloved country on this 14th of August, the Energy Update reaffirms its resolve to wholeheartedly support all hectic underway to achieve the Pakistani nation's independence in the energy sector as early as possible.

We fully believe in the notion that Pakistan is blessed with massive resources having the capability of generating energy both through conventional and unconventional means. The tapping of these resources would generate an abundance of energy that would not just be sufficient for Pakistan's own requirements but could also be supplied to many neighbouring and regional countries.

The EU also reiterates its fullest resolve to fully back the efforts to slash the fuel import bill of Pakistan. Needless to say, that reduction in fuel import expenditure would go a long way in reviving the national economy that has been in a sorry state of affairs for a long due to fast-depleting foreign exchange reserves. The decrease in reliance on fossil fuels for energy production would also boost the efforts to improve the environmental conditions in the country. The EU fully believes in the concept of greater exploitation of the renewable energy sources abundantly available in Pakistan for lowering the cost of electricity for the end consumers and for safeguarding the environment. Clean electricity production is the need of the

hour. There is an abundance of hydro, wind, and solar energy resources in Pakistan whose maximum utilization could ensure electricity production in the country in the most environment-friendly manner.

The EU on the occasion of the Independence Day of Pakistan also reiterates its commitment to publishing to the maximum possible extent editorial content both in its print and web versions to support the efforts of generating electricity that boost efforts to make Pakistan clean and green.

The EU has the utmost resolve to continue organizing events and forums to assemble at one place the best minds of Pakistan's power sector for proposing ways and means to maximize clean electricity generation in the country. We pray for the resolution of our energy woes at the earliest for a prosperous and developed Pakistan.

Thar Coal Energy Board approves coal tariff of Block-I, II

Mines producing 15.4m tons of coal per annum and being primed to scale up to 19m tons per annum over next eighteen months

—◆— EU Report —◆—

The Thar Coal Energy Board in its 25th meeting held under the chairmanship of Sindh Chief Minister Syed Murad Ali Shah approved a levelized tariff of \$37.36 per ton for the financial close stage petition for 7.8 million tons per annum of Block-I and a levelized tariff of \$30.40 per ton for Contract stage petition for 11.2 million tons per annum of Block-II.

The meeting was held at CM House and was attended by Federal Planning Minister Ahsan Iqbal (through video link), Sindh Energy Minister Imtiaz Sheikh, Sindh Minister for Mines & Mineral Shabbir Bijarani, Sindh Minister for Education Sardar Shah, Advisor Law Murtaza Wahab, Secretary Energy Abubakr Madani, MD Thar Coal Energy Board Khadim Hussain Channa and other officers concerned.

The Minister Energy Imtiaz Shaikh while briefing the Chief Minister regarding the progress of SECMC and SSRL mines operating in Thar Coalfields, said that the mines were currently producing 15.4 million tons of coal per annum and were being primed to scale up to 19 million tons per annum over the next eighteen months if the board approved the proposal. The board approved the proposal. Moreover, power generated from the Thar Coalfields also has one of the lowest costs of power generation in the country.

It may also be noted here that power generated from Thar Coalfields is considerably cheaper than imported coal, whereas also providing greater energy security, and saving precious foreign exchange reserves for the country.

During the meeting, the management of Thar Coal Energy Board also briefed the Board regarding the Financial Close stage petition for extraction of 7.8 million tons per annum for Block-I of Thar Coalfields, as well as the Contract stage petition for extraction of 11.2 million tons per annum for Block-II of Thar Coalfields. During the presentation, it was highlighted that as the mines continue to scale up, the overall cost of production continues to decline largely due to the mines attaining economies of scale. As mines extract greater economies of scale, the coal tariff is expected to reduce further, which will also result in a



reduction in electricity generation tariff from mine-mouth power plants located on Thar Coalfields.

