

MONTHLY

OCTOBER 2023

ISSN 2309-6578

ENERGY UPDATE

A PUSH FOR
SOLAR GEYSERS

BALUCHISTAN MINERALS:
FROM DUST TO GLORY

CRACKING DOWN ON ELECTRICITY THEFT:
A SOLUTION TO LINE LOSSES

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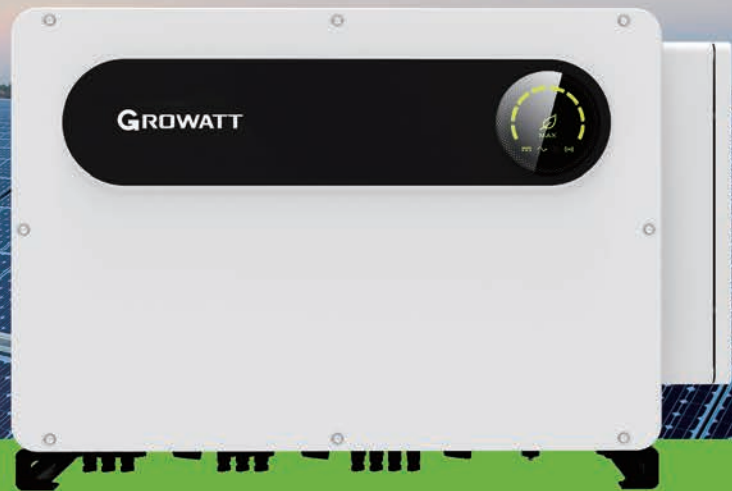
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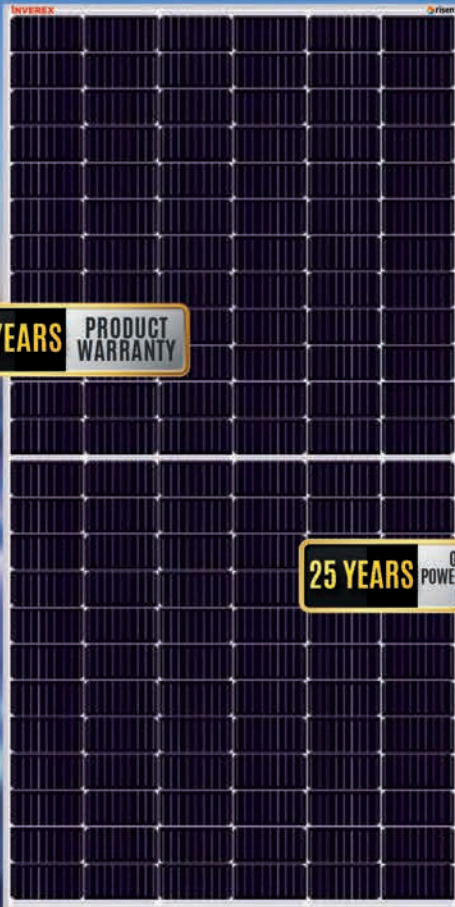
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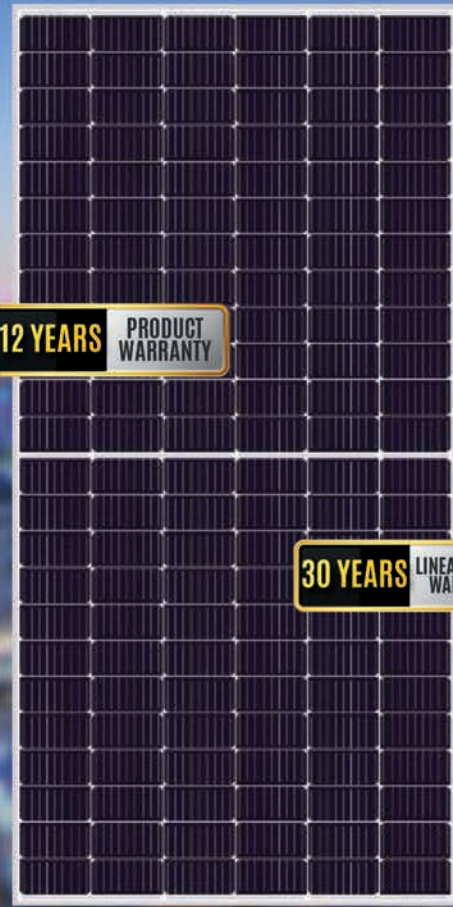


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The N-type module with Hot 2.0 technology has better reliability and lower LID/LETID.

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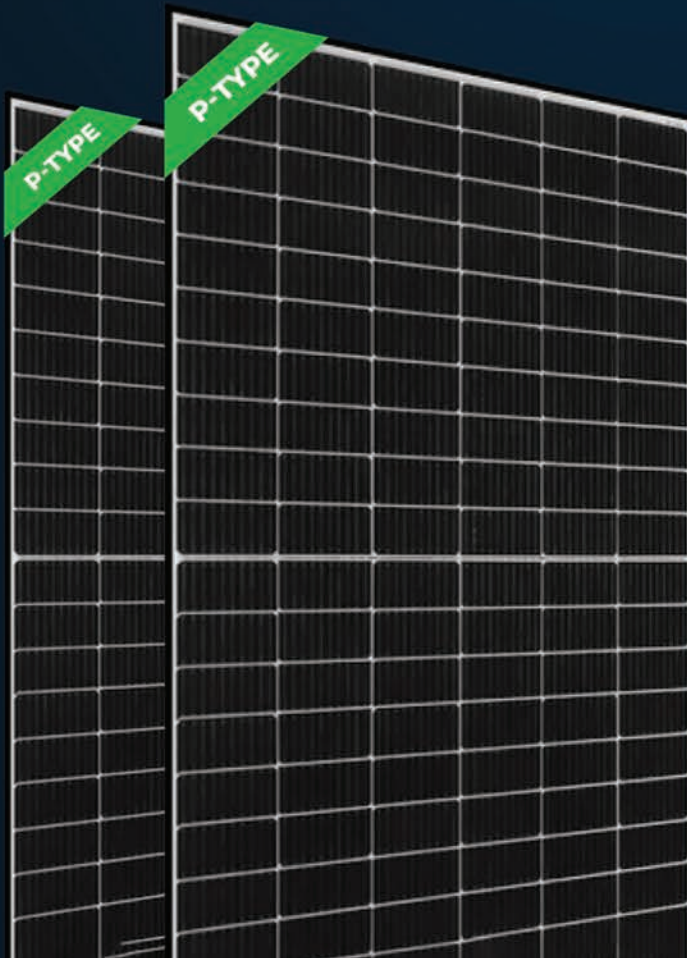
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SPECIFICATIONS

| Module Type | JKM550M-72HL4 | | JKM555M-72HL4 | |
|---|--------------------|--------|-----------------|--------|
| | KM550M-72HL4-V | | JKM555M-72HL4-V | |
| | STC | NOCT | STC | NOCT |
| Maximum Power (Pmax) | 550Wp | 409Wp | 555Wp | 413Wp |
| Maximum Power Voltage (Vmp) | 40.90V | 38.42V | 40.99V | 38.59V |
| Maximum Power Current (Imp) | 13.45A | 10.65A | 13.54A | 10.70A |
| Open-circuit Voltage (Voc) | 49.62V | 46.84V | 49.72V | 46.93V |
| Short-circuit Current (Isc) | 14.03A | 11.33A | 14.12A | 11.40A |
| Module Efficiency STC (%) | 21.29% | | 21.48% | |
| Operating Temperature(°C) | -40°C~+85°C | | | |
| Maximum system voltage | 1000/1500VDC (IEC) | | | |
| Maximum series fuse rating | 25A | | | |
| Power tolerance | 0~+3% | | | |
| Temperature coefficients of Pmax | -0.35%/°C | | | |
| Temperature coefficients of Voc | -0.28%/°C | | | |
| Temperature coefficients of Isc | 0.048%/°C | | | |
| Nominal operating cell temperature (NOCT) | 45±2°C | | | |

Key Features



SMBB Technology
 Better light trapping and current collection to improve module power output and reliability.



Durability Against Extreme Environmental Conditions
 High salt mist and ammonia resistance.



PID Resistance
 Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.




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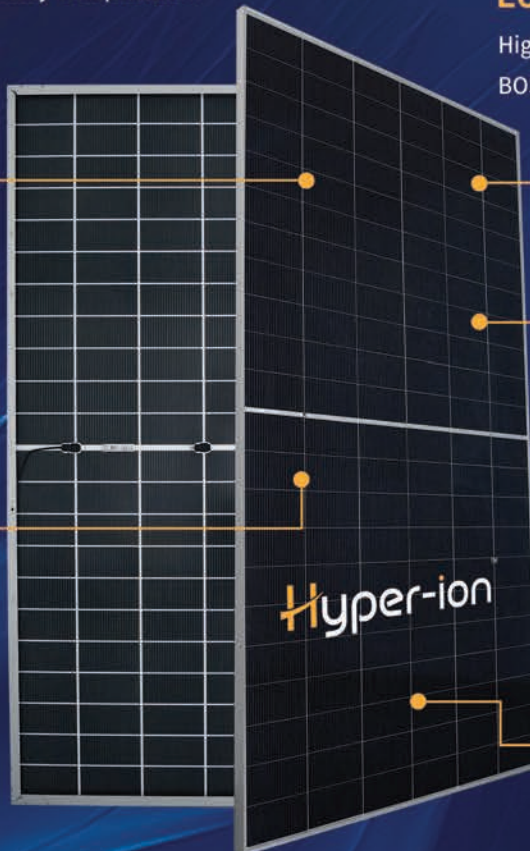
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CONTACT US



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| TOP BRAND FY | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH |
| 2023 | 2023 | 2023 | 2023 | 2023 | 2023 | 2023 | 2023 | 2023 | 2023 |
| EUPD RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH |
| TOP BRAND FY | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH | RESEARCH |
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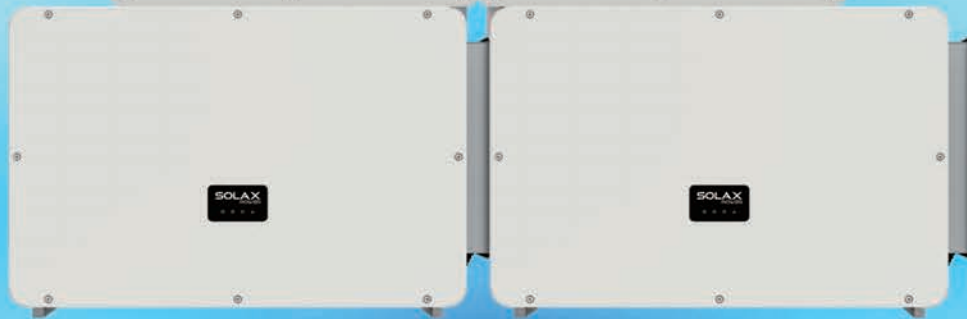
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Source: Customs Shipment Data

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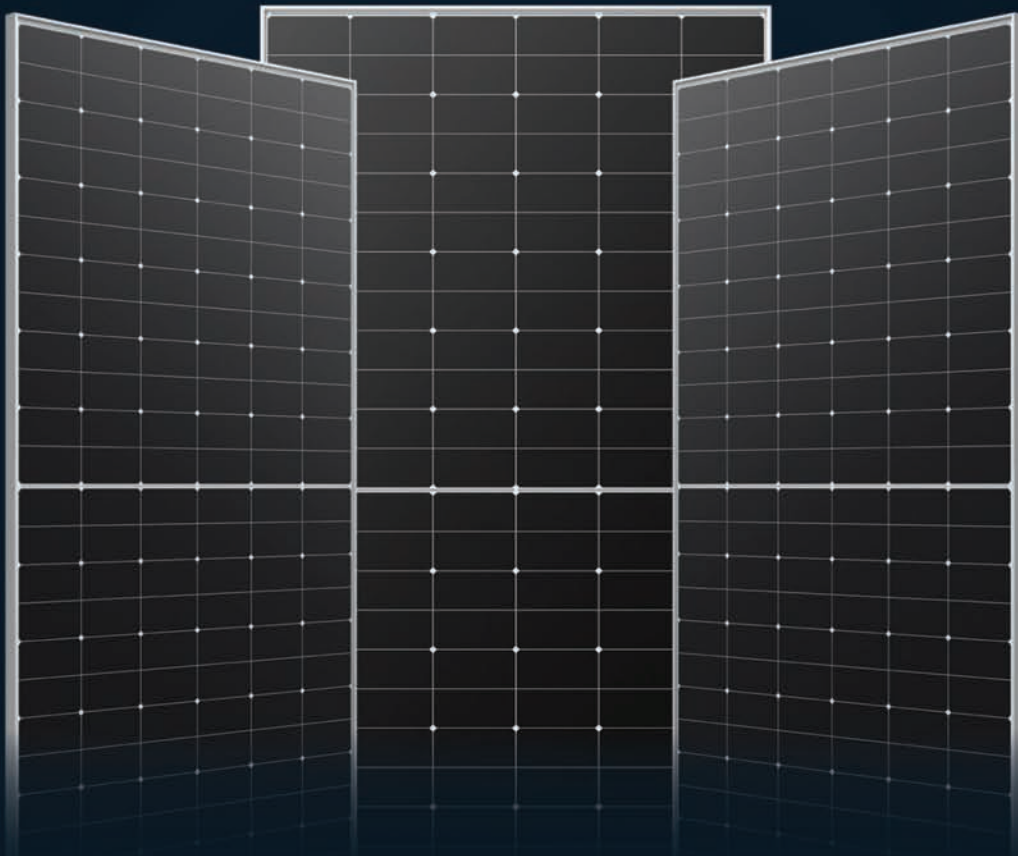
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ELECTRICAL CHARACTERISTICS

| Electrical Characteristics | STC AM1.5 1000W/m ² 25 °C | NOCT AM1.5 800W/m ² 20 °C Incls | Test uncertainty for Power: ±3% |
|---|--|--|---------------------------------|
| Module Type | LR5-72HTH-585M | | |
| Testing Condition | STC | NOCT | |
| Maximum Power (P _{max} /W) | 585 | 437 | |
| Open Circuit Voltage (V _{oc} /V) | 52.36 | 49.36 | |
| Short Circuit Current (I _{sc} /A) | 14.27 | 11.52 | |
| Voltage at Maximum Power (V _{mp} /V) | 44.21 | 40.34 | |
| Current at Maximum Power (I _{mp} /A) | 13.24 | 10.84 | |
| Module Efficiency(%) | 22.6 | | |

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15 15-year Warranty for Materials and Processing

25 25-year Warranty for Extra Linear Power Output

FROM THE Editor's desk...

Power Pilgerage: A Silent Crime

Electricity pilferage is a crippling silent crime that has been committed across Pakistan in all democratic governments with a dare, hitting the country's economy hard for decades due to rampant corruption from top to bottom level.

Almost all democratic governments have badly failed to control it due to political compromises, lack of interest in taking action despite the presence of strict laws, and bad governance. Neither PML-N governments nor PPP or PTI regimes could control this social and anti-economy menace in their power tenures.

Pakistan's power sector suffered a massive loss of Rs470 billion due to electricity theft in 14 months, according to a report released in July 2023.

Fortunately, the current caretaker government, led by Interim Prime Minister Anwaarul Haq Kakar and supported by Pakistan Army Chief General Asim Munir, has felt pain from this evil deed and has launched a massive crackdown against power theft, which is producing better results.

A recent report said that the Senate Committee on Energy was informed by the Power Division that the recovery in the ongoing anti-power theft drive has reached Rs1 billion per day and it is expected that the total collection may reach Rs150 billion within the next four to five months that is a good sign in the history of Pakistan.

Furthermore, the Lahore Electric Supply Company has recently detected 4,451 illegal connections in just 11 days. The company had so far submitted FIR applications against 3,845 electricity thieves, out of which 2,730 FIRs were registered with respective police stations, while 224 accused were arrested. All electricity thieves have been charged so far with 9,622,164 detection units amounting to Rs409.452 million.

HESCO has recovered Rs1.881 billion during September 7-27 out of Rs169 billion were in dues payable against the public and private sector consumers as well as in fines from the electricity thieves. It has also lodged 317 FIRs so far besides ensuring the arrest of 31 persons by Sept 27.

By Sept 20, K-Electric had registered 550 FIRs over Rs418 million power theft. The top 20 cases alone account for 3.2 million units of the total KE power theft.

Ironically, the power theft has been affecting the government, power distribution companies, and even the general public. One of the major impacts of electricity pilferage is the financial loss suffered by the government and power distribution companies.

In addition to the financial impact, electricity theft also poses a serious threat to public safety. Illegal connections and tampering with electricity meters can cause fires, electrocutions, and other accidents that endanger people's lives and property. Moreover, electricity theft often leads to blackouts and power outages, which can disrupt vital services such as hospitals, schools, and public transportation.

Three of the most common methods for stealing power include inverting the meter, causing it to run backward; placing metal straps behind the meter to divert some of the electricity from the meter reading; and switching meters. Utilities have the responsibility to assess the extent of the crime in their service area and to establish methods and procedures for identifying thieves. They must also determine their objectives once they detect potential thefts. Some utilities conduct all their investigations and followup actions, and other systems use local police to assist them in investigations.

There is a dire need to end power theft in Pakistan to help stabilize the national economy. Therefore, people belonging to all segments of society should come forward and support the government in its crackdowns against the power theft.



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
hikhald@live.com

Marketing and Promotions Manager
Mustafa Tahir
mtmustafa92@gmail.com
mustafa@energyupdate.com.pk

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

Monthly Energy Update

#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

REGISTRATION # DCO/DDO/LAW/CDGK-41/2006
Published by M. Naeem Qureshi for Energy Update
& Printed at Print Vision, Karachi Cell: 0333-2244586

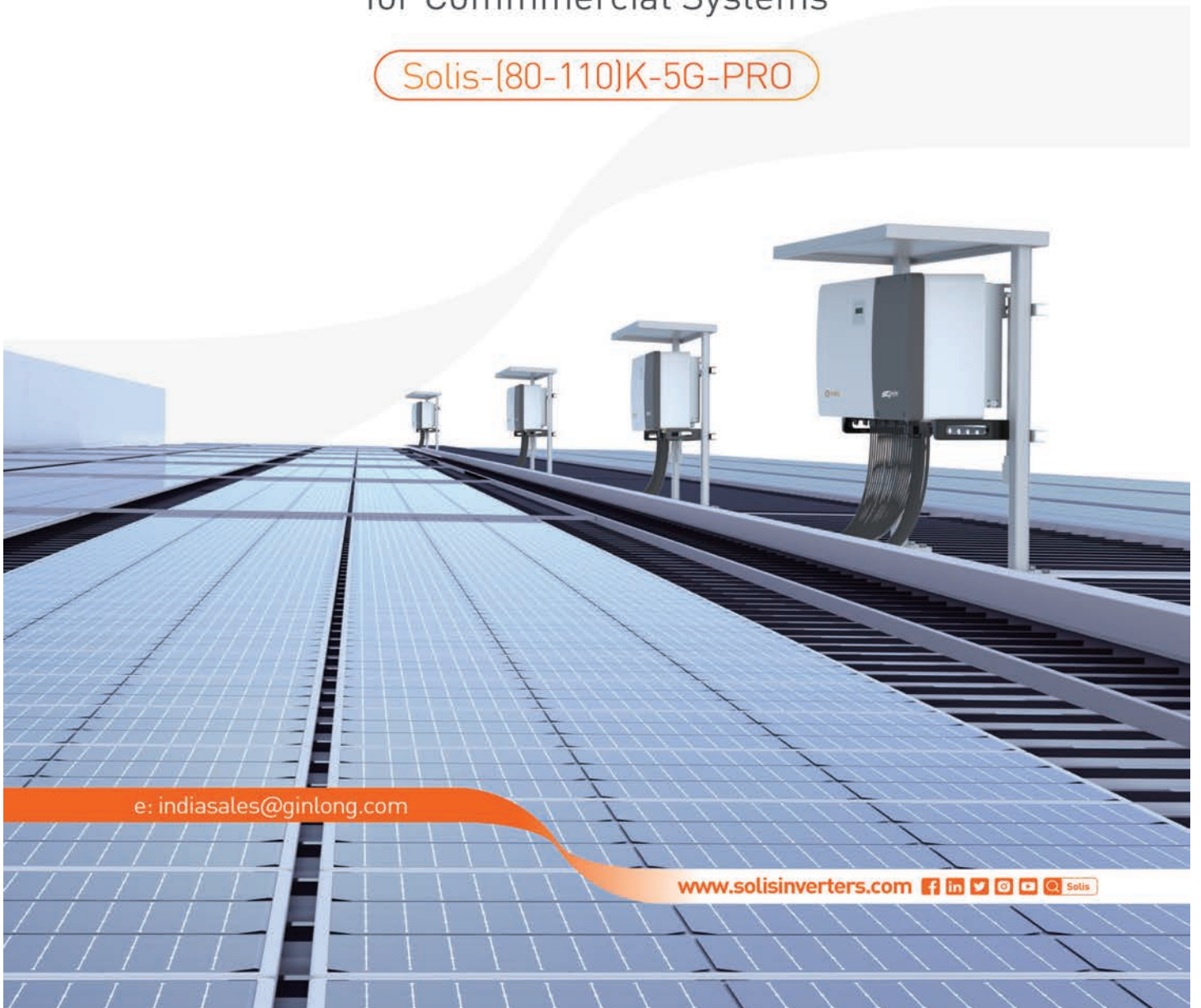




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A push for solar geysers

LPG, LNG are expensive, so diversification is required

Syed Akhtar Ali



The writer is a former member of the Energy Planning

After the electricity tariff, the gas tariff is poised to be enhanced as well. The average tariff will likely increase by 50 per cent. There is a point of view that rich consumers living in posh areas should not be given pipeline gas, whatever the tariff may be, and should be supplied LPG or LPG equivalent gas tariff. Not only is the gas tariff going to be high, there will also most probably be gas supply issues, as happens in the winter usually.

