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ENERGY UPDATE

THE ILLUSION OF RELIEF: ANALYZING
PRIME MINISTER SHEHBAZ SHARIF'S
**ELECTRICITY PRICE REDUCTION
ANNOUNCEMENT**

ALLEGED LACK OF MERIT IN
SOLAR SYSTEMS DELIVERY

SOLAR INVESTORS
FEEL BETRAYED

NRL DISCOVERS SIGNIFICANT
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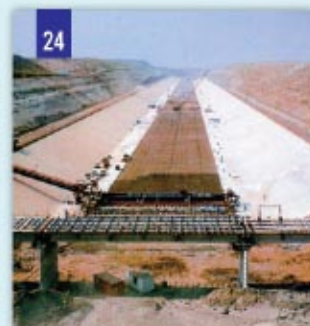
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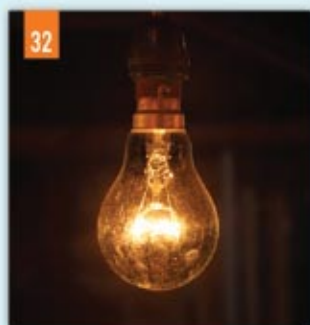
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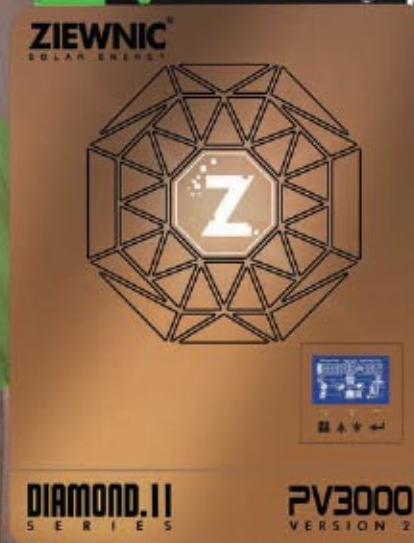
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FROM THE Editor's desk...

Power rate relief: do more still needed

Prime Minister Shehbaz Sharif has recently announced a reduction of Rs7.41 and Rs7.59 per unit in electricity rates for domestic and industrial consumers, respectively, to provide relief to the inflation-hit citizens of the country. This move comes after years of public protests, political pressure, and rising cost of living, which severely affected middle and lower-income households. rices.

No doubt, the relief package is a positive step, but there is a need to do more for public relief in power and other sectors. There is also a need to ensure this power relief for the long term and provide more power cuts besides resolving the core problems such as circular debt, high production costs, inefficient power plants, and power theft, which still loom large on the horizon.

In recent years, electricity prices in Pakistan have witnessed continuous hikes due to several reasons such as rising international oil and gas prices, devaluation of the rupee, and conditions set by the IMF. There is a need to get rid of IMF dictations about lying taxes. The practice of giving relief from one side and putting a burden on the other side in the shape of more taxes and bids to make solarisation difficult must be avoided in the future, as the continuous tariff hikes have shifted the heavy burden directly on the common man, leading to social unrest and protests across the country.

There is a dire need to promote energy conservation at the national level through media campaigns, encourage households to install solar panels with tax incentives, and take strict action against electricity theft, which causes major financial losses, besides improving the efficiency and governance of distribution companies and providing subsidies only to the poor and deserving segments of society, rather than blanket relief.

For long-term solutions, the government must adopt a comprehensive strategy. It needs to shift focus towards renewable energy sources such as solar and wind to reduce reliance on imported fuel. The government should rationalize heavy taxes on electricity bills which add more than 25-30% extra cost for the consumer, and implement smart meters and prepaid systems to avoid billing errors and improve recovery. It is also urgently require to renegotiate expensive power purchase agreements with IPPs to reduce capacity payments.

The government should privatize inefficient DISCOs with strict directions for public relief and bring in private-sector management expertise to improve service delivery. It will be good to educate citizens about responsible energy consumption and provide incentives for using energy-efficient appliances. This electricity rate cut provides short-term relief but long-term reforms are crucial to address Pakistan's energy crisis. Without structural changes, such temporary reductions will only provide limited benefits.



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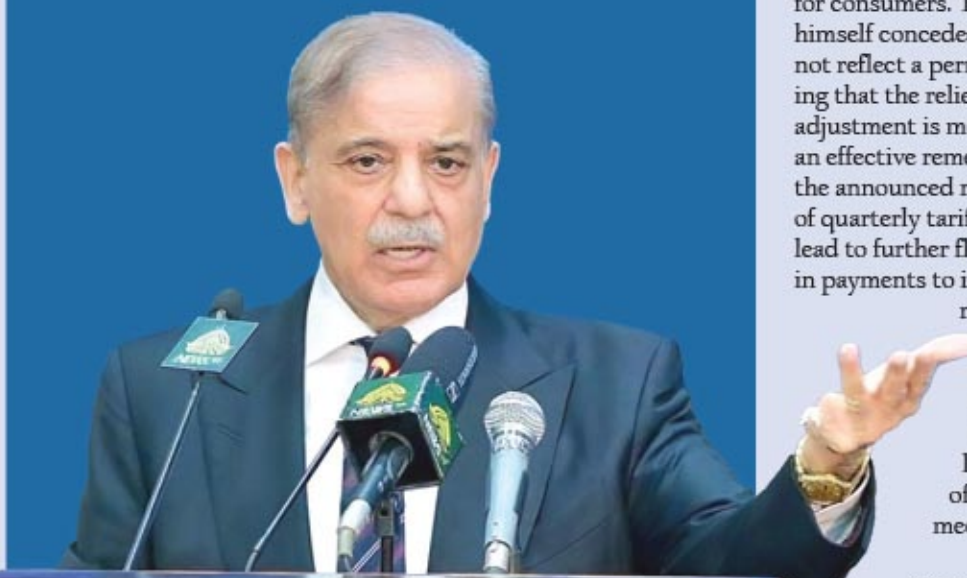
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The Illusion of Relief: Analyzing Prime Minister Shehbaz Sharif's Electricity Price Reduction Announcement



M. Naeem Qureshi

Managing Editor Energy Update

In a recent announcement, Prime Minister Shehbaz Sharif declared a reduction of Rs 7.41 per unit in the average price of electricity, a decision that has drawn significant scepticism from various economic analysts and power consumers alike. While the government presents this reduction as a welcome relief measure aimed at easing the financial burdens on households and industries already grappling with high electricity tariffs, many have dismissed it as a temporary fix that fails to address the root causes of the ongoing energy crisis. Critics argue that the high cost of electricity remains firmly entrenched in the country's economic fabric, and this announcement does little to alleviate the persistent burden on consumers, particularly those from middle-income families who are most vulnerable to fluctuations in energy pricing.

Concerns have been raised regarding the lack of a reduction in the base electricity tariff, a crucial element that fundamentally determines the overall cost of electricity for consumers. The Federal Power Minister himself conceded that the recent decrease does not reflect a permanent solution, emphasizing that the relief provided through the price adjustment is more of a cosmetic change than an effective remedy. Detractors highlight that the announced reduction is largely a product of quarterly tariff adjustments, which often lead to further fluctuations, and a reduction in payments to independent power producers resulting from recent amendments to their contracts with the government. Such measures, they argue, are insufficient to provide any real, long-term relief to the millions of Pakistanis who struggle to meet their electricity expenses.

Moreover, critics are drawing attention to the monthly revisions in electricity rates and the conditional relief based on the petroleum levy collected by the government. With the global prices of oil experiencing significant dips, these stakeholders are urging the government to extend its relief measures beyond just electricity tariffs to encompass a reduction in petroleum product prices. Such a comprehensive approach could deliver substantial financial benefits to middle-income families, enabling them to better cope with the rising cost of living. The gov-

ernment's reluctance to lower fuel prices despite favorable international market conditions has raised serious questions about its commitment to providing real economic relief to the populace.

Opposition political parties, meanwhile, demand electricity rates return to April 2022 levels.

Adding to the controversy, the government's previous decision to drastically cut net-metering buyback rates for consumers with installed on-grid rooftop solar systems stirred backlash from renewable energy advocates and consumers alike, as it posed a threat to the burgeoning solar market. Recognizing the potential fallout, the Prime Minister subsequently announced a halt to this move, directing Energy Ministry officials to open discussions with key stakeholders before finalizing the revised net-metering tariff. This sequence of events underscores the complexities facing the government as it navigates the intricate landscape of energy policy in Pakistan, revealing the challenges in balancing consumer needs with fiscal realities.

At a recent press conference, Jamaat-e-Islami central Amir, Hafiz Naeemur Rehman, claimed that the government had been compelled to slash the electricity rates owing to sustained movement of his party on this issue, featuring a historical 14-day protest sit-in in Rawalpindi. He informed media persons that the JI had consistently pursued the federal government on this issue. He believed that this was just the first stage of slashing the power tariff, as more financial relief should be extended to the concerned power consumers. He welcomed the announcement by the Prime Minister to reduce the per unit electricity cost by over Rs 7. He said that per per-unit cost of power supply should be further reduced. The JI chief demanded that the government should withdraw undue taxes and the exploitative slab system as part of the billing mechanism for the power consumers. He called upon the government to reduce the electricity prices and withdraw its petroleum development levy. He expressed gratitude to the concerned people, activists of his party, traders, and retailers who had actively taken part in the protest drive against high electricity rates in the country. The JI chief reiterated the demand of his party that a proper forensic audit should be conduct-

ed of the IPPs established in the country since 1994 and expose the elements which collect billions of rupees as capacity charges for these expensive power plants. He demanded that the rates of the petroleum products should be slashed as per the low fuel prices in the international market.

Appearing on a podcast with the Institution of Electrical and Electronics Engineers Pakistan Honorary Secretary General Shahid Shafi Sial, the former Federal Finance minister Dr Miftah Ismail said that electricity cost was too high in Pakistan to an extent that it was difficult to sell power produced in the country.

He said the high cost of electricity was most problematic for the middle-income families who consumed over 300 units in a month. He welcomed the reduction in electricity rates while noting that it would extend the much-needed economic relief to these middle-income consumers, industries, and businesses whose survival had been at stake due to the ever-increasing cost of energy. The former Finance minister, who was earlier highly critical of the government's move to slash net-metering tariff for rooftop solar power systems, noted that a part of this relief was based on quarterly tariff adjustments because of the inoperative Neelum-Jhelum Hydroelectric Power Plant. He said the NEPRA wasn't counting the operational cost of the defective hydroelectric plant in the tariff determination. He, however, disclosed that this cost would later be recovered from the consumers after restoration of the hydro-power plant. Dr Ismail mentioned that a portion of the recent reduction in the tariff was derived from the government's move to renegotiate its contracts with the IPPs. He said the government's budget didn't have any allocation to pay subsidy to the lifeline consumers in the country, as the consumers in other categories paid for this subsidised tariff offered to low-income households. The Former Finance Minister said that this subsidy inflated the electricity bills of a vast number of consumers in the country. He said the electricity tariff offered to the industries and businesses should further be reduced to Rs 30 to 35 per unit to revive economic ac-

tivities in the country. Dr Ismail suggested that Rs 1100 billion allocated in the federal budget for the Public Sector Development Programme should be reduced to Rs 700 billion to slash taxes recovered through electricity bills. He noted that government economic woes had been mitigated to a large extent due to low fuel prices in the international market.

MQM Pakistan senior leader, Dr Farooq Sattar, said that his party would make efforts to convince the Prime Minister to further slash the electricity rates for consumers in Karachi when he would visit the provincial capital next time to address a public meeting.

Talking to media persons in Karachi, Federal Health Minister, Syed Mustafa Kamal, conceded that the reduction of the petroleum prices in the international market had enabled the government to extend financial relief to the power consumers in the country. He further conceded that Pakistan's agreement with the IMF didn't allow a reduction in the base electricity tariff. He said that up to Rs 7 billion were being paid to a power plant to pay salaries to its staff, irrespective of the fact that it hadn't been producing electricity. He said that the Pakistani economy suffered an annual loss of Rs 600 billion due to theft of electricity. He emphasised that distribution companies in the energy sector should be privatised at the earliest. Given critical feedback on the PM's announcement, the recent electricity rate reduction will likely be a tough sell to the public. ■



Solar investors feel betrayed

Govt's Move to Discourage Net-Metering Sparks Outcry

Lower buyback rates will definitely discourage new solar installations; the government needs to seek the demand of relevant stakeholders in changes to solar policy; Instead of discouraging solar adoption, the regime should expand incentives for green energy to reduce reliance on expensive fuel imports

Special Report by Mansoor

The recent decision to revise net-metering policies has triggered strong reactions from energy experts and solar power users as the government under this policy will buy electricity from new solar consumers at Rs10 per unit, down from Rs27. A key point of contention is the lowering of buyback rates for surplus electricity fed into the grid by solar energy consumers. Critics argue that this move will discourage renewable energy adoption and hurt consumers who have invested in solar power.

Energy analysts and environmentalists strongly oppose the reduction in net-metering buyback rates. Lower buyback rates reduce the financial benefits of solar energy, making it less attractive for homeowners and businesses. This could slow down the transition to clean energy. Many consumers have invested heavily in solar systems, expecting a reasonable return. Changing the policy retroactively hurts these early adopters.

With Pakistan facing energy crises and power shortages, solar energy helps reduce dependence on fossil fuels and the national grid. Discouraging net-metering could worsen the situation. Lower buyback rates make solar energy less financially attractive for households and businesses. Many consumers install solar panels expecting to recover their investment through electricity savings and surplus energy buybacks. If the buyback rate is significantly reduced, the return on investment (ROI) period will increase,



discouraging new solar installations.

Discouraging net-metering could slow down the adoption of solar energy, making the country more dependent on fossil fuels. This would contradict national and international commitments to clean energy and climate change mitigation.

Pakistan's solar energy share is very low despite its huge potential. By 2030, the share of electricity from hydel, wind, and solar sources is projected to rise from 28 percent, 4 percent, and 1 percent, respectively, to 39 percent, 10 percent, and 10 percent, increasing the total share of green electricity in the generation mix to approximately 59 percent.

The net metering mechanism was first introduced in the Policy for Development of Renewable Energy for Power Generation, 2006. The policy aimed to promote renewable energy adoption, reduce reliance on fossil fuels, and empower consumers to generate their own electricity, thereby contributing to energy security and environmental sustainability.

The rapid increase in net metering consumers led to reduced electricity sales for DISCOs, impacting their revenues and financial stability. Authorities expressed concerns that the benefits enjoyed by net metering consumers might lead to higher costs for non-participating consumers, as the fixed costs of the grid are spread over a smaller sales base.

As of December 2024, Pakistan had 283,000 net-metering consumers.

The government's lower buyback rates will deter potential consumers from investing in solar energy systems, slowing the growth of renewable energy adoption. Pakistan aims for 20% renewable energy by 2025 and 30% by 2030. As of recent data, solar energy accounts for approximately 1% of Pakistan's total electricity generation. Discouraging net metering could hinder achieving these targets.

The burgeoning solar industry, including local businesses and job creation, might face setbacks due to decreased consumer interest and investment.

Vast Potential: According to the World Bank, utilizing just 0.071% of Pakistan's land area for solar photovoltaic (PV) installations could meet the country's current electricity demand. Pakistan benefits from high solar irradiance, especially in regions like Balochistan and Sindh, making it well-suited for solar energy projects.

In summary, while the net metering policy was initially designed to promote renewable energy, recent changes, particularly the reduction in buyback rates, have raised concerns about the future growth of solar energy in Pakistan. Balancing the financial health of DISCOs with the promotion of renewable energy adoption remains a critical challenge for policymakers.

Net-metering has become a pivotal innovation in the renewable energy sector, offering a cost-effective and environmentally friendly way for individuals and businesses to generate and consume electricity. As the world increasingly shifts towards sustainable energy solutions, net-metering plays a vital role in promoting the use of solar and wind energy, thereby contributing to reduced dependence on non-renewable resources.

Net-metering is a system that allows energy consumers, typically homeowners or businesses, to produce their own electricity using renewable energy sources such as solar panels or wind turbines. When these systems generate more electricity than the consumer needs, the excess power is sent back to the grid. In return, the consumer receives credit for the surplus electricity, which can offset future energy costs. Essentially, it allows two-way flow of electricity between the grid and the consumer.

The net-metering system works by using a special bi-directional meter that tracks both the electricity consumed from the grid and the electricity sent back to it. The balance of energy is then reflected in the consumer's monthly electricity bill, where the credits for excess energy reduce the overall cost of the bill.

Net-metering offers significant financial benefits for consumers. By generating their own electricity, users can drastically reduce their monthly utility bills. The ability to receive credits for surplus energy means that, over time, the initial investment in renewable energy infrastructure can be recouped, leading to long-term savings.

To ensure the growth of net-metering in Pakistan and promote renewable energy adoption, the government, regulatory bodies, and stakeholders need to implement strategic policies. The government should ensure that buyback rates for excess solar energy remain competitive to maintain the financial attractiveness of net-metering. Rates should be indexed to inflation and reviewed periodically to keep them aligned with market condi-

tions. Any policy changes should be gradual and predictable to protect existing solar investors.

The process of obtaining a net-metering license from the National Electric Power Regulatory Authority (NEPRA) should be simplified. Reducing bureaucratic hurdles and unnecessary delays can encourage more consumers to adopt solar power. A digital portal for applications and approvals can improve efficiency and transparency.

The government should provide subsidies for installing solar panels, inverters, and batteries to make solar power more accessible. Soft loans and financing options through commercial banks can help consumers afford the upfront costs of solar energy systems. Tax incentives, such as reduced import duties on solar equipment, should be implemented to lower installation costs.

Awareness campaigns should be launched to educate the public about the benefits of net-metering.

Workshops and training programs can help homeowners and businesses understand the process of installing solar power systems. Consumers should be informed about potential savings, environmental benefits, and government incentives for adopting solar energy.

Large-scale industrial and commercial consumers should be encouraged to install solar power systems through policy incentives. Industries consuming high amounts of electricity can significantly reduce their operational costs through net-metering. Special tariff structures can be introduced for businesses that contribute surplus solar energy to the grid.

A long-term national solar policy should be introduced to provide clarity and stability for investors. Regular consultation with industry stakeholders, including solar companies and consumer groups, can help develop fair policies. NEPRA and the Alternative Energy Development Board (AEDB) should work together to ensure a regulatory framework that promotes solar adoption.

Boosting net-metering in Pakistan requires a combination of policy reforms, financial incentives, infrastructure improvements, and public awareness. By adopting these measures, the country can accelerate the transition to renewable energy, reduce reliance on expensive fossil fuels, and promote energy security. A well-designed net-metering policy will benefit consumers, the economy, and the environment in the long run. ■

Transitioning to privatization of Discos

Engr Tahir Basharat Cheema

The writer is President of IEEEEP

People want immediate solutions to their problems

The Pakistan Power Sector is always in the news – primarily, for its perceived and actual inefficiency and the consumer-end tariffs that most cannot digest. The people would want immediate amelioration of their problems.

Most of the time, it is forgotten that consumer indiscipline too is a serious issue to contend with and that there are other externalities that do not allow distribution operations to meet the laid down standards etc.

Another facet of the problem that experts highlight could be the long and continued indifference to the ongoing rot. It is also sadly forgotten that the poor DISCOs are required to operate profitably on face of the below par and expensive power generation (all due to inherent problems), the extreme burden of badly negotiated IPPs PPAs, a brittle grid, a lackluster and a nearly non-professional regulator and the inappropriately meddling governmental entities.

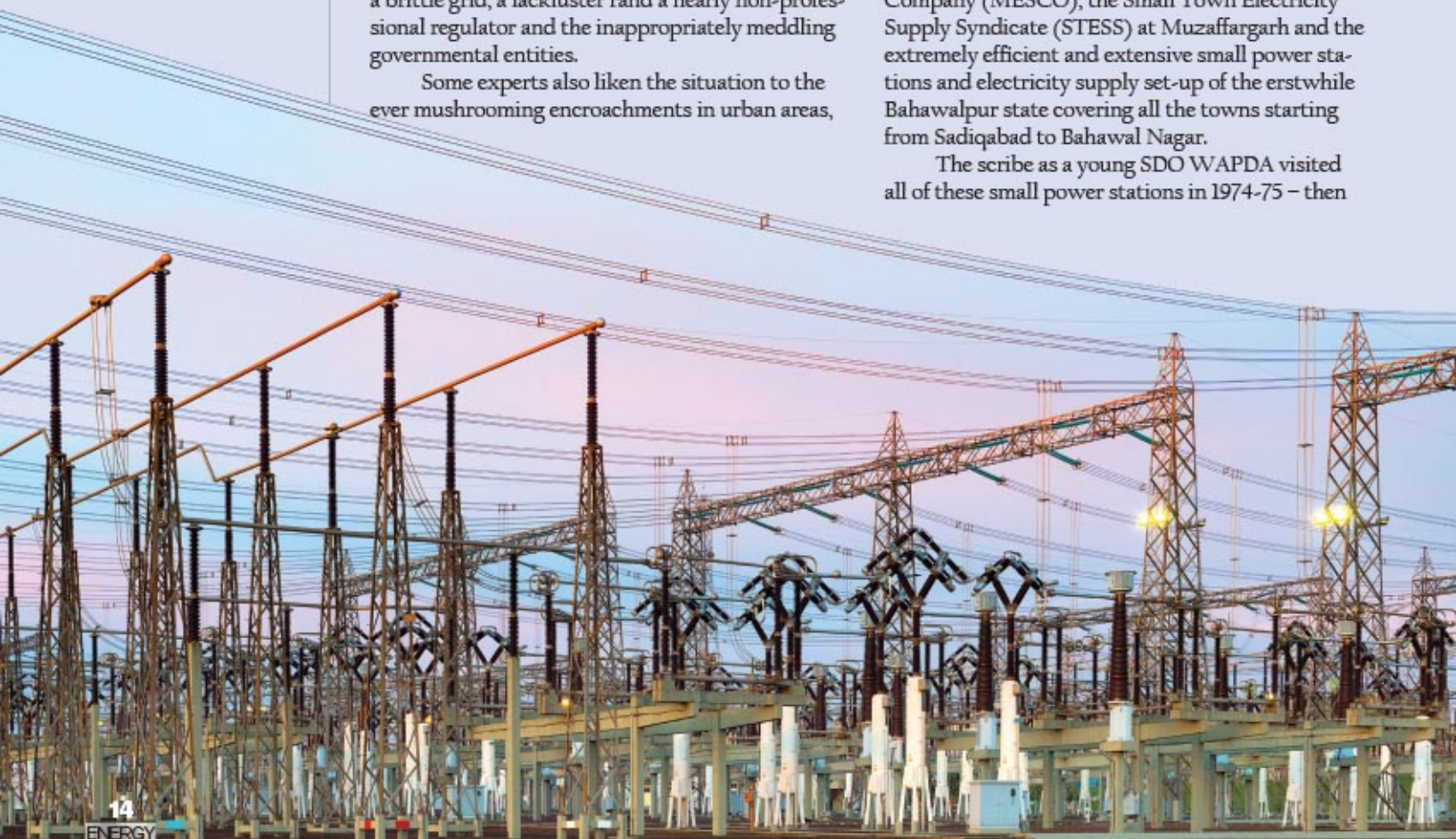
Some experts also liken the situation to the ever mushrooming encroachments in urban areas,

which need a near military action to correct but it is forgotten that the military action to correct the wayward DISCOs during 1998-2004 had resulted in a great loss in shape of migrating professionals to the then El-Dorados of the world.

While accepting whatever has been stated in the preceding paragraph, it is still a fact that the DISCOs are not appropriately functioning and nor are they able to serve their clientele. In order to look towards possible solutions to the morose, there is a need to look into the evolution of the present-day DISCOs.

In 1947, Pakistan inherited 60MWs of power generation and a motley of electricity supplying companies. Of note would be the Camp Bellpur (Camelpur foremost) Electric Supply Company for the city which is now known as Attock, the Rawalpindi Electric Power Company (REPCO) for the garrison town, Lahore Electric Supply Company Ltd. – abandoned by its migrating owners (thereafter as a fait accompli taken over by the then Punjab Govt.), the Multan Electric Supply Company (MESCO), the Small Town Electricity Supply Syndicate (STESS) at Muzaffargarh and the extremely efficient and extensive small power stations and electricity supply set-up of the erstwhile Bahawalpur state covering all the towns starting from Sadiqabad to Bahawal Nagar.

The scribe as a young SDO WAPDA visited all of these small power stations in 1974-75 – then



taken over by WAPDA. It was heartening to see all of the power houses properly sited in the middle of these towns – allowing for proper voltage and service to the people.

The Bahawalpur state had a near state of art system crafted by a very able Irish superintendent and staff comprising of experienced persons and who had prior knowledge of the works.

Transitioning from Punjab, we saw similar small set-ups in Khairpur, again set-up by the erstwhile Khairpur state, small but abandoned set-ups at Shikarpur and Larkana, a similar but again abandoned set-up at Hyderabad (some parts of the city were referred to as the Paris of the sub-continent before 1947), a small Parsi owned entity at Quetta and the then considered as extremely large – the KESC at Karachi, which had been incorporated as a Company in 1913. It can easily be concluded that barring REPCO, LESCO, MESCO, the Bahawalpur State Electricity System and the KESC at Karachi, all of the other entities were very small and distributing electricity as a novelty rather than as a utility/service.

Pakistan, as a newly independent state, made great strides and handed over the abandoned entities to the Provincial Electricity Departments, which basically were part of the provincial irrigation departments and which, in a way, progressed and prospered under the watchful gaze of the provincial electric inspectorates (operating under the Electricity