The Board approved a levelized tariff of US\$ 37.36 per ton for the Financial Close stage petition for 7.8 million tons per annum

of Block-I of Thar Coalfields which is operated by Shanghai Electric, and a levelized tariff of \$ 30.40 per ton for Contract stage petition for 11.2 million tons per annum of Block-II of Thar Coal Fields, which is operated by Sindh Engro Coal Mining Company. ■

New British envoy arrives in Pakistan

—◆— EU Report —◆—

British High Commissioner-designate to Pakistan Jane Marriott has arrived in Islamabad to take up her new posting. “I am delighted to be here in Pakistan, a country that deeply matters to, and has a long-standing relationship with, the UK,” Jane said after she landed in the federal capital on Sunday. “With over 1.6 million people of Pakistani heritage in the UK making up every part of the British society, we have a special and ever-growing bond. “Our friendship stems from our shared history and values, deep people-to-people ties, growing trade links and a renewed development partnership. I will be working hard to continue to expand these. “With the climate emergency a growing threat to health and livelihoods across the world, I have a particular interest in ensuring that the bilateral relationship between our countries is a green, sustainable one,” she added.



Oil companies collaborate for \$10bn project

— EU Report —

In a historic collaboration, four leading Pakistani state-owned companies will join hands for Greenfield Refinery project at the strategic Gwadar Port in Pakistan.

The momentous Memorandum of Understanding (MoU) signing ceremony took place at the head office of Oil and Gas Development Company Limited (OGDCL) on Thursday.

The Pakistani state-owned entities, Oil and Gas Development Company Limited (OGDCL), Pakistan State Oil (PSO), Pakistan Petroleum Limited (PPL), and Government Holdings Private Limited (GHPL), will collaborate through a joint investment strategy. The project will have significant foreign investment from world-class oil & gas giants through equity participation.

The project envisages setting up an integrated refinery petrochemical complex with crude oil processing capacity of minimum 300,000 BPD along with petrochemical facility in Pakistan.



Call to transform Karachi into humanistic Eco-City

— EU Report —

The much celebrated and recent awardee of RIBA Royal gold medal, Dr Yasmeen Lari, CEO Heritage Foundation of Pakistan held a street tea get-together with Karachiites from all walks of life at Denso Hall Rahguzar Walking Street in Karachi.

The objective of getting the motely gathering together especially at Rahguzar, a model eco-enclave in the heart of the busy congested city, was to call Karachiites to take ownership and join hands to transform Karachi into a humanistic eco-city, and to witness first-hand the huge possibility and potential of such an eventuality.

The event, hosted by Arif Bahalim a founding member of Karavan Karachi, an initiative launched by Heritage Foundation in 2000, in order to create awareness of the city's unsung wealth of heritage at the time, began

with a welcome and walk down memory lane by the host. He then invited Shanaz Ramzi, director Heritage Foundation and founding member of Karavan Karachi who was also wearing the hat of co-host of the event as president Rotary Club of Karachi New Central, to give her welcome address.

A documentary created by Ramzi and Arif Bahalim on Karavan Karachi and its achievements was then shown to jog the memories of those present on the events that had taken place in 2000 to celebrate Karachi as a historical city. The core Karavan group comprising Yasmeen Lari, Shanaz Ramzi, Arif Bahalim, Shaha Tariq and Afroza Bhamani were then invited on stage to share their memories.

Starting from where the documentary left off, Heritage Foundation's recent phenomenal work during the floods was showcased highlighting humanistic humanitarianism, for the people and by the people – achievement through self-building.

DEA group completes first LPG Air Mix Plant

— EU Report —

Dynamic Engineering & Automation (DEA) Group of Companies in commitment to contributing to the economic growth and development of Pakistan has received another milestone of completing the first LPG Air Mix Plant in the private housing society of Pakistan. The achievement was made in continuation of the efforts by Dynamic Engineering & Automation (DEA) and Total Dynamic Systems Pvt Limited (TDS) teams for the tariff approval of the LPG Air Mix Plants in the private sector. The tariff was approved in a Cabinet Committee on Energy (CCoE) meeting chaired by Prime Minister earlier this year which enabled Oil and Gas Regulatory Authority (OGRA) to issue the first ever private sector LPG Air Mix operational and distribution license in Pakistan. The plant is owned by Bahria Town Karachi, and is developed by DEA group with a capacity of 70 mmbtu/h and 120 Mtons storage.