There are three main uses of domestic gas: cooking; water heating; space heating. The most sacrosanct use is cooking which a majority of people demand should be given priority in gas supply allocations. This allocation is actually done by the gas companies, regulators and the government. The other two uses do not have such moral sanctity. In fact, per some people, the other two uses are wastage and the gas used in those should rather be diverted to industrial uses which would aid the economy.

It has been several years now that solar geysers have been introduced in the Pakistan market. However, their use is still limited for a variety of reasons. It used to cost under Rs50,000 per unit but its cost has doubled recently due to the depreciation of the rupee. Unfortunately, solar geysers are imported, almost totally. A solar geyser essentially consists of two parts – an insulated water storage tank and evacuated water double-walled tube of borosilicate glass. Additionally, there are optional electronic controls and a small water pump.

If solar geysers are installed in at least 50 per cent household roofs, a lot of gas can be saved. Such a step would help the country overall as well as individual consumers. The main problem here is the lack of supply chain and branding. If a customer wants to buy a solar geyser, s/he doesn't know where to go and get a reliable product at the right price. After-sales support is another issue. It is believed that local manufacturing would be able to handle these issues. Earlier, gas companies used to take interest in such initiatives and were quite successful as well. With a change in management, these activities have almost been dropped.

Solar geysers can also be utilized to meet hot water requirements in many industries. The food, beverages and dairy industries have washing and cleaning requirements. Pakistan has a large textile industry that has dyeing and processing components. The textile processing industry has to usually install captive power units to utilize the exhaust heat for water heating purposes. Instead, such plants can install solar water heating panels the way our solar PV panels are installed. Space is a general limitation in Pakistan's textile industry. New sites and locations should take care of this problem.

The global market of solar geysers exceeds \$3 billion and is increasing at a rate of CAGR 5.0 per cent. Small countries such as Morocco have established solar geyser manufacturing facilities. Recently, a plant has been installed in Morocco to manufacture 40,000 SWH which is to go up to 90,000 units per year. It will be a 100 per cent locally manufactured product. There are plans to export it as well. Egypt, under the assistance of the United Nations Industrial Development Organization (UNIDO), launched a programme called SHIP – Solar Heating in Processing Industry – to popular-

ize solar water heating in the process industry. Manufacturers have been readied to manufacture and supply solar water heating systems to three chosen sectors: textiles, chemicals and food. A concessionary financing scheme has also been introduced. It is being extended to other regional countries and is a good model to be adopted by Pakistan as well.

In local manufacturing, China is a problem and China is a solution as well. No one can compete with China due to their cheap labour, efficiency and subsidized pricing. However, with cooperation and JVs with Chinese companies, local manufacturing and exports can be developed. Pakistan has almost all the manufacturing know-how that is involved – steel fabrication, foaming, and glass industry. Companies making gas geysers or washing machines can go into this besides many other SMEs.

There can be two approaches to locally manufacture SWH in Pakistan. The first is to start with small plants of a capacity of 10-20,000 units. There is a scope for several parties to get into this. The second is that, under CPEC, a major project is launched to transfer Chinese plants and make a manufacturing hub for meeting local demand and exports as well. SMEDA can also fast track the process of popularizing the local manufacturing activities in this respect. It is a separate issue that SMEDA also needs institutional strengthening and modernization. Local gas production is going down with no signs of new discoveries. LPG and LNG are expensive. In such a scenario, diversification is required. Besides that, some sensitivity should also be shown to the global targets of climate change. Solar geysers and biogas are two major ways to contribute to these objectives besides meeting the ever increasing demand of gas for cooking and non-cooking purposes. A new line of manufacturing and exports can also thus be created at a time when we need it so badly. A government initiative would be required to create a credit line. There are many green credit lines available internationally that could be explored. ■





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Dr Abid Qaiyum Suleri

The writer heads the Sustainable Development Policy Institute

Pakistan possesses an immense potential, particularly in the realms of solar, wind, and hydropower – with the capacity to generate an impressive 2,900 GW of solar power, 340 GW of wind power, and 60 GW of hydropower.

Additionally, it ranks second globally in coal reserves and holds the third spot in terms of its online workforce. Undeniably, this potential is vast, but there exist domains where Pakistan excels on a global scale. For instance, it stands as the third-largest milk producer, the fifth-largest producer of sugarcane and cotton, the sixth-largest producer of mangoes and dates, the eighth-largest producer of wheat, and the twentieth-largest producer of livestock worldwide.

These statistics are primarily within the energy and agriculture sectors, but similar commendable rankings exist across various others. Nevertheless, the harsh reality that confronts us, the ordinary citizens of Pakistan, is the persistent struggle with energy and food inflation. The term ‘we, the ordinary citizens’, is intentionally used here because there is also a select group of powerful and influential individuals within Pakistan that has masterfully exploited its position and resources to manipulate state policies and institutions for personal gain, often at the expense of the majority.

This phenomenon, known as ‘elite capture’, stands as a formidable challenge to human development and social justice in Pakistan,

phenomenon, known as ‘elite capture’, stands as a formidable challenge to human development and social justice in Pakistan,

The way out of elite capture

Pakistan capable to generate 2,900 GW solar, 340 GW wind, and 60 GW hydropower power; Additionally, it ranks second globally in coal reserves and holds the third spot in terms of its online workforce

according to esteemed economist Dr Hafiz Pasha. It systematically erodes the foundations of democracy, accountability, and equality. Dr Pasha's estimations reveal that elite capture annually costs the economy nearly Rs1 trillion, stemming from factors like tax exemptions, concessions, and subsidies enjoyed by these elite groups. Moreover, elite capture skews the allocation of public expenditure, resulting in inadequate investments in crucial human development sectors such as education, health-care and social protection.

The issue of economic injustice and elite capture in Pakistan has long been diagnosed. In Dr Pasha's words, “Power, people, and

policy are the key drivers of inequality in Pakistan.” The powerful wield their privilege to claim more than their fair share, and people discriminate based on characteristics like gender and class. Their acceptance of often ineffective policies further exacerbates inequality.

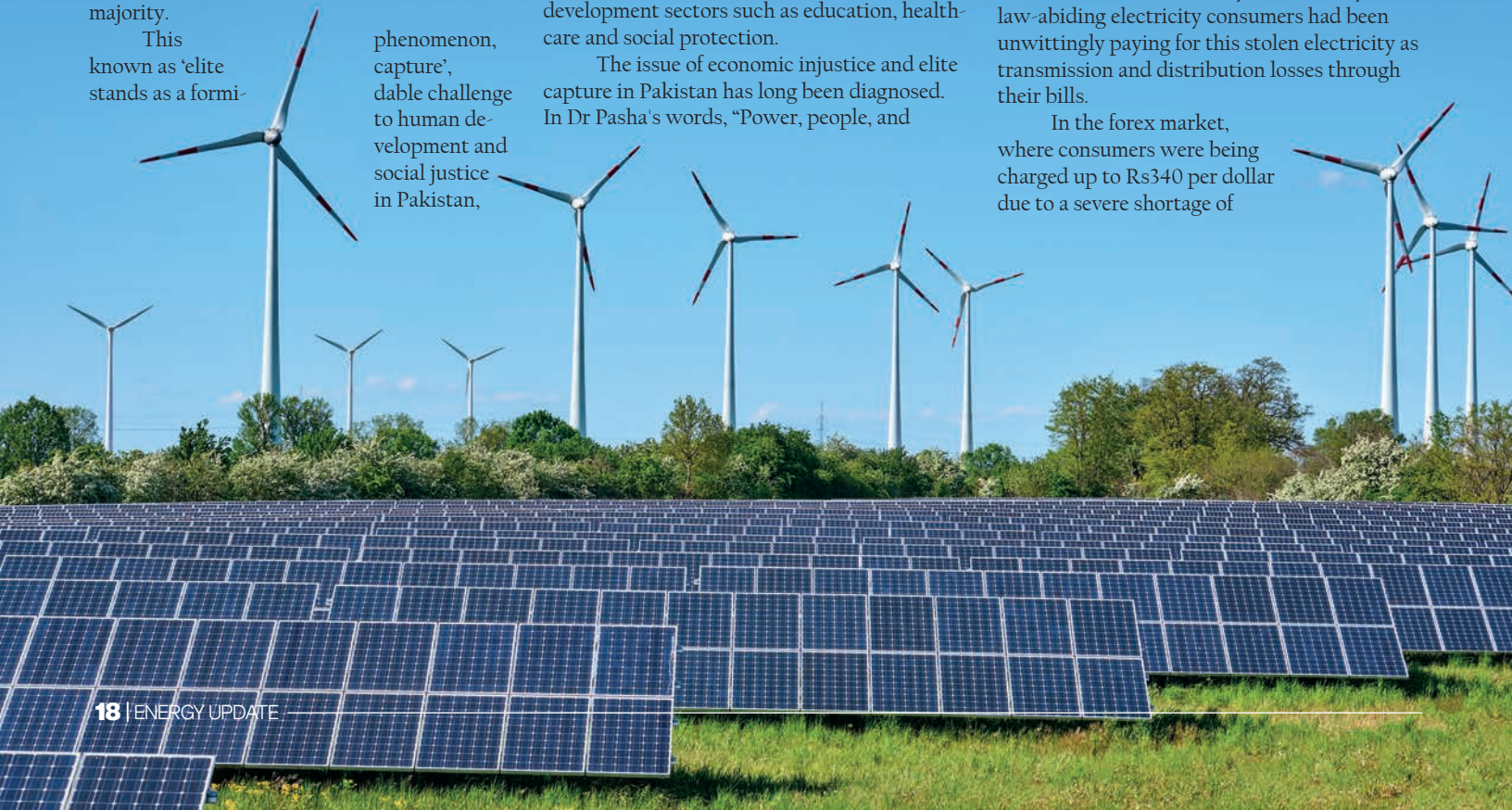
The consequences of these inequalities simmer until they reach a tipping point, wherein those affected identify collectively as ‘have-nots’. This is where the tension between an elite minority and a less privileged majority begins to unravel the core social and societal fabric.

The ordinary citizens of Pakistan had endured these inequalities for some time. However, the huge depreciation of the rupee in the last year, exorbitant electricity bills in August, artificial shortages of dollars, soaring sugar prices, and a slew of indirect taxes pushed them to the brink, culminating in protests. Recent months saw Pakistan teeter on the brink, with the potential for social chaos unless tangible initiatives addressed economic injustice.

In a positive turn, the state machinery sprang into action. A comprehensive crackdown targeted electricity theft, dollar hoarding, dollar smuggling, sugar price manipulation, wheat smuggling, and misuse of the Afghan Transit Trade. A few days of assertive political will and the authority of the state brought a semblance of order to the chaos.

Within a week of the campaign against electricity theft, authorities identified over 10 million stolen units of electricity, lodged over 4,000 FIRs, arrested nearly 500 individuals involved in electricity theft, and recovered approximately one billion rupees in lieu of the cost of stolen electricity. Remarkably, law-abiding electricity consumers had been unwittingly paying for this stolen electricity as transmission and distribution losses through their bills.

In the forex market, where consumers were being charged up to Rs340 per dollar due to a severe shortage of



greenback, a crackdown on dollar smugglers, hoarders, and unscrupulous foreign exchange companies led to an improvement in the value of the rupee and the availability of dollars. The Intelligence Bureau identified 122 currency smugglers and 40 exchange companies involved in currency rate manipulation. An estimated \$30-35 million was being sent to Afghanistan from Pakistan daily, adding pressure to the rupee's value, already weakened by a current account deficit. With effective measures against currency smuggling, that outflow was also controlled.

The government also launched an extensive effort to curtail the smuggling and hoarding of essential commodities, gradually stabilizing sugar prices and availability. Thousands of tons of sugar hoarded across different districts of Pakistan were recovered in this campaign. Reportedly, 109 sugar smugglers and 14 sugar mills engaged in illicit sugar smuggling to Afghanistan were identified.

To address revenue shortfalls, the government cracked down on the smuggling of Iranian fuel in Pakistan, which was estimated to cost the national exchequer at least Rs225 billion annually. Plans are also in place to combat tax evasion in the tobacco industry, which costs the exchequer Rs240 billion.

Likewise, measures are being devised to halt the misuse of the Afghan Transit Trade Agreement (ATTA), where a significant portion of imports (including tea, tires, synthetic fibre, and electronics) is smuggled back into Pakistan through reverse cargo. The IB identified 63 major tea smugglers and 66 tyre smugglers responsible for billions in revenue losses to the government.

These initiatives are undoubtedly commendable, and the hope is that they will be consistently sustained. However, they alone are insufficient to unlock Pakistan's tremendous potential. Realizing this potential hinges on dismantling the entrenched elite capture that has plagued Pakistan for decades.

Recall the three 'Ps' at the root of inequality: power, people, and policies. The smugglers, hoarders, tax evaders, and energy thieves did not emerge overnight; they represent powerful individuals and lobbies that have been shaping policies in their favour and exploiting the people for decades. Regrettably, this often occurs with the tacit complicity of those who hold policymaking or enforcement roles.

For instance, in a recent revelation, 248 officers in the power sector were identified as "officers of jet-black integrity" by the power secretary. They have been called back from the field and posted in the head office. However, mere reassignment to 'less important positions' is not a solution. The pertinent question arises: why are disciplinary actions not initiated against those who have been aiding power theft, currency and commodity hoarding, and smuggling? The question also arises as to why the government machinery at the highest level entrusted to oversee these malpractices turned a blind eye for decades.

Unfortunately, successive governments – whether civilian, hybrid, or military – have consistently failed to take meaningful action against elite capture. This failure is rooted in vested interests, lack of political will, and a fear of disrupting the status quo. The consequence of this chronic inaction is a trust deficit between the people and the government. This trust deficit can be remedied if the state, following the dismantling of the power-policy nexus, embarks on institutional and policy reforms aimed at fostering economic justice. Hope this dream comes true in our lifetime. ■

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Teacher: "Construct a sentence using the word 'sugar'"

Pupil: "I drank tea this morning."

Teacher: "Where is the word sugar?"

Pupil: "It is already in the tea..!!"

TEACHER: Our topic for today is Photosynthesis.

TEACHER : Class, what is photosynthesis?

Student: Photosynthesis is our topic for today.

TEACHER : John is climbing a tree to pick some mangoes.

(Begin the sentence with 'Mangoes')

Student : Mangoes, John is coming to pick you...

TEACHER : What do you call mosquitoes in your language?

Student: We don't call them, they come on their own...

TEACHER : Name the nation, people hate most

Student: Exami-nation...

TEACHER : How can we keep our school clean?

Student: By staying at home...

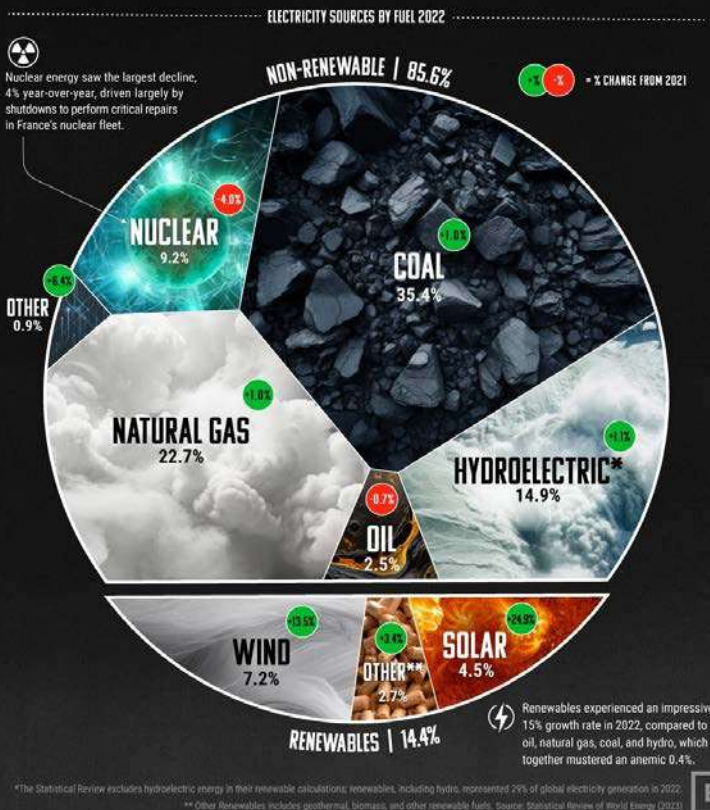
Not Easy to be a Teacher !!!!!

Dedicated to all naughty ex-students.....

Happy Teachers Day

WHAT POWERED THE WORLD IN 2022?

Coal still leads the charge when it comes to electricity, representing 35% of global power generation in 2022, followed by natural gas at 23%, and hydroelectric at 15%.



Safeguarding lives in the oil and gas sector takes center stage

OGRA Chairman's
Masroor Khan



Naeem Qureshi

The Oil and Gas Regulatory Authority has been mandated with core objective to develop and continuously work towards safe, progressive and competitive oil and gas industry in close coordination with all stakeholders and to provide sustainable solutions, through innovation and adaptation to foresee and overcome the challenges faced by the sector and to safeguard the interests and uphold the confidence of the nation and the consumers and to ensure safety at workplace during operational activities as well as to save the precious lives of end users and general public including workers. Further, the policy guidelines are issued by the Federal Government from time to time and OGRA is bound to function considering approved policies of the federal government.

This is disclosed by OGRA Chairman, Masroor Khan, in an exclusive interview with the Energy Update in which he talked at length about the measures adopted by the energy sector regulator to safeguard LPG business in Pakistan. Following are the important excerpts from his interview for our readers:

Energy Update: What steps the OGRA has lately taken after the increase in the number of fatal accidents in the country involving LPG?

Masroor Khan: We have been seriously pursuing and working on the safety of all stakeholders in the oil and gas sector; many incidents have been reported through media

during domestic use by the end-users leaving us in the state of bolt-from-the-blue and suffering and the authority seriously been exasperating safety campaigns through all possible tools to educate general public while dealing with these hazardous gases through seminars, awareness walks, pamphlets, electronic media as well as print media to save precious lives as saving one life means saving humanity.

Further, the authority has expanded its outreach to engage all the stakeholders by site visits of energy installations and through dialogue, workshops, visits to the industry, conducting discourses at federal and provincial trade chambers to educate stakeholders including end-users.

EU: How harsh are the punishments, which could be handed down to those involved in unsafe handling, storage, and transportation of LPG in Pakistan?

Mr Khan: The LPG industry has been exponentially growing in the country with significant increase in the number of its users from small (domestic), medium to heavy commercial users. The LPG's demand and corresponding supply have also been increasing. The increase in consumption of an inflammable material, i.e. LPG, means an increase in the safety risks associated with it. However, as far as the punishment to the violators are concerned, it is very easy to punish a licensee but it is very difficult to catch non-state-actors who are involved in business without proper standard operating procedures as the role of law enforcement agencies and local government are performed separately. Moreover, the punishments given in the existing laws for dealing with such cases

are very lenient. The punishments contained in the Code of Criminal Procedure propose a penalty of merely Rs 3,000 and imprisonment of only three months for someone involved in unsafe handling of LPG.

Additionally, any such amendment is the domain of federal government and any such law approved by the federal government shall be implemented by Oil and Gas Regulatory Authority.

EU: What method does the OGRA use to make sure that the provinces in the country implement its LPG safety rules?

Mr Khan: Safety at operational activities is essential to save precious lives of both the employees and the general public and to avoid any hapless incident causing catastrophic distress, in this context, OGRA regularly coordinate with Chief Secretaries of the provinces and other law enforcement agencies like Customs Department and local administration to ensure compliance of OGRA rules and regulations. Further, OGRA has its own enforcement teams who are delegated tasks through the country to ensure compliance and report the same to the Authority. The industry has faced many unprecedented challenges in shape of safety, energy transition, COVID-19 pandemic, economic and atmospheric issues of floods and technological advancements as well as supply chain related issues, however, the industry is growing in right direction and will be productive and victorious and OGRA is working closely to deliver safe, sustainable, and competitive industry ensuring safety in all sculpts with a vision to saving one life means saving humanity.

Power Diplomacy in Action:

Pakistan seeks investment and collaboration with energy giants at ADIPEC in Abu Dhabi

A Pakistani delegation at the ADIPEC energy event in Abu Dhabi is actively seeking investment and collaboration with energy giants from China, Saudi Arabia, and the UAE to strengthen Pakistan's energy sector. The country's Ministry of Petroleum is leveraging the Special Investment Facilitation Council (SIFC), created in June, to fast-track decision-making and attract foreign investments, especially from Gulf countries.

Minister Muhammad Ali is spearheading efforts to capitalize on opportunities and cooperation avenues. Key meetings include discussions with the Abu Dhabi National Oil Company (ADNOC) on LNG and crude supply and talks with ARAMCO on exploration and digitalization of oil and gas wells. Notably, Pakistan recently joined hands with Saudi Aramco for a \$10 billion Greenfield refinery project in Gwadar Port, an initiative aligned with the China-Pakistan Economic Corridor (CPEC).

Further strengthening ties, the Pakistani Minister for Petroleum also met with the Vice President of China National Petroleum Corporation to explore mutual interests and future cooperation opportunities."



Pakistan's minister for energy Muhammad Ali, right, meets a delegation from Saudi ARAMCO at ADIPEC in Abu Dhabi, UAE

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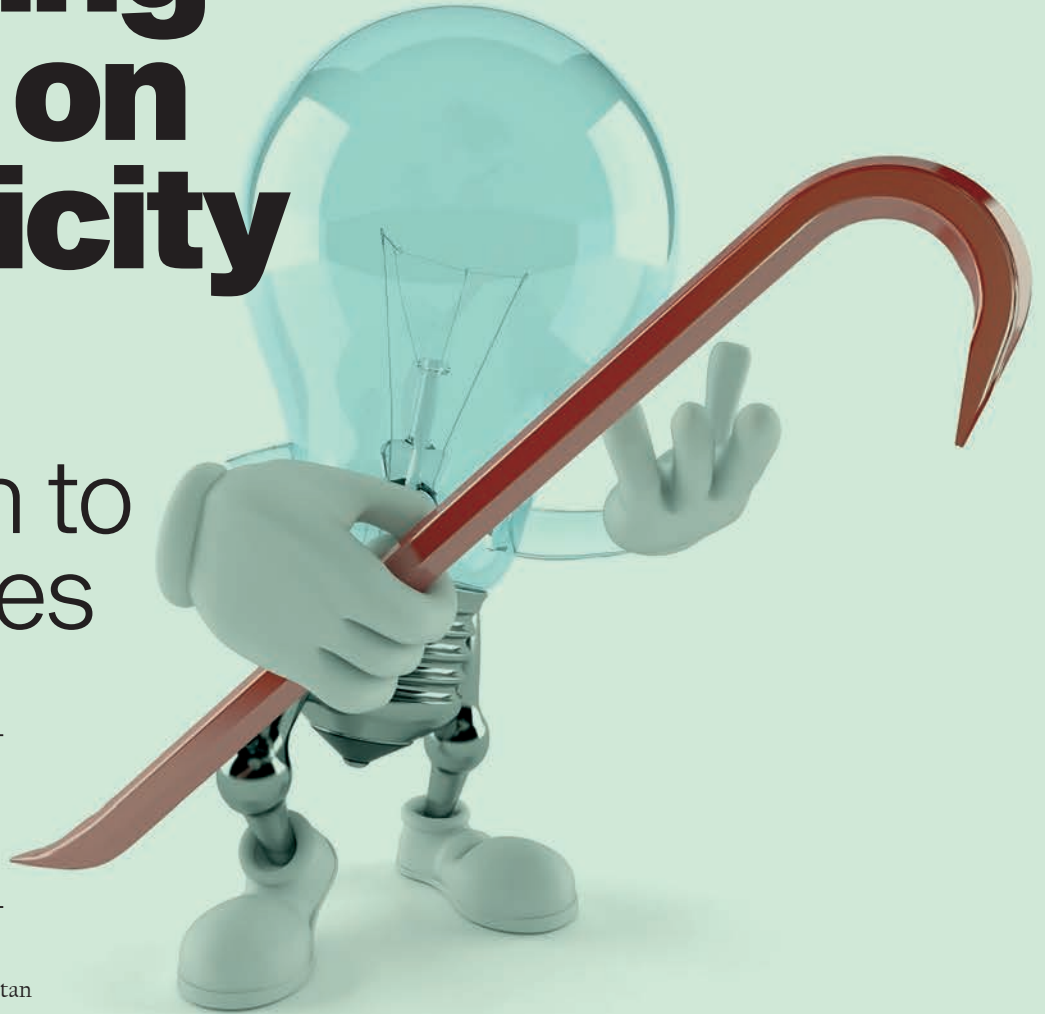
Cracking Down on Electricity Theft:

A Solution to Line Losses

Dr Basharat Hasan Bashir



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



The interim government of Pakistan has announced plans to launch a crackdown against electricity theft as part of efforts to address the growing circular debt in the power sector (Rs2.8 trillion), a key contributor to rising power tariffs.

Caretaker Energy Minister Mohammad Ali has revealed during a press conference in Islamabad that they are working on an Electricity Act to establish enforcement infrastructure and special courts to prosecute those involved in theft. The act is expected to be moved and passed through a presidential ordinance in the coming weeks.

The government aims to curb or reduce power theft, estimated at Rs589 billion, to alleviate the burden on legitimate power consumers and potentially lower electricity prices. Additionally, a list of power distribution company officers involved in theft has been compiled for further action. Caretaker Prime Minister Anwaar-ul-Haq Kakar has directed swift action against power thieves and defaulters, emphasizing the importance of resolving

energy sector issues.

The effectiveness of electricity anti-theft technologies in Pakistan, or any other country for that matter depends on various factors, including the local context, infrastructure, regulations, and the extent of the electricity theft problem. Here's how some of the technologies could be effective in Pakistan:

Advanced Metering Infrastructure (AMI): Implementing AMI systems in Pakistan could be highly effective. These systems provide real-time data on electricity consumption, making it easier to detect abnormal usage patterns indicative of theft. Utility companies can then take immediate action to investigate and curb theft.

Prepaid Metering Systems: Prepaid meters can be particularly effective in Pakistan, where electricity theft is a significant issue. By requiring prepayment for electricity, these systems can reduce the incentive for theft and ensure that consumers pay for the electricity they use.

Remote Disconnect/Reconnect: Remote disconnect/reconnect technology can enhance control over electricity supply, allowing utility companies to disconnect service quickly in case of theft or unauthorized connections. This technology can be particularly useful in areas with high rates of electricity theft.

Data Analytics and Machine Learning: Implementing data analytics and machine learning algorithms can help identify patterns of theft and unusual consumption behavior. Utility companies in Pakistan can use these technologies to detect theft more efficiently and allocate resources for investigation and enforcement.

Tamper-Evident Seals: While tamper-evident seals can be effective in Pakistan, it's important to ensure that they are regularly inspected and replaced if tampered with. Regular maintenance and inspections are crucial for their effectiveness.

Legal and Regulatory Measures: Enforcing strict legal penalties for electricity theft,

along with regulatory measures, can deter potential thieves. Public awareness campaigns can also educate the population about the consequences of theft and encourage reporting of suspicious activities.

Low Voltage Disconnect (LVD) Devices: LVD devices can be effective in areas where electricity theft is rampant. These devices can automatically disconnect power when theft is detected, reducing the incentive for unauthorized connections.

Audible and Visual Alarms: Installing meters with audible and visual alarms can deter theft by drawing attention to tampering or unauthorized access. These alarms can prompt quicker response times from utility personnel.

It's important to note that the effectiveness of these technologies depends on the commitment of utility companies and government authorities to combat electricity theft. Additionally, the local socioeconomic conditions, infrastructure, and cultural factors in specific regions of Pakistan may influence the choice and implementation of anti-theft technologies. A comprehensive strategy that combines multiple technologies, along with legal enforcement and public awareness, is likely to be the most effective approach to combat electricity theft in Pakistan.

Reducing line losses, also known as transmission and distribution (T&D) losses, is crucial for improving the efficiency and financial viability of the electricity distribution system in Pakistan. These losses occur due to factors such as technical inefficiencies, theft, and metering inaccuracies. Here are several strategies to reduce line losses in Pakistan:

Infrastructure Upgrades: Infrastructure upgrades in the context of reducing line losses refer to the comprehensive modernization and improvement of the electrical transmission and distribution (T&D) infrastructure. This involves replacing or upgrading outdated components and systems to enhance the efficiency and reliability of the electricity grid.

Equipment Replacement: One of the primary aspects of infrastructure upgrades is the replacement of aging and inefficient equipment. This includes transformers, insulators, circuit breakers, switchgear, and conductors. Old and deteriorating equipment can contribute significantly to technical losses due to increased electrical resistance and reduced performance.

Efficient Substations: Substations play a critical role in the distribution of electricity. Upgrading substations with modern equipment and technologies can reduce energy losses during the transformation and distribution process.

Improved Insulation: Ensuring prop-

er insulation in the electrical infrastructure helps prevent leakage of electricity and reduces losses. Upgrading insulators and using advanced insulation materials can enhance the efficiency of the grid.

Load Balancing: Balancing loads across different parts of the grid can help prevent overloading and reduce technical losses. Load management systems can be implemented to optimize load distribution.

Monitoring and Control: Implementing advanced monitoring and control systems allows grid operators to have real-time visibility into the status of the infrastructure. This can aid in the rapid detection and resolution of issues that contribute to losses.

Advanced Metering Infrastructure (AMI):

Advanced Metering Infrastructure (AMI) is a modern system that uses advanced meters and communication technologies to provide real-time data on electricity consumption, enabling two-way communication between utility companies and consumers.

Smart Meters: The cornerstone of AMI is the deployment of smart meters. These electronic devices replace traditional analog meters and are capable of measuring electricity consumption with high accuracy. Smart meters record consumption data at regular intervals (e.g., every 15 minutes), providing detailed insights into how electricity is used.

Meter Inspection and Maintenance: Meter inspection and maintenance refer to the regular examination, testing, and servicing of electricity meters to ensure their accuracy, reliability, and proper functioning. This strategy aims to minimize billing inaccuracies and prevent technical losses due to faulty or tampered meters.

Calibration: Meters need to be calibrated periodically to maintain accuracy. Calibrating meters involves adjusting them to ensure they measure electricity consumption correctly. Calibration may be necessary due to wear and tear, temperature fluctuations, or other factors affecting meter performance.

Energy Efficiency Measures: Energy efficiency measures refer to a set of practices and technologies aimed at reducing the overall consumption of electricity by optimizing energy use, reducing waste, and promoting the use of energy-efficient appliances and systems.

Capacity Building: Develop the technical skills and expertise required for renewable energy project planning, installation, and maintenance. This includes training a workforce capable of managing and operating renewable energy facilities. ■

Hydro tariff hiked by 29pc

EU Report

The National Electric Power Regulatory Authority (Nepra) has approved about 29 per cent increase in average generation tariff for Wapda's hydroelectric stations to meet its Rs155 billion annual revenue requirement. Under the decision, the average generation tariff for FY23 has been allowed at Rs4.96 per unit when compared to Rs3.85 per unit in FY22. The Rs1.11 per unit increase in generation tariff would, however, not jack up the average distribution tariff for end-consumers with the same proportion but translate into a nominal additional cost of the entire electricity basket involving a much larger share of other generation sources from furnace oil, local and imported natural gas, coal, renewables and so on. In approving the revised rates, the regulator also for the first time allowed about Rs1.10 per unit water use charges to Azad Kashmir's Neelum-Jhelum Hydropower project on a par with net hydel profit (NHP) permissible to the provinces, particularly Khyber Pakhtunkhwa and Punjab. The 969MW plant has been supplying clean energy to the national grid since 2018 without any formal agreement with the AJK government, resulting in political and social unrest in Azad Kashmir. The decision allowing AJK to be treated like provinces in payment of water rights would increase AJK's share to Rs5.44bn for FY23 compared to Rs712m in FY22. Nepra has previously been disallowing water use charges to AJK on the pattern of NHP to provinces on the premise that AJK was not a province under the constitution and hence it was entitled to water use charges (WUC) at a lower rate of 42 paise per unit under the Mangla Dam agreement. The federal government had to facilitate a fresh agreement with AJK so that the regional government could be treated on a par with provinces for electricity payments. ■

Iran seeks extension in gas pipeline deal

EU Report

As the threat of billions of dollars in penalty looms, Iran has asked Pakistan to extend their gas pipeline deal to keep the project alive in future. Pakistan and Iran have not been able to execute the Iran-Pakistan (IP) gas pipeline project because of longstanding US sanctions against Tehran over the latter's alleged nuclear programme. Iran has already built years ago its part of the pipeline. Pakistan too was required to complete laying of the pipeline in December 2014 with planned start of gas delivery from January 1, 2015. Following its failure to implement the project, Pakistan served a force majeure notice on Iran for suspending work on the pipeline, but the latter did not accept it. The two sides have already signed an agreement to extend the IP pipeline deal for five years, which will expire in March 2024. ■

Balochistan Minerals: From Dust to Glory

Reema Shaukat

The writer is communication strategist at the Institute of Regional Studies

Pakistan is blessed with a variety of terrains, all four seasons and a vast sea. Since 1947, we have called ourselves an agricultural country, but over the years food became scarce because of negligence and various other factors.

Apart from agriculture, our geographical location offers us a diversity in landscapes. On one side, we have landmasses suitable for harvesting, then on the other side, there are valuables hidden in the rugged mountainous regions. Likewise, beside a 1,000-km long coast, unseen treasures in the deep blue sea are waiting to be reconnoitered. Every province of Pakistan offers immense potential because of its topography. From north to south, Pakistan has a treasure trove of natural wealth which we have not been able to tap.

Balochistan — the country's largest province — has less population, but it is rich in mines, minerals and other precious reserves. The Balochistan coast also offers promising serendipity. Now at a stage, when our economy needs an overhaul, there is a need to capitalize on the destined prosperity that we own. According to official sources, Balochistan has a variety of sizable and valuable mineral deposits including gold, silver, copper, iron, chromite

and lithium in more than 1,600 mines. An estimated 500 coal mines, 600 mining venues of Onyx/Marble, 91 mines of Iron and approximately 550 mines for Chromite, Antimony, Fluoride, Granite and Gabbro are existing in this province. Reko Diq and Saindak, both in District Chaghi of Balochistan, have major gold and copper deposits and have attained worldwide attention. The areas are part of Tethyan Magmatic Arc belt which spreads from Western Europe to South East Asia.

The Saindak Copper-Gold Mine is located near the town of Saindak and the deposits at Saindak were discovered back in the 1970s in collaboration with a Chinese engineering firm. The Saindak mine has total estimated reserves of 412 million tons, of which, an estimated 1.69 million tons are mineable. Saindak has the capacity of producing roughly 15,800 tons of copper blister, 1.47 tons of gold and 2.76 tons of silver. For the purposes of mining, the Sain-

dak Copper-Gold Project was set up by Saindak Metals Ltd (SML), a company fully owned by the Government of Pakistan, at the end 1995 with a cost 13.5 billion rupees. However, in 2002, in order to revive the project, Pakistan and China signed a formal contract the same year worth \$350 million for the development of Saindak Copper-Gold mine. The contract between SML and China's MCC Resources Development Co. Ltd. (MRDL) expired in October 2012, but was extended for a 5-year period till October, 2017. It was then again extended for another five years till October 30, 2022. Now it has been given an extension up to 2035. As per agreement, 49% of revenues from

the mine go to MCC-Metallurgical Construction Corporation of China, while 51% of it goes to the government of Balochistan and 6.5 % as the royalty.

Reko Diq represents one of the largest copper and gold reserves in the world having estimated reserves of 5.9 billion tons of ore grading, 0.41% copper and gold reserves amounting to 41.5 million ounces, and a mining life of at least 40 years. As regards to Reko Diq, in 1993 Broken Hill Proprietary Company (BHP) Australia and Balochistan Development Authority (BDA) signed an agreement titled Chaghi Hills Exploration Joint Venture Agreement (CHEJVA). In 2006, Tethyan Copper Company (TCC) acquired the project of Barrick & Antofagasta. The Supreme Court in 2011 declared CHEJVA illegal, the Balochistan government then refused the Mining Lease and the matter later went into international litigation. A settlement was reached in 2022 between all parties. As a consequence, Barrick Gold acquired the mining leases and exploration license, and started exploration. It has incurred the Government of Balochistan 33% of the total financial benefits of the project with \$32 billion over the project life. Apart from socio-economic uplift of the area, 8,000 job opportunities in the development phase and 3000 in production phase are created.

Although slowly and gradually work is on for the development of Balochistan in terms of mining and minerals exploration, there are several hurdles, which must be taken care of

to non-technical persons which further puts halt in the exploration processes. Thus, there is a dire need to devise a comprehensive strategy based on modern practices in the mining sector immediately to reap benefits. There should be more large-scale mining undertaken instead of smaller pockets. Geological data should be readily available to authenticate mining efforts as secondary data doesn't appeal to mining investors. The government must focus on joint ventures between public and private entities. Companies involved in mining should be bound to invest in Corporate Social Responsibility (CSR). Many profit-generating areas in Pakistan are facing economic crunch, but for the mining sector if there are outstanding dues against the mining companies and contractors and concerned departments are unable to meet the revenue targets, a strict action should be taken against defaulters, including heavy fines or cancellation of permits.

One important observation noted in the mining sector is the lack of human capital with non-expertise in procurement of services, evaluation of tenders, contract agreement procedures and exploration which lead to further delay in maximum utilization of projects. Pakistan has the largest youth bulge but we are unable to divert them towards technical

education and skill-based training. Hiring experts, be they local or foreigner, in international law, administration, engineers, geologists, scientists, digital and technical specialists and getting our youth trained by them can help in bridging the gap, apart from their capacity enhancement. Modern mining legislation must be taken into consideration. Enabling the environment in terms of safety and security for investors, while overcoming our bureaucratic hurdles between the federal and provincial governments can be a good omen for mining sector development in Pakistan particularly in Balochistan.

Despite having mega ventures in our country like CPEC, the element of sea-blindness is prevalent in the mineral sector too. Pakistan has 16,650 million barrels of oil-equivalent gas reserves worth \$14,000 million and 4.4 million tonnes of mineral deposits in our sea but untapped. Essentially, we have remained unable to exploit it primarily owing to our lack of resource mapping and relying on foreign scientific exploration services. Hence, there should be an imperative call for action to streamline enablers of the economy, chalk out maximum benefits for the locals and carve a better future for people of Balochistan-real owners! ■



immediately. These include lack of first-hand geological data, receipt of small revenue, outstanding dues against the mining companies, law and order conditions, incapacitation of expertise and lack of infrastructure in mining areas. It is important to highlight that local mine owners because of a lack of technical and on-ground knowledge and expertise, sublet mines

National Engineering Services Pakistan (Nespak) has achieved a significant milestone by securing its first-ever Neom project in Saudi Arabia, marking a groundbreaking achievement for a Pakistani firm.

This project, primarily focused on the energy sector, was awarded to Nespak by the Saudi Electric Company (SEC), showcasing the consultancy's growing international engineering expertise.

Nespak's responsibilities include overseeing the construction management of Extra High Voltage (EHV), High Voltage (HV), and High-Voltage Direct Current (HVDC) projects in various Neom zones, with a budget of 46.5 million Saudi Riyals (equivalent to Rs3.794 billion) and a three-year completion timeframe.

This success reflects Nespak's technical excellence and dedication. Established in 1973 by the Pakistani government, Nespak aims to cultivate engineering talent and achieve self-reliance in consultancy services. With over 4,500 employees, the firm's cumulative project cost exceeds USD 330 billion.

STARTUP PAKISTAN

Pakistani Engineering Firm "Nespak" Secures Project in Saudi Arabia's Neom

f i t in y

Oil bonded warehouse policy's impact on economy

Petroleum Division is author of this policy along with input from relevant agencies

Syed Akhtar Ali



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

Recently, an oil bonded warehouse policy has been announced. This is one of the best and useful policies that one would have seen in recent years.

Petroleum Division is the author of this policy along with input from relevant agencies like the Federal Board of Revenue (FBR), Customs and commerce ministry, who deserve accolades. The policy had been under discussion for the past few months and now it stands as an approved gazette policy. Bonded warehouse policies have been around for a long time, which were applicable to many sectors. However, for the petroleum sector, it is a new development. Under this policy, an eligible importer or manufacturer can import the product or material without paying customs duty and sales tax and store it in a bonded warehouse, which is under the supervision of Customs authorities.

For the oil sector, it is a new and happy development. We will discuss here its

salient characteristics and impact on the sector and the economy.

It is known that Pakistan is suffering from multifarious problems related to economy, finances and energy prices and supply. Energy is an important input under all circumstances, good or bad. It costs a lot of money both for the country and companies to import and for users to buy. Energy supply chain has to function smoothly and any discontinuity is usually costly and disrupting, resulting in all kinds of implications.

Energy and especially oil storage form an important part of energy security policy in almost all countries, developing or developed. It is a separate issue that developed and rich

countries keep large storages.

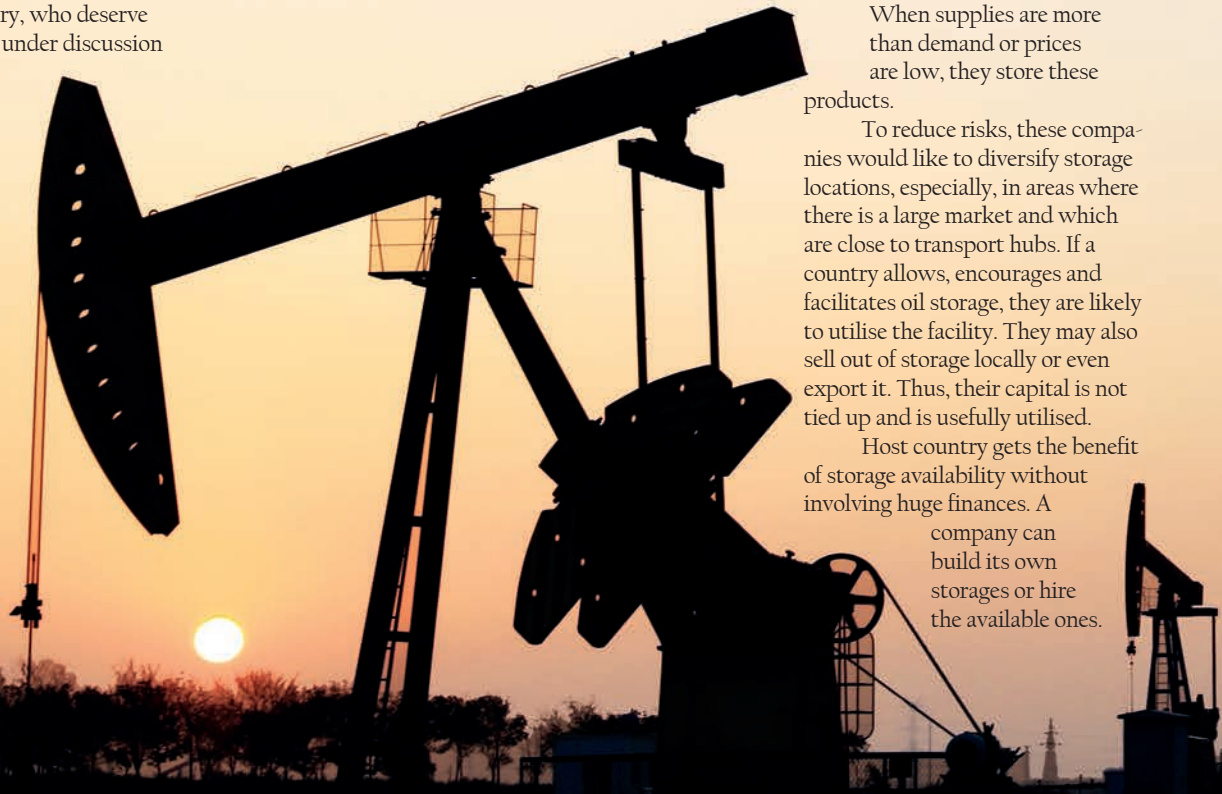
IEA recommends or requires its member countries to keep oil storage for three months. It is obvious that poor developing countries cannot have that much storage. In Pakistan, the regulatory requirement for petroleum products storage is 20 days. In financially hard days, like these days, it may not be easy to maintain even this volume of storage.

Even if foreign exchange is available, one would like to spend it in other areas as well. In this context, the oil bonded warehouse policy is a welcome step.

Large international trading companies and countries keep storages of crude oil as well as petroleum products like petrol, diesel, kerosene and jet petroleum. When supplies are more than demand or prices are low, they store these products.

To reduce risks, these companies would like to diversify storage locations, especially, in areas where there is a large market and which are close to transport hubs. If a country allows, encourages and facilitates oil storage, they are likely to utilise the facility. They may also sell out of storage locally or even export it. Thus, their capital is not tied up and is usefully utilised.

Host country gets the benefit of storage availability without involving huge finances. A company can build its own storages or hire the available ones.



It would bear storage costs and charges it to customers.

One can readily see how such a facility and activity can boost energy security and economic activity. Storage building activity boosts the engineering industry and employment. It also develops the wholesale oil market.

It can boost investment in oil refining and trade and buying local companies or having JVs with them. Consequences are numerous and multifarious.

Pakistan consumes 17-22 million tons of petroleum products and crude oil per year. It has varied from \$12 to \$20 billion in the past depending on prices and quantity. One month of storage would involve \$1 to \$2 billion.

Foreign oil companies are going out of Pakistan for a variety of reasons. However, it is from retail operations. Wholesale market operations will remain attractive.

In India, the retail oil market is occupied by three public sector companies. Foreign companies do not come in there. However, Adnoc and Saudi companies have built storages there, although of crude oil.

India is self-sufficient in finished petroleum products. However, it imports most of its crude oil requirements, hence the international and regional interest in storage. Admittedly, as oil is a regulated sector in Pakistan, there are complexities of sales and pricing. There are issues of financial and physical outflows. This requires a comprehensive policy.

Such a policy has been prepared recently. It appears that most of the issues have been taken care of. Nothing is perfect. There may be some dangling issues, which may be taken care of in consultation with stakeholders. However, there are some stakeholders which are more of a vested interest, who would like to block market expansion and entry of newcomers. They have been lobbying against it. In the oil sector, people have been talking of mafias, rightly or wrongly. But if they belong to public sector companies, it should be a matter of concern for the government. But unfortunately that those very circles, which are lobbying for deregulating and opening up of the oil sector, are the ones who are opposing the introduction of this policy. In the long run, if market expands, most players benefit and share the fruits of expansion. In the short run, there may be a need for adjustments. That is what market is. The policy should be able to attract Middle Eastern and other oil companies. It is an ideal project for SIFC. It is hoped SIFC would be able to consider it in its portfolio. ■

Actions against wrongdoers bringing results

Mohiuddin Aazim

The caretaker government's crackdown across Pakistan against illegal foreign currency transactions, electricity, and gas pilferage and hoarding of sugar — all at the same time — has delivered some initial results.

The rupee has regained some of its lost value against the US dollar, sugar prices that skyrocketed in recent weeks have started to fall, and the speed with which power from utilities was being stolen has decelerated.

The action against the wrongdoers can be expected to continue for one simple reason: the International Monetary Fund (IMF) is in no mood to allow space for the caretakers to continue to accommodate the status quo in economic matters — and the crackdown against the wrongdoers has been initiated with the full backing of the army's top leadership.

The State Bank of Pakistan (SBP) has unveiled a comprehensive strategy to stop the flight of US dollars from the country and has asked low-grade (B-category) foreign exchange companies to upgrade them within three months or risk losing their licenses.

The crackdown against unscrupulous forex dealers, commodity hoarders, electricity and gas stealers, and ease in uncertainty about elections may boost businesspeople's morale in the near term.

The government has announced to set up special courts to try electricity and gas theft. Provincial governments are working more closely with law enforcement agencies to tackle sugar hoarding and smuggling.

The caretaker Prime Minister Anwarul Haq Kakar has dispelled the impression that the caretaker setup is here to stay and has told the nation that his government is ready to hold general elections at the shortest possible notice.

All these good happenings should ideally boost business confidence that remained low till recently. According to a Gallup Survey published in daily newspapers just a week ago, 72 per

cent of 500 sample businesses surveyed were concerned about Pakistan's default — and 49pc of them expressed significantly high concern.

The crackdown against unscrupulous forex dealers, commodity hoarders, electricity and gas stealers, and ease in uncertainty about elections may continue to boost the spirit of businesspeople for some time to come.

But, these actions are not enough to ensure that the external sector weaknesses that remain at the heart of the economic crisis in Pakistan will somehow go away. The caretakers and the powerful establishment know this.

That is why Prime Minister Kakar and top military leadership have separately told businesspeople that the Special Investment Facilitation Council (SIFC) has concrete plans to seek \$25-\$50 billion in long-term foreign investment from Saudi Arabia, UAE, Kuwait, Qatar and other countries.

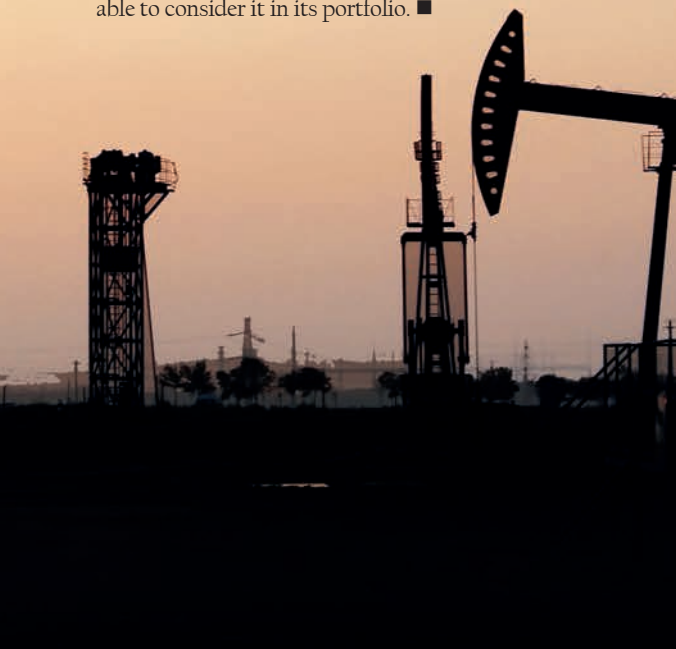
They were told that foreign direct investment would start flowing in shortly in five major areas, namely agriculture, defence production, mines and minerals, power sector and information and communication technology.

Such reassurances are heartening and may have a good psychological impact on the business environment. But as regards the beginning of the implementation of the plans seeking foreign direct investment, much depends on how quickly even a sliver of the promised fund comes into the national kitty, how soon general elections are held and an elected government installed smoothly, and whether and how efficiently the new government pursues SIFC policies.

The caretaker government has now decided to experiment with borrowings from the capital market. It has decided to use those borrowings exclusively for state-owned enterprises that need massive capital injection for survival and expected growth.

Whether the plan works well depends on how the capital market investors perceive the instruments of the borrowings (bonds, shares or certificates of investment) to be adopted and the country's general economic and investment environment.

Courtesy Dawn



Capacity payments may rise to C for FY24

Strategy needed to decouple energy, growth in Pakistan

25% of population still lacks electricity as energy demand soars 2.4%: fossil fuels continue to cause higher production costs

Afia Malik



The writer is a Senior Research Economist at the Pakistan Institute of Development Economics (PIDE), Islamabad

Pakistan's energy demand has risen by 2.4%, and 25% of the population still lacks electricity. Shortages and unreliability leave over 90 million under-met. New energy supplies are needed to meet the growing demand and address under and unmet energy needs.

Renewable energy is gaining attention, but fossil fuels continue to dominate, resulting in increased carbon emissions, environmental challenges, higher production costs, and financial pressure on the national exchequer. This requires efficient energy use or decoupling economic growth from energy consumption.

Improving energy efficiency can be a cost-effective way to address the energy challenges faced by the country. It can minimize environmental concerns, ease production costs, and promote economic growth. Many developed nations have decoupled economic growth from energy consumption, demonstrating that higher income levels don't necessarily translate into more energy usage.

It is more cost-effective to save energy than producing it. Improving energy efficiency can close the gap between supply and demand, reducing the need for new energy sources. To achieve this, we must focus on managing demand through energy conservation rather than denying access to unserved or underserved people.

Pakistan must implement a comprehensive and innovative approach to unlock its energy efficiency potential to ensure national energy security and reduce reliance on imported energy sources. It is more cost-effective.

After several consultation rounds, the

National Energy Efficiency and Conservation Policy prepared by the National Energy Efficiency and Conservation Authority was approved early this year. This is the second such policy.

The first-ever energy conservation policy was designed by ENERCON in 2006. Before NEECA, ENERCON was created by the government in 1987. However, after the 18th Amendment of the Constitution, it was dissolved. Despite the 2006 policy, ENERCON failed to gain support from various groups and, ultimately, failed in its implementation.

Unless serious efforts are made, the newly approved policy may suffer the same fate. In Pakistan, policy initiatives need implementation. Successful implementation of policy initiatives in Pakistan requires effective coordination at all levels, including the local level. This is how several countries have achieved improvement in energy intensity.

Serious efforts have to be made towards reducing technical and non-technical losses in the electricity and gas sectors. We are losing almost 20% of the electricity produced in these losses; likewise, more than 17% in SSGCL and about 12% in SNGPL of gas is lost in unaccounted-for-gas (UFGs).

Despite tall claims, I don't see any improvement; despite the diminishing indigenous resources in the gas sectors, these losses have increased over the years. In the energy balance,



Since FY2006, losses have increased by 26%.

On the power generation side, there is an enormous burden of capacity payments. For FY2024, these were estimated to be almost Rs 2 trillion. This amount adds to the circular debt when this capacity is not utilized or lost due to inefficiency (system losses) — Rs 93 billion was added to the circular debt due to system losses from July to April FY2023.

The subsidized electricity and gas and enormous cross-subsidy across consumer categories are the reason for the inefficient use of these resources. As long as we consider electricity or gas as a right and not a private good and continue subsidizing these utilities, stopping the misuse of these energy sources is impossible.

For electricity and gas, prepaid smart meters are the solution to save energy or to increase productive use. A serious effort towards this can prevent energy misuse and wrong billing by energy companies. Controlling inefficient resource use can also be achieved through energy price management, that is, prices without subsidies and cross-subsidies. Replacing the tariff-based subsidies with direct transfers to the targeted population is a much better option.

It should be mandatory for NEECA to conduct energy audits on a larger scale, covering buildings, industries, public transportation, and agricultural tube wells. In the building sector, retrofits for existing buildings must follow energy audits by incorporating energy-efficient equipment and implementing energy conservation guidelines. It is also crucial to enforce building codes for all new constructions, which should be ensured during the map approval stage.

In the transport sector, implementing cost-reflective road pricing and parking fees can prevent the unnecessary use of private cars and save fuel. This must be prioritized to reduce road congestion and energy efficiency. Fuel rationing in the public sector (as a role model), as done by the Philippines in 2006, can significantly reduce fuel and energy import bill use.

Pakistan's industrial sector has the potential for expansion. Replacing outdated technology in existing units and using energy-efficient practices in new ones can save significant energy costs to increase industrial competitiveness. In the agriculture sector, efficient use of water pumps is vital.

Although the NEECA Policy mentions incentives, relying solely on them without implementing fines or penalties may not lead to the desired outcomes. It is crucial to prioritize raising awareness on this issue immediately. Japan serves as an excellent example of how effective this strategy can be. In just a few weeks in 2011, they dramatically increased awareness of energy use and efficiency.

Additionally, NEECA should survey the market for energy-efficient appliances and assess their affordability and long-term viability for the average Pakistani. It is also crucial to consider the availability of these appliances in small cities, not just large urban centers. It is necessary to have an organized strategy to decouple energy from growth. Technological advancements and institutional improvements can boost energy efficiency, enhance competitiveness in international markets, and promote economic growth. ■

An energy milestone in the offing **AsiaPak company to convert Jamshoro power plant into Thar coal**

\$50 million will be invested to convert 600MW imported coal power; plant expected to begin its commercial operations from indigenous coal by Sept next year



AsiaPak Investments has announced an investment of \$50 million to convert the 600MW Jamshoro imported coal power plant to Thar coal as part of its efforts to reduce reliance on imported fossil fuels.

“We have approached the government for our plan of investment and waiting for the nod of authorities,” AsiaPak Investment Head Shahriar Chishti said.

He was talking to the media about the utilisation of Thar coal in the plant, which was financed through Asian Development Bank at the cost of \$545 million, and is still to start its commercial operations.

Head of AsiaPak Investments, which claims to have acquired 54 percent shares in K-Electric (KE), hoped that the government would soon give its approval for the investment.

“Plant is expected to begin its commercial operations (CoD) from indigenous Thar coal by September next year, if the government approves our investment plan immediately,” he said, while expressing his hope that the plant would generate around 5 billion units per year, and bolster provision of electricity in Karachi – the commercial hub and revenue engine of Pakistan.

Chishti said that KE is also interested in development of 660MW unit-II

of the Jamshoro supercritical imported coal-based power plant. He said both units of the project were designed to be operated as a combined facility; many common facilities were included in the project design, hence the cost of unit-II would be far less than that of unit-I.

He said AsiaPak which is also one of the shareholders in Thar Block-I, and KE have offered financing for the conversion of the project. The modification project will incur a cost of \$50 million which is not more than 10 percent of the project's total cost, he said.

The daily coal demand of the plant is around 8,000 tonnes, or some 250 trucks per day from Thar Coal Block-I. Thar coal mines have huge capacity to supply the needed fossil fuel.

He said that a 100km rail link will also be developed from Thar Mine site to Chhor, while the rail track from Chhor to Jamshoro plant is already intact. “Chhor to mine site rail link is very important,” he added. Sindh government has already informed the federation that it will finance this project. Perhaps, some Middle Eastern investors have also expressed their desire to finance the track, he said.

“It would be unfortunate if we continued to operate this plant on imported coal for the next 30 years, despite having enormous local coal reserves,” Chishti concluded. ■

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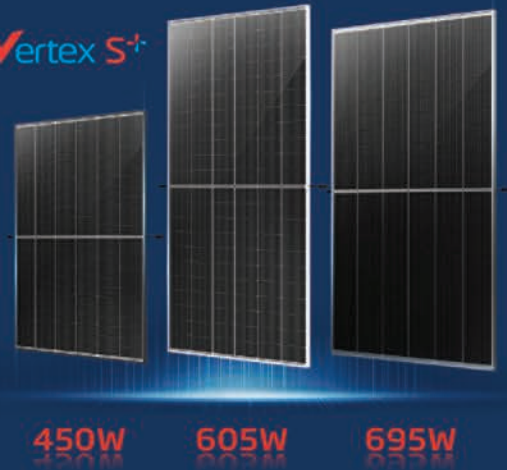


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Tehmina Asad

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

During the last week of August 2023, people were taken aback when they received their electricity bills. Even those consuming an average of 200 units per month were shocked by the increased amounts on their bills.

Energy efficiency in buildings

Encouraging energy efficiency is crucial to securing a sustainable future for Pakistan

This was mainly due to the soaring circular debt (Rs2.63 trillion) leading to increased base tariff and additional surcharges, fluctuations in imported fuel prices, and inefficiencies in meter-reading and tariff determination. All these factors contributed to the increased electricity costs reflected in the bills.

Pakistan's energy consumption patterns require scrutiny. In this context, a robust call to action arises for adopting energy-efficient practices, particularly within the building sector.

It is a neglected area contributing to higher electricity demand and consumption inefficiencies in our building structures.

Pakistan's energy statistics paint a picture of rapidly increasing energy demand. The country's energy needs have surged from 484 terawatt-hours (TWh) in 2000 to 1,071 TWh in 2021, highlighting the urgent need for greater efficiency in energy consumption.

In contrast, developed nations such as Germany and the Netherlands have successfully curbed their energy usage, showcasing the potential of embracing energy-efficient strategies.

Since 1986, Pakistan's domestic electricity consumption has persistently risen due to rural electrification and growing urbanization, driven by population growth. The domestic sector accounts for a significant portion (47%) of the country's electricity consumption.

In comparison, the industry consumes 28%. Looking ahead to 2030, the projected energy mix emphasizes addressing domestic sector energy demands, primarily relying on natural gas (55%) and electricity (40%).

This differs from the global trend, where industrial consumption dominates. The global industrial sector uses 41.9% of electricity, whereas the domestic sector uses 26.6%.

Even India follows a similar pattern, with industry consuming 41% and households consuming 26% of the total electricity. This divergence highlights the urgency for Pakistan to realign its energy consumption practices for enhanced efficiency and sustainability.

During significant weather conditions, a significant amount of energy is used for space cooling or heating in different types of buildings, including residential, commercial, and public structures. The increased energy consumption in these buildings is primarily due to their construc-



Oil, gas reserves to end in 15 years



Hydrocarbon deposits deplete rapidly since no new major discovery made

Pakistan's oil and gas reserves have depleted by 17% and 6%, respectively, in the past one year till June 2023 as no major hydrocarbon discovery has been made since long. It signals that leftover deposits will be fully consumed in the next 15 years, according to a research house that cited data of the Pakistan Petroleum Information Services (PPIS). In a report on oil and gas exploration, Arif Habib Limited analyst Muhammad Iqbal Jawaid said that Pakistan's crude oil reserves contracted by 17% to 193 million barrels in June 2023 compared to 233 million barrels in the same month of last year. The depletion was because of a "natural decline in major oil fields".

Similarly, natural gas reserves went down by 6% to 18,339 billion cubic feet (bcf) at the end of June 2023 compared to 19,513 bcf in June 2022. "The country's total hydrocarbon reserves have a lifespan of 15 years," he projected while observing the hydrocarbon production and consumption trends. He elaborated that the reserves left with Oil and Gas Development Company (OGDC) were likely to be consumed in 20 years while the reserves of Mari Petroleum would be exhausted in 15 years.

Pakistan has made no meaningful discovery of crude oil and gas in more than two decades, heavily increasing its reliance on expensive imported fuels to meet consumer needs. Latest data suggests that Pakistan produced 69,938 barrels of oil per day and 3.26 bcf of gas per day in the week ended August 31, 2023.

AHL's Jawaid said that the decline in oil reserves was observed in major fields including Jhandial, Pasakhi/ Pasakhi North, Chanda, Adhi, Nashpa, Shahdadpur and Makori East. They registered a plunge of 99.6%, 27%, 15%, 13%, 13%, 6% and 3%, respectively, in the past one year.

Meanwhile, oil reserves in Mehar, Umar, Halini and Pindori fields registered a jump of 21%, three times, three times and four times, respectively, in the year under review. In the case of gas, its reserves in Kunhar West Deep, Uch, Adhi, Qadirpur, Shahdadpur, Nashpa, Sui and Mari fields depleted by 5%, 5%, 6%, 7%, 8%, 9%, 10% and 12%, respectively.

In the AHL E&P universe, oil reserves of PPL, POL and Mari declined by 10%, 59% and 77%, respectively whereas OGDC's oil reserves recorded an uptick of 1%. In terms of gas reserves, OGDC, PPL, Mari and POL's reserves decreased by 4%, 4%, 11% and 55%, respectively. ■

Courtesy Express Tribune

tion materials and designs.

Numerous buildings have been constructed using thermally conductive materials that lack adequate insulation capacity. Consequently, these buildings become excessively warm during summers and uncomfortably cold during winters. This temperature inefficiency necessitates considerable energy for regulating and controlling the indoor climate.

The energy demand in Pakistan fluctuates significantly between winters (12MW) and summers (32MW), with the high cooling load being the primary contributing factor. Domestic cooling accounts for nearly 37.10% of the total capacity, while commercial cooling contributes to approximately 65% of the total energy demand, resulting in a difference of around 20 KMW. The generation of electricity at high rates to meet this additional demand leads to high tariffs and capacity costs.

By 2025, the peak electricity demand in Pakistan is expected to increase by an additional 4000MW. This gap is anticipated to widen due to various factors, including the growing electricity consumption in the building sector.

The rising demand for new construction in Pakistan provides a significant opportunity to enhance energy efficiency by employing energy-efficient techniques, materials, and practices for better building design. With a yearly growth of 5.3% in construction demand due to rapid urbanization and population increase, urban areas are projected to accommodate over 40 million people by 2023, necessitating new structures and escalating energy requirements.

Enforcing the Energy Conservation Building Code (ECBC) within the construction sector becomes crucial to address this.

Enhancing the efficiency of building envelopes can reduce air conditioning electricity consumption by approximately 20%. One practical approach involves integrating energy-efficient strategies into new construction using sustainable materials, technologies, and innovative design methodologies like Building Information Modeling (BIM).

Embracing and enforcing building codes within Pakistan's

construction landscape offers a promising route toward achieving energy efficiency objectives, especially amid the prevailing energy crisis.

When followed, Energy Conservation Building Codes (ECBCs) can facilitate the design and construction of energy-efficient buildings and minimize energy wastage. Anticipating a 5.3% annual rise in new construction, Pakistan has a golden opportunity to integrate energy-efficient measures seamlessly.

Additionally, improving energy efficiency is not limited to new constructions; retrofitting older buildings with energy-efficient technology can also yield great results. Making enhancements to building envelopes, and lighting fixtures, utilizing renewable energy sources, such as solar panels, can significantly reduce energy consumption and lead to substantial long-term cost savings.

Institutions like the National Energy Efficiency & Conservation Authority (NEECA) are central to this transition. NEECA's steadfast dedication to promoting energy conservation across sectors can manifest sustainability in energy consumption. Through collaboration with provincial authorities and implementing cost-effective measures, NEECA aspires to reduce CO2 emissions by 8.29 million tons by 2030.

Encouraging energy efficiency is crucial to securing a sustainable future for Pakistan. It is not just about cutting costs and reducing emissions but also about improving the locals' living standards and preserving the environment. By adopting techniques like passive building design, robust insulation, and renewable energy sources, we can ensure that our buildings are practical and environmentally responsible. This will reduce energy consumption and enhance the quality of life for the people.

Disseminating awareness through media, encouraging routine energy audits for existing structures, and enforcing energy code compliance for new constructions are all pivotal steps. Adopting energy-efficient practices is necessary for Pakistan's overall growth, not just a personal preference. ■

El Niño: A climatic phenomenon with global implications

Understanding complexities of El Niño and Its far-reaching effects

Dr Basharat Hasan Bashir



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

El Niño, a climatic phenomenon that has captured the attention of scientists and the public alike, is back in the spotlight. This complex and recurring weather event has far-reaching implications for ecosystems, economies, and societies around the world. In this in-depth exploration, we'll delve into the intricacies of El Niño, its causes, effects, and the current state of research and preparedness.

El Niño, a Spanish term meaning "the little boy," is a climatic phenomenon characterized by the periodic warming of sea surface temperatures in the equatorial Pacific Ocean. It is part of a larger climate system known as the El Niño-Southern Oscillation (ENSO), which encompasses both El Niño (the warming phase) and La Niña (the cooling phase).

The primary driver of El Niño is the weakening or reversal of the normal trade winds that blow from east to west across the tropical Pacific. During El Niño events, these winds weaken or even reverse direction, leading to a disruption of the ocean-atmosphere system. This disruption, in turn, results in the warming of surface waters in the central and eastern Pacific Ocean.

El Niño's impacts are felt across the globe, affecting weather patterns, sea levels, and ecosystems in various ways.

Altered Weather Patterns: El Niño can cause shifts in atmospheric circulation patterns, leading to extreme weather events. This includes increased rainfall and flooding in some regions (e.g., South America and the southern United States) and droughts in other regions (e.g., Australia and Southeast Asia).

Global Temperature Anomalies: El Niño tends to contribute to temporary global temperature increases due to its influence on atmospheric circulation. This can exacerbate existing climate change trends.

Coral Bleaching: Warmer ocean temperatures associated with El Niño events can trigger coral bleaching, endangering marine ecosystems and fisheries. **Agricultural Impacts:** Crop yields can be affected due to the altered rainfall patterns, leading to food shortages and economic disruptions in affected regions. **Wildfires:** Increased drought conditions caused by El Niño can elevate the risk of wildfires, as seen in parts of California during past events.

Monitoring and Predicting El Niño:

Advancements in climate science have enabled the monitoring and prediction of El Niño events with increasing accuracy. Scientific agencies and organizations around the world, such as the National Oceanic and Atmospheric Administration (NOAA) and the Australian Bureau of Meteorology, use a range of tools, including satellite data and computer models, to track sea surface temperatures and atmospheric conditions.

Atmospheric Feedback Loop

The warming of sea surface temperatures in the eastern Pacific creates a positive feedback loop with the atmosphere. Warmer ocean waters release heat into the atmosphere, leading to changes in atmospheric circulation patterns. The rising warm, and moist air can trigger convection and the development of low-pressure systems, further enhancing the disruption of normal weather patterns.

Global Impacts: The altered atmospheric and oceanic conditions associated with El Niño have far-reaching effects on global weather and climate. These impacts include changes in rainfall patterns, droughts, floods, and variations in

temperature. El Niño events can disrupt normal climate cycles, affecting ecosystems, agriculture, and even economies around the world.

Droughts and Water Scarcity: Conversely, El Niño can bring about drought conditions in other areas. Regions such as Australia, Southeast Asia, and parts of Africa may experience reduced rainfall, leading to water scarcity, crop failures, and stress on freshwater resources.

Temporary Global Warming: El Niño can contribute to a temporary increase in global temperatures. The disruption of atmospheric circulation patterns and the release of heat from warm ocean waters into the atmosphere can elevate global temperatures for a short period. This warming effect can exacerbate existing trends related to climate change.

Vector-Borne Diseases: Changes in rainfall patterns can affect the distribution of disease-carrying vectors like mosquitoes. This can lead to outbreaks of vector-borne diseases, such as malaria and dengue fever, in affected regions.

Infrastructure Damage: Severe weather events like flooding and landslides can damage infrastructure, leading to significant economic costs for repairs and recovery.

Impact on Trade: The disruptions caused by El Niño can affect global trade in various ways. Crop failures can lead to changes in food prices and trade imbalances, while damaged infrastructure can erode some of the pros and cons associated with El Niño.

Severe Weather Events: El Niño often brings extreme weather events, including heavy rainfall, floods, and storms. These can result in loss of life, property damage, and significant economic costs.

Economic Disruptions: The economic impacts of El Niño can be substantial. Severe weather events, damage to infrastructure, crop failures, and increased healthcare costs can strain economies at local and national levels. ■



Solax Power aims to be a trusted partner of Pakistan in clean energy

Enhancing customer support and after-sales service network is our motto

Naeem Qureshi

Solax Power is dedicated to not only expanding our presence in Pakistan but also contributing to the country's sustainable energy future. We aim to be a trusted partner in Pakistan's journey toward a more reliable and cleaner energy supply, says Tiger Yan, Regional Sales Director, Solax Power in an interview with Energy Update.

Q1. SolaX Power recently participated in the Solar Pakistan Expo and Conference in Karachi. Could you share your thoughts on the significance of this event for the Pakistani renewable energy market?

Ans: While Pakistan is facing energy challenges, I believe that events like the Solar Pakistan Expo are pivotal in driving awareness and facilitating the growth of the renewable energy sector in Pakistan. It brings together industry leaders, renewable energy experts, and other stakeholders under one roof to discuss the most innovative technologies that can help Pakistan's transition towards a cleaner and more sustainable energy future.

Q2. Can you tell us about the key takeaways or outcomes from SolaX Power participation in the event? Did you make any important partnerships or connections?

Ans. Foremost, our participation in this event provided us with a valuable platform to showcase our cutting-edge solar solutions and technologies to a diverse and engaged audience. It was a true honor for me to be invited to deliver a speech during the conference, where we shared our insights on the Pakistani renewable energy market.

Another important outcome was the establishment of significant partnerships and connections. We had fruitful discussions with local distributors, solar installers, and potential business partners who showed keen interest in our offerings. These connections are essential for expanding our presence in the Pakistani market, ensuring the accessibility of SolaX products to a broader audience.

Furthermore, our involvement provid-

TIGER YAN,
Regional Sales Director,
Solax Power

ed us with valuable insights into the specific energy challenges and opportunities present in Pakistan. These insights will play a crucial role in shaping our product development and market strategies within the region.

Q3: Can you tell us about the key takeaways or outcomes from SolaX Power's participation in the event? Did you make any important partnerships or connections?

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Another important outcome was the establishment of significant partnerships and connections. We had fruitful discussions with local distributors, solar installers, and potential business partners who showed keen interest in our offerings. These connections are essential for expanding our presence in the Pakistani market, ensuring the accessibility of SolaX products to a broader audience.

Furthermore, our involvement provided us with valuable insights into the specific energy challenges and opportunities present in Pakistan. These insights will play a crucial role in shaping our product development and market strategies within the region.

Q4. Pakistan faces energy challenges, including power shortages. How does SolaX Power's technology address these issues and contribute to a more reliable energy supply in the country?

Ans: Pakistan's energy challenges, particularly power shortages, are a pressing concern. At SolaX, we recognize the need for innovative solutions to address these issues and contribute to a more reliable energy supply. Our XI-Hybrid LV solar inverter is at the forefront of this effort.

SolaX XI-Hybrid LV is specifically devel-



oped to support low-voltage batteries, making it well-suited for the Pakistani energy landscape. This feature ensures a stable and uninterrupted power supply even under unstable grid conditions. Moreover, XI-Hybrid LV offers flexible compatibility, including support for generators. During power shortages or outages, it can seamlessly integrate with backup generators, guaranteeing uninterrupted power flow when needed most.

Q5. In what ways does SolaX Power plan to further engage with the Pakistani market, and what are your future plans for expanding your presence in the country?

Ans: To foster a strong and enduring presence in the Pakistani market, SolaX has devised a multifaceted strategy. Firstly, we plan to strengthen our local partnerships, forging alliances with distributors, installers, and service providers who share our vision for sustainable energy solutions.

Also, we aim to enhance our customer support and after-sales service network. Providing timely maintenance, technical support, and product education is paramount to ensure customer satisfaction and trust in SolaX. Lastly, we intend to continually tailor our product offerings to meet Pakistan's specific energy demands and challenges. Through these strategic initiatives, Solax Power is dedicated to not only expanding our presence in Pakistan but also contributing to the country's sustainable energy future. We aim to be a trusted partner in Pakistan's journey toward a more reliable and cleaner energy supply. ■

The anatomy of Discos' BoDs

Whole nation is seized by huge electricity bills

Engr Tahir Basharat Cheema



The Writer is Former MD PEPCO

The whole nation is seized by the huge bills received by the people. KE – as a vertically integrated utility – with its own dedicated generation fleet and transmission lines, was quick to inform the public about NEPRA (National Electric Power Regulatory Authority) being responsible for the huge rates.

Pseudo experts have also chipped in since then with their words of wisdom. The GoP, on the other hand, while citing IMF (International Monetary Fund) constraints has as yet only offered installments to the poor protestors. We will have to wait and see as to where it all will lead us.

Looking into the innards of the Power Sector, we see its governance is with the non-professional MoE (Ministry of Energy), while the management of the DISCOs is seen to be with the various fully empowered BoDs responsible for everything—including billions worth of procurement and construction contracts. The problem is clearly at both these ends.

However, as the generalist civil service is not going away anywhere, we need to look into the anatomy of the BoDs for possible solutions. More so, when even the federal government is restricted to only control and manage the DISCOs through its representation on the boards.

The legislation – primarily, the Companies Act and the SECP's (Securities and Exchange Commission of Pakistan's) Rules governing the functioning of the SOEs (state-owned enterprises) clearly require so.

In a situation where a BoD was not found wanting a few years ago, a lawyer of note, and now even more of eminence, as the member of the board secured an order from the IHC and assured the required longevity for the BoD. Since then, the succeeding Boards have assured us that the particular company has remained on the same low level.

In view of the above, it is of great importance to delve into the anatomy of the BoDs – especially, of the DISCOs – the show window of the Power Sector. History informs us that WAPDA's then area Electricity Boards were wrested out of their

moorings and corporatized as non-listed Public Limited Companies in 1996-97. And with this change, separate BODs were nominated for each of the Power Sector Corporatized Companies (PSECS) by the succeeding PEPCO (then in a way also a forte of the army-led management of WAPDA).

These were filled-up by sectoral nominees but which remained answerable to the WAPDA House where the Authority's Chairman was nominated as the Chairman PEPCO with the Member Power as the MD PEPCO.

This concept remained in vogue till the then Ministry of Water & Power (now changed into the MOE's Power Division and the Ministry of Water Resources) took over the job of making nominations and quickly filled the same with a mix of business and political persons.

Unfortunately, with each change of government at the Centre, the nominees became more and more political and also more non-professional. At the same time, the proficiency and seniority of the governmental nominees too dropped from Additional Secretaries to even officers of the rank of Deputy Secretaries – with the latter, in most cases simply opting to skip the board meetings or at the max to use skype or zoom to be visible in the proceedings.

The situation took a bizarre turn when an old KESC hand became the SAPM on Energy and brought in 42 former mid-level functionaries of the KESC – now dubbed as the KE, to take full control of the DISCO BoDs.

These poor people did try to deliver, but it all was too much for them. At the change of the then regime, everybody believed that the new nominees to the DISCO Boards would be experts to the core – especially, when everyone now recognized the importance of professionalism.

Unfortunately, the change was otherwise, and the new boards were duly packed primarily by political nominees alone. Furthermore, the boards have also been converted into training academies for the most competent progeny of legislators – the intake being divided equally between the provincial and the national assemblies.

The core professional or two are simply over-awed by the majority and either stay away or acquiesce, thus they are not much of use.

Furthermore, the members either liking the setting, lordling over otherwise in-accessible functionaries or happy to pocket the honoraria amounts, are seen resorting to holding of myriad meetings each month, surely against the norms and the reason for the latest edict from the fed-

eral government restricting such meetings to just one or two in a quarter.

The academy of the boards is being put to great use by the permanent and contractual cadre of the DISCOs. By making them feel important, the cadre takes all of the trainees for a ride by arranging extensions in service and even promotions that otherwise would never pass the test of rules and regulations in vogue.

Besides this aspect, the basically non-professional BoDs are kept away from any foray into the operational efficiencies or allied issues. Consequently, the Boards have bogged down in approving extensions, promotions and up-coming recruitments; they are kept away from any scrutiny of operational working of the DISCOs – the main reason for steep downturn in all of the KPIs, etc. The one or two professionals amongst the boards either join the fray or are simply sidelined.

So, one thing is clear, the boards are restricted to the mundane relating to HR issues. And surely for procurement and contracting businesses. And so much is the availability of political capital that the board members regularly visit the DISCO HOs nearly every day. But the most damaging is the fact that the DISCOs are bereft of the needed advice and management control that only professionals could offer.

Thus, everything is in a flux and without any direction to manage the current crisis stemming out of the latest exorbitant bills as received by the people. The non-professional boards are oblivious of the issues / reasons for the rise in the electricity rates and, in a way, a party to the rot that is evident in shape of DISCOs receivables of Rs 2.188 trillion (ending May, 2023) and the Circular Debt of nearly Rs 2.500 trillion.

It would be of interest to know about such a case presently is being heard before the Baluchistan High Court – which relates to the pre-dominantly politically packed BoD of QESCO. The Hon'able Court is reportedly piqued about the situation and may accept the petition.

What could be the solution? Simply replacement of the present non-professional and political BoDs with purely professional boards or simply dispensing with the wayward boards altogether – especially, when the political capital of the Power Sector will not let the professional BoDs be.

This is the question that begs an answer; otherwise, the rot would continue. Besides, it is also important to suggest changes in the fit and proper criteria of the SECP as it needs to be further made stringent – otherwise, any possible revival of the DISCOs would remain a dream. ■

PRICE SURGE

Government finalizes gas tariff hike plans under IMF deal

EU Report

The Petroleum Division is preparing to present a proposal for increasing gas tariffs in Pakistan, pending approval in an ECC meeting. This move is aligned with the IMF's requirements for the first review of the \$3 billion SBA loan. Once approved by the federal cabinet, the new gas prices will be implemented from the date of cabinet approval, rather than the originally planned date of July 1, 2023.

The proposal suggests a significant increase in gas tariffs across various sectors, including protected residential consumers, the fertilizer industry, export industry, non-export industry, commercial consumers, CNG industry, and the cement industry. Domestic high-end consumers are also expected to face substantial tariff hikes, tied to the price of LPG cylinders.

The government aims to address the circular debt issue in the gas sector, which has reached Rs2,900 billion, by raising gas prices to reflect market realities. This move is expected to have an impact on various industries and consumers, both domestic and commercial, as the government works to balance the energy sector's financial stability.

بجلی کے کھمبوں اور تاروں پر بیٹھنے کا بل



Nationalising Independence Power Producers

Dr Arshad Zaman

The Writer is Senior Economist

In Gordium, the capital of Phrygia (ancient Greece), legend had it that whoever could untie an oxcart tied by a complex knot would rule all Asia. Famously, in 333 BCE, Alexander the Great untied the knot, not by untying it, but by cutting through it. This article advocates cutting the Gordian Knot of our purchasing power agreements (PPAs) with Independent Power Producers (IPPs), by nationalising the IPPs. This would lower electricity tariffs, which now threaten civil order, and solve the problem of circular debt, once and for all, albeit at an upfront cost.

The mechanics are straightforward. A 'Power Sector Nationalisation Ordinance, 2023' can be drafted and promulgated in less than eight weeks of decision. The Ordinance would specify its coverage and provide for owners to be compensated by suitably structured federal government bonds (or sukuk), but only on the basis of a comprehensive, reliable audit, preferably forensic, of their accounts.

No other compensation should be allowed. It would provide for orderly transfer of their boards and management, under a newly defined mandate, and include an Orderly Nationalisation Framework, drawing on the 1998 Orderly Framework for IPP Negotiations. Other provisions to facilitate implementation and remove difficulties should be provided. The aim should be to unlink all indexing to dollars, shift all commercial risks from government to investors, strictly restrict sovereign guarantees to political risks only, and align the target return on equity to global norms.

Based on careful study of all contracts, the Ordinance should cover all IPPs whose PPAs contravene these aims: around 40 IPPs (of the 247 currently licensed), of which only 10 comprise 60-70pc of the sector. No doubt, the IPPs cartel would resist this. But let us first look at what would be accomplished if such an Ordinance could be passed. Reportedly, (ET, 29 August), the government is committed to pay Rs 1,300 billion (roughly \$4.3 billion) in capacity payments to idle IPP plants in the current fiscal year.

If promulgated by say end December, over half this amount (roughly 9pc of the budgeted federal deficit this year) would be saved and the average consumer's monthly electricity bill would be reduced by perhaps 25-35pc.

More significantly, the Ordinance would lay to rest the problem of so-called Circular Debt that has bedeviled public finances and the national economy since 2006. This unfortunate term, sanctified by the Economic Committee of the Cabinet in 2014, misleadingly suggests that these debts arise from a shortage of liquidity to settle offsetting obligations.

In fact, they are structural debts that arise from the incentive ("security") package offered by governments to IPPs in the early 1990s. These agreements tie successive generations of the people of Pakistan, for 25-30 years, to providing

inputs (fuel oil, natural gas, and coal) to IPPs effectively at rupee-indexed prices, while paying for their installed capacity and electricity generated in dollar-indexed prices.

This deceptive, fraudulent asymmetry in the structure of PPAs, along with numerous other unjust provisions, ensures that governments will go on accumulating rising debts to the IPPs, as prices, interest rates, and foreign currency exchange rates rise. They must then recover these from citizens through increases in tariffs and taxes that now threaten to outstrip their incomes, as well as through improvements in technical and commercial efficiency. These contracts are unconscionably unfair and inequitable.

This structural debt, created by failing to fulfill obligations under these PPAs, is reportedly (PT Profit, 16 August), around Rs 2,310 billion (roughly \$7.7 billion) today. This should be offset against a final settlement with the IPPs.

The Nationalisation Framework, under the Ordinance, should provide for the issue of Notices of Intent to Nationalise, declaring a moratorium on interest payments and preventing companies and lenders from untoward legal steps to protect their rights under the agreements, as was done in 1998. Most IPPs are now owned by citizens (even if dual citizens), so all disputes should be subject to domestic courts.

As precedent, local courts successfully restrained Hub Power Company from recourse to international arbitration in 1998. In the unlikely event that a legal jeopardy exists in some contracts, we have recourse under international and foreign municipal laws to several pre-emptive measures, best left unspecified for now. This concludes the case for nationalisation, but concurrent efforts would also be needed to reimagine the future design and functioning of the electricity sector, after nationalisation. This would call, above all, for a change in the mindset of policymakers, who have been indoctrinated over the last thirty years in the theoretical, unquestionable virtues of deregulation and privatisation. But in reality, the textbook paradigm of reforms has failed in Pakistan mainly because the regulatory and antitrust systems needed to break up monopolistic cartels and promote competition, essential for its success, do not exist.

The design of a practical, reality-based, results-oriented middle path between the old WAPDA/KESC system and the current state of disorder is a complex technical task which should be entrusted to a committee of experts.

They should draft a roadmap of common-sense reforms, which should constantly be reviewed and revised in the light of experience. The proposed Ordinance should be the first step toward the new system. But to succeed, not just in the power sector but in overall economic reforms, governments must abandon the blind pursuit of theoretical paradigms, unmindful of consequences, and make policy by rational trial-and-error. "Cross the river by feeling the stones," as the Chinese say. The writer has served as Senior Economist with the World Bank in the 1970s and as the Chief Economist of the Government of Pakistan in the 1980s. ■

Solar Pakistan Exhibition

LONGi's green innovation shines

At a recent Solar Pakistan Exhibition, LONGi's green innovation shined on the scene. LONGi's showcased outstanding achievements in the field of environmentally-friendly green new energy and demonstrated LONGi's unique charm in clean energy technology to visitors.

As the world's leading solar energy brand, LONGi has always been at the forefront of renewable energy. The more eye-catching was that the LONGi Pakistan team confidently announced that we are about to achieve the magnificent goal of 2GW+!

The much-anticipated Hi-MO series of products were displayed, which is a new generation benchmark for solar technology. Among them, Hi-MO 6 series products are famous for their high efficiency and excellent performance, providing solid support for our great goal. Hi-MO 6 uses composite passivated back contact cell (HPBC) technology and has no grid lines on the front. In addition to its excellent performance, it can also seamlessly integrate into the environment, bringing higher efficiency and beauty to the roof. It is the perfect choice for industrial and commercial roofs.

The bifacial photovoltaic module Hi-MO 7 based on HPDC technology is also eye-catching. Hi-MO 7 uses composite passivation technology and bifacial double-junction cell technology, which can capture sunlight from both front and back sides, maximizing the energy output of ground photovoltaic projects. If Hi-MO 6 is the best choice "tailor-made" for industrial and commercial rooftops, then Hi-MO 7 is the future of

ground photovoltaics. Hi-MO series products not only represent LONGi's technological strength, but also LONGi's commitment to green new energy.

A series of MOUs with industry partners were also signed at this exhibition to jointly write the future chapter of renewable energy. LONGi prepared 2GW+ specially customized cakes at the exhibition site. The Secretary of the Sindh Department of Energy attended our 2GW+ celebration ceremony and cut the cake to celebrate. This cake represents magnificent achievement of reaching 2GW+ and also symbolizes firm commitment to a clean energy future.



Energy sector is largest producer of greenhouse gases

Mian Fahad



Writer is currently Country Head – PK, Shenzhen Growatt New Energy

The energy sector is the largest producer of greenhouse gases (GHGs) in Pakistan. Projections suggest that the country's energy demand will increase significantly, reaching between 108 to 126 million tons of oil equivalent (TOE) by the year 2030.

Pakistan is facing challenges related to unsustainable energy management, a heavy reliance on imported fossil fuels, and outdated coal technology. These issues have not only impacted the country's energy security but also hindered its compliance with global energy efficiency and decarbonization requirements.

However, there has been a notable shift in the government's approach, focusing on increasing the use of renewable energy (RE). The updated National Climate Change Policy 2021 represents a significant legislative and policy advancement in this direction. It places a strong emphasis on achieving climate change mitigation goals through energy efficiency measures and the reduction of carbon emissions.

One of the key objectives of this policy is to tap Pakistan's substantial potential for

renewable energy. It sets an ambitious target, as by 2030, 60% of the country's energy production will come from clean and renewable sources, so Pakistan will no longer pursue coal power plants' import. Moreover, Pakistan's updated Nationally Determined Contributions (NDCs) in 2021 align with the government's energy-related policy initiatives.

They prioritize the integration of renewable energy sources across various sectors. The 2019 Renewable Energy Policy also aims to reduce greenhouse gas emissions, aligning with the Kyoto Protocol. Pakistan possesses abundant renewable energy resources, including solar, wind, hydro, geothermal, and biomass. Solar energy, in particular, has gained significant attention due to the high irradiation levels in the southwest region, which receives the highest global horizontal irradiance in the Himalayas and the Karakoram.

Wind energy sources in Pakistan have the potential to generate 43,000 MW of electricity. Additionally, the International Renewable Energy Agency (IRENA) estimates that Pakistan's hydropower sector could provide up to 60GW of power, making it a cost-effective energy source. Biomass also has significant potential, estimated to generate 50,000 GWh/year in the country.

Furthermore, geothermal energy resources are available in all provinces and can be harnessed for power generation, heating, cooling, and hot water supply. Harnessing this untapped potential and implementing policy reforms to promote renewable energy across major sectors could lead to a substantial reduc-

tion in reliance on conventional energy sources such as fossil fuels.

This transition would result in cheaper electricity, increased energy security, and potential savings of up to \$5 billion over the next two decades, as indicated in a report by the World Bank.

The textile industry is one sector that stands to benefit greatly from Pakistan's available renewable energy resources while contributing to eco-friendly power generation. Please note that while I have rephrased the content, it's essential to ensure that the source of information is appropriately cited if you intend to use this text for any formal or academic purposes. The industry currently faces several barriers that are impeding its transition to renewable energy (RE) resources, requiring immediate government intervention. One significant issue is the limitation of the current net-metering scheme for solar power systems in the industry, which is capped at 1MW.

There is a pressing need to expand this limit to 5MW, especially considering that the large-scale manufacturing industry often requires between 1.5 to 5MW of power. This expansion has the potential to add 5000MW of solar energy to the country's energy mix without any upfront investment from the government. It would not only make export-oriented units (EOUs) more competitive in the international market due to lower energy costs but also align with the commitment to increase the share of renewables in the total energy mix as outlined in the updated NDCs for 2021. Additionally, the government's plans to launch



solarization projects totalling around 14000MW are commendable.

These projects are expected to reduce the import bill for costly fuels and promote the generation of low-cost, environmentally friendly electricity. To further support the industry in enhancing its energy efficiency sustainably and independently, it should be allowed to install its own solar power structures, and the net-metering scheme for solar should be extended from 1MW to 5MW. Addressing the wheeling case is another crucial aspect. Pakistan needs to transition toward free market models with multiple buyers and sellers in the power sector to promote transparency and revive it.

The wheeling regulations should incorporate the wheeling of renewable energy, and the associated costs should be reduced for off-site industrial installations of renewable power infrastructure. These legislative challenges, combined with the withdrawal of regionally competitive energy tariffs, are placing significant financial strain on the industry.

This situation has led to reduced capacity utilization due to working capital issues, decreased competitiveness in the international market, and difficulties in sourcing raw materials. These challenges could have long-lasting negative effects on the industry's compliance and sustainability efforts and hinder the adoption of RE technology. It's crucial to address these issues promptly to ensure the industry's resilience and transition to cleaner, more sustainable energy sources.

In conclusion, it is imperative for the Government of Pakistan to take immediate action to address the current constraints related to the net-metering scheme for solar, as well as wheeling charges, and to maintain regionally competitive energy tariffs for the industrial sector. These measures are essential for facilitating the industry's progress towards sustainability and its transition to renewable energy (RE) sources. By doing so, the government can enable the industry to harness the full potential of RE resources within the country, reduce dependence on fossil fuels, and enhance its competitiveness in the global export market.

Failure to address these issues would risk rendering the government's recent National Climate Change Policy (NCCP) and Nationally Determined Contributions (NDCs), which emphasize RE, as mere documents without meaningful implementation. In essence, a concerted effort to overcome these barriers is vital to realizing Pakistan's renewable energy goals, fostering industrial sustainability, and aligning with international commitments to combat climate change. ■

DISCOUNTED IMPORTS

Pakistan's Cnergyico imports first private-sector Russian crude amid discounts

EU Report

Cnergyico, Pakistan's largest refinery operator, has successfully imported the nation's first private-sector shipment of Russian crude oil. This move comes as Pakistan capitalizes on Moscow's discounted oil exports after Russia's exclusion from European markets due to the Ukraine conflict. Despite challenges like port limitations, Cnergyico utilized its single-point mooring to receive the cargo.

The 100,000-metric-ton shipment of Urals crude will be processed at Cnergyico's Hub refinery, marking a significant milestone for both the company and the country. Cnergyico plans to sell refined gasoline and diesel locally while exporting furnace oil to generate foreign exchange.

Pakistan aims to import 100,000 bpd from Russia this year to address its foreign-exchange crisis and combat inflation.



However, analysts note increased shipping costs and lower-quality fuels from Urals crude compared to products from Saudi Arabia and the UAE. Cnergyico remains optimistic about the viability of Russian imports through furnace oil exports.

Payment for Russian crude varies, with the government using Chinese yuan for its imports, while Cnergyico is reported to do the same via a Chinese bank's letter of credit. Despite challenges, Pakistan sees an opportunity to secure discounted Russian oil to stabilize its energy needs.

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Hopewind to harness clean energy potential

Pakistan can generate 2900GW solar and 340 GW wind energy: moot told

Khalid Iqbal

Hopewind, the world's leading renewable energy equipment producer, has plans to build technical support teams in Pakistan comprising local technicians for efficient service to its customers using clean energy options for energizing their homes and offices.

"We have also plans to conduct local R&D activities to promote and support the Pakistani renewable sector for maximum utilization of solar and wind power potential of our country," said Hopewind's new Country Manager in Pakistan, Syed Salman Mohiuddin, while speaking at a webinar titled: "Smart energy choice for your home & business".

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

Mohiuddin said the Hopewind's inverters were very stable having virtually zero per cent failure rate because they were not based on IGBT. "We have our distributor in Pakistan but we now aim to expand our business in Pakistan," he said. Irfan Ahmed, a senior



energy expert who conducted the webinar, noted that the active involvement of Hopewind in installing over 100 GWs of renewable energy generation capacity around the world was a remarkable achievement given that Pakistan's solar and wind energy projects were not producing more than 3 GWs power. He said that Pakistan needs more dynamic companies like Hopewind to help its government achieve the ambitious targets set for the renewable en-

ergy sector that has to be achieved in less than 10 years. Ahmed told the audience that as per the latest estimates, Pakistan had the potential of generating 2900 GWs of solar energy and 340 GWs of wind power. He said that equipment and technology required for wind and solar power projects should be indigenously produced to the maximum possible extent.

Energy Update hosted this webinar to promote and awareness of the new product. ■





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Renewable energy: solution to energy crisis

Net Metering growth in Pakistan has been slow due to differentials in off-peak, peak rates

Moin M Fudda



The writer is a solar licence generator and a founder of Group "Save the Planet via Green Energy"

The power sector of Pakistan has remained under severe stress for more than two decades. To fill the gap between supply and demand, the government introduced three Power Polices in 1994, 2002 and 2015 and signed long-term agreements of up to 25 years with 79 IPPs (independent power producers).

According to a report by an inquiry committee headed by Muhammad Ali, former Chairman of the SECP (Securities and Exchange Commission of Pakistan) and now the Minister of Energy, IPPs earned 17% rate of return in US\$ which at the time of submission of report in April 2020 worked out to 27% and now owing to adverse exchange rate, annual return in PKR has crossed 50%.

A review of two imported coal-based power plants established under the 2015 Policy revealed that one plant had recovered 71% of the investment in two years whereas the other had regained 32% of investment in only one year.

To reduce the dependency on ther-

mal fuel, in 2015 the government decided to increase the share of renewable energy from 9% to 30% by 2030. Regrettably, following the same policies, the government again signed long-term agreements indexed to US\$ with Solar IPPs.

At the same time to tap the Solar Energy, Nepra (National Electric Power Regulatory Authority) issued Net Metering Regulations whereby Roof-Top Solar Generator could sell the excess supply to the Discos at the National Average Power Purchase Price (NAAP) without any infrastructure costs and zero-line losses.

Net metering was first introduced in the US in 1969 and since then it is available in sixty countries. In most countries after sunset electricity meters run in reverse to offset the excess energy supplied during the day and balance if any, is carried forward and then finally adjusted in the monthly bills. Additionally, to promote greenhouse gas emissions, some countries provide tax incentives. On the other hand,

Net Metering growth in Pakistan has been slow due to differentials in off-peak and peak rates and no adjustment thereof. Thus, till date Roof-Top Solar Generators' share in the Renewable Energy is less than 1%.

Surprisingly, someone in the Power Division felt that since cost of electricity generated

through Hydro and new Wind Power Plants is less than Rs 10 p/u, the NAAP of Rs 19.32 p/u by DISCOS from Net Metering consumers should be reduced.

It was argued that if the GoP is unable to renegotiate the terms of contracts with IPPs, which are indexed to US\$, then why target Roof Top Solar Generators, who are being paid in PKR for a payback period of 5 to 7 years.

Prior to the public hearing and with quality research by a PIDE (Pakistan Institute of Development Economics) team, its Vice Chancellor Dr. Nadeem ul Haq led the webinar which concluded that Nepra's move would not be in line with Government's 2030 vision of Renewable Energy.

Whereas after the hearing Engineer Abdul Jabbar, who was also acting in public interest, managed intervention by the President of FPPC&I (Federation of Pakistan Chambers of Commerce and Industry) against this move.

Therefore, finally, on 10th of February 2023, Nepra decided against any amendment in the Net Metering Regulations. A decision signed by the Chairman and three members of the Authority stated that economic benefits of Net Metering in terms of displacement of costlier electricity, saving of foreign exchange and incurring minimal losses cannot be ignored coupled with a low quantum of less than 1% of Net Metering Units.



Shocks of high electricity bills

People turning to solar energy

Aamir Yasin

With electricity tariff going through the roof, more and more people, especially those from the middle class, were looking for alternatives. Their only option at the moment remains solar energy.

However, this system has its own problem. Due to low local production of solar panels, installation of this system has become costly as its components have to be imported.

Therefore, instead of installing the entire solar panel system, people are opting for fans and room coolers run on solar panels to get relief from inflated electricity bills.

The high demand of these solar panels has led to an increase in their prices, which range from Rs4,000 to Rs10,000.

LED lights lay on the shelves of the shop. Air coolers powered by solar energy are effective to keep indoor spaces cool during hot weather. These types of air coolers work on solar panels to generate electricity which powers the fan and pump system that circulates air and water throughout the unit. Due to high demand of the solar generating power system, a number of shops that sell and install solar panels have cropped up in the city.

If one walks from Fawara Chowk to Liaquat Bagh in Rawalpindi, he or she would find shops dealing with solar energy system, especially those panels that power fans and room coolers.

At present, an amount of Rs300,000 to Rs500,000 was required to convert the house on to solar energy, which, in the words of shopkeepers, was likely to increase in the coming days. Most of the equipment used in the system like solar panels, batteries or inverters were imported while some things used in the installation were locally made.

Solar panels are normally installed on roofs. Material that is required includes roof anchors made of aluminum or steel, a unique key lock system between the roof anchors and the mounting frame, mounting frame, bolts to screw it tightly, clamps to fix the solar panels to the mounting bracket and

lastly solar panels.

Ahmed Nabi, the owner of a workshop on College Road, told Dawn that the process of installing solar energy system was simple but technical and more than four workers were involved in the process.

Solar-powered fans are also in demand.

He said last year, installation of a solar energy system did not require that much money, but this year, it has become expensive. He said with the help of solar energy system, one can run a washing machine, eight fans, lights and refrigerator during the day, adding that during the night, the house owner could consume regular electricity.

“We are also making solar energy system to run air conditioners but it is far more expensive. The price is comparatively high but it saves electricity charges as you can run an air conditioner in the afternoon with solar energy,” he said.

Mohammad Kamran, a consumer at College Road, said electricity tariff was increasing with each passing day, therefore he was exploring the idea of installing solar energy system.

“I am visiting College Road to check the market rate of solar energy system; I found it to be expensive as it required an investment of more than Rs500,000 to Rs600,000,” Mr Kamran said.

Batteries to run devices like fans and bulbs on solar energy are also on sale. — Photos by Mohammad Asim

Another consumer, Riaz Ahmed, said it was difficult to pay electricity bills and had therefore decided to install solar energy system in his house. He went on to say that it was the duty of the government to provide people loans to promote solar energy.

Meanwhile, the provincial government has decided to transition all government institutions under its jurisdiction to solar energy to reduce the amount in electricity bills. Through this initiative, these institutions as well as the Punjab government will save billions of rupees annually.

It has been decided to launch the project in November and for this the district administration and the relevant authorities have started making necessary preparations to install solar energy devices in these institutions. ■

Courtesy Dawn

Through the recent report in media, it is perceived that having not reconciled with the Authority's unanimous decision, Power Division this time without giving background of public hearing and Nepra's decision has made a case that 1000MW of excess energy generated by Roof-Top Solar Panels costs it more than Rs 19.32 p/u it pays to Net Metering consumers because it also pays a significant amount to the IPPs in the capacity payment for not buying the same from the power generation companies.

Net Metering Regulations may please be amended to provide adjustment of excess units supplied during off-peak hours with peak hours through running of reverse meters as it is prevailing in a number of countries.

This will to some extent compensate the Roof-Top Solar Installers for the lesser price compared with the CPPA rate, they are selling the units to the DISCOS. Also, at the same time it will discourage, on the one hand, the use of batteries which are unfriendly for the environment and on the other the government will save foreign exchange through reduced imports of batteries.

With zero-line losses and no infrastructure costs associated with the export of Solar Units and given that Roof-Top Solar Generators having no nationwide platform to argue their case, they rely on Nepra for protection of their rights. Therefore, Nepra must periodically review the NAPP and its last revision of 14th July 2023 from Rs 19.32 to Rs 22.95 being illegally held in abeyance by the Power Division must be notified.

Pakistan is endowed with year-round sunny weather and therefore it is about time the Power Division, which due to its flawed policies has placed a huge burden of circular debt and capacity payments on the country's economy, be stopped forthwith from interfering in the management of Renewable Energy.

Instead, it is hoped that the recently established Special Investment Facilitation Council (SIFC) will also include Renewable Energy in its scope so as to enhance the quantum of Net Metering from 1% to 10% in the next 3 to 5 years. ■



Elusive relief amid skyrocketing inflation

Food inflation is still high while global crude oil prices are on the rise

Mansoor Ahmad

Balancing the needs of the common man with fiscal responsibility is a complex task. It requires careful planning and execution.

The major factors that trigger inflation in Pakistan include the food prices, prices of petroleum products and the exchange rate. While the present regime has moved to stop the depreciation of the rupee, the food and petroleum prices continue to rise.

Food inflation is still high and global crude oil prices are on the rise. Other factors that trigger inflation are the power and energy rates. Power bills are currently the most talked about expense in household budgets. There are indications that power and energy rates will continue to rise for a while. Gas rates alone are set to jump by 45 percent this month.

What relief does the common man want? More than the food prices the poor are now worried about their power bills. A family with a fan, a fridge and a television consumes around 200 units a month. Three years ago the bill for 200 units was around Rs 3,000. A year and a half ago, the bill for the same number of units rose to around Rs 5,500. Now 200 units cost over Rs 9,000. How much relief can the government provide on this bill, Rs 1,000 or Rs 2,000? Will it solve the family's problem?

The government is not in a position to provide even this amount. The cost of transport has risen manifold and is bound to rise more as petroleum prices are revised every 15 days. Will the government share the burden of transport expenses? There is no way that this or any other government in Pakistan

could help the common man in meeting these expenses. Prices of medicines are now out of reach for the common man. Many people are skipping their daily doses of life-saving drugs to save the resources for other needs.

This is an administrative problem and can only be resolved if similar administrative actions are taken against businesses as have been taken against hawala dealers and sugar hoarders. The government does not lack manpower to enforce fair regulation. However, it certainly lacks the will to confront so many vested interests in the system. A culture of exploitation is embedded in the system.

Governments should develop and implement comprehensive economic plans that address structural issues contributing to inflation and budget deficits. This needs consistency of policies. The central bank is trying to adjust monetary policy to control inflation. If inflation is primarily demand-driven, they can raise interest rates to reduce spending. However, if it's supply-driven (like rising food prices due to factors like bad weather), monetary policy may have a limited impact. In Pakistan, it is a combination of both. The central bank has gone too far in increasing its policy rate. It is likely to increase it further to tame the runaway inflation.

The policy rates are increased

to contain money supply. But this does not happen in Pakistan where the government is the largest borrower. High policy rates increase the cost of doing business and, hence, increase the prices of goods and services. After massive increases in prices even the targeted subsidies doled out by the state are not sufficient for the poor.

Addressing supply-side issues causing food price increases is essential. This can include investments in agricultural infrastructure, improving productivity and bringing down trade barriers. These are long-term remedies. The common man needs immediate relief which is not in sight.

Addressing these challenges requires a long-term perspective. Governments should develop and implement comprehensive economic plans that address structural issues contributing to inflation and budget deficits.

This needs consistency of policies. If the economic policies continue to change with every change of government, uncertainty will persist and impede economic progress. We certainly need a charter of economy that provides constitutional protection for economic policies for at least 10 years. We also need economic policies that ensure a level-playing field for all. There are no one-size-fits-all solutions to economic challenges like the ones we are facing in Pakistan. Balancing the needs of the common man with fiscal responsibility is a complex task. It requires careful planning and execution. ■



Solar Pakistan

Exhibition & Conference

Solis showcases cutting-edge S6 technology range

Solis, renowned as the third-largest inverter manufacturer worldwide, marked a significant milestone at the Solar Pakistan Exhibition & Conference 2023, held from September 7 to 9 at the Karachi Expo Centre. The event saw the introduction of Solis' highly-anticipated S6 technology range to the Pakistani market for the very first time.

The S6 technology range by Solis is a versatile and innovative solution designed to cater to a diverse array of applications, including residential, commercial, and utility-scale solar projects. The highlight of this cutting-edge range is its emphasis on generator connectivity and multiple input methods, which enhance its functionality significantly.

One of the standout features of the S6 technology is its automatic UPS switching capability, ensuring seamless power continuity for users. Additionally, the S6 offers up to 10 seconds of 200% surge power backup overload capability, making it a robust choice for various energy storage needs.

In residential environments, the S6 inverters connect solar panels to a low-voltage battery. These inverters intelligently manage solar energy production during the day, continuously assessing production against demand in real-time. This enables them to distribute electricity both for immediate use in the home and to charge the battery for later consumption, whether during the night or during peak periods.

Solis' S6 Advanced Hybrid energy storage inverter is designed to meet the requirements of residential and commercial photovoltaic (PV) energy storage systems. It supports multiple parallel machines to form single-phase systems, with a maximum of 48kW in parallel. Moreover, the inverter is compatible with both lead-acid and lithium batteries, offering multiple battery protection features for added safety and efficiency.

The introduction of Solis' S6 technology range to the Pakistani market underscores the company's dedication to research and development, representing years of innovation and a commitment to providing cutting-edge solutions for the evolving energy landscape.

With power classes ranging from 3kW to 8kW, the Solis S6 hybrid inverter empowers users to harness clean electricity while optimizing energy structures for greater economic, secure, and stable power consumption. This innovative inverter boasts features such as Bluetooth configuration, generator connectivity, UPS-level switching, and enhanced surge capabilities, ensuring that users enjoy an uninterrupted power supply.

Moreover, Solis places a strong emphasis on sustainability, as evidenced by the inverter's high DC/AC ratio, PV string current support, and customizable charging/discharging settings. These features reduce electricity bills and maximize the use of solar energy, contributing to a greener and more cost-efficient energy solution. Solis also facilitates system expansion, whole-house backup, and versatile working modes to accommodate diverse energy needs.



Hamza Sajid And Ahsan Imtiaz with team Solis



Team Solis giving information about products to visitors

Power bills and public anger

Anjum Ibrahim

The usual jargon was issued by the Prime Minister's Office on 27, after an inconclusive emergent meeting was called in the aftermath of violent street protests in several cities against the August electricity bills: relevant departments and ministries were directed to prepare concrete measures to reduce the burden of the increased bills and submit them the following day.

The Caretaker Prime Minister was quoted as saying, "we will not take any steps in haste that will harm the country. We will take measures that won't further burden the national exchequer and will facilitate the consumers....It is not possible that while the people face difficulties high ranked officials and the prime minister continue to consume free electricity paid for with the taxes people pay...I represent the common man even if the air conditioner in my room has to be turned off." And he sought details of institutions as well as officials getting free electricity.

On 28 August the Caretaker Information Minister tweeted that the Ministry of Energy had chalked out recommendations for consideration to tackle the issue of inflated bills and would present them to the federal cabinet on Tuesday which would take a final decision on the matter.

On 29 August the cabinet meeting reportedly (as no press release was issued and neither did any caretaker cabinet member bother to hold a press conference) deferred the decision to provide any relief till consultations, read phasing out the condition to achieve full cost recovery, were held with the International Monetary Fund (IMF) under the ongoing Stand By Arrangement (SBA), with the staff level agreement reached on 29 June 2023, which helped the country avert the looming threat of a default.

On 1 September a somber-looking caretaker prime minister flanked by the caretaker finance minister and energy minister informed a select group of TV anchors that the bills would have to be paid though a proposal to defer the payment for those who consumed less than a certain amount of electricity has been submitted for consideration to the International Monetary Fund (IMF).

The question is what constitutes full cost recovery? There is overwhelming evidence that the woes of the energy sector are due to the continuation of the same five major flawed



policies/failure to implement structural reforms by successive administrations and their compounding over decades' that accounts for the unsustainable 2.6 trillion-rupees circular debt today.

First, contractual agreements favouring the Independent Power Producers (IPPs) signed during the tenures of Benazir Bhutto, Pervez Musharraf and Nawaz Sharif (under the umbrella of China Pakistan Economic Corridor) which allow for capacity payments in dollars – payments that are increasingly a challenge for the country with a fast eroding external rupee value and plummeting foreign exchange reserves (currently shored up with debt).

The last Public Accounts Committee Chairman Noor Alam Khan proposed ending this facility for grades 16 to 22 which he claimed would save 9 billion rupees. This is an economically unviable long-standing policy though if withdrawn it would most likely be challenged in the court of law.

Negotiations are critical with those who receive free electricity, before seeking approval of any proposal with the Fund, with the objective of reaching a more economically viable solution. Besides this measure would be endorsed by the IMF

even though it is not a condition/structural benchmark under the SBA.

In addition, the Prime Minister's House, the Presidency, and the Secretariat are billed at the taxpayers' expense while a generous limit of free electricity is also allocated to houses in the Ministers' Enclave. These must be withdrawn immediately even though the actual electricity maybe a very small percentage of the total used yet optics are critical at this point.

Two observations are in order. First, while there is no clarity yet as to the specifics of the proposals sent to the IMF for consideration with the Prime Minister merely stating this Thursday past that some relief would be announced within 48 hours (not announced till the writing of this article) yet one would assume that one proposal would be to reduce/end taxes on electricity for those with low consumption - currently levied at the rate of 17 percent general sales tax, and 7.5 percent advance tax - with a proposal to generate the resultant shortfall in revenue from some other source.

If this other source envisages widening the tax net to include the non-filing traders and the income of rich landlords at the same rate that is payable by the salaried class, then the Fund is likely to fully support this measure.

Reducing rising electricity tariff

Syed Akhtar Ali



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

National Electric Power Authority (Nepa) has increased electricity base tariff by Rs 4.96 per unit from Rs 24.82 per unit to Rs 29.78 per unit. It is a 20% increase. Consumer tariff has yet to be announced, but it would increase substantially.

Gas sector consumer tariff would also increase as similar base tariff has been recently increased by OGRA as well. As is usual, 20% increase in wholesale tariff may not be proportionately passed on to all consumer category. Poor domestic consumers up to 300 units may get a lower brunt and higher end consumers may get proportionally higher (more than 20%) increase.

Textile sector has asked for a reduced tariff due to its export competitiveness issues. It is a zero-sum game. Concession to one category of consumers is passed on to the other category. Earlier, government used to absorb the deficit in the form of circular debt which has increased to Rs. 3 trillion.

One of the major problems is the rising capacity charges (increase from Rs 11.0 in 2022-23 to Rs 17.1 in 2023-2024) due to lesser utilization of capacity and others. This can be increased with economic recovery resulting in lower capacity charges.

Increasing capacity utilization may increase imported fuel consumption which increases foreign exchange requirements. We are stuck in foreign exchange area also. So easier said than done? But something has to be done.

There are some financial restructuring options of the IPPs (Independent Power Producers) that may have to be examined. This is our main objective in this space. The main issue is that most of energy sources in Pakistan are dollar denominated. Even if it is a local resource, its production facility has been created

with foreign investment or debt which has to be serviced.

The recent example is of Thar coal, which is local but its production requires fixed and variable costs, which are in foreign currency. Not to talk of imported fuel power plants wherein all costs are in foreign currency; investment or debt servicing and fuel cost and other variable costs, all of it.

Oil increases transport cost of fuels. Now capacity charge has a share of 66% versus fuel cost of 36%. Hydro having a large share with fuel cost being zero has been contributing to lower average fuel cost and continues to do so. However, the recent reduction appears to emanate from reduction in imported fuel prices.

Thus capacity payments have increased from 5% to 10%, almost or precisely doubled. Combine it with currency depreciation, Rs 100-110 to 1 USD having gone to Rs 280-284.2.7 times increase. In some cases, RoE is also Libor based.

Thus capacity payment should have quadrupled or even more. Older solar power plants are selling electricity at Rs 30 per kWh, while new solar tariff was USc 4.0 per kWh, which should have increased to 8 USc due to Libor increase which should translate to Rs.25 per kWh.

All of this has increased producer and consumer power tariff. Under IMF conditions, Circular debt has to be reduced, although in such circumstances, circular debt cannot be attempted or decreased from financial tricks or tariff increase. DISCOs' efficiency increase under or without privatization is the solution. Privatization has not happened. It will take 5 years to privatize. ■



The caretaker finance minister informed the senate standing committee that the government would adhere to the specifics of the SBA and lamented the very narrow fiscal space implying there will be no subsidy or cross subsidy as noted in the SBAs' Memorandum, of Financial and Economic Policy (MEFP). But sadly, she remained silent on measures that one would have hoped she had announced by now that would have begun to create fiscal space and thereby increase leverage with the Fund notably slashing current expenditure (inexplicably upped by 26 percent in the budget for the current year from the revised estimates of last year).

And secondly, two previous finance ministers unsuccessfully sought renegotiations (phasing-out of harsh upfront conditions) with the IMF under the then ongoing Extended Fund Facility (EFF) programme – Shaukat Tarin and Miftah Ismail – but both were forced to capitulate as the possibility of a default surfaced.

Ishaq Dar not only requested a phasing out of the same conditions which was denied but also violated two major EFF conditions (a controlled interbank rate and raising the budgeted current expenditure by 21 percent for last fiscal year) that led to its suspension with 2.6 billion dollars remaining undisbursed. The incumbent caretaker finance minister has yet to make a positive impression on the markets. ■

Courtesy: Business Recorder



Silent on climate change

Eight million people still do not have access to safe and clean water: UNICEF

Muhammad Hamid Zaman



The writer is a Howard Hughes Medical Institute professor of Biomedical Engineering, International Health and Medicine at Boston University

A year ago, as the waters of the catastrophic floods destroyed homes and lives, there was a sudden interest in the country in climate change. Some were talking about the inevitability of similar events happening at short intervals, others were starting a campaign to get the rich countries to pay for the damage in Pakistan.

A year later, according to Unicef, eight million people — about half of them children — still do not have access to safe and clean water. Friends who are clinicians working in Sindh paint a picture of misery, poverty and state apathy. Doctors working on the ground would repeatedly speak of unimaginable disaster and tragedy. Malnutrition, dehydration and exposure to deadly diseases continue to impact millions. The problem of climate change did not get resolved since the floods, but why is it that all of a sudden the entire national chorus on climate went silent? There are three reasons why the climate change-floods discussion did not get traction beyond the first few weeks.

First, the discussion was dominated by hyperbole and not facts. There were few robust studies to back the claims the government and those in the media made. Experts on climate change were not entirely convinced of the government claims.

This is not to say that climate change is not responsible for adverse weather events. Indeed, climate change has led to unusual weather patterns and the impact is substantial, but the destruction was not simply because of rising temperatures and unusual rainfall patterns. It was also decades of poor planning, corruption and lack of preparedness. Children are ill, and diseases are rampant in the provinces not just because of heavy rains.

These things were an acute problem well before the first episode of the 2022 floods. It is because communities have been denied their basic rights of education, health, safety and well-being for generations. The climate angle, without a recognition of our own failure in governance, was unlikely to convince experts, domestic and foreign.

Second, trust deficit in country and abroad also

played a role. Our own trust in the government remains low, and there are some good reasons for that. So when government played the climate card, there were many who saw that as a way to divert attention from its own failures. International opinion was unfortunately no better.

But perhaps the strongest reason is our own lack of interest. By early fall of 2022, national media was no longer interested in the story of the communities that were suffering. The poor, after all, do not make for a good primetime story.

The government entities went back to business as usual and the national conversation went back to its default mode: political intrigues, bombastic statements and predictions about the political future of politicians, parties and their supporters. Communities continued to suffer with outbreaks of disease, lack of basic water and sanitation, and no reliable and stable housing situation was available for millions.

The country that was unaffected, however, had moved on. While English newspapers would run a story once in a while, Urdu newspapers and national news programmes were even more apathetic and rarely discussed what was happening to those who had lost homes, loved ones and more recently all hope. In January 2023, for a brief period, there was once again a discussion of the devastating floods as donors pledged their support, but that too died down quickly.

The fact that most of those pledges remain unfulfilled should also surprise no one. As the interest in the situation collapsed, inevitably, the conversation on what “caused” the floods also evaporated. Today, only a handful of NGOs have continued to talk about climate change and have kept the broader issue alive.

The issue of climate change is real, urgent and serious. Discussing it opportunistically, without backing it with the concern of those who are adversely affected, will only increase the doubts about the honesty of our narrative. ■

Risen signs agreement with AGN Solar

Risen Energy, a leading solar module manufacturer in China, has announced the signing of a distributor appointment and a new sales agreement with AGN Solar for the supply of 50MW of its high-efficiency modules.

AGN Solar is specialized distributor of renewable energy products and tier 1 equipment such as solar panels, inverters and batteries that create solar energy in Pakistan and the Middle East.

The agreement includes 90,000PV modules of various powers which include P-type monocracial, Bifacial 550/555W, and N-type latest technology HJT 585W and 685W. The modules will be delivered to Karachi in Pakistan, where they will be distributed and installed in residential and commercial projects.

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, 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.

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.



Country Sales Head Risen Energy Ahsan Khan with Naveed Shahzad of AGN Solar during MOU Signing Ceremony.



Country Sales Head Risen Energy Ahsan Khan cutting the cake during MOU Signing Ceremony.

Pakistan's copper wealth: A potential game changer

Saudi Arabia, the UAE, Qatar, and numerous other countries are eagerly eyeing Pakistan's vast copper reserves; demand for copper skyrocketed in recent years; Copper is integral to solar panels, electric vehicles, wind turbines, robotics, other techs

Farrukh Saleem



The writer is news analyst

Copper is integral to solar panels, electric vehicles, wind turbines, robotics, 5G, drone technology, biodegradable batteries, cryogenics, energy-efficient technologies, geothermal energy, quantum computing, and energy transmission systems. Remarkably, Pakistan ranks seventh globally in copper reserves, making it a significant player in this industry's evolution.

The demand for copper has skyrocketed in recent years, driven by technological advancements, renewable energy projects, and the global shift towards electric vehicles.

Saudi Arabia, the UAE, Qatar, and numerous other countries are eagerly eyeing Pakistan's vast copper reserves, making it a potential treasure trove for the nation. These Gulf nations, with their multi-billion dollar sovereign wealth funds, are well aware of the economic potential of copper, especially as they diversify their economies away from oil and gas. Their interest reflects the global demand for copper, which is crucial for manufacturing electronics, building infrastructure, and expanding renewable energy sources. The question that looms large, however, is whether these billions will truly benefit Pakistan and its people.

Pakistan's copper reserves, located primarily in the western Balochistan province, have long been known to be substantial.

However, extracting and utilizing this resource has been a challenge due to three factors: infrastructure limitations, security concerns and bureaucratic hurdles. Now, with the world's focus on copper, Pakistan has an opportunity to turn this resource into a driver of economic growth and development.

To be certain, the path to realizing this potential is fraught with challenges. The government must ensure that agreements with foreign investors are transparent, accountable, and prioritize the interests of the nation. The revenue generated from copper extraction should be channeled towards public welfare, infrastructure development and education.

Local communities in Balochistan should be included in the decision-making process and benefit from the mining activities. This can be achieved through job opportunities, infrastructure development, and revenue-sharing mechanisms.

Pakistan should negotiate agreements that promote technology transfer, allowing the nation to develop its expertise in the copper industry rather than remaining solely reliant on foreign expertise. The government must develop a long-term strategy for the copper industry, ensuring that the benefits are not short-lived.

Pakistan stands at a crossroads with its copper wealth. The billions that Saudi Arabia, the UAE, Qatar, and others are willing to invest represent a potential boon for the nation. However, for these billions to truly reach Pakistan and its people, it is imperative that the government navigates this opportunity with transparency, diligence, and a commitment to the long-term welfare of the nation.

The global demand for copper is unlikely to wane, making it a valuable asset that can transform Pakistan's economy and elevate its status on the global stage. The world is watching, and it is Pakistan's moment to seize the copper opportunity responsibly and wisely. ■





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Financial globalisation and WAPDA

Further reforms must be pushed on hopes power system will become efficient

Dr Fahd Rehman

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

Before financial globalisation, electricity generation, transmission, distribution and retail supply functions were performed by the Water and Power Development Authority (Wapda) till the early 1990s.

Wapda was a compact monopoly and performing all these functions in a reasonable manner. Like other developing economies, Pakistan was facing loadshedding in the peak season, which was quite normal.

The World Bank proposed to the policymakers in Islamabad to follow the international trend of privatisation and deregulation in the power sector. This proposal was even supported by the International Monetary Fund (IMF) at that time. The policymakers followed their advice and framed the Power Policy of 1994. They allowed independent power plants (IPPs) and the first IPP came into operation in 1997. This was the first foreign direct investment (FDI) in the power sector.

Most of the commentators, analysts and economists welcomed power production in the private sector on grounds that it will bring efficiency and address the problem of loadshedding in a short span of time and attract further FDI into the country.

The power policy wooed foreign investors and offered guaranteed returns to them on their capital investment. Their investment was also protected against devaluation of the rupee.

Returns on these investments were guaranteed by the associated agencies of the World Bank such as the Multilateral Investment Guarantee Agency (MIGA) and the International Bank for Reconstruction and Development (IBRD). Another arm agency – the International Finance Corpora-

tion (IFC) – offered loans to foreign investors. Hence, foreigners invested in the risk-free power sector of Pakistan.

The Power Policy of 1994 was criticised by a few commentators and analysts on grounds that it provided guaranteed dollar returns to the investors and increased the dependence of Pakistan on imported furnace oil. The so-called Power Policy of 2002 was framed in light of that criticism and implemented. The new policy maintained main features of the previous one.

However, this policy provided a level playing field to domestic investors and facilitated the use of indigenous resources and hydel power.

Domestic investors found the features of capacity payment and protection against devaluation of the rupee quite attractive and pounced on this lucrative opportunity and kept on installing their plants, which resulted in surplus power production in 2004-05.

In the meantime, the government did set up institutions to implement a new agenda.

Private Power and Infrastructure Board (PPIB) was set up in 1994 to facilitate and protect investments. National Electric Power Regulatory Authority (Nepra) was set up in 1997 to regulate electric power services in Pakistan.

Pakistan Electric Power Company was set up in 1998 to take away Gencos (generation companies), DISCOs (distribution companies) and transmission functions of Wapda.

As a consequence, the transmission functions of Wapda were handed over to National

Transmission and Despatch Company (NTDC) in 1998 under the National Transmission Policy of 1995, while the distribution function was handed over to around eight DISCOs in the early 2000s and the remaining two DISCOs at the beginning of 2010s.

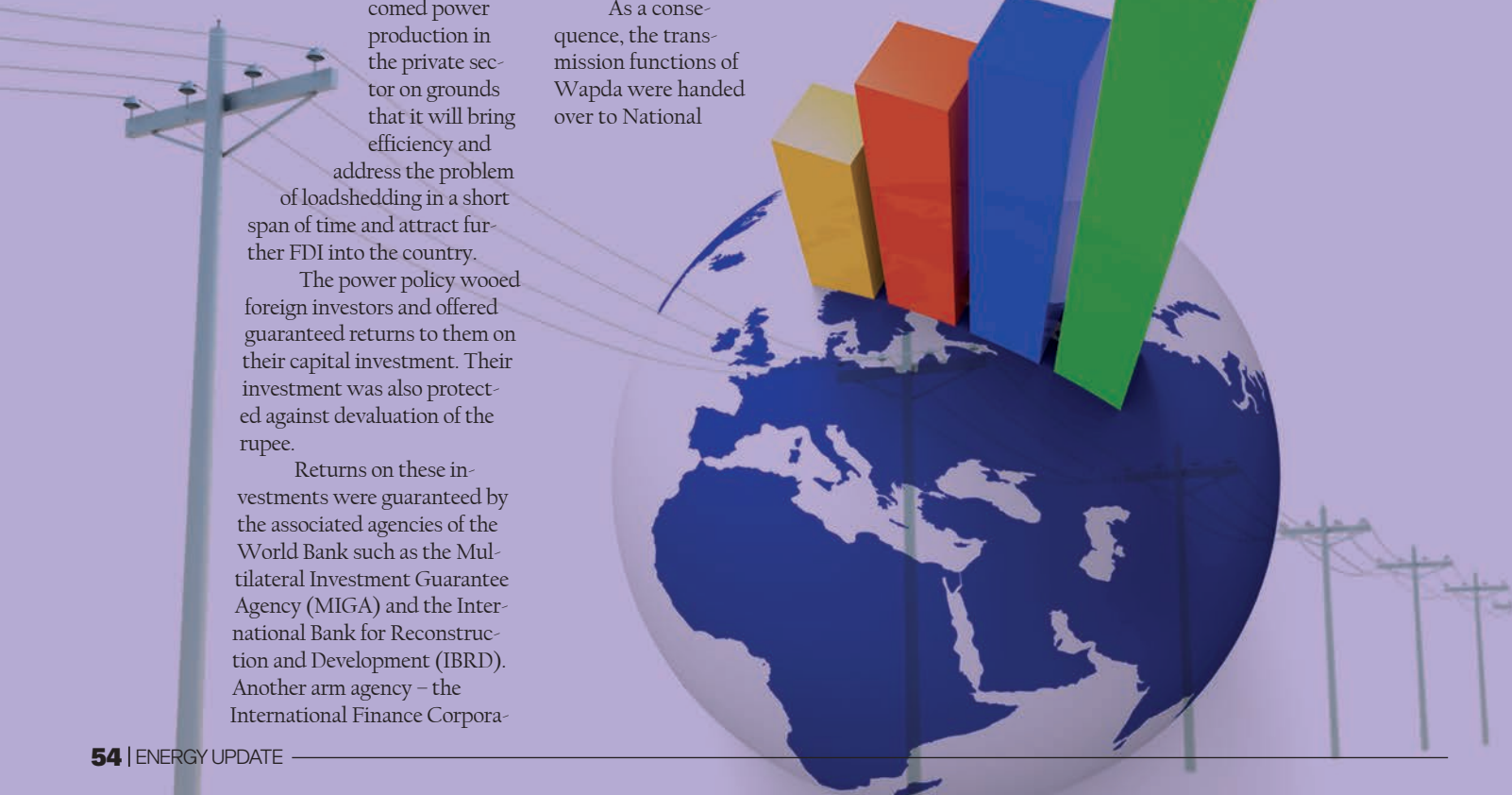
In order to undertake further reforms, the Central Power Purchasing Agency (CPPA) came out of NTDC in 2009 and acted as a representative of DISCOs to administer the billing and settlement of power purchase agreements.

Now, the Power Generation Policy 2015 and Transmission Line Policy 2015 are in effect.

In short, a compact monopoly Wapda is reduced to water reservoirs. It has been unbundled and its generation, transmission, distribution and retail supply functions have been handed over to a complex combination of companies and authorities.

These microeconomic reforms are driven by financial globalisation. The promise of microeconomic reforms is that it will bring efficiency.

Regardless of the consequences, we need to push for further reforms in the hope that the system will become efficient in the future. Is our power system efficient after 30 years of reforms? This is an important question to ponder over. ■



First Solar School Project launched in Pakistan

Pakistan-German Renewable Energy Forum (PGREF) and Benchmark School, in collaboration with the Goethe Institute, organised an event for the inauguration of Benchmark School as a new Solar School.

The event marked the official launch of the project at the school and its integration into the "Solar Schools" network, highlighting the successful installation of a solar system for teaching purposes and the importance of renewable energy and climate change for the youth of Pakistan. It brought together the school management, esteemed dignitaries from both Pakistan and Germany, students, teachers, organizations, and companies from both the public and private sectors that are active in the renewable energy sector for a day filled with celebration and learning.

According to Ms. Kulsoom Tanvir, Principal of Benchmark Schools, "We are very proud of being the first solar School Project in Pakistan. The idea behind this project is to engage the youth of Pakistan in the areas of climate change and renewable energy resources. We appreciate all our students, teachers and project partners and hope to continue and build upon such projects in the future."

The event comprised a ribbon-cutting ceremony by the chief guest, Mr. Shah Jahan Mirza, PPIB Managing Director, alongside the solar panel system. Mr. Julian Scheider, the Project Manager then provided an overview of the system and said, "This project is not only about covering the electricity generation for the school but also about integrating renewable energy into the curriculum of the school in a tangible and interactive way."

Mr. Shah Jahan Mirza, remarked, "It is indeed a pleasure for me to be here. I congratulate the teacher and students for these wonderful performances. I commend the German-Pakistan ongoing partnership, as well as Benchmark School which has been a partner in this first initiative in Pakistan."



"Pakistan's PAEC Honored for Pioneering Cancer Treatment at IAEA Conference"



In a significant recognition at the 67th International Atomic Energy Agency (IAEA) conference, Pakistan's Pakistan Atomic Energy Commission (PAEC) has been applauded for its pioneering efforts

in using nuclear and advanced techniques for cancer diagnosis and treatment. PAEC plays a vital role in cancer awareness, prevention, diagnosis, and treatment in Pakistan. The prestigious event also marked the signing of

an agreement designating Pakistan's Nuclear Medicine, Oncology, and Radiotherapy Institute (NORI) as an IAEA "Anchor Centre" under the "Rays of Hope initiative."

The Anchor Centre Agreement, signed by PAEC Chairman Dr. Raja Ali Raza Anwar in the presence of IAEA Director General Rafael Mariano Grossi, establishes NORI as a crucial cancer treatment facility working closely with the IAEA to enhance cancer research capabilities in the region. Anchor Centres collaborate with the IAEA to provide expertise, training, research support, and mentorship to other medical facilities in their respective regions.

In addition to Pakistan, Anchor Centre Agreements were also signed with cancer institutes from Algeria, Egypt, Jordan, Morocco, and Turkey during the ceremony. NORI, part of PAEC's network of 19 cancer hospitals, is a cutting-edge facility equipped with state-of-the-art technology, including Cyberknife, and is dedicated to diagnosing and treating cancer patients. ■

"Global leaders urge wealthy nations to lead on Net-Zero, acknowledge energy poverty challenge"



At the World Petroleum Congress in Calgary, leaders discussed the feasibility of achieving global net-zero emissions by 2050. While wealthier nations may have the capacity to meet this goal, they recognized that developing countries, grappling with "energy poverty," might struggle to do so. Alberta Premier Danielle Smith emphasized the importance of wealthier nations leading by example in reducing their carbon footprints while assisting less developed countries in addressing both carbon neutrality and energy poverty. "World Petroleum Congress Announces Saudi

Arabia to Host 25th Edition in 2026 as WPC Energy"

The World Petroleum Council, now known as WPC Energy, has officially signed an MOU with Saudi Arabia, designating Riyadh as the host for the 25th World Petroleum Congress in 2026. This move aligns with WPC Energy's commitment to leading the transition to a low-carbon energy system through innovation and technology. The name change and announcement came during the 24th World Petroleum Congress in Calgary, where Amin Nasser, President & CEO of Aramco, received the prestigious WPC Dewhurst Award.

"OGDCL's Fiscal Year 2022-23: Soaring Profits and Generous Dividends Mark a Year of Success"



OGDCL, the Oil & Gas Development Company Limited, has reported robust financial results for the fiscal year 2022-23, ending on June 30, 2023. The company's net sales revenue reached Rs. 413.594 billion, resulting in a profit after tax of Rs. 224.617 billion, showing a substantial increase of 59% compared to the previous year. Earnings per share also saw significant growth, rising from Rs. 31.11 to Rs. 52.23.

"Pakistan receives first Russian LPG shipment with Iranian assistance"

Pakistan has welcomed its inaugural shipment of liquefied petroleum gas (LPG) from Russia, marking a significant energy transaction between the two nations. This delivery, supported by Iranian collaboration, follows Pakistan's previous receipt of Russian crude oil, strengthening energy ties between the countries. Russia successfully transported 100,000 metric tonnes of LPG to Pakistan via Iran's Sarakhs Special Economic Zone. The Russian embassy confirmed this development through social media and indicated ongoing discussions for a second LPG shipment. Details regarding the cost and potential discounts on the LPG remain undisclosed. Pakistan's Ministry of Energy is currently examining the situation in response to the Russian embassy's announcement about the LPG delivery, further solidifying the growing energy relationship between the two nations.

"Engro Corporation in talks to sell select thermal energy assets"

Pakistan's Engro Corporation Limited (Engro) has announced an in-principle understanding with a potential buyer for the divestment of certain thermal energy assets held by its subsidiary, Engro Energy Limited. The proposed sale will proceed through a scheme of arrangement, subject to detailed due diligence, regulatory approvals, and execution of definitive documents.



Engro recently authorized the restructuring of its thermal energy assets into a separate wholly-owned holding company as part of its ongoing efforts to optimize resource allocation and streamline operations. In its latest financial results, Engro reported a Profit After Tax (PAT) of Rs21.47 billion for the first half of 2023, marking a 28% increase from the previous year. This translates to an Earnings Per Share (EPS) of Rs19.12 for 1HCY23, compared to Rs12.87 in the same period last year, aligning with industry expectations, as noted by Topline Securities.

SOCIAL AND BUSINESS ROUND UP



Al Furqan Welfare organization organized art competition for students Nasir H Shah ex minister, CG Malaysia and CG Türkiye. Intesaruddin Faryal Asif are seen in the picture.



A group photo of team of Nippon Energy and M Naeem Qureshi from Energy Update



PSO inaugurated fuel supply station at Skardu



Inauguration of Solar Pakistan



Inauguration of Pakistan Energy Conference Lahore



A group photo of participants at Solar Pakistan along with CG Oman Engr Sami Abdullah



A picture of Crescent Steel stall and team at Pakistan Energy Conference Lahore



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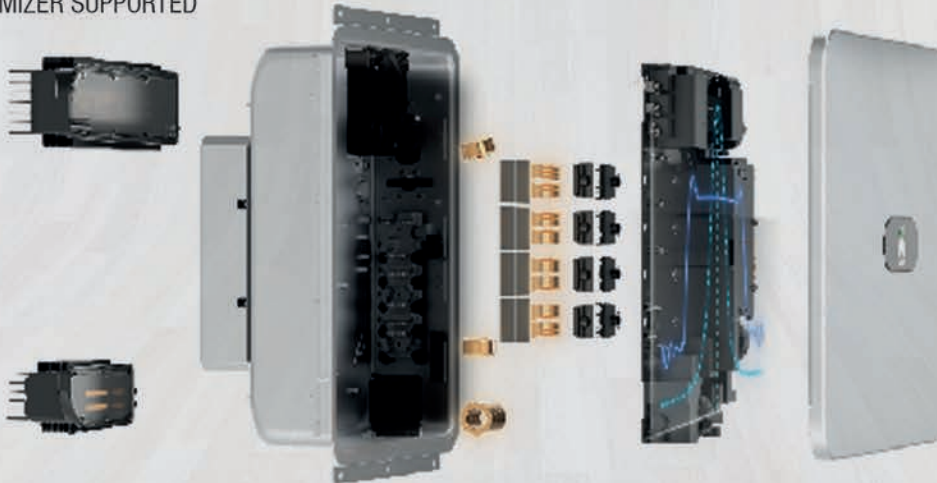
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APPLICATIONS

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