

MONTHLY

SEPTEMBER 2023

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# ENERGY UPDATE

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POWER SECTOR  
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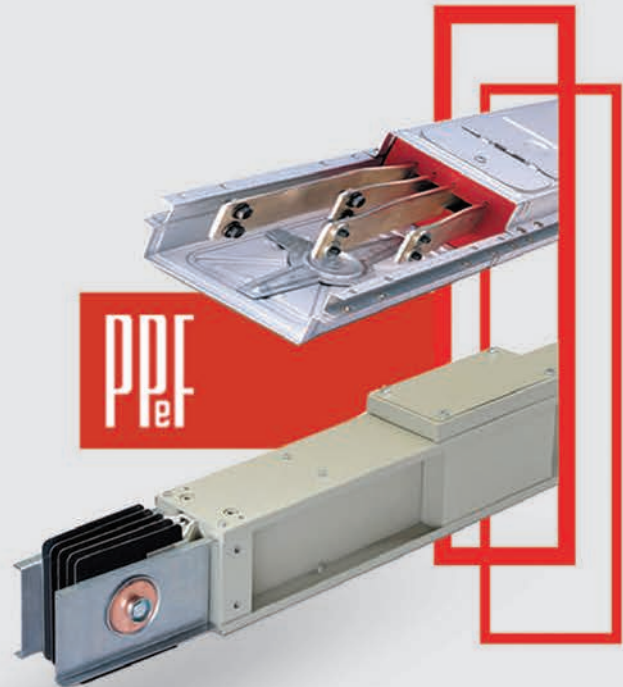
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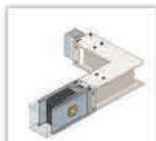
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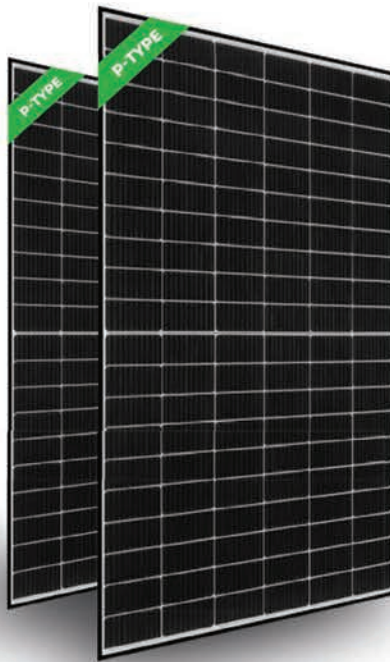
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	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	550Wp	409Wp	555Wp	413Wp
Maximum Power Voltage (Vmp)	40.90V	38.42V	40.99V	38.59V
Maximum Power Current (Imp)	13.45A	10.65A	13.54A	10.70A
Open-circuit Voltage (Voc)	49.62V	46.84V	49.72V	46.93V
Short-circuit Current (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			
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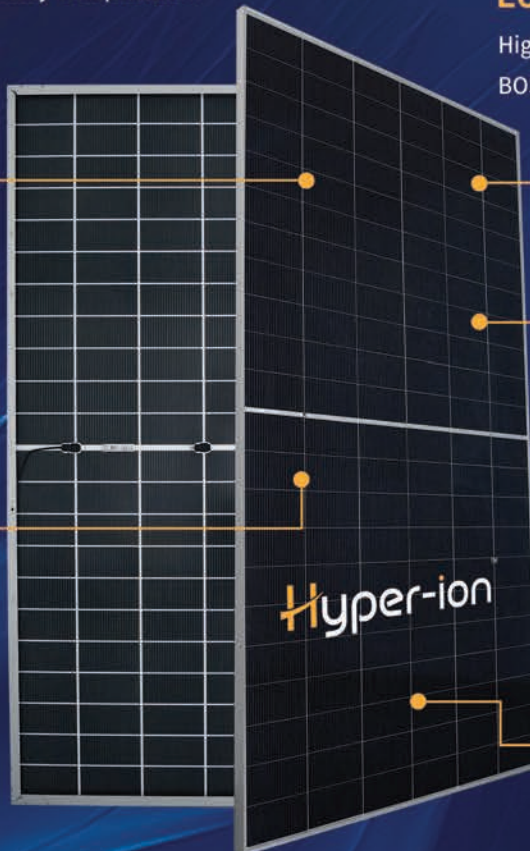
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## Public cry and govt apathy

The people of Pakistan, including businessmen, have started country-wide protests against the highest-ever inflated electricity bills in the country's history, which are beyond the payable capacity of all segments of society.

The bills are so high that businessmen, traders, and the general public have joined forces and torched them and refused to pay. The violent protests emerged in Karachi, Faisalabad, Lahore, Islamabad, Peshawar, Multan, Rawalpindi, and many other cities and towns. It is feared that these protests could take a dangerous turn that could shake this government.

The political parties, including MQM-P and Jamaat-e-Islami, have also opposed the skyrocketing hike in electricity rates and warned the authorities of starting massive agitation if relief to the public is not provided immediately.

The previous PTI and PDM rulers have signed heavy agreements with the IMF for raising electricity, oil, and gas prices to unjustified levels without taking stakeholders, the business community, and the public, into confidence. Such one-sided decisions, made without assessing the income of people and the cost of doing business, were totally unwise.

It is ironic that nine kinds of taxes have forcibly been imposed on electricity bills that include General Sales Tax, Fuel Price Adjustment, Electricity Duty, PTV License Fee, Financing Cost Surcharge, Extra Tax, Further Tax, Sales Tax, and last but not least is Income Tax. Furthermore, energy sector subsidies in line with the IMF deal have also been withdrawn, making the lives of people miserable.

It is also shocking that caretaker Finance Minister Dr Shamshad Akhtar has said that the country's fiscal space did not permit any subsidy or relief in electricity bills as per the IMF deal. Earlier, the Federal Cabinet could also not decide on the relief in this regard.

There should be no denying that the rise in power tariff seems to be a human rights violation and a well-thought bid to push people towards hunger and poverty. The forced decisions of the previous PTI and PDM governments have ruined the national as well as public economy as the country and the people are struggling for survival.

The fact is that the time has come for the caretaker government to adopt a positive approach and provide immediate relief to the public in electricity bills besides providing other reliefs; otherwise, the situation seems to be leading towards chaos. There is also an urgent need to withdraw free electricity and petrol facilities to the bureaucrats and all others.



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# Pakistan

—◆ Syed Akhtar Ali —◆

**R**ecently, an important conference, 'Pakistan Mineral Summit', has been organised in Islamabad by the Petroleum Division. Top national and international dignitaries and a large number of professionals participated.

The conference brought Pakistan's minerals into a new perspective and possibly marked a new beginning. It also reaffirmed Barrick's commitment to the Reko Diq project as outlined by the CEO of the company in the context of the new Reko Diq agreement. We will discuss in this space Pakistan's mineral outlook today in the context of the new initiatives that are under study.

Pakistan's mineral sector contributes 2.5% to the GDP, which is very miniscule, although there are several large known deposits. Copper, gold, lignite coal, iron, lead-zinc, ferrochrome and marble/granite are the most distinct and visible. Besides, there are a number of non-metals that are there.

Thar coal/lignite is on the top of minerals with 185 billion tons estimated resources, which are already playing a major role in supplying energy to Pakistan. More can be done and should be done to increase its output before the window is closed (within the next 50 years) on this important resource under international climate regime.

## Copper

Copper and Lithium are the future oil. Copper is already playing a major role in electrical sector worldwide. No electricity can be conceived without it. However, emergence of Electrical Vehicles (EVs) has created a

new market and prospects for it.

Copper prices have been increasing. When Saindak was launched in the 1990s, copper prices were only around 2000 USD per ton, which created difficulties for its financial survival. It is above 8000 USD per ton now and the prospects of it going up to 15000 USD per ton cannot be ruled out.

Major copper and gold resources are at Reko Diq, which is now through with the legal problems. Recently, news has come out of a copper deposit in Waziristan which is actually working. Not much has been publicised about it in public domain. This deposit is, however, much smaller than Reko Diq as opposed to wrong information publicised by some journalists.

Copper resources (deposits) have been estimated at 5.9 billion tons (contracted), out of which 2.5 billion tons have been found recoverable, although the latter is variable and depends on the prevailing prices. There is confusion about contracted and non-contracted deposits. Average depth of 15-20 meters has been reported, indicating good mining economics. At current and long-term international prices (LME grade A cathode), the deposit value can be said to be of 100-200 billion USD.

Earlier, foreign companies had a share of 75%. Balochistan's share will be 10% without actual equity subscription and 15% would be on payment basis. So Balochistan is having a good deal. Pakistan has been saved of a major financial catastrophe of having to pay fines of about 10 billion USD.

Rival governments have cooperated

in the revival of the project along with the Supreme Court which earlier created the problem by declaring the earlier Reko Diq agreement null and void. Let us not repeat such mistakes in the future. World will carefully watch our conduct in the current arrangement

As per existing studies, 200,000 tons of copper and 250,000 oz of gold will be produced per year. Reportedly, it is being studied to double the output in second phase. Concentrate (usually containing 20% copper and gold) output would be 80 million tons per year.

Aggregate turnover and exports should exceed 2 billion USD per year, depending on the prices. Earlier feasibility study is being updated. Investment of 8-10 billion USD has been projected. The project will start giving output by 2028. The project should have an economic life of 40 years.

Estimated income Flows, (as per private estimates of this scribe): Royalty (@ 5% of sales) should yield 100 million USD per year, all of it going to Balochistan. Additionally, profit share of 25% would accrue.

Three participating national companies will get their profit share as per their equity share. The federal government will get corporate income taxes. It is not known whether corporate income tax exemption has been awarded under SEZ rules.

Earlier project feasibility study limited local production to concentrates only containing 25-30% copper. Copper concentrate was to be exported for extra-processing abroad into saleable products. Concentrates' trade is not unknown. Some 30%



# mineral outlook

copper (3.3 Mt out of 11 Mt) is traded in copper-in-concentrate form. It is not known as to what would be the project structure in the new setting.

However, it is not usual for mining companies to install downstream processing units. They cannot be and should not be forced to install downstream industries. A wide variety of business interests invest in the down-stream sector. Industrialization and technology expansion take place under this model.

Copper processing is an energy intensive process requiring both gas and electricity. Chaghi area of Balochistan is quite rich in solar and wind resources.

A hybrid solar and wind along with some fossil fuel would be an optimum energy mix. It may, however, be noted that Al-Tuwairqi Steel Mills could not be commissioned. Therefore, energy cost and availability would have to be seriously examined before insisting on smelting and refining components.

There are about 20 countries which have active copper mines: Russia, the US, China, Canada and Australia among developed countries and Chile, Peru, Mexico, Brazil, Zambia, Congo, Indonesia, Iran, Kazakhstan and Mongolia among the developing countries. China imports and exports more than 50% of world Copper.

It has been reported that in Pakistan also lithium has been found in Gilgit-Baltistan, Chitral, parts of KPK and Chaghi in Balochistan. Adequate geological effort should be put and its institutional strengthening would be required for fast-track development of this resource. Cobalt has also been indicated in the same area, which is a pricey mineral more than Lithium probably.

## iron ore

Pakistan has Iron ore resources of around 1.4 billion tons, most of which are of low grade, except the recent discovery of iron ore in Chiniot. Several iron ore deposits have been identified for years, like Kalabagh, Nokundi, Dalbandin, etc.

PPL has a JV with provincial government of Balochistan as Bolan Minerals, which provided beneficiated iron ore to Pakistan Steel Mills (PSM). For quality and other reasons, PSM rescinded the contract. Chiniot iron ore is reportedly of higher grade of 60%. Reserves may increase with further exploration. Reserves are of 250 million tons which may increase to 500 million tons.

A lot is known about Thar coal of 185 billion tons, which is today producing cheapest electricity. Presently, 8-10,000MW of Thar coal based electricity is projected in the next ten years. In addition to electricity, many other products can be produced through gasification route. As mentioned earlier, the deposit is very large and every effort should be done to maximize its output on fast-track basis.

Pakistan has 300 billion tons of marble resources spreading over in all the provinces. Marble is mostly utilised in the local construction industry. Only 37 million USD of exports have been reported. It has been claimed and perhaps rightly that this number can and should go up to 370 million USD and even more.

## Mining policy and laws

While mineral resources are rightly provided the ownership rights in the constitution of Pakistan, there is a need of developing a unified countrywide mineral policy

regime a la oil and gas. The whole country has suffered under policy confusions and subsequent judicial activism in the case of Reko Diq.

## Resource curse

There is a controversy in economic literature led by renowned economist Jeffery Sachs that mineral resources cause various economic, political and social difficulties among developing countries having mineral resources. Focus shifts to earning rents rather than profits through growing and developing. Elite capture and corruption increase. Currency strengthens to higher levels which hinder exports of other products. Evidence of mineral rich African countries such as Congo, Niger, and Guinea, etc., has been cited.

The situation of mineral rich South America is, however, not that bad. Chile and Peru are reportedly doing well but have suffered under imperial and colonial conspiracies and pressures. Mineral curse has already been there in Pakistan to some extent in various forms. We were about to lose 10 billion USD in the fines levied by the World Bank tribunal. Unrealistic projections of mineral abundance have promoted separatism and terrorism.

Fortunately, Pakistan has mineral resources but cannot be called as having abundant resources. Resource abundance is a relative and possibly controversial subject. Pakistan has a large economy and a wider resource base such as agriculture. It won't be a single source economy at all. Thus the prospects of becoming mineral resource dependent, as happened in many countries of Africa, do not seem to be there. ■

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



# Power sector blues!

Electricity users are up in arms; AJK consumers have also joined in protests

◆ Engr Tahir Basharat Cheema ◆

**T**he electricity users of Pakistan are up in arms. They have received highly inflated bills which, according to them, is not fair. This time around, the AJK consumers too have joined in the protests by burning a colossal plus ten thousand monthly bills in Rawalakot alone.

That till now, they had been receiving highly subsidized bills – nearly one-third of the tariff in Pakistan, has been conveniently forgotten.

All in all, the situation is most grim and bound to rise even more in light of the latest QTA (Quarterly Tariff Adjustments) for last fiscal's fourth quarter of Rs. 5.40 per unit (notwithstanding the resolve to stagger recovery thereof over six months instead of the requisite three billing cycles).

The exponential ballooning of the bills is also on account of charging of raw capacity charges due to reduced demand and the outgoing revenue based load shedding and the similar rise in the GST on the usage, which has increased in direct proportion to the rise in the recently increased electricity tariff. It translates into the fact that with each cent rise, the GoP collects an equal amount in GST. This is most unjust – specially, in today's serious economic crunch.

The question that begs an answer is as to why the fiasco has taken place and what could be the solution. Surely, it all is



on account of ignorance of the Power Sector dynamics by the relevant entities tasked to govern, regulate, manage and operate the generation, transmission and distribution systems in the Country. The strange part is that the whole of the system has collapsed and that too simultaneously. None of the related entities has even squeaked during the build-up of the crises. Indeed, this was the time of transition from the elected to the caretaker government.

The detractors would call to attention the conduct of the permanents posted in the lacking entities and the apathy on their part.

Furthermore, the issue of the additional drivers that have exacerbated the crisis have been highlighted by academicians and Power Sector professionals alike, with calls for

inculcating complete professionalism in the works.

In other words, all connected from the governors to the operators of the power system have to be hardcore professionals.

What are these drivers that have further coagulated the miseries of the people. These are summed-up as the plethora of feckless policies – firmed-up through mindless decision making and that too for the few, the continued side-lining of any good part of the policies by self-interest, these being at cross-purposes with the general good of the people, relegation of these on intervention of the self-serving elite, lack of understanding of the dynamics of the Sector – specially, the fact that add-ons and taxes on the bills automatically inflate with any increase in the





base tariff etc., that socially Pakistanis are presently in the process of joining the lower middle class in droves and that increase in electricity usage is a manifestation of this process and that it cannot be scuttled, that commerce and industry is in the process of import substitution thus making gadgetry available for the people – once only for the well-to-do, that the consumption-led economy has never been scrapped in favouring of any production-led growth, that the banking sector operates with impunity while earning colossal amounts on consumer credit etc. Unfortunately, none of these externalities has been taken into consideration by the concerned while planning for the Power Sector.

It is further seen that there is a serious disconnect between the above entities and

thus the generators are oblivious of their obligations, the TRANSCO has a below par infra-structure, is beset with procurement and contracting scandals and also remains unable to serve the pipeline ARE (Alternate & Renewable Energy) projects. The DISCOs are strangled by totally compromised and non-professional BoDs.

Sadly, these are more of a drag than any help. The Regulator with semi-professional staffing is afraid to reject padded-up petitions that require acceptance of un-substantiated claims just to keep the system going on.

The current situation can be ameliorated as a first to some extent by firstly vowing to induct total professionalism in the Sector and that too in the least time period. Today's vows, thereafter, have to be followed by priority up-gradation of the nearly dormant PP&MC (Ex-PEPCO) with the required hard-core professionals and the best of the MD instead of a civil servant lately notified for the job.

The present fully politicized BoDs of all the related entities have to be changed in line with the fit & proper criteria of the SECP (Securities and Exchange Commission of Pakistan) and all of the CEOs – specially of the DISCOs, have to be re-appraised, and in case of need, replaced with proper re-source on at least a three-year's tenure.

All three of the above pre-requisitions can be done in a max of 30 days. Concurrently, so as to provide some relief to the consumers, the leviable GST on electricity bills has to be put on hold – thus lessening the burden on the common electricity consumer.

This step would lessen the present burden for the while. The final step suggested is to introduce DSM/conservation in the country in a big way – thus reducing the demand by 25%. This would include a moratorium on IPP (Independent Power Producers) raw capacity payments for the present fiscal year during which solutions to reduce the high generation cost would be broached and introduced.

This is of utmost priority as the economy and specially the people are simply unable to pay for today's bloated electricity tariffs. The present financial year thus has to be the watershed period for correction of the wrongs of the last two decades. May be, it is some atonement for the erroneous and half-baked reforms undertaken by us during the above period. ■

*The writer is former MD PEPCO*

## Iran can provide cheap gas, electricity, oil: envoy

— EU Report —

Iranian Ambassador to Pakistan Reza Amiri Moghadam said on Friday that Iran could provide cheap gas, electricity and oil to Pakistan.

The Iranian ambassador said this in an informal chat during a reception he hosted for the editors of Rawalpindi and Islamabad newspapers. He said that Iran floated a suggestion to start direct flights to the capitals of both countries and Pakistan had agreed to the proposal. He said that Pakistan had sought Fifth Freedom facility for PIA flights to Tehran and Iran had also sought such a facility for its four airlines. At present flights are being operated to Mashhad from Lahore and Karachi.

While commenting on the gas pipeline project between Pakistan and Iran, Moghadam said in view of the US sanctions, Iran seeks such a solution where Islamabad does not get into any global crisis if it gets gas from Tehran.

He said that Pakistan is facing a crisis of high tariff of gas and power and Iran can solve the issue by providing gas and electricity to Pakistan on affordable tariff. Iran can also provide oil to Pakistan at cheaper rates, he said. About ties with the UAE, he said that Iran has friendly ties with UAE as both countries have a trade of billions of dollars.

He said that Iranian ambassadors are working in Saudi Arabia and the UAE and their envoys are also doing work in Tehran. About a question regarding the US, he said that the US is a big power but there are certain shortcomings in the US policy.





# Pakistan producing very limited percentage of oil

Dependency on dominant fossil energy resources, especially oil is risky; economic growth is constrained by bottlenecks in energy sector; recent decades witnessed a manifold increase in energy demand

—◆ Special Report by Mansoor —◆

**P**akistan's economic growth is constrained by bottlenecks in the energy sector. Pakistan is producing a very limited percentage of oil to meet the overall demand of the country. Indigenous oil production is constrained by technological, technical and financial constraints. This necessitates the import of crude oil and other oil products in large quantities to meet a significant share of the total demand.

According to a report by the Ministry of Finance, the recent decades witnessed a manifold increase in the demand for energy. The three principal drivers of the increase in energy demand are the surge in economic activities, population growth and rapid technological transformation in the world.

The cost of fuel and electricity has enhanced the cost of overall production, consequently, higher prices have substantially increased the cost of living which further eroded the purchasing power of households.

Higher oil prices in the global market and the massive depreciation of the Pakistani rupee are making oil more expensive, trig-

gering external sector pressure and widening the trade deficit of the country. The surge in the oil import bill is attributed to increases in value as well as an increase in demand as the import of petroleum products went up by 121.15 percent in value and Energy 261 24.18 percent in quantity. The Crude oil imports rose by 75.34 percent in value and 1.4 percent in quantity during the period under review. Similarly, liquefied natural gas witnessed an increase of 82.90 percent in value, while liquefied petroleum gas (LPG) imports also jumped by 39.86 percent during July-April FY2022.

The scarce natural gas reserves of the country are quickly depleting due to a substantial increase in the demand for gas, putting huge pressure on the limited natural gas reserves of the country. The government is looking for both short as well as long-term alternative solutions to respond effectively to the substantial energy requirements. Keeping in view the rising demand for energy, the Government is focusing to develop new exploratory wells to increase the supply of national gas. In addition to that, LNG and piped gas are being

imported. In the FY2021, around 373 million MMBTU of LNG gas worth around US\$3.4 billion was imported.

This corresponds to around 30 percent of the total natural gas consumption in the country. During July-Feb FY2022, 75.64 percent gas is domestically produced, while 24.36 percent of gas is being imported.

Coal is also used for electricity generation in Pakistan. Thar has the largest coal reserves in the country which has been actively developed in recent years. The first Thar plant, having capacity of 660 MW, became operational in the first quarter of FY2020. Currently, the overall electricity generation from coal has reached to 5280 MW. Thar coal is contributing 1,320 MW, while imported coal contribution to electricity generation is 3,960 MW which is around 75 percent of the total electricity generation from coal in the country. Electricity generation configuration is relying heavily on the imported coal and this trend is likely to change as units based on the Thar field are added to the electricity generation mix.

Pakistan is very rich in hydropower and has the enormous potential to generate electricity from water. The estimated total hydropower potential of Pakistan is around 60,000 MW. The country is not





## Power firms swallow billions of rupees

—◆ Zafar Bhutta ◆—

utilizing its full potential and using nearly 16 percent of the total hydropower potential. The high investment cost for the installation of hydroplants, development of electricity transmission network and resettlement of the affected population are few reasons for hydro-power not being exploited to its full capacity. Currently, the Hydro installed capacity is 10,251 MW which is around 25 percent of the total installed capacity.

Pakistan has wind corridors as well and there is huge potential to generate electricity from wind. It is estimated that Pakistan can generate 50,000 MW from wind. The contribution of Wind in the total installed capacity is 4.8 percent and currently stood at 1,985 MW. The potential for solar power in Pakistan is also high. The sunlight is available abundantly almost throughout the country. Currently, the capacity share of these renewable resources is small, but it is expected to increase sharply, as reflected in the Alternative and Renewable Energy Policy 2019.

The installed capacity of solar is 600 MW which is around 1.4 percent of the total installed capacity. Pakistan is also producing energy from the nuclear technology whose contribution is increasing gradually. The gross capacity of the nuclear power plants was 2,530 MW that supplied about 7,076 million units of electricity to the national grid during July-March FY2021. The gross capacity of nuclear power plants has increased by 39 percent and it stood at 3,530 MW that supplied 12,885 million units of electricity to the national grid during July-March FY2022.

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Historically, Pakistan's economic growth is constrained by bottlenecks in the energy sector. Pakistan's energy requirements are increasing and demand for energy in the coming decades will rise substantially. Energy demand on this scale will put increasing pressure on energy resources and distribution networks. This is unsustainable without a fundamental transformation of the energy system. Dependency on the dominant fossil energy resources, especially oil is risky. Energy security is essential because the kind of disruption we have seen is a potential threat to our economic well-being. Exploration of the more indigenous and renewable resources is key to have energy security. ■

Power distribution companies (DISCOs) have eaten up billions of rupees collected from electricity consumers in the name of installing earthing systems to avoid fatal incidents in future. The shocking disclosure was made at a public hearing conducted by the National Electric Power Regulatory Authority (Nepra) on Thursday. On the occasion, Nepra, the power-sector regulator, cautioned DISCOs that it was working on a regulation which would slap penalty on officials involved in illegal deduction and disconnection of meter connections.

The regulation will also ensure the replacement of transformers at certain times and if a company fails to replace them it will be fined. "The amount of fine will go into the pockets of consumers," Nepra announced.

The regulator has started a probe to unearth where billions of rupees, collected from consumers for the earthing of electric poles, were invested by DISCOs. Ground earthing is necessary because of the electricity system in Pakistan. While hearing the case of Lahore Electric Supply Company (Lesco), the regulator was informed that the company had 670,000 pole structures but more than 60% had no earthing system. For the remaining 40% poles too, there was no proper earthing system in place. In random checking by Nepra's regional offices, it was found that earthing cost had been included in the demand note given to consumers but the amount was not spent on the earthing of electric poles to shield people from fatal accidents. Nepra authorities indicated that they would impose a fine of Rs10 million on Lesco.

The regulator also inquired where the money went which had been collected from the consumers. Lesco CEO Shahid Haider clarified that the company's system was old, which was why the earthing system was missing. "Seasonal effects have also damaged the system," he said.

He disclosed that the company had submitted a two-year plan to the regulator for the earthing of 356,000 poles. Nepra countered that Lesco had failed to perform its duty of providing electricity to consumers, adding that the consumers had paid the cost but the earthing system was not installed. ■

*Courtesy: Express Tribune*





# ADIPEC 2023 to focus on decarbonisation, global energy transition

Interview with  
ORME's dmg events president  
**Christopher Hudson**



—◆ Energy Update —◆

## Q1: How does ADIPEC 2023 stand out from previous editions?

**Christopher Hudson:** In this year of shared global and national attention on climate change, ADIPEC is being hosted under the theme of Decarbonising, Faster, Together, with a renewed purpose and stronger ambition to support the global energy transition.

We are building on our nearly 40-year legacy of innovation and evolution to take ADIPEC to the next level, bringing together energy producers, consumers, and experts from government, technology, and finance sectors, besides providing dedicated space for more voices, including young people and women, all of whom are working towards the common goal of a sustainable energy future.

As part of our commitment to enabling the collective advancement of decarbonisation, we have devised enriched conference and exhibition programmes. We are especially excited about the ADIPEC Decarbonisation Accelerator, a dedicated area that enables organisations to showcase their game-changing projects and solutions driving decarbonisation at scale. Within the Accelerator, a dedicated Start-up Hub will host pioneers presenting groundbreaking technologies that drive the future of decarbonisation and accelerate energy progress.

Complementary to that, we have introduced the new Decarbonisation Connect initiative to facilitate connections on the show floor

by showcasing exhibitors' decarbonisation strategies and innovations through dedicated spaces and presentations. To increase engagement, we are also developing the Decarbonisation Guide, featuring exhibitors' decarbonisation products and solutions, and a schedule of exhibitor presentations during the event.

These new offerings, alongside our expanded youth programme, expanded Strategic Hydrogen Conference, enriched Maritime & Logistics Zone and Conference, and all new ADIPEC Awards categories, support the global energy transition by focusing the wider industry's attention on key needs and issues.

## Q2. What are your hopes and expectations for ADIPEC 2023 in terms of visitors, exhibitor numbers etc.?

**Christopher Hudson:** Our ambition for ADIPEC 2023 is to support the resolution of key industry challenges on the path to net zero by creating a platform that brings nations, industries, businesses and individuals together to build cross-sector collaboration and partnerships that develop and share solutions. We have designed ADIPEC 2023 as a place for ideation, sparking innovation and next-generation technologies. Across our 10 strategic and technical conferences and more than 350 conference sessions, 1,600-plus speakers will explore the strategies and solutions critical to achieving a cleaner and more secure energy future. ADIPEC's mission and offerings are expected to attract over 160,000 attendees

from around the world, who will connect with the 2,200+ companies from across the entire energy value chain exhibiting at ADIPEC's 15 exhibition halls.

## Q3. To what extent will ADIPEC focus on decarbonisation, and how will the agenda reflect the 'Decarbonising, Faster, Together.' theme?

**Christopher Hudson:** ADIPEC 2023 will unite industries, businesses, and individuals to drive urgent and collective action towards our net-zero future. It will do this by placing decarbonisation at the heart of ADIPEC, permeating the entire event, from the cutting-edge conference programme to the innovative exhibition and exciting new features. Our mission is clear: prioritising decarbonisation across the energy ecosystem, while reducing emissions and fostering economic progress.

With more than 200 strategic and technical sessions on decarbonisation alone, the low-carbon agenda is the key focal point for the ADIPEC conference programme. The dedicated Decarbonisation Strategic Conference, now in its second year, brings together leaders from the energy spectrum to tackle topics ranging from overcoming barriers to decarbonisation to mobilising finance for low-carbon technologies and the critical role of innovation in fast-tracking the journey to a brighter energy future. And of course, there are our special exhibition offerings and initiatives that include the Decarbonisation Accelerator, Decarbonisation Connect, and the Decarbonisation Guide.

#### **Q4. How do you hope discussions at ADIPEC will lay the groundwork for COP28 in November?**

**Christopher Hudson:** Taking place two months ahead of COP28 in the UAE, ADIPEC 2023 will unite the expanding and diverse world of energy producers and consumers to work together to transform, decarbonise and future-proof energy, by accelerating the innovation and tangible actions needed to enable a lower-carbon world. Specifically, it will address how we will respond to the call for action by Dr Sultan Al Jaber, COP president-designate, to eliminate methane emissions by 2030; phase out carbon emissions across the value chain to reach net zero by 2050; ensure energy security and clean energy investment flows in the global south; and scale decarbonisation technology and clean energies to achieve carbon neutrality.

ADIPEC 2023 will connect the energy industry with leaders in the manufacturing, maritime, finance, logistics and technology sectors to address how we decarbonise, faster, together. It will be a forum for energy providers and users to advance credible solutions, generate new insights, spark innovation, and unite around collective action to phase out emissions while breathing new life into economic growth. By facilitating the conversations integral to a secure, lower-carbon future and providing a platform for collaboration, bold commitments and collective industry action, ADIPEC 2023 will be where the energy industry steps up, aligns and leads on the greatest energy market transformation in modern times.

#### **Q5. Can you elaborate on the new dedicated Hydrogen Strategic Conference and Decarbonisation Strategic Conference? How they are supporting the industry's efforts towards sustainable energy solutions?**

**Christopher Hudson:** The importance of hydrogen in supporting the energy transition and its commercial value for energy businesses cannot be understated. However, for hydrogen to scale up, cross-sector innovation and collaboration are crucial to reduce technology costs and accelerate infrastructure investment. With that in mind, the ADIPEC Hydrogen Strategic Conference has been designed to gather the most influential leaders in the energy ecosystem to discuss the role of hydrogen in global economies, the latest technological breakthroughs, near-term and long-term strategies, and the actions required to scale the hydrogen economies of the future. Delivering strategic, technical, and operational insights, the conference will provide the insights necessary to shape and accelerate the continued growth of the hydrogen value chain.

In a complementary way, the ADIPEC 2023 Decarbonisation Strategic Conference will feature strategic sessions with a focus on addressing the need for innovative policies, new investment, technology advancement, new energy sources, and decarbonisation of heavy industries. As industries commit to delivering their decarbonisation strategies, the conference will gather energy industry leaders, policymakers, governments, financial institutions, and cross-sector industries to discuss the challenges and opportunities in our decarbonized future. ■

## POWER DEVOLUTION

# Power distribution firms to be transferred to provinces

## Shift in ownership will empower provinces to determine subsidies for electricity tariffs

EU Report

**T**he federal caretaker government is all set to finalise a framework of operational, financial, and structural policy matters of ex-Wapda distribution companies (XWDISCOs) “to improve their performance”.

The federal cabinet has given its nod for transfer of control of XWDISCOs to the provincial governments. The decision to transfer ownership of XWDISCOs to provincial authorities is viewed as a critical step toward curbing losses within the energy sector and addressing rampant power theft. The decision was taken during a recent meeting, chaired by caretaker Prime Minister Anwaarul Haq Kakar, official sources said. Now, the policy draft will be sent to the Council of Common Interests (CCI) for final approval. After that, the process to transfer 10 XWDISCOs with assets and financial autonomy to the respective provinces will begin.

Electricity generation and transmission systems will remain under federal control; provincial governments will assume authority over the XWDISCOs after the transfer. This shift in ownership will empower provinces to determine subsidies for electricity tariffs and establish measures to combat theft and manage load-shedding schedules. The government has also taken the decision to eliminate uniform power tariffs that have hitherto been applied nationwide.

“The PDM [Pakistan Democratic Movement] government, headed by Shehbaz Sharif, had carved out the policy in its last days, which the caretaker government will take up now for approval,” a senior Energy Ministry official told The News.

“Peshawar Electric Supply Company (PESCO) and Tribal Areas Electric Supply Company (TESCO) will be handed over to Khyber-Pakhtunkhwa, and Islamabad government will have total control of IESCO. The process may take 2-3 years to complete,” added the official.

Punjab will be given control of four DISCOs: Lahore Electric Supply Company (LESCO), Gujranwala Electric Power Company (GEPCO), Faisalabad Electric

Supply Company (FESCO), and Multan Electric Supply Company (MEPCO). Hyderabad Electric Supply Company (HESCO) and Sukkur Electric Supply Company (SEPCO) will be handed over to the Sindh, and Quetta Electric Supply Company (QESCO) will be handed over to the Balochistan government.

Under the proposed policy, the distribution segment is the interface of the entire sector with the consumers of electricity. The financial viability of the entire sector is premised on the efficient operation of the distribution system and timely recoveries from the consumers. The said policy recognises the deep-rooted and systemic problems in the power distribution sector as being the main cause of accumulation of the circular debt, and contains a number of operational, financial, and structural policy measures and objectives aimed at improving the performance of XWDISCOs. These policy objectives, including the objective to privatise XWDISCOs, have remained constant in the previous power/electricity policies, approved by the CCI in 1998, 2002, and 2013, according to the official.

The policy draft mentions that the overall policy framework for the electricity sector would be determined at the CCI forum. To facilitate the transition, a comprehensive policy framework has been meticulously devised. This agreement will be signed between the central and provincial governments. It's about how the transfer of control will work and the plan for it.

The provincial governments will have the autonomy to implement measures specific to their jurisdiction. This will allow them to address local challenges and promote sustainable and efficient electricity distribution. The provincial governments will have the authority to oversee distribution companies within their respective jurisdiction and also through local administration. This will include monitoring operations, ensuring compliance with regulations, and addressing issues specific to the local context.

They will be responsible for implementing robust measures to deduct and prevent theft, such as conducting regular inspections, employing advanced metering systems, and strengthening law enforcement efforts to deduct illegal connections. ■



# Towards indigenization in energy sector of Pakistan

—◆ Dr Khalid Waleed —◆

In an era characterized by relentless global energy demands, expansive imported fuels and the escalating specter of climate change, the Overseas Investors Chamber of Commerce and Industry (OICCI) Pakistan organized an intellectually charged event that pierced through the veneer of conventional discourse.

This seminal symposium, marked by impassioned deliberations and profound revelations, plunged headlong into the complex intersection of indigenization and localization within Pakistan's intricate energy landscape. The event discussed pressing issues of such as Climate Financing, the indispensability of Renewable Energy, Climate Change mitigation, the pivotal role of Independent System Operators, and the resounding significance of steadfast long-term planning, it became evident that this event has unfurled a pivotal chapter in Pakistan's odyssey towards energy self-sufficiency, indigenization, localization and sustainability.

## The Energy Matrix of Pakistan: A Complex Scenario

At present, Pakistan's primary energy demand

stands at approximately 88.44 Million Tons of Oil Equivalent (MTOE). Although seemingly modest when juxtaposed with the energy behemoths like India, China, and the USA, the sources constituting Pakistan's energy portfolio present a multifaceted challenge. A concoction of firewood (41%), dwindling natural gas (21%), imported oil (19%), and other sources including coal, portrays a precarious energy landscape that necessitates swift action, particularly with projections indicating an impending rise to 100 MTOE by 2030.

The pressing concern here lies in the environmental impact of this energy mix. The heavy reliance on firewood and fossil fuels has led to increased emissions of greenhouse gases, contributing significantly to Pakistan's carbon footprint. This not only exacerbates global climate change but also poses immediate health hazards for the population due to air pollution. The need for a shift towards cleaner and more sustainable energy sources cannot be overstated.

## Localization and Indigenization: Beyond Buzzwords

The clarion call for localization and indigenization is not mere rhetoric; it is a

pragmatic economic imperative. The merits are myriad, encompassing economic growth, job creation, the fortification of local industries, and the substantial savings of foreign exchange. However, embarking on the journey towards true indigenization demands more than ad hoc efforts; it necessitates a meticulously devised strategy.

This strategy begins with a comprehensive assessment of demand and available resources. It's not enough to simply substitute imported energy sources with domestically produced ones; the nation must identify its



unique strengths and capabilities that can contribute to energy production. For instance, Pakistan's geographical location offers abundant sunlight, making solar energy a prime candidate for localization. Wind energy, hydropower, and biomass are other areas where Pakistan can harness its indigenous potential.

Seamless integration within the energy supply chain is equally crucial. This involves the development of a robust ecosystem where local industries can contribute components and expertise, thus reducing reliance on foreign imports. Collaborations between academia, industry, and policymakers are pivotal in nurturing this ecosystem. Moreover, the establishment of technology hubs and innovation clusters can accelerate the development and deployment of indigenous energy solutions. Moreover, there is also a need to develop mining industry for extraction of critical minerals required for energy transition.

### R&D: Pakistan's Crucial Challenge

An in-depth scrutiny of Pakistan's R&D expenditures in comparison to global benchmarks paints a somber picture. At a mere 0.19 percent of the GDP, the nation trails even behind the South Asian average. The realm of innovation is further illustrated by patent registration figures, unveiling a stark gap: while India notched an impressive 23,141 patents in 2021, Pakistan struggled to amass 338.

This dearth of investment in research and innovation is a major stumbling block in achieving true indigenization. Innovation is the bedrock upon which sustainable energy solutions are built. Countries that have successfully transitioned towards renewable energy, like Denmark and Germany, have done so by heavily investing in research and development. Pakistan must cultivate an environment that encourages curiosity, exploration, and technological breakthroughs to propel its energy sector forward.

### Stakeholder Convergence: Imperative for Progress

Effectuating a paradigm shift towards indigenization demands a collective endeavor that unites diverse stakeholders - the government, the private sector, and academia/Civil Society Organizations (CSOs). This harmonious synergy is to be realized through forging robust connections between academia, industry, and policymakers.

The role of the government is pivotal in creating an enabling environment for indigenization efforts. This encompasses the formulation of favorable policies, incentives for research and development, and streamlined

regulatory procedures. The private sector, on the other hand, can drive innovation through investments, commercialization of research, and establishment of local manufacturing capabilities. The academia and CSOs have a crucial role in bridging the gap between theory and practice, ensuring that research translates into tangible solutions.

### Drawing Lessons from Global Exemplars

A beacon of inspiration for Pakistan lies in Denmark's remarkable trajectory toward harnessing wind energy. In the aftermath of the 1970s oil crisis, Denmark adroitly pivoted towards wind energy, catalyzing local manufacturing and channeling substantial investments into R&D. Presently, Denmark stands as a formidable global leader in wind energy, with over 40% of its electricity sourced from wind turbines. The dividends of this transformation are manifold: amplified employment opportunities, diminished reliance on imports, reduced greenhouse gas emissions, and a palpable upliftment of the local community.

### Charting the Way Forward

The tapestry of Denmark's success story weaves seamlessly into Pakistan's current narrative. Standing on the precipice of an impending energy crisis, the trajectory towards indigenization and localization ceases to be a luxury; it morphs into an inexorable necessity. The echoes from the symposium convened by the Overseas Investors Chamber of Commerce and Industry resonate with a resolute message: the hourglass of time is teetering on the brink of profound introspection, meticulous integration, potent incentivization, and unflinching policy orchestration.

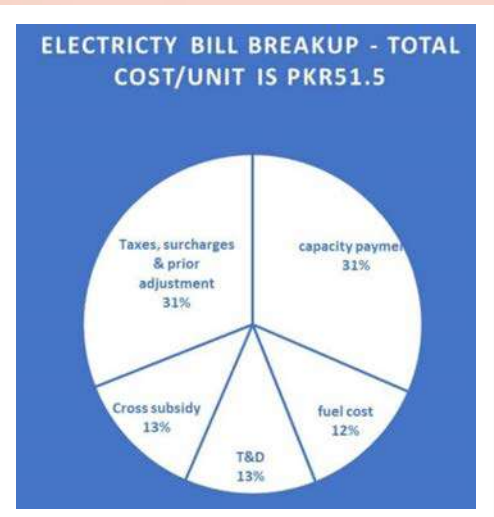
The path forward, as illuminated by this symposium, intertwines Pakistan's pursuit of energy security with its aspirations for robust economic growth. By nurturing a thriving ecosystem for renewable energy, the nation can stimulate economic activity that ripples across industries. Job creation will burgeon, not only in the specialized field of energy technology but also in ancillary sectors, such as manufacturing, installation, and maintenance. The establishment of local technology hubs will catalyze innovation, fostering a culture of research and development that can further branch into diverse sectors, transcending the energy realm. Moreover, the coupling of economic growth with renewable energy initiatives serves as a powerful lever to uplift local communities. As wind turbines hum and solar panels glisten, regions once overshadowed by

fossil fuel plants can experience a rejuvenation. This symbiotic relationship between progress and sustainability is the cornerstone of the narrative that Pakistan can script.

Simultaneously, this narrative must emancipate itself from the shackles of imported fossil fuels. As the world navigates geopolitical turmoil and energy insecurity, a nation that hinges its growth on indigenous energy sources becomes inherently resilient. Pakistan's reliance on imported oil and gas, prone to price fluctuations and international disputes, can be severed. The process of localization and indigenization not only empowers Pakistan to determine its energy destiny but also shields it from the geopolitical quagmires that often accompany energy imports. The event convened by the Overseas Investors Chamber of Commerce and Industry (OICCI) serves as the prelude to this transformative symphony. It's an overture that reverberates with the harmony of local innovation, economic resurgence, and environmental stewardship.

The challenges that loom may be complex, but the solutions are equally ingenious. From harnessing solar and wind potential to investing in breakthrough research, from fostering public-private collaborations to instating visionary policies, Pakistan's voyage towards energy indigenization is a saga of hope, determination, and resilience. As history etches its lines, let Pakistan be remembered not for the crises it faced, but for the fortitude with which it overcame them. Let its journey towards energy self-reliance echo as a resounding anthem, not just within its borders, but across the globe. With each solar panel installed and every wind turbine erected, Pakistan forges a future that is not just energy-secure, but economically vibrant, environmentally conscious, and resilient in the face of uncertainty. The symposium's echo reverberates: the time is now, the path is clear, and the destination is a sustainable, prosperous future. ■

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# Economic policy by interim govt

Given Pakistan is facing a very difficult economic challenge; Economic diplomacy is an important focus area for caretakers

—◆ Dr Omer Javed —◆

**G**iven Pakistan is facing very difficult economic challenge, mainly in the shape of bringing debt sustainability, on one hand, and on the other controlling inflation, while also providing as much stimulus, and social protection spending as possible, given a tight fiscal space, and macroeconomic stabilization needs in an overall International Monetary Fund (IMF) Stand-By Arrangement (SBA) environment, the current interim government, especially the finance minister, has a lot more on the plate than a 'usual' interim government and its finance minister.

Controlling inflation, which is still quite high, is the key here, especially because falling inflation will not only enhance the fiscal envelope but will also provide greater room for reducing policy rate. Here, while the former will allow greater impetus to economic growth, the latter will once again contribute both to boosting growth, and in lower domestic debt repayment needs.

Having said that, it may make sense for the interim finance minister to bring much-needed balance on the currently overboard reliance on monetary, and fiscal austerity measures to control inflation, whereby policy rate is over-emphasized as the main tool for curbing inflation, while it is quite evident that supply-side, governance-related measures have also a significant say in this regard.

In this regard, the IMF should be sensitized of this needed shift away from overboard austerity emphasis through indicating greater governance-, supply-related reform/administrative efforts.

In terms of increasing external debt sustainability, and reducing imported inflation, the interim government will have to take forward the humongous task of not only building up foreign exchange reserves, but to do them rather quickly, given the high gross financing needs that the country faces; not to mention the likelihood of imported inflation remaining a significant contributor to imported inflation,

given it is expected that oil prices will likely rise due to the reported curtailment of oil supply by OPEC+ in at least the short-term.

Here, a significant performance on taking forward – and even building up where possible – the initiatives made under the Special Investment Facilitation Council (SIFC) to bring in greater foreign investment in the country.

Moreover, within the overall effort, the interim government should also look to improve the performance with regard to setting up of Special Economic Zones (SEZs), especially in terms of providing better governance-, and incentive structures.

Three other important areas where structural reforms agreed with the IMF as a starting point, and which may see enhancement under more ambitious planning, need to be focused by the interim government, and which are in the areas of domestic resource mobilization, energy sector, and enhancing state-owned enterprise (SOE) performance, including possible privatization.

Here, on one hand, it may make sense to learn from the successful experiences of, for instance China's and Scandinavian countries', in terms of running SOEs – including learning from the Mixed-Ownership Enterprises (MOEs) experience of China – and to tread the path of privatization in a more cautious way, given the negative fallout of the late-1980s to mid-2000s Neoliberalization, a policy mindset that led to the so-called 'golden age of privatization'.

For instance, the writer's recent article 'Independence Day economic resolutions' in another newspaper, points towards the importance of seeing a non-neoliberal, social democratic styled role of public sector, including in matters of privatization, may provide some useful guidance to the interim government, and to an elected one later.

The article indicates in this regard: 'In the light of the above, especially given the successes of for instance, China, and the Scandinavian countries, of the public sector in implementing a meaningfully inclusive, resilient, and sustainable economy, it is important that economic results should extend to seeing a more balanced role of the public sector in terms of the extent of the privatization process, and the running of state-owned enterprises (SOEs).

The neoliberal mantra, over the years, of excessive privatization, and weak regulation of the private sector has created deep cracks in terms of economic resilience, especially when it came to preparedness to deal with existential threats like climate change, and the Covid pandemic, perpetuation of the 'profit-over-people' mindset in the private sector, and increasing income and wealth inequalities.'

Economic diplomacy is another important focus area for the interim government, mainly in terms of alignment, and harmonizing the bilateral/multilateral climate finance inflows, agreed earlier with regard to the climate change-related catastrophic flooding from last year.

Secondly, a greater effort may also be made to take advantage of the reported debt pause clause for countries suffering from climate disasters announced by the World Bank recently. Thirdly, as one of the top-ten climate-vulnerable countries, it may make sense to discuss with the IMF greater allocation of special drawing rights (SDRs) in the light of the overall case presented under the 'Bridgetown Initiative' for climate-vulnerable countries. ■

*The writer holds a PhD in Economics from the University of Barcelona. He previously worked at the International Monetary Fund*



# How to reduce people's misery in energy sector

GST can be done away with or at least reduced as energy tariff becomes unaffordable

**I**t does not require any elaboration that people are suffering from high inflation, especially in the energy sector. There are both supply and pricing issues.

It is also known that heavy currency devaluation and international commodity crisis in the context of Ukraine conflict have, in large part, contributed to these problems. The problems are becoming unbearable, although the government's pricing policies have tried to save the poor from the brunt of energy price inflation. In the process, middle classes are suffering and falling into the ranks of the poor. The tragedy is that more is yet to come. Policymakers and administrators are at a loss as to what to do?

There are a number of long-term solutions that have often been discussed, but in this piece, we will try to look for some steps, which may help reduce the misery of the people.

Governments' hands are tied under an IMF agreement. Cost has to be recovered in full from consumers, although cross-subsidy has been allowed. But there is a limit to how much load can be transferred to the richer consumer categories.

Latest electricity bills reveal that high-end consumers have to pay Rs60 per unit. In general, electricity prices have been doubled and gas prices will follow accordingly.

The problem with electricity and gas tariffs is that there are a lot of overheads, which go up in proportion to the increase in basic price. Some overheads such as fuel surcharge are necessary and are part of the basic tariff, but there are other charges as well, which could be reduced partly or wholly.

General sales tax (GST) is charged on electricity and gas tariffs at a rate of 17.5%. GST is levied on most items but many sectors are able to evade it and not much is collected from them. It is an indirect tax which has a regressive effect on the economy. But it has been consid-

ered useful for documentation of the economy. We will restrict ourselves here to the GST effect on energy tariff.

GST adds a lot of overheads to electricity and gas bills as the 17.5% rate is a large multiplier or adder. In all of the Asean region, which includes the most progressive and fast developing economies, the GST rate is 10% or even lower. These countries include Vietnam, Thailand, Malaysia and Indonesia.

Even developed countries like South Korea, Australia and Japan have 10% GST rate. China has 13% GST. Why should Pakistan ape Western Europe and the US in charging a high GST rate of 17.5%. There may be arguments in favour of keeping a high GST, most obvious being the collectability and the need to collect taxes and revenue.

Under IMF dictates, energy tariff should reflect the cost of supplies so that circular debt is controlled. However, the IMF does not bind on GST. It does require the government to collect legitimate taxes from those who escape either under rules or outside of the rules.

GST can be done away with from the energy sector or at least reduced. We are passing through an emergency. People are crying. High unaffordable tariff will increase theft and will increase receivables as well.

There are indications that it has started happening already. Theft is gaining a new legitimacy under the circumstances. There should be a search for balance and optimum point.

A GST rate of 5-10% on energy may alleviate some burden from the people. GST reduction may be for all consumer categories or at least be applicable to the low-income groups. Perhaps, the IMF will be amenable to this proposal. It should be persuaded.

## Surcharges

Late payment surcharges are also excessive at 10%. If one delays payment of electricity bill by one day, he is liable to pay 10% of the billed amount. It is not as bad in the gas sector.

Why has electricity sellers been provided such a largesse over and above the losses that consumers have to pay. In the current hard economic circumstances, the issue has become even more painful.

Nepra, in a recent hearing, did take stock of the issue. It is not known what concessions have been worked out. The government should reduce it consistent with interest rates which even now are 2% per month or slightly more. The late payment charge may be reduced to 2% for first month and higher for later delays.

There is access problem as well which affects pricing and the quality of life. While electricity is available to 70% of people, gas is hardly available to 25-30%.

Consequently, there is often political pressure to expand gas network where it is uneconomic to expand. Consequently, average cost of supply increases.

Biogas has been largely ignored by policymakers, while piped gas resources have been going down. Biogas is used worldwide even in developed countries. Global market sales stand at \$75 billion.

Liquefied petroleum gas (LPG) prices are also increasing. Rural poor often use LPG. Biogas is a mid-price resource. It is produced from liquid and solid waste, which is abundantly available, especially in rural areas.

Biogas generators are available these days in a packaged form made of plastic cylinders. An ordinary plumber can make one unit in a few hours using the material available in hardware shops. It may cost under Rs20,000 per unit. ■





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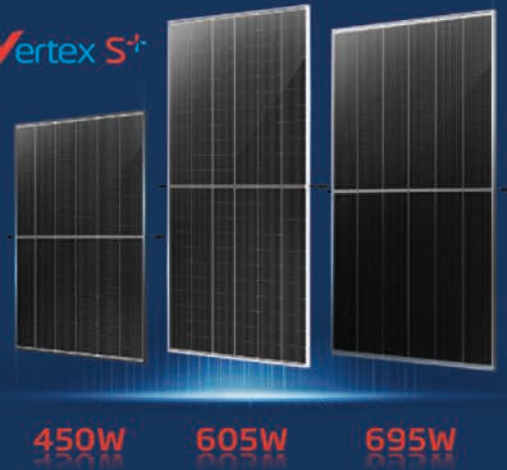


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# NFEH Conference on Adapting Urban Transportation to Climate Change

Annual Environment Excellence Awards presented to 81 companies; seven organisations given away special awards for their active tree plantation campaigns



Group Photo of 20th Annual Environment Excellence Awards 2023 winners with Chief Guest The honourable Consul General of the UAE, Bakheet Ateeq Al Remeithi. Guest of Honor Secretary Energy Sindh Abu Bakar Ahmed, CEO Indus Hospital Dr. Abdul Bari, President NFEH M. Naeem Qureshi, Secretary General Ruqiya Naeem, Vice President Engr. Nadeem Ashraf, CEO EMC Pakistan Syed Nadeem Arif and others.

The National Forum for Environment and Health (NFEH) in partnership with the Energy Update and other partner organizations conducts every year an impressive event to recognize and reward the excellent work of the industrial and corporate sectors of Pakistan in protecting the environment.

The Annual Environment Excellence Awards (AEEA) honour Pakistani companies for outstanding performance in any field. In addition to recognizing remarkable work by the companies in protecting the environment, the NFEH organises this event to gather on one platform the environmentalists, researchers, donors, policy planners, elected representatives, and officials to discuss an important aspect of the climate emergency in Pakistan. This year too, on the occasion of the 20th AEEA-2023, the NFEH held a conference on climate emergency and modes of urban transportation available in the country.

The speakers, including urban planning and climate change experts, discussed in detail the efforts underway to modernize public transportation systems in large cities

of Pakistan including Karachi, and their likely benefits for the environment.

The honourable Consul General of the UAE, Bakheet Ateeq Al Remeithi, addressed the conference as its chief guest. The UAE diplomat assured the audience that the world community assembling at the United Nations Climate Change Conference-2023 (COP-28) to be held in Dubai later this year was sure to provide

special financial assistance to Pakistan keeping in view its serious climate vulnerability.

Remeithi said that he had been personally a witness to the massive impact of the phenomenon of climate change in Pakistan during his years-long stay in the country.

He said the heads of state, senior relevant authorities, and environmental experts belonging to various countries soon gathering



Group Photo of 1st Annual Environment Excellence Awards 2004's Winning Companies Representative with Team NFEH. (They were recognized by NFEH on their 20th Years of Success of AEEA).





**From L TO R Consul General of the UAE, Bakheet Ateeq Al Remeithi, President NFEH M. Naeem Qureshi, CEO Indus Hospital Dr. Abdul Bari, SG NFEH Ruqiya Naeem, Mian Zahid Hussain, Director Exponent Engineers Asher Lodhi, Energy/Environment Expert Engr. Irfan Ahmad, Environment Engineer EMC PAK Syed Omar Arif & Vice President NFEH Khalid Iqbal.**

in Dubai for COP-28 had no option other than taking into account Pakistan's serious vulnerability due to climate change.

Remeithi said the world community would surely provide a sizable portion of the global budget meant for tackling the climate emergency in Pakistan owing to the massive destruction caused by events like floods, heavy rains, and heat waves.

He assured the audience that the UAE rulers would fully support Pakistan's case in this regard as they had always come to support the suffering and underprivileged Pakistani brethren after every disastrous event.

The UAE diplomat said that he had been following up on a daily basis to ensure that the Pakistani government actively took part in the upcoming COP-28 to effectively highlight the country's climate risk vulnerability before the concerned world community.

Speaking as the guest honour, the CEO of Indus Hospital, Dr Abdul Bari Khan, said that environmental degradation in the last few years had massively affected the physical and mental health of Pakistanis.

He said that improvement of the environmental conditions would go a long way in keeping Pakistanis healthy and lessening the massive public spending to tackle a number of diseases and health issues directly linked to the environment.

Former Sindh government's Environment and Forests Secretary, Shamsul Haq Memon, hoped that modern mass transit facilities being developed in large cities of Pakistan, including Karachi, in the form of bus rapid transit system (BRTS) and urban rail service would be highly helpful in tackling the environmental emergency.

He said that in addition to building BRTS in Karachi, the public transport facilities in small cities and towns of Sindh should also be upgraded where motorcycle rickshaw service had created a serious traffic mess on roads.

Environmentalist, Syed Omar Arif, said that mass transit systems should be expeditiously built in cities like Karachi as harmful vehicular emissions had massively degraded the environment. Shabina Faraz, an environmental journalist, emphasized that the planning for modern transportation systems should take into account the daily commuting requirements of woman workforce and students.

Sindh Government's Energy Secretary, Abu Bakar Madni, praised NFEH for regularly



**Secretary General NFEH Ruqiya Naeem presenting memento to Consul General of the UAE, Bakheet Ateeq Al Remeithi.**



**Panel Discussion on Environmental Challenges and Way Forward Session Chairman Shams ul Haq Memon, Advisor, NFEH and other Panelist were Bilawal Suhag, Researcher, FPCCI, Shabina Faraz, Environment Journalist, Abdul Aziz, General Manager, Bus Rapid Transit Service Karachi.**

holding conferences on environmental issues.

NFEH President, Naeem Qureshi, thanked the UAE Consul General for attending the event and reaffirming the commitment of the brotherly Islamic country to provide the fullest assistance for tackling the climate emergency in Pakistan. He said the NFEH would continue to hold more such conferences.

NFEH Secretary-General Ruqiya Naeem in her vote of thanks said that her NGO would further accelerate its tree plantation drive in Karachi and other cities by involving concerned stakeholders in increasing green cover

in the country.

On the occasion, 81 companies were awarded the 20th AEEA-2023 for their exceptional performance in tackling the climate emergency. Seven organizations were given away special awards for their active tree plantation campaigns.

Noted businessman Mian Zahid Hussain; Abdul Aziz, BRTS General Manager in Karachi; Ashar Lodhi, a senior engineering consultant; Dr Kasier Waheed, Engr Nadeem Ashraf, Engr Irfan Ahmad, Bilawal Suhag and others also spoke on the occasion.



# CARETAKERS AND



## Tough decisions can be taken to put economy back on track

—◆ Mansoor Ahmad —◆

**T**he failure to address governance and transparency issues has resulted in the misallocation of resources, including borrowed funds

Perhaps for the first time in our arrangements with the International Monetary Fund, the donor agency has committed to release a second tranche of a 9 month-programme to a caretaker government. As usual, the IMF expects the caretakers to follow the agreement it signed with the previous government.

The PDM government implemented tough IMF conditions at the cost of public support. It also assured the IMF that the caretaker setup will honour its commitments. The caretakers did not disappoint the IMF. On its very first day in power, the caretaker federal government announced a big raise in the petroleum product prices. It can be argued that the raise was inevitable following a raise in global crude oil rates and decline in the rupee value.

Under conditions agreed with the IMF, the government of Pakistan is to charge a minimum of Rs 55 per litre petroleum levy on sales of petrol and diesel. After some time, the levy has to be increased to Rs 60 per litre. Had the price been kept unchanged the petrol levy would have declined to Rs 35 per litre for diesel and Rs 37.5 for petrol.

Accepting IMF conditions on generating revenue, while failing to improve gover-

nance and transparency, has led to a range of economic, social and political consequences for the country. It has created a permanent economic instability. The IMF conditions are often designed to stabilise a country's economy by addressing fiscal deficits, reducing public debt and maintaining exchange rate stability. If the country fails to improve governance and transparency, corruption and mismanagement persist, undermining the effectiveness of the revenue generation measures. This can result in ongoing economic instability, hindering long-term economic growth and development. Elected governments often lack the resolve to confront vested interests. Caretaker governments, having no political aims, can take tough decisions to put the economy back on track.

This is a rare opportunity for the caretaker Executive, who must work hard to eliminate power inefficiencies; make the schools deliver quality education; and ensure delivery of services at public healthcare centres. There has been a visible improvement, for instance, in the healthcare system in the Punjab where the caretaker chief minister has used his longer than usual tenure to improve health services in the province.

Caretakers and the concerned circles must realise that backing off from the IMF programme is not an option. The agreed conditions agreed must be implemented in letter and spirit.

The socio-economic inequality that we observe today is because of lack of governance and transparency that has perpetuated a system where resources are diverted to the hands of a

few. This has resulted in social unrest, protests and a general sense of dissatisfaction among the population.

The failure to improve governance and transparency has also eroded public trust in government institutions. This has led to declining citizen engagement, tax evasion and a lack of cooperation in implementing necessary economic reforms.

Persistently weak governance and a lack of transparency have also contributed to political instability. This instability has created an environment of uncertainty and unpredictability, which further deters investment and economic growth.

The failure to improve governance and transparency has also impeded the efficient utilisation of resources, including human capital. This has resulted in numerous missed opportunities for development in areas, such as education, healthcare and infrastructure.

Leaders of the caretaker government must realise that backing off from the IMF programme is not an option. The agreed conditions must be implemented in letter and spirit. There is a need for progressive taxation. Also, the untaxed sectors of the economy need to be brought into the tax net.

Pakistani governments have struggled in the past to meet the IMF conditions. Now is also the time for the government to get rid of the loss-making public sector entities. ■

*The writer is a senior Lahore-based economic reporter at The News International*

# Heat: What's the alternative to air conditioning?

Power-hungry AC units contribute to climate change and make the global heat problem worse; however, solutions like passive cooling and better designs for cities can help

— Energy Update —

**K**uwaiti summers are oppressive. Baking heat radiates from every corner of the city, making even the lightest of exercise excruciating. That is, unless you are lucky enough to live in an air-conditioned bubble.

"In Kuwait, you're in your air-conditioned apartment or your air-conditioned car to go to your air-conditioned place of work or the air-conditioned mall," said Alexander Nasir, who used to live in the Gulf nation. "Of course it was absolutely atrocious for the environment, but it was the only way to avoid the inferno outside."

The climate crisis has made heat waves more likely and more intense around the world. The summer of 2023 saw soaring temperatures worldwide, with NASA saying July was the hottest ever recorded.

Even in 2018, the use of air conditioners and electric fans made up 10% of global electricity consumption, according to the

International Energy Agency.

AC units are only widespread in a few countries like Japan and the United States — where more than 90% of households have them. They're only available to 8% of people in the hottest parts of the world.

Sometimes, cooling a home can be as simple as opening the windows at night to let in cool air and drawing the shades when the sun hits the window during the day.

Passive cooling can also be integrated into a building's design. Some methods, such as wind catchers in North Africa and the Middle East, have been staving off heat for centuries.

India has found that even a simple fix like painting roofs with lime-based white-wash can reduce indoor temperatures by 2 C to 5 C. Designing with location in mind is also key, according to bioclimatic architects, whose designs take local climates into account. Studying the wind direction before building allows for openings that encourage cross ventilation, for example.

In Medellin, Colombia, authorities have

planted "green corridors," vegetated passages keeping pedestrians and cyclists out of the direct sun. They have helped reduce the city's average temperatures by 2 C.

In tropical Singapore, dense vegetation on some skyscraper facades keeps them from heating up as much. "By having at least 10 meters of greenery on the front of your buildings, you can reduce the surface temperature by 5 degrees Celsius," said Ayu Sukma Adelia, an architect from the Cooling Singapore Research Project.

Another approach is to cool entire districts with massive cooling units. Singapore has what it claims to be the largest underground district cooling facility in the world, which brings temperatures down in residential buildings, banks, malls and an iconic hotel. Water is chilled 25 meters below the ground before it is piped across a series of buildings.

District cooling can save up to 50% on energy and emissions compared to regular air conditioners, and cities such as Toronto, Paris and Hong Kong are now using them. ■





# Financing climate action

The global climate crisis has left no country untouched, but it is the developing world that is facing the most severe impacts. For countries like Pakistan, already struggling with economic instability, climate change 'burn' presents not just a threat to the environment but also stresses our national and human security.

It has already claimed thousands of lives and caused billions of dollars in damages. At one estimate, just in 2022, Pakistan faced a cumulative drag of eight percent on its GDP from climate change.

According to the World Bank's Country Climate and Development Report, Pakistan faces a fairly quantum challenge if climate response and development needs are to be met, amounting to a staggering \$348 billion between 2022 and 2030.

To achieve deep decarbonization, \$196 billion is necessary, while \$152 billion is needed for adaptation and resilience, and this is the bare minimum. Strategic responses are further complicated by recurring floods and the return of the El Nino phenomenon, that creates a recovery trap, with countries like Pakistan struggling to rebuild and reconstruct while simultaneously coping with ongoing heatwaves and extreme weather events.

These are no small numbers. From severe heatwaves that melt our glaciers, to catastrophic floods last year that have devastated one-third of Pakistan, it is clear to policymakers that the climate crisis has compounded our nation's challenges in ways that even today go unrecorded. Livelihoods and income impacts in rural areas are only yet seen as a calculus of growing impoverishment, food insecurity and ongoing





soil and hydromet challenges.

Hidden costs across all sectors have not even been registered, as they remain fragmented, systemic and un-processed. Health impacts in terms of high morbidity and mortality are linked directly to municipal over-stress in peri-urban and urban dwellings, not to mention the poor governance of pollution laws and green zoning. Yet it is only at the crosshairs of climate events that the connection between environmental degradation and inaction is publicly linked to surges in composite crises for the most vulnerable.

We know now that water-borne diseases and lack of access to basic health facilities in crisis burdens women and children the hardest and swiftest. Yet the social costs are far from understood in most developing countries, including Pakistan. Unicef alone estimates that 76 per cent of children under 18 in South Asia – 460 million – are exposed to extreme high temperatures where 83 or more days exceed 35 C.

Globally, many developing countries are already struggling with the twin challenges of energy security and debt crises. As a country with less than one per cent of the global emissions, Pakistan is not responsible for adding bulk to the world's greenhouse gas emissions, yet we are disproportionately affected by the climate crisis. Like others in the arc of climate vulnerability and development, we lack both the capacity and resources to manage the accelerated risks posed by climate change.

Given that adaptation is a top priority which requires significant investments in climate resilient infrastructure, the higher costs of such resilient development must also be flagged. Adaptation can cost up to four times more than conventional development and, even though its returns are potentially equally high, speedy access to financing remains

difficult. Despite the international hype about global green financing, climate fund pipelines by and large continue to be projectized, resistant to agile withdrawal and rarely provide budgetary support for countries in crisis.

Despite climate finance pivoting as the backbone of climate action, it remains notoriously elusive for many developing countries on the frontlines of the climate crisis. The international community in 2019/20 had pledged to mobilize \$100 billion per year in climate finance for developing countries, but the actual disbursement has fallen well short of the target, and climate finance has both been short and slow to reach the countries that need it most. This lack of funding and adaptive capacity is one of the main reasons why climate action is being held back in Pakistan and other developing countries. The recently created Loss and Damage Fund remains yet to be operationalized, let alone act as a trigger for financing shortfalls in climate emergencies in the Global South, and many fear that if it too remains unfunded due to lack of political will and out-of-the-box solutions for funding, it may well become another 'ghost fund'.

There is no longer any contest on the claim that speed, scale and capital are the three fundamentals that need to shift if countries on the brink of climate disaster are to rebuild as well as adapt to change. The UNFCCC Standing Committee on finance's "first report on the determination of the needs of developing country Parties (NDR)" highlights that a staggering \$6 trillion is needed by 78 developing countries alone to meet their financial needs outlined in their Nationally Determined Contributions (NDCs) by 2030. It is reasonable to assume that this figure will be much higher once all 199 member states of the UNFCCC implement their NDCs.

Under the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC), developed countries have a moral obligation to provide financial support to developing countries to help them mitigate and adapt to the impacts of climate change. What tangles the problem further is that there is no agreed definition of what constitutes climate finance, leading to vastly different claims from developed and developing countries on financing responsibilities.

In the race for climate survival and preparedness, 2030 is the decisive decade. If global financing does not go up, and net zero trends stabilize at Paris targets of 1.5 C above industrial levels,

which they are well overshooting, those of us on the frontlines will pay the human and capital cost. If the New Multilateralism, as the UNSG calls it, is to have any meaning or form, it has to meet climate sustainability head on in transformative solutions.

One way to get past the chokehold on financing climate challenges was already on the table at the Paris Summit 2023. The summit proposed many creative paths forward for reforming the international financial architecture to ensure climate finance is accessible to developing nations with new sources of funding to be explored and tapped without adding to the debt burden of vulnerable countries. Why? Because developing countries are borrowing at much higher rates than developed countries, creating a heavier debt burden that becomes a punishing drain on national budgets.

At the same time, lower-income countries end up spending five times more on debt servicing than on climate mitigation and adaptation. For instance, Pakistan spent 400 times more on debt servicing (Rs3950 billion) than funding its climate ministry (Rs10 billion) to lead climate mitigation and adaptation.

Many developing countries are often told that they need to undertake painful structural reforms by creditors. This is not unreasonable, but in times of a climate polycrisis, there is a compulsion for global multilateral institutions to find innovative sources of funding and financing for those it should service without piling on more debt. One way of course to do this is to bring in the private sector into the room, but not as a conventional investor, because that leaves a huge de-risking hole in the piece, and leeches climate-smart investments away from countries that are both debt and climate stressed.

Conventional wisdom toolkits are well past their capacity in even providing coping-expense buffers for frontline countries. In existing scenarios, the private sector only comes in when it appraises profits on its investments. When climate-stressed unpredictability comes into the mix, which it invariably does today, the power-point presentations to transform entire countrysides from a Shakespearean 'blasted heath' to booming-farm-utopia all melt away, reinforcing the fact that investors shy away from high levels of risk.

Yet the solutions too lie at the heart of the crisis in global capitalism, where the oil and gas sector rakes in unprecedented profits from the fossil fuel industry, and barely gets tapped as a profit-percentage pegged capital investor in high-risk countries.

Without these difficult conversations to fund climate stress, or carbon trade frameworks that are not universal, multilateralism will never catch up to climate change. ■

*The writer is the former federal minister for climate change and environmental coordination.*







# Petrol prices in India and Pakistan

—◆— Syed Shabbar Zaidi —◆—

**T**he price of petrol is regulated in both India and Pakistan. In India, prices differ from state to state. There is no Inland Freight Equalization Margin (IFEM), which is added to prices in Pakistan to keep them uniform throughout the country. The price of petrol in Dehli has been taken as the base as this is the lowest price in the country.

In Dehli the price of petrol is INR 97 equivalent to 1.16 USD per litre versus PKR 290 equivalent to 1.07 USD across Pakistan. The upfront position seems to suggest that petrol is 'expensive' in India in comparison to Pakistan.

A petroleum industry expert has explained to this author that Indians have received discounts of up to 30% on their purchases of Russian crude that they have been using for decades and have refineries that are designed to process the Russian crude. Furthermore, he said, Pakistan's crude procurement price from the Gulf is higher for the reason that it buys on a deferred payment basis.

In this author's view if the prices on deferred payment are higher by the sum referred above, then there is effectively no benefit to Pakistan and that difference is being paid by way of a deemed interest.

Whatever may be the reason, the difference of over Rs 50 per litre is a substantial sum and there is a dire need to analyse it. We may

need cheaper oil from Saudi Arabia and Kuwait instead of loans. If the value of total imports is accounted for, it means we are spending around \$3.78 billion more on imports than Indians on account of pricing difference. This amount has been calculated on a consumption of 489,000 barrels per day at a price of \$ 81 per barrel and the difference of 27% in in retail prices.

The second astonishing aspect is substantial recovery of taxes from petroleum by Indians against Pakistanis. Indians are collecting 47% taxes on each litre sold; whereas, Pakistan only collects 20% tax. In other words, if Indians are selling at \$1.16 per litre, then their government is receiving around 50 cents per litre on consumption.

This adds to their government's revenues and balances their fiscal account. In Pakistan, we live with a meagre 20% tax on petrol and the position is so precarious that there is no possibility of increase in taxes despite IMF's pressure on the government to increase Petroleum Levy (PL) on POL products.

This difference is the main reason for the present economic chaos in Pakistan where the public complains about the increase in petroleum prices despite the fact that such prices are actually lower in real terms when compared with those in India.

PL is another misnomer in Pakistan. It is simply a duty. We have segregated this amount from taxes and levies on account of our basis of allocation of revenues and considerations of sharing of revenues with provinces in the federal divisible pool.

The question whether or not the prices in India are higher or lower is a subjective one. The reliable indices prepared by an international organisation reflects that Consumer Prices in Pakistan are 23.4% 'lower' than in India (other than rent); however, Local Purchasing Power in Pakistan is 64.4% lower than in India. This means an average Pakistani

has around 50 cents' buying power as against one dollar of an Indian's. In other words, petrol is substantially more expensive in Pakistan as compared to India.

There is another statistic that is extremely important. This is the comparative price over the period of five years. Average price in 2017 was around PkR 80 per litre when the Crude was at 57 \$ per barrel. Now it is around PKR 290 per litre when the Crude is around 75 dollar per barrel. The increase in prices is almost over 3 times, which reflects that this hike is largely on account of depreciating US\$/PKR parity. It was 107 in 2017 and is around 285 now.

An almost threefold increase. This also exhibits that in the past, petroleum prices were directly or indirectly being subsidised. Another revealing fact is the total consumption of petrol / diesel in India and Pakistan. India's is almost 10 times of our consumption.

Petrol and diesel are openly available at dispensers operating in remote places and transporters make use of it. One of the people involved in the transport business said that if the transporters do not use this smuggled petroleum products available at cheap prices then they are not able to meet their expenses. This is one of the reasons why the transport sector is not part of corporate or documented sector.

The purpose of this article is to initiate a debate on the major issues confronting the national economy and the centrality of the energy sector (power and fuel). These are issues that have compromised Pakistan's economic performance due to which we have landed ourselves in dire economic straits. The politics of patronage and rampant corruption are definitely the reasons behind our predicament.

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# Reforming Pakistan's Energy Sector

Energy sector has long grappled with challenges such as power theft, transmission and distribution losses, circular debt

◆ Dr Basharat Hasan Bashir ◆

**T**he energy sector in Pakistan has long grappled with challenges such as power theft, transmission and distribution losses, and the accumulation of circular debt.

To address these issues and improve the performance of distribution companies, the federal government has initiated a bold step of transferring control of ex-Wapda distribution companies (XWDISCOs) to provincial governments. This paper examines the rationale behind this initiative and critically analyzes its potential benefits and drawbacks. Through an in-depth exploration of the pros and cons, this paper aims to provide insights into the implications of this decision for Pakistan's energy sector and its future.

The energy sector forms the backbone of a nation's development, playing a pivotal role in economic growth, industrial progress, and the overall quality of life. However, the energy landscape in Pakistan has been marred by persistent challenges that have hindered its potential to power the nation's progress. From widespread power theft to transmission and distribution losses, the sector has grappled with systemic inefficiencies that have led to a burgeoning circular debt crisis.

In response to these pressing concerns, the fed-

eral government has undertaken a bold and transformative initiative - the transfer of control of ex-Wapda distribution companies (XWDISCOs) to provincial governments. This paradigm shift signifies a significant departure from established norms and represents a visionary approach to reforming the energy distribution system. This paper delves into the rationale behind this landmark decision and conducts an in-depth exploration of its potential advantages and drawbacks, seeking to provide an informed perspective on the far-reaching implications of this strategic move for Pakistan's energy landscape.

The energy sector, as a critical pillar of a nation's infrastructure, holds the potential to drive economic growth, foster industrial innovation, and enhance the overall well-being of its citizens. In Pakistan, however, the sector has long been plagued by multifaceted challenges that have impeded its capacity to meet the dynamic energy demands of the country. Power theft, distribution inefficiencies, and a mounting circular debt crisis have collectively formed a trifecta of obstacles that hinder not only the sector's efficiency but also the nation's progress at large. Recognizing the urgency to rectify these issues and lay the foundation for a sustainable energy future, the federal government has embarked on an ambitious endeavor - the transfer of control of ex-Wapda distribution companies (XWDISCOs) to provincial governments. This strategic move represents a paradigm shift in the governance of Pakistan's energy distribution system, aimed at not only resolving long-standing challenges but also at ushering in a new era of localized decision-making and accountability.

The rationale behind this transformative initiative stems from a comprehensive evaluation of the energy sector's intricacies and challenges. Central to the decision is the recognition that the distribution segment serves as the primary interface between the energy industry and consumers, exerting a profound influence on the financial viability of the entire sector.



By relinquishing federal control over XW-DISCOs and vesting authority in provincial governments, the initiative seeks to address challenges at their roots, offering provinces the autonomy to tailor solutions that align with their specific needs and regional dynamics. This decentralized approach is poised to empower provinces with the ability to craft targeted strategies against power theft, efficiently manage load-shedding schedules, and determine subsidies for electricity tariffs in response to local socioeconomic conditions.

However, as with any paradigm shift, the decision is not without its set of potential benefits and challenges. On the positive side, the initiative holds the promise of fostering local governance, enhancing resource allocation efficiency, and placing consumers at the forefront of energy policies. Yet, the move also introduces potential concerns regarding coordination among provinces, potential resource constraints, and the specter of political interference in energy operations. The transition's implementation timeframe and the need for strong institutional capacities within provincial governments further contribute to the complexity of this transformation.

In this paper, we undertake a comprehensive analysis of the pros and cons associated with the initiative to transfer control of XW-DISCOs to provincial governments. By critically evaluating the potential benefits against the possible drawbacks, we aim to shed light on the multifaceted implications of this decision for Pakistan's energy sector and, by extension, the nation's journey toward a sustainable and robust energy future. Through this examination, we aspire to contribute to a nuanced understanding of the complexities surrounding this initiative and provide insights into its potential to reshape Pakistan's energy.

**Initiative Rationale:** The decision to transfer control of ex-Wapda distribution companies (XWDISCOs) to provincial governments emerges from a profound analysis of the challenges that have historically plagued Pakistan's energy sector. This bold initiative is underpinned by a multi-faceted rationale that seeks to address these challenges comprehensively while aligning with broader goals of efficient energy management, local governance, and sustainable development.

**Curbing Power Theft and Losses:** One of the foremost drivers behind the decision is the urgent need to curb rampant power theft and transmission and distribution losses. These issues have inflicted substantial financial losses on the energy sector, eroding its ability to sustainably generate revenue. By vesting provincial governments with the authority over distribution companies, the initiative aims to empower localized bodies to implement strategies that are tailor-made to counteract power theft and minimize losses. Provinces, with their in-depth understanding of local dynamics and challenges, can employ innovative measures and advanced

technologies to enhance monitoring, detection, and mitigation of power theft, leading to a reduction in losses and improved sector profitability.

**Responsive and Accountable Governance:** The initiative also prioritizes the establishment of responsive and accountable governance mechanisms within the energy sector. The federal structure of Pakistan's governance system has often posed challenges in ensuring timely decision-making and implementation. By devolving control to provincial governments, the initiative places governance closer to the people and enables more nimble and locally-relevant policy formulation. This proximity to consumers fosters a heightened sense of accountability, as provincial governments become directly responsible for addressing the concerns and needs of their constituents. This, in turn, can foster trust in the energy distribution system and promote efficient operations.

Provincial governments, as custodians of their respective regions' development, are better equipped to make decisions that align with local priorities and socio-economic realities.

This empowerment enables them to adjust electricity tariffs, determine load-shedding schedules, and allocate resources in a manner that suits their unique requirements. By granting provinces the autonomy to shape policies that suit their circumstances, the initiative transcends the one-size-fits-all approach that has sometimes hindered effective energy management.

The transfer of control empowers provincial governments to allocate resources more efficiently, considering the local context and priorities.

### **Pros of the Initiative:**

**Local Governance and Accountability:** Transferring control of ex-Wapda distribution companies (XWDISCOs) to provincial governments heralds a transformative shift towards localized decision-making and heightened accountability. Provinces, as custodians of their regions, possess a nuanced understanding of local dynamics, challenges, and aspirations. This proximity to the ground enables them to craft strategies and policies that are tailored to their unique energy landscapes.

The initiative empowers provincial governments to take ownership of energy distribution operations, fostering a sense of ownership and commitment to effective management. This localized control not only facilitates quicker decision-making but also establishes a direct line of accountability between provincial authorities and the constituents they serve. By engaging directly with local stakeholders, provincial governments can develop a better grasp of the prevailing issues and formulate strategies that align with the welfare of their communities.

**Load Shedding Management:** The issue of load shedding, which has often plagued Pakistan's energy sector, can be more effec-

tively managed through the localized approach enabled by the transfer of control. Provinces are better positioned to assess their energy demands and allocate resources to minimize disruptions in electricity supply. By developing load-shedding schedules that cater to regional demands and constraints, provincial governments can ensure a more equitable distribution of electricity. This approach not only contributes to improved consumer satisfaction but also reduces the economic and social disruptions caused by frequent power outages.

In the subsequent sections of this paper, we delve into the potential drawbacks associated with this initiative, offering a comprehensive examination of the potential challenges that must be navigated to ensure its successful implementation.

### **Cons of the Initiative:**

**Coordination Challenges:** Decentralization might lead to inconsistencies in policies and practices among provinces, impacting overall sector coordination and effectiveness.

**Resource Constraints:** Some provinces might lack the financial and technical resources needed to efficiently manage distribution companies, leading to disparities in performance.

**Political Interference:** Provincial ownership could potentially lead to increased political interference in energy distribution operations, affecting efficiency and transparency.

**Loss of Economies of Scale:** The national uniform power tariff is being eliminated, which might lead to a loss of economies of scale that can arise from centralized decision-making.

**Implementation Timeframe:** The transition process may take some time, during which uncertainties and disruptions could persist, potentially affecting the quality and reliability of electricity supply.

**Institutional Capacity:** The success of this initiative hinges on the institutional capacity of provincial governments to effectively manage and govern the distribution companies.

The initiative to transfer control of ex-Wapda distribution companies to provincial governments is a bold step that reflects the government's commitment to tackling deep-rooted issues within Pakistan's energy sector. While the potential benefits of localized governance, improved accountability, and tailored solutions are promising, the decision also brings challenges of coordination, resource allocation, and political interference. Ultimately, the success of this initiative will depend on how efficiently provincial governments can execute their responsibilities, align strategies, and collaborate with federal bodies and stakeholders. With careful planning, effective implementation, and ongoing monitoring, this initiative could pave the way for a more resilient, efficient, and consumer-centric energy distribution system in Pakistan. ■

*The writer is Ph.D., P.E, Alternative Energy & Climate Change (Mitigation and Adaptation) Specialist*



# Power sector becomes an existential threat to Pakistan

The situation has been further exacerbated by the falling rupee and the ever-strengthening dollar

◆ Engr Tahir Basharat Cheema ◆

**P**resently, the power sector has become an existential threat for Pakistan. The situation has been further exacerbated by the falling rupee and the ever-strengthening dollar.

We have ended-up with spare generation capacity (on account of stunted sales and the mindless policy of revenue-based loadshedding), inability of DISCOs to recover their revenues and scourge of illegal abstraction of electricity/power – evident all over the country.

Trite 1960s technology and the sad jump into sham AMI (Advanced Metering Infrastructure) assures that the things are not about to change – at least in the near future.

Various multi-lateral developmental agencies (MLDAs), mindful of their charters are up in arms with calls for immediate reform in the Sector. This for all is to somehow allow the Discos a free float within the present scene of a myriad policies, intruding Power Division, a lackluster regulator, BODs fully manned by politicians or their protégées, operational management with temps and that too who have the right connections and the unbridled NTDC, Gencos and IPPs on the prowl – the result of the last many reforms forced upon Wapda and the successor ex-Wapda PSCes (Power Sector Corporatized Entities).

Delving into history would be most helpful. The first WB-sponsored reform was adopted during the late 1980 whereby Wapda's distribution regions were converted into the

UK modelled Area Electricity Boards (AEBs). That by then the UK had already decided to do away with this set-up and privatize the Sector is another story.

That the UK restructure edit's Central Electricity Generating Board (CEGB) along with its regional electricity boards and privatized the whole sector by 1990 informs us about our belated doings. Presently, there is a clamour to bring back its ownership to the public domain in the UK.

Political, business and agriculture nominations were made on the AEBs and from thence on political interference has been institutionalized in the power sector. Not being left to the AEBs, the World Bank supported by other MLDAs decided that as WAPDA was still there in the stewardship role GoP was forced to take up another round of reforms resulting in the setting-up of PEPSCO (wresting the Power Wing out of Wapda) as a management company and converted the AEBs into non-listed public limited companies – now known as the Discos, while also setting-up the NTDC (National Transmission and Distribution Company) and the four Gencos (owning all of the publicly owned generating assets – then 4820 MW in all).

These GENCOs, as programmed, have since simply shut shop with spare estates to be pilfered by looters. Even state of the art plants installed in 2012 and 2014-15 are shut pending repairs.

Presently, all of these ex-Wapda PSCes are managed by distinct BODs. Unfortunately, there are only five power sector professionals amongst the 180 or so board members. Most of the members are either political to the core or their nominees – surely unrelated to the sector. So much is the importance of SECP's (Securities and Exchange Commission of Pakistan's) Fit & Proper Criteria for the board members.

And besides meddling in the day-to-day operations – especially of the Discos, these untrained persons are more interested in touting their protégées and assuring that the Discos wrongly invest in electrification of specific areas.



According to estimates, all of the budget for the loss reduction programme has been lost while catering for opening-up new areas for electrification – a crime in the sector’s lingo.

Thus, the last three reforms have weakened Wapda, have ended with Pepco converting itself to the PP&MC – an appendage to the Power Division, Discos and other PSCEs being run by politicians, a lackluster regulator, PPIB (Private Power and Infrastructure Board)/ AEDB (Alternative Energy Development Board) – a signing machine propagating IPPs and the related PPAs that cannot be implemented, hundreds of this genre in the pipeline that will further choke the Pakistanis with their mindless tariffs (mostly, over-invoiced and pipe dreams like the CTBCM (Competitive Trading Bilateral Contract Market) – found dead on arrival and governments who promise more reform).

Then comes the governmental representation on the 16 BODs (all of the PSCEs). These should necessarily be from the AGP’s office, the Finance Division and one from the Power Division. The fourth from the provinces would also have to be a hard core professional instead of anyone (sadly & erratically) holding the position in the Energy Departments.

The PP&MC (Ex-PEPCO) needs to be converted as an integral part of the Power Division and as a monitoring and reporting company instead of an entity responsible for planning – as if, the Planning Commission, the CPPA-G (Central Power Purchasing Agency-Guaranteed) and the NTDC were not enough. It should then be rightly named as the Directorate General of Power like the DGs (Oil, Gas & PCs) under the Petroleum Division.

Now that we have a surplus regime (all dressed-up with nowhere to go), the possibility of enacting and implementing the required legislation should pose no problem at all. And without such support, the DISCOs will not be able to deliver. The enactment has to support full recovery of the billed units besides assuring consumer discipline – the missing link at the moment.

To concurrently follow would be to re-think the PPIB-AEB’s mandate and it’s staffing, what (CPPA-G) (Central Power Purchasing Agency-Guaranteed) does and has to do, the treatment of and the pipeline IPPs, the plans and policies in vogue (to be merged into one all-encompassing bible), the regulator Nepra (National Electric Power Regulatory Authority) and its failures as yet and what it should do and not do – reduce its burgeoning staffing with corrected direction etc. All in all, professionalism has to take precedence in all of these entities.

It will be difficult as it all hits the present wayward thought process and the interests of the non-professional beneficiaries of the system. However, nothing short of the above eight changes can resurrect the power sector of today. The faster all of these solutions are implemented, the better it would be for the country. ■

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

## Over-concentration of clean energy sparks fears

says production of critical clean energy inputs is concentrated in a few countries



**T**he United States is working to build resilient, diversified clean energy supply chains to protect its economic security, while guarding against the risks posed by over-concentration in a handful of countries, US Treasury Secretary Janet Yellen said in remarks prepared for an event in Las Vegas on Monday.

Yellen will touch on the challenges of transitioning away from fossil fuels in a major speech she will deliver after touring a union facility where workers are learning skills to work on clean energy projects.

Yellen’s speech comes days before the one-year anniversary of the Inflation Reduction Act (IRA), which includes \$500 billion in new spending and tax breaks that aim to boost clean energy, reduce health-care costs and increase tax revenues.

Yellen plans to laud the continuing resilience of the US economy while underscoring the importance of key legislation like the IRA in helping to rebuild the US manufacturing base and “reduce choke-points, mitigate disruptions, and protect our economic security.”

“As we move away from fossil fuels, we remain concerned about the risks of over-concentration in clean energy supply chains,” she said in excerpts of the speech obtained by Reuters.

“Today, the production of critical clean energy inputs – from batteries to solar panels to critical minerals – is concentrated in a handful of countries.”

A report by the International Energy Agency (IEA) earlier this year noted that China holds at least 60% of the world’s manufacturing capacity for most mass-manufactured technologies, such as

solar photovoltaic and wind systems, and 40% of electrolyser manufacturing.

It said critical minerals needed for these industries were also highly concentrated, with the Democratic Republic of Congo supplying 70% of cobalt, China 60% of rare earth elements, and Indonesia 40% of nickel. Australia accounts for 55% of lithium mining and Chile for 25%, it said.

Yellen said the US was investing domestically to build more resilient and diversified supply chains, while helping other countries accelerate their own energy transitions.

“The IRA is helping re-shore some of the production that is critical to our clean energy economy,” she said. “Accelerating these transitions can mean greater demand for US clean energy technologies produced by American workers. It can also bolster global clean energy supply chains.”

Yellen will speak at a training centre operated by the International Brotherhood of Electrical Workers (IBEW) union.

The remarks in Nevada, likely to be a key battleground state in the 2024 presidential election, are part of a month-long travel blitz by President Joe Biden and his cabinet as they work to convince sceptical Americans that their policies are working to boost economic growth and fight global warming.

The US economy has outrun recession warnings with record-low unemployment, strong wage gains and better-than-expected GDP growth, but many voters who backed Biden in 2020 think the economy has fared poorly, and may not vote for him in the 2024 election, a Reuters/Ipsos poll released last week showed. ■

*Courtesy The Express Tribune*



# The economics of circular debt

—◆— Dr Khalid Waleed —◆—

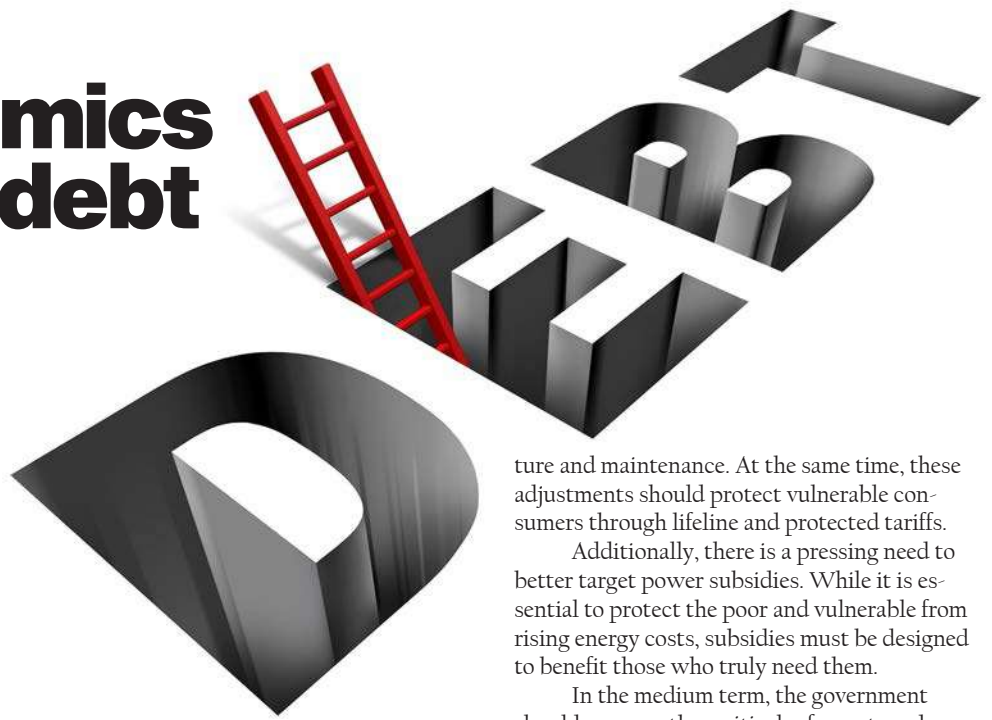
**T**he energy sector of Pakistan has been grappling with a severe and urgent situation, burdened by the mounting circular debt (CD) and severe liquidity pressures. These challenges have been building up for more than a decade, fueled by a combination of sluggish reforms, operational losses, and political reluctances. The fiscal year 2023 witnessed a further deterioration, putting immense strain on the power sector, resulting in widespread power outages, load shedding, exponential increase in tariff and unexpected additional budgetary subsidies.

At the heart of this crisis lies the power sector, requiring immediate and concrete reforms to restore its viability. Recognizing the gravity of the situation, the International Monetary Fund's (IMF) staff report and statement have provided valuable insights and way forward. As part of the plan, the government is poised to adopt an updated Fiscal Year 2024 Circular Debt Management Plan (CDMP) in 2023. The primary aim of this plan is to reduce the budgeted FY24 power subsidy from PKR 976 billion, equivalent to 0.9 percent of GDP. Moreover, the plan entails measures to offset the projected FY24 CD flow of PRs 392 billion and stabilize the FY24 CD stock at its expected end-FY23 level of PKR 2,374 billion (2.2 percent of GDP). The implementation of this comprehensive plan is crucial to alleviate the energy sector's woes and pave the way for a sustainable and robust power industry in the country.

In the reform plan, a crucial step is the timely realignment of power tariffs with cost recovery levels and annual rebasing (AR) by National Electric Power Regulatory Authority (NEPRA).

The government is also cognizant of the necessity to target power subsidies more effectively. In this regard, efforts are underway to shield vulnerable segments of society, introduce fairness, and reduce fiscal burdens. To achieve this, the government is required to embark on the third stage of a multi-year subsidy reform plan, focusing on rationalizing subsidies for major agricultural users. Alongside, regular tariff adjustments will be implemented while safeguarding lifeline and protected slabs for residential consumers.

The natural gas sector is confronted with similar challenges, necessitating regular



biannual end-user gas price adjustments while ensuring protection for the most vulnerable consumers. Collaborating with the World Bank, the government seeks to implement the weighted-average cost of gas pricing law, improve data management and projection capabilities, and implement reforms to reduce Unaccounted-for Gas (UFG) losses. The gravity of the circular debt issue within the energy sector demands immediate attention and decisive action. Failing to address this problem could have far-reaching implications for the economy, leading to power shortages, diminished industrial output, and ultimately, a negative impact on the overall growth and development of the country.

Pakistan's energy sector, long shadowed by systemic flaws, has been skating on thin ice. It's a cocktail of inefficiencies, administrative faux pas, and a chronic investment drought that's left powerhouses running dry. The resultant strain? Spiralling costs, an unwelcome reliance on premium imported fuels, and a burgeoning circular debt that increasingly feels like a millstone around the government's neck.

The political arena, notorious for its 'kick-the-can-down-the-road' approach, hasn't helped. Fearing electoral aftershocks and public furore, authorities have shied away from biting the bullet on global commodity pricing and exchange rate fluctuations. The upshot: a liberal sprinkling of subsidies, intended as a salve, but only deepening the fiscal quagmire and stretching the national purse strings to snapping.

The first and most crucial step is the timely alignment of power tariffs with cost recovery levels. Transparent and regular tariff adjustments, in line with established formulas, are essential to ensure that power companies can cover their costs and invest in infrastruc-

ture and maintenance. At the same time, these adjustments should protect vulnerable consumers through lifeline and protected tariffs.

Additionally, there is a pressing need to better target power subsidies. While it is essential to protect the poor and vulnerable from rising energy costs, subsidies must be designed to benefit those who truly need them.

In the medium term, the government should pursue other critical reforms to reduce costs and circular debt in the power sector. Furthermore, addressing circular debt in the gas sector requires a similar approach.

To support the reform efforts, the government should work closely with international financial institutions like the World Bank and the Asian Development Bank (ADB). These organizations can provide technical expertise, financial support, and valuable insights from successful energy sector reforms implemented in other countries.

Moreover, a tailored Just Energy Transition Partnership Investment Plan (JETP-IP) must be negotiated under the strategic initiative of China-Pakistan Economic Corridor, so that energy transition can be accelerated along with much needed investment into power grids.

In conclusion, Pakistan's energy sector, long a tangle of inefficiencies and fiscal acrobatics, stands at the precipice. For a decade, it's been ensnared in the stranglehold of a mounting circular debt, punctuated by power blackouts and beleaguered bailouts. 2023 only darkened the clouds, with the power sector bearing the brunt, beset by liquidity woes, and drawing ever deeper from the national purse.

A final piece of the puzzle lies with the China-Pakistan Economic Corridor. A bespoke Just Energy Transition Partnership Investment Plan might be the linchpin, energising grids and speeding up the energy transition. In essence, Pakistan's energy woes, knotted in political indecision and historical inefficiencies, demand not just immediate panaceas but a sustainable vision. The country can ill-afford to let its energy sector keep running in fiscal circles. ■

*The writer has doctorate in Energy Economics and serves as a Research Fellow in Sustainable Development Policy Institute (SDPI)*



## 3rd largest PV inverter manufacturer globally according to Wood Mackenzie

Solis Inverters, a global powerhouse in the solar energy industry, has been acknowledged as the world's no.3 solar by shipments, according to Wood Mackenzie. This outstanding recognition reaffirms Solis' dedication to technological innovation, product quality, and commitment to a sustainable future.

In 2022, Solis experienced an exceptional year of growth, marked by the inauguration of a brand-new factory featuring state-of-the-art, automated production lines. This expansion allowed the company to bolster its manufacturing capacity significantly, enabling us to serve an even larger customer base worldwide. In a year marked by multiple challenges, the firm has gained share based on the strong backing of its partners and customers to deliver on time.

In 2022, when it comes to the top 5 firms globally, Solis has grown 86% over 2021, by far the fastest growth in the group. More importantly, this growth came on a significant 61% growth in 2021 over 2020, indicating the strong sales network and brand recognition the firm has built up.

"Solis ranked 3rd largest PV inverter manufacturer globally for the second con-

secutive year." stated Sandy Woodward at Solis Inverters. "We couldn't have achieved this without our 4500+ strong global team's commitment to excellence. As we expand our manufacturing capacity further, we are well-positioned to continue on a path of growth, dedicated to contributing to a zero-carbon future."

This latest data comes on the back of many awards and accolades for Solis over the last 18 months. The company was presented the "top inverter brand 2023" seal for Belgium by respected global market research organisation, EUPD Research; having gained the same seal for the Netherlands and South Africa. This marks the eighth year running in which Solis has been recognised by EUPD, based on 100,000 interviews across more than 50 countries.

With a presence in over 100 countries worldwide, Solis Inverters rapid ascendance in the rankings is a reward for its responsiveness to market needs, with overall manufacturing capacity set to exceed 80 GWs by the close of 2023. Solis has remained focused on a model where the firm fully backs local sales, marketing, training, engineering, and service support for clients, ensuring high satisfaction levels and brand pull even in newer markets.

### About Solis

Established in 2005 and listed on the Shenzhen Stock Exchange (300763.SZ), Ginlong (Solis) Technologies is one of the largest and most experienced global solar inverter manufacturers. The company provides cost-effective solutions for homes, businesses and large-scale power plants; delivering value at every level of the solar supply chain and appealing to homeowners and businesses, as well as electricity producers and renewable energy investors globally. Combining a global supply chain with world-class R&D and manufacturing capabilities, validated under the most stringent international certification, Ginlong optimises Solis inverters for each regional market, serving and supporting its customers with a team of local experts. The company aims to work with stakeholders to accelerate the world's journey towards a more sustainable future.



# Green hydrogen for Pakistan

— Afaf Ali —

“The era of global warming has ended, the era of global boiling has arrived.” This was stated by UN Chief Antonio Gueterres, and it presents grave concerns about climate change.

The impact of climate change is atrocious and unjust, especially on developing countries, despite their lower contribution to greenhouse gas (GHG) emissions.

Pakistan’s GHG emissions stand around 1%, yet the flash floods in 2022 alone accounted for billions of rupees in loss and damage. The floods affected 4.4 million acres of crop and food shortages caused massive disruption.

Pakistan mainly relies on imported fuel, and the GHG emissions associated with fossil fuels are a major cause of the unprecedented increase in global mean temperature of the world.

For Pakistan, due to import, socio-economic conditions are affected severely by hikes of fuel prices in the international market. This also leads to higher circular debt.

Hence, the need of the hour is to explore opportunities that will provide energy security and decarbonisation of the industrial sectors. For this purpose, green hydrogen vector is being integrated in the energy mix globally.

All the hues (grey, blue, green) of hydrogen correspond towards its source of production because every method has different GHG emissions associated with it.

Hydrogen is produced mainly from natural gas (grey) and coal gasification (black) contributing to immense carbon emissions. The green hydrogen is the one produced by renewable electricity only by electrolysis of water, however, grey hydrogen dominates the market at this moment.

Pakistan has great potential for the production of green hydrogen. Adequate irradiance levels are mapped for more than 90 percent of the country’s topography with approximate capacity of 2,900 GW and the southern coastal line of 60 km, named as Ghara-Jhimpir corridor, has the potential of 43 GW of exploitable wind energy potential (Pakistan’s annual energy demand is 32 GW; FY’22).

The coastal lines also remove the geographical barriers to water uptake for green electrolysis. The production of green hydrogen and its derivative fuels like green ammonia & methanol may lead the decarbonisation of hard to abate sectors directly.

If the cost competitiveness occurs it could also help generate the electricity by using green hydrogen in fuel cell applications. This can reduce the country’s dependency on

imported fossil fuels in priority sectors i.e industry, transport and energy.

The green hydrogen has a large value chain and versatility, making it a potential candidate to be used in chemical industry, industrial heating, electricity, cement and steel.

The Power to X further covers the broader use in the form e-ammonia and e-methanol that can benefit both industry i.e fertilizers and mobility.

The cons at the moment are hydrogen storage and transportation. It has lower energy density and highly inflammable. To overcome this barrier, green ammonia can be used to store the green

hydrogen and provide an established supply chain infrastructure as 80 percent hydrogen is required to produce ammonia in the industry. Green Ammonia synthesised from green hydrogen further provides a decarbonisation opportunity to a high carbon emitting fertilizer industry.

Hydrogen blending with natural gas in the current gaseous infrastructure can reduce the carbon emissions in heating sector, the blend could be 5-20 percent of the composition.

Hydrogen ready turbines are also being developed by the manufacturers like Mitsubishi power & General Electric, while a small retrofit is required for existing turbines to utilize a blend with natural gas (20-35 percent).

The transport sector contributing the second largest carbon emissions can benefit from the use of Fuel Cell Vehicles FCVs in public and private transport. The FCVs market has already been strategized in Japan to add 200,000 FVs by 2025 (S&P global), even currently there are 137 hydrogen refueling stations available for consumers.

The hindrance to developing a green hydrogen project is the high capital cost, the levelised cost of electricity and electrolszer cost have to reach significantly lower ranges to the grey hydrogen. Certain climate actions like a carbon tax on industrial carbon emissions and development of voluntary carbon markets can help achieve the cost competitiveness much earlier than projected.

PwC recently published a report stating that the green hydrogen export market is anticipated to reach \$300 billion by 2050 and by 2030 (BNEF’2023) the levelised cost of green hydrogen will reach the fossil fuel based hydrogen in various markets including Brazil, China and India.

This presents a groundbreaking opportunity towards mitigation efforts in Pakistan to achieve net zero carbon emissions.

The high capital cost, if compared to the cost of climate damage, provides a sustainable picture of viability. The chemical industry, heavily reliant on hydrogen, is uniquely positioned to tap into the emerging hydrogen economy, creating different revenue streams while achieving their decarbonization goals.

However, still in nascent phase, the green hydrogen demands standardisation, identification of key stakeholders, robust policy making and cross border coalitions to develop the right framework expediting its production and application.

The government could play a vital role in developing the green hydrogen by leveraging on public, private partnerships and international cooperation. Tapping green hydrogen as a commodity can lead to energy independency, additional revenue generation by exporting it, while addressing the climate crisis. ■

*The writer is Research Analyst at Renewables First Pvt.Ltd*



SolaX Roadshow 2023 in Pakistan:

# Discover clean energy for tomorrow

**S**olaX, a global frontrunner in solar and energy solutions, is all set to light up Pakistan this September with an amazing roadshow. This event promises to be a celebration of innovation, local expertise, and the unveiling of SolaX's star products. Join SolaX for an exciting experience that will leave you inspired and ready for a cleaner, brighter future.

In Pakistan, SolaX has established a strong local presence to support its customers and the upcoming roadshow marks another milestone for SolaX in connecting with friends in the renewable energy sector. Commencing on September 8th in Karachi, this remarkable journey will span nine cities over the course of one month. Attendees are able to interact with SolaX's local team in Pakistan, who are dedicated to providing top-notch support and guidance throughout the entire journey, from system selection to installation and maintenance.

SolaX's star products, such as X1-Hybrid LV, X3-MEGA G2, and X3-FORTH, are set to steal the spotlight at the event. The low-voltage residential hybrid inverter, X1-Hybrid LV features a 16A DC single string input current, making it compatible with high-power solar panels in the market. Its other functions like built-in shadow tracking, a user-friendly LCD color screen, and smart loads management are also impressive. Notably, the X1-Hybrid LV offers UPS-level switching time (less than 10ms), EPS output of up to 200%

for 10 seconds, and future-ready generator compatibility.

For commercial and industrial scenarios, SolaX offers grid-tied inverters, including X3-MEGA G2 and X3-FORTH, which are known for their efficiency and reliability. These two products introduce intelligent features like smart solar panel I-V Curve Diagnosis and night-time reactive power compensation, optimizing energy production. With built-in export power control, remote maintenance, and 24-hour operation monitor-

ing, they provide unparalleled convenience.

SolaX roadshow extends beyond showcasing products; it's a vibrant hub for fostering connections and collaborations. Mark your calendars and be prepared to network with industry experts, fellow enthusiasts, and potential partners. Share ideas and be part of the green energy revolution in Pakistan. ■

For more information, please follow us on social medias or contact [info@solaxpower.com](mailto:info@solaxpower.com) & [info@fronus.com](mailto:info@fronus.com)

**SolaX Power Roadshow 2023**

سولیکس کے سنگ  
توانائی کے رنگ

Map of Pakistan showing roadshow dates by city:

- Karachi: Sep. 8 (Fri.)
- Hyderabad: Sep. 18 (Sun.)
- Sukkur: Sep. 13 (Wed.)
- Bahawalpur: Sep. 15 (Fri.)
- Multan: Sep. 18 (Sat.)
- Lahore: Sep. 20 (Wed.)
- Rawalpindi: Sep. 20 (Wed.)
- Islamabad: Sep. 21 (Sat.)
- Peshawar: Sep. 25 (Mon.)

Product images: SolaX X1-Hybrid LV, SolaX X3-MEGA G2, SolaX X3-FORTH.





# Electrifying off-grid, rural population in Pakistan

Shaukat Ali

**T**he German Federal Ministry for Economic Cooperation and Development (BMZ) is financing the Renewable Energy and Energy Efficiency Program in Pakistan.

The program is implemented by the 'Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH'. The German investments aim to provide access to clean and affordable energy, create opportunities for economic development, and help in reducing the negative impacts of climate change in Pakistan.

## The program focuses on:

1. Electrifying off-grid villages and community settlements for access to clean energy for basic lighting needs with surplus power for productive uses to eradicate poverty.

The program has financed the construction of a solar PV microgrid in southern Pakistan for an off-grid village of 15 houses, each connected with a 350W solar panel on the rooftop, producing 12-volts DC power for essential energy needs. The houses are inter-connected through a 48-volt microgrid accumulating surplus electricity from the

participating houses in the network.

The system is designed in partnership with a local R&D University, which has developed the Power Processing Unit (PPU). The PPU is integrated into the system to regulate the battery energy storage system (BESS), transform the voltage, and communicate data for remote monitoring.

The project operates on the Peer-to-Peer (P2P) power-sharing model, providing 24/7 energy for lighting homes with provision for air cooling fans, television, mobile charging, and lighting courtyards. The surplus power is shared by the houses in the microgrid and used for running a water pump to provide clean drinking water for the community. Each house pays a monthly tariff of US\$ 4.00 to a local operator for maintaining the system.

The tariff is agreed between the developer and the community, considering the poverty, economy of the community, and operational cost of the system. The installed setup is scalable for larger applications and is ideal for entrepreneurship. The system is sustainable due to community ownership and 3rd party maintenance. Power sharing enables resource maximization and optimized utilization of power thus reducing consumption cost of electricity.

2. Stabilization of Weak electricity grids for people living at the last mile of the power distribution network to improve voltage and ensure a reliable supply of electricity to domestic, commercial, and industrial consumers.

The grid stabilization project is implemented in the remote mountain region by feeding in hydropower in the existing power distribution system to improve voltage and supply quality electricity to residents, businesses, and industrial consumers. The GIZ project has financed the integration of 04 independently operated hydropower stations through the 11 KV grid infrastructure to transport surplus electricity to the densely populated towns and business centers.

The pilot intervention has optimized the utilization of surplus electricity from isolated hydro-electric stations to supply reliable electricity to domestic & commercial consumers and has facilitated small industries, a local hospital, and educational institutions in the area to improve people's lives, livelihoods, and has created opportunities for economic activities. ■

*Writer is Head of Rural Electrification Renewable Energy and Energy Efficiency Project II (REEE II) Pakistan*



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# INVITATION



## VISITOR'S PROFILE

### OIL & GAS

- Construction Companies
- Engineering/Procurement
- Fuel Suppliers
- General Contractors, Engineering, Drilling & Consulting Companies
- Govt. & Business Delegations from the Region
- Government Energy & Regulatory Departments
- Leading Station Network & Distribution Companies
- Local and Foreign Ministries
- Manufacturers & Suppliers of the Industrial Hardware and Allied Equipment
- Major Local & International Manufacturers of Petrochemical and Metallurgy Industries
- Oil & Gas Producers & Refineries
- Research & Development Organizations
- Self-Generating Industrial Manufacturing/Process Plants and Large Institutions
- Support Equipment & Service Providers

### POWER TECHNOLOGY

- Captive Power Producers
- Construction Companies
- Energy Service Providers
- Engineering & Procurement Companies
- Fuel Suppliers
- General Contractors
- Government Energy and Regulatory Departments
- Government & Business Delegations from the region
- Independent Power Producers
- Local & Foreign Ministries
- Manufacturers & Suppliers of the Industrial Hardware & Allied Equipment
- Non-regulated Power Generators
- Oil & Gas Producers and Refineries
- Power & Energy Marketers
- Power Generating Electric Utilities
- Power Industry OEMs
- Power Industry Project Developers
- Power Supply & Distribution Companies
- Research & Development Organizations
- Self-Generating Industrial Manufacturing / Process Plants & Large Institutions
- Support Equipment & Service Provider

## VISIT CONFIRMATION FORM

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ Mobile: \_\_\_\_\_

Email: \_\_\_\_\_

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# Govt caps incentives for refinery upgrade projects

◆ Khaleeq Kiani ◆

The federal government has revised incentives in the recently approved brownfield refining policy, capping the utilisation of funds to be collected from tariff protection at 22 per cent for the import of used refining equipment and 25pc for new equipment to upgrade infrastructure.

The outgoing government approved the new policy earlier this month under which existing refineries will be provided benefits for the duty-free import of machinery that can help boost production of more environment-friendly Euro-5 grade fuels — a move that is expected to help cut fuel imports.

According to a notification issued by the Cabinet Secretariat, the Ministry of Energy (Petroleum

Division) has been directed to revise some incentives. The 22pc cap will be on funding from an escrow account — a financial account where funds are held by a third party — for refineries importing used plant, machinery and equipment (PME) for upgrading, and 25pc for those importing new PME. The policy mandates a minimum customs duty of 10pc for a six-year period on imported petrol and diesel. Any customs duty imposed over 10pc and reflected in the ex-refinery price — the price at which refineries sell fuel — will be deposited in the Inland Freight Equalisation Margin (IFEM), used to equalise the price of petroleum products across the country.

Petrol, diesel prices may go up under new policy, refineries expected to become more environmentally friendly. The “refineries shall be allowed 10pc tariff protection/deemed duty applicable on motor gasoline (petrol) and diesel’s ex-refinery price for six years from the date of notification of the refining policy and opening of the joint escrow account with the Oil and Gas Regulatory Authority (Ogra)”, the revised policy said. “However, 2.5pc of the deemed duty on diesel and 10pc of motor gasoline (incremental incentive) shall be deposited by refineries in the escrow account maintained by Ogra and the respective refinery jointly in the National Bank of Pakistan for the utilisation of upgrade projects only,” it said.

This policy is expected to result in price increases of Rs5.64 per litre for petrol and Rs3.07 per litre for diesel, although these figures may

change based on market conditions. However, this will help upgrade the existing refineries to deep conversion facilities with Euro-5 standards at an estimated cost of \$4bn each — a significant savings compared to the \$10bn required to establish a new (greenfield), comparable refinery and maximise petrol and diesel production and reduce furnace oil output to almost negligible level.

A refinery and Ogra will open the requisite escrow account within three months. Until the account is opened, the incremental incentive will be deposited in the IFEM. New equipment and materials for refinery upgrades won’t attract certain taxes and fees when imported. However, to get these tax breaks, a refinery must show the equipment details to the Federal Board of Revenue for approval after completing the initial design study for the upgrade. ■

Courtesy Dawn



# Fire protection in electric power plants

## An In-Depth Analysis of Passive Fire Prevention

—◆ Dr Muhammad Imran Taj ◆—

**F**ire safety is a critical concern in electric power plants to ensure the protection of personnel, equipment, and the uninterrupted operation of the facility. This article provides a comprehensive examination of passive fire prevention technology, with a specific focus on intumescent coatings on cables, and its compliance with NFPA 850. By exploring the benefits, challenges, and standards outlined in NFPA 850, this study aims to promote effective fire protection measures in electric power plants.

Fire protection plays a crucial role in ensuring the safety and reliability of electric power plants. These plants are complex facilities that generate and distribute electricity to meet the energy demands of industries, businesses, and households. Given the high voltage equipment, flammable materials, and intricate systems present in power plants, the risk of fire incidents is a constant concern.

The safety of plant personnel is the top priority in any industrial setting, including power plants. Fires can pose immediate threats to the lives of workers, operators, and maintenance staff. Effective fire protection measures, such as early detection systems, fire suppression systems, and evacuation plans, help

mitigate these risks and ensure the well-being of individuals working in power plants.

**Equipment Protection:** Electric power plants house highly sophisticated and expensive equipment, including generators, transformers, switchgear, and control systems. These components are vital for the generation and transmission of electricity. A fire incident can lead to equipment damage, disruption of power supply, and costly downtime. Implementing fire protection measures, such as fire-resistant enclosures, automatic fire suppression systems, and heat detection systems, helps safeguard these critical assets and minimizes the risk of equipment failure.

Passive fire protection measures are essential for safeguarding generators, transformers, switchgear, and control systems in electric power plants. These components are critical for the operation and reliability of the power generation and distribution process. Here are some key considerations for implementing passive fire protection for these systems:

**Fire-Resistant Enclosures:** Generators, transformers, switchgear, and control systems should be housed within fire-resistant enclosures or rooms. These enclosures are constructed using fire-rated materials, such as concrete, steel, or fire-rated panels. The enclosures are designed to withstand fire and prevent its spread to other areas of the power plant. They

are typically equipped with fire-rated doors, walls, and ceilings to ensure adequate compartmentalization and containment of fire.

**Cable penetrations** in walls and floors provide potential pathways for fire spread. It is crucial to install fire-rated cable penetration seals to prevent the passage of fire and smoke. The intumescent coatings can be used for fire-rate the cables. They help maintain the integrity of fire-rated barriers and limit fire propagation between compartments.

**Fire-Resistant Coatings:** Applying intumescent coatings on cables, generators, transformers, switchgear cabinets, and control room.

### NFPA 101: Life Safety Code

The Life Safety Code provides requirements for the design, construction, and maintenance of buildings and structures to ensure the safety of occupants. It may include provisions related to the use of intumescent coatings in specific applications, such as fire resistance ratings for structural elements or protection of exit corridors. The future is to protect the building from fire by applying passive fire prevention in the fabric of the building. ■

*Dr. Muhammad Imran Taj PhD HSE Fire Protection, MIfireE UK NAPFIS UK Nebosh IfireC UK, President Fire Protection Industry of Pakistan*





# Pakistan's great shift to minerals: The gold in our dust

—◆ Muhammad Azfar Ahsan —◆

The world's axis has shifted, a geological event that warrants worry – beckoning humanity to contribute towards the stability of the planet. Within that vein, three significant changes in Pakistan have brought in a much-needed shift – a formative approach to enable this country of 240 million people to move towards prosperity.

These changes have come about as empowered initiatives for the development of trust in the country's potential. All three have come silently and herald good times for Pakistan.

The first is the establishment of the Special Investment Facilitation Council (SIFC) and its role as a one window of facilitation for investors. They have proactively galvanized dormant projects and have initiated many new ventures. They seem well-positioned to bring Pakistan back on the map as a strong potential hub for Middle East and Chinese business interests.

The second event is the Pakistan Minerals Summit in Islamabad, held earlier this month. Mining is part of the five areas of development on SIFC's agenda and the Summit proved to be a great start to turning 'dust to development,' with a focus on Reko Diq as it possesses almost \$6 trillion worth of potential.

Balochistan represents almost 44% of Pakistan's land. As part of the rich Tethyan Metallogenic Belt (TMB), it literally holds gold in its dust. This rich mineral reserve stretches all the way to the North before entering China, endowing Pakistan with trillions of dollars' worth of minerals. We have the world's second-largest salt mines, fifth largest copper and gold reserves, huge coal deposits, and vast crude oil reserves, yet our mineral sector's performance has been underwhelming, with exports accounting for a mere 0.1% of global exports and 2.5% of Pakistan's GDP.

The Pakistan Minerals Summit constitutes a consolidated step towards translating Pakistan's mining potential into actionable strategies. It brings the

much-awaited collaboration of Barrick (Barrick Gold Corporation) and the Saudi government with the Pakistan government. And with the caretaker Prime Minister Kakar in office, we can look at Balochistan becoming a major conduit for Pakistan's success.

Mark Bristow, CEO at Barrick Gold, in frank conversation, has acknowledged the rich prospects of Balochistan, quoting Lewis Carol's 'If you don't know where you are going, any road will do' as a wake-up call to realize our mining potential and the need for socio-political dynamics to synchronize with the development requirements of the mining industry.

Jacques Van Tonder, Chief Development Officer, Rio Tinto, mirrored my thoughts when he referred to his life in South Africa and mining dust being in his veins. He referred to the Oyu Tolgoi in the South Gobi region of Mongolia as one of the largest known copper and gold deposits in the world and compared Reko Diq as an equally powerful medium to change the prospects of Pakistan.

With good examples like that of Thar Coal, and the signed deal for the ARAMCO Project, we are witnessing how rising concerns over investments vs. imports are spurring investments to help bring the world to sustainable dynamics. We are, as yet, not strongly positioned in this equation of transition, but we can be.

The shift has given me hope. Pakistan, in the last few months, faced the most critical of hours with default on the horizon and instability across the landscape. Devaluation was not just of the currency; it was of the morale of the nation.

Now, the stakeholders must ensure that no repeat of judicial intervention occurs as it did in the past, costing Pakistan billions of dollars. At the end of the day, money can be made again, but lost years of probable happiness and growth can never be compensated. The cost that Pakistan paid was worth more than its weight in any gold scattered in its dust. ■

*The writer is a former Minister of State and Chairman Board of Investment*



## SOCIAL ROUNDUP



**Total PARCO has entered into partnership with Bykea technologies for providing fuel and lubricants to Bykea Captains.**



**SDPI has organized Consultation on sustainable future in Islamabad. Picture Shows Senator Taj Haider, Ex MNA Rumina Khan and others are receiving a Charter.**



**Naya Nazimabad & MKP Group organized Tree Plantation on Independence Day, Arif Habib Chairman of the Project Anis Younus, Sana, Naem Qureshi & others are seen in the picture.**



**OGDCL workshop on energy explores latest trends, future prospects and collaboration avenues.**



**Attended Oath taking ceremony of care take chief minister held at Sindh Governor House recently. A picture with Governor Sindh Kamran Tessori, caretaker CM Justice ( R) Maqbool Baqar and others.**



**Newly appointed British High Commissioner to Pakistan, Her Excellency Jane Marriott CMG OBE at the British Deputy High Commission Karachi Met with Renowned Host Sidra Iqbal.**



**Chairman OGRA Masroor Khan inspected LPG outlets to check safety regulations.**



# Who are the people using free electricity in Pakistan?

—◆— EU Report —◆—

A sharp hike in electricity bills has led to public protests across the country with consumers burning electricity bills collectively to express their objection to the exorbitant sums. The protesters are demanding that free electricity should not be provided to WAPDA employees and other officials because it is the general public who has to bear its burden.

A heavy amount of electricity is being used every month by individuals like the Prime Minister, President, Supreme Court and High Court Judges, Federal Ministers, Chairman NAB, Governor State Bank, Senior Bureaucrats and senior government officials.

## Here are the details that have uncovered:

According to the President's Salary, Allowances and Privileges Act 1975, unlimited electricity

units will be provided to the President and after their retirement, the President will be able to use 2000 units per month for free. After the death of the president, 2000 units of free electricity will be provided to his widowed wife. Similarly, the Prime Minister of Pakistan is also provided unlimited free electricity.

The Chief Justice of the Supreme Court and other judges have the right to use 2000 units of electricity during and after their service. A High Court Judge is provided 800 units of free electricity after retirement. Rs22,000 for utility bills to the Federal Minister

As per public perception, electricity provided to federal ministers and members of the assembly is free of charge; but that isn't so. Federal Ministers each are paid Rs22,000 in monthly salary to pay all utility bills, while Members of the Assembly are not paid any amount for any utility nor for their official residence 'Parliament Lodges'.

Chairman NAB is also provided with free electricity units equal to judges of the Supreme Court. They are provided with 2000 units of

electricity per month for free.

The Governor State Bank, however, is provided with unlimited electricity free of cost and the amount is paid by the State Bank. The officers of government institutions are also provided free electricity, but the relevant department/institution pays their bills to WAPDA. According to statistics presented by the Ministry of Energy in the Senate Committee, 189,000 WAPDA employees were provided with 34 crore units of electricity for free in a year, using electricity worth 8 billion rupees for free.

WAPDA earning officers start getting free electricity units from 16th grade onwards. 16th grade officers are provided with 300 units per month, 17th grade officers with 450 units per month, 18th grade officers with 600 units, 19th grade officers with 880 units per month, 20th grade officers with 1100 units while 21st and 22nd scale WAPDA officers are provided with 1300 units per month. These power units are provided free of charge. The perks are provided after retirement as well.

## Lucky sets up 2nd solar plant

—◆— EU Report —◆—

Lucky Cement has kick-started its second captive solar power plant for its own consumption with the aim of reducing costs and continuing to stay in profit under a challenging macro-economic working environment in the country. The project was set up at an estimated cost of Rs3 billion. It was expected to save almost half a billion rupees each year, according to a previous notification. "Since solar plants have a low specific yield, a 25MW plant will give a net output of around 5MW, which is likely to result in annual savings of Rs480 million for the company." With the launch of the second solar plant, the company's installed power generation capacity for self-consumption from renewable sources has increased to 39%. This includes a 34MW solar power plant commissioned in December 2022 at its manufacturing site in Pezu, Lakki Marwat and the waste heat recovery plants at both locations.

## Mari Petroleum announces outstanding results

—◆— EU Report —◆—

Maintaining the upward performance trajectory of the previous years, Mari Petroleum Company Limited (MPCL) has announced excellent financial and operational results for FY 2022-23. Year on year, the company's net sales and net profit recorded an impressive growth of 53% and 70% and stood at the historically highest levels of Rs145.7 billion and Rs56.1 billion respectively. The net profit would have been Rs64.7 billion without the provision of a 10% super tax. Growth in net profit was reflected in EPS, which also reached the historically highest level of Rs420.75 per share from Rs247.8 per share of the previous year. MPCL Board of Directors has recommended a final cash dividend of Rs58 per share (580%) for approval of the shareholders in the upcoming AGM. With this, the total dividend for FY 2022-23 will come to a Rs147 per share (1,470%), also the highest in the Company's history. The company contributed Rs74 billion to the government exchequer in the form of royalty, taxes, levies, and duties. Indigenous production of natural gas, crude oil, and LPG by MPCL helped curtail the country's fuel import bill by over USD 3 billion during FY 2022-23.

## Energy projects prove game changer: PEDO

—◆— EU Report —◆—

The Chief Executive Officer, Pakhtunkhwa Energy Development Organization (PEDO) Engineer Naeem Khan has said that the ongoing energy projects for the production of cheap hydropower in the province will be proved as game changer for the stability of the economy of province and to control the ongoing energy crisis in the country. Apart from the production of cheap electricity, the industrial sector would be developed in one hand while on the other hand, new employment opportunities will be available in the province. The damages caused to some parts of the energy projects in the district of Swat due to the disastrous floods in August last year and the importation of electrical equipment was stopped, there was a slight delay in the completion of the projects, but now these projects are being completed rapidly while some are passing through the final stages of completion.

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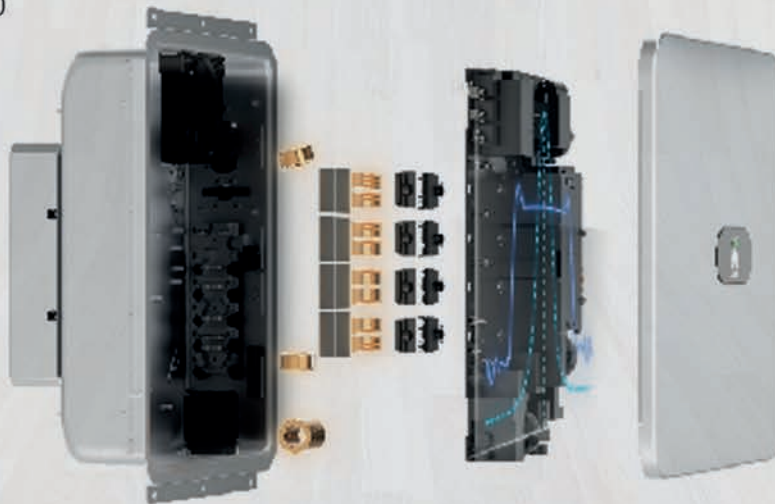
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