Internet restrictions Pakistan ranked third in world

— EU Report —

Pakistan has been ranked third in the world over the imposition of internet restrictions in the first half of 2023.

According to a report by Surfshark, a virtual private network company headquartered in Lithuania, a half-year analysis of internet shutdown based on the

Internet Shutdown Tracker reveals that Pakistan was responsible for three of the 42 new restrictions worldwide, which were imposed following the arrest of former prime minister Imran Khan on May 9.

At the time, access to Twitter, Facebook, Instagram, and YouTube was restricted in the country, while several temporary cellular network disruptions were also witnessed across the country for several days afterward.

The Surfshark report ranks Pakistan behind Iran and India as the countries leading the list of regimes who imposed internet restrictions during the first half of 2023. With Asia being the focal point of most internet shutdowns.

Iran witnessed the most internet disruptions in this time, with 14 cases in total, all of which occurred in Zahedan during Friday protests over the Zahedan massacre.

Vitol wins PARCO contract

— EU Report —

Vitol Group, the world's largest independent oil trader, has secured a contract to sell 50,000 metric tonnes of high-sulfur fuel oil from Pak Arab Refinery Ltd. (PARCO) in the international market. The deal, sources said, is expected to fetch a lower price than the domestic market rate. The sale price was not disclosed. The fuel oil, a byproduct of crude refining, is used for power generation and marine bunkering. "The local price of FO is around Rs160,000 per metric tonnes, and the export price of PARCO's latest sale of HSFO to Vitol is around Rs140,000 metric tonnes," sources said. PARCO said in a statement that it remains fully committed to adhering to all legal and regulatory requirements while promoting honesty and openness throughout its operations. Stake held by the government of Pakistan and a 30 percent stake held by Mubadala Investment Company, the investment arm of the government of Abu Dhabi. The remaining 10 percent is held by OMV, an Austrian oil and gas company.



Jazz and Amica Energy join hands to illuminate Pakistan's future with clean energy solutions. A historic MoU signing ceremony marks the beginning of a bright collaboration, paving the way for transformative solar projects across the nation. Together, we are bringing sustainable progress and empowerment to Pakistani communities.

PM inaugurates 1,263MW power plant

— EU Report —

Prime Minister Shehbaz Sharif inaugurated various development projects across Punjab, including a 1,263 megawatts thermal power plant in Jhang with a capacity of generating 10 billion inexpensive units annually.

Speaking to the media at the soft launching of various development projects here, the premier lauded the services of all provincial governments in ensuring peace and maintaining law and order.

The premier launched different projects, including the Rs50 billion Medical City, Rs52 billion National Health Support Programme, and Rs30 billion Population Welfare Programme. He also broke ground for SL-3 Lahore Ring Road project and Shadara to Kala Shah Kaku Metro Bus extension scheme.

Speaking at the inauguration ceremony of the thermal power plant in Jhang, the prime minister maintained that PTI chief and deposed premier Imran Khan had neglected the completion of the gas-fired Haveli Bahadur Shah power plant because of his animosity with the PML-N leadership and the country had to pay an additional whopping amount



of Rs77 billion against its original cost of Rs74 billion at that time.

PM Shehbaz continued that the project was to be inaugurated in 2019 but it was stalled because of the "criminal negligence" of the PTI government and its "lack of interest".

A precarious journey to economic uncertainty

— M. Amayed Ashfaq Tola & M. Ahsan Ahmed —

In numerous instances, a pervasive sentiment has permeated the media landscape, suggesting that Pakistan could potentially face the prospect of defaulting on its debt commitments, ultimately leading to a potential collapse of its economy. Moreover, an additional assertion has been made which states that the combination of a sluggish GDP growth and a hike in inflation serves as a revealing indication that Pakistan's likelihood of defaulting is a matter worthy of consideration.

Amidst the tumultuous events witnessed at the beginning of the preceding Fiscal Year, concerns emerged regarding repayment of Pakistan's foreign debt and a potential default thereof. However, Pakistan has successfully met all of its debt repayment obligations. As per data provided by the State Bank of Pakistan (SBP) on predetermined short-term drains on foreign currency reserves, Pakistan has repaid approximately \$20.84 billion between April 2022 and April 2023 worth of foreign repayments.

Simultaneously, Pakistan has also ensured the settlement of essential import bills as well. Considering all the chaos, political instability, and the havoc that the floods have caused, this is an impressive feat. Furthermore, it is also noteworthy that the Pakistani economy has, in March 2023, achieved a Current Account surplus sabbatical of 28 months.

The National Accounts Committee has recently revealed that the provisional estimate of the GDP growth rate is 0.29 percent compared to the revised estimate of 6.1 percent from the previous year. It is worth noting that last year's growth was primarily driven by consumption and import-oriented activities rather than inclusive growth as seen in the aforesaid chart. In similar vein, as the economy overheated in the previous year due to an import and consumption led growth, Pakistan suffered a CAD of \$17.4 billion.

The aforesaid table showcases that although Pakistan has achieved GDP growth above 5 percent twice in the past 5 fiscal years, the share of prominent sectors in our GDP have

been relatively stagnant, if not on the verge of decline.

Furthermore, in the outgoing fiscal year, the floods destroyed huge masses of cultivated area and livestock in the country, creating a massive food supply disruption and therefore rendering Pakistan in a state of food insecurity. This is reflected in the provisional estimation of the main cash crops of Pakistan's economy, primarily attributed to a decline in the production of Cotton by 41 percent (from 8.33 to 4.91 million bales) and Rice by 21.5 percent (from 9.32 to 7.32 million tons).

However, positive growth has been observed in wheat, with an increase of 5.4 percent (from 26.21 to 27.63 million tons), sugarcane by 2.8 percent (from 88.65 to 91.11 million tons), and maize by 6.9 percent (from 9.52 to 10.183 million tons). In addition to that, Pakistan's export sector heavily relies on the textile industry, accounting for almost 59 percent of its total exports in the Jul-April period of FY23.

Interestingly, it is notable that exports have experienced a relatively modest decline of 12.14 percent considering the ongoing global recession. In contrast, import bills have witnessed a more substantial decrease of 29.22 percent, which is more than twice the rate of the decline in exports. This significant reduction in imports has resulted in a prominent contraction of above 40 percent in the trade deficit for the current fiscal year compared to the previous year.

During this challenging period, Pakistan witnessed a remarkable surge in its inflation rate, reaching a record level. The average inflation rate for the period of July to May in the outgoing fiscal year, FY23, stood at 29 percent.

These subsidies eventually had to be withdrawn by the incumbent government as they were unsustainable for our economy. Consequently, Pakistan now faces the necessity of implementing stringent policy measures set by the international lending agency. One of these measures include a hike in interest rates, which is seen as crucial for unlocking the required financing.

To mitigate the risk of default and promote economic stability in Pakistan, several policies can be considered including a reduction in interest rates to stimulate economic activity and minimize debt servicing, implementing tax reforms to broaden the tax base and also encouraging corporatization through effective tax reforms/measures, implementing structural reforms in commodity-producing sectors, and working on comparative trade policies to enhance national exports.

As the nation faces the challenges of the current unprecedented situation, there is hope that the current finance team will draw upon their past success and navigate Pakistan towards a brighter future, employing their expertise and experience to overcome these difficulties. ■





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KARACHI OFFICE (HEAD OFFICE)

223/F, Block 2, P.E.C.H.S,
Karachi, Pakistan.

Tel: +92 (0)21 34303165-66-68-69

Email: info@exponent.com.pk

ISLAMABAD OFFICE

Office No. 10, 1st Floor, Madani Plaza,
Block - 46, West Jinnah Ave, Blue Area,
Block-E, Islamabad, Pakistan.

Tel: +92 (0)51 2342016

Email: isl@exponent.com.pk

LAHORE OFFICE

494, Ravi Block, Allama Iqbal
Town, Lahore, Pakistan.

Tel: +92 (0)42 37801155

Email: Lhr@exponent.com.pk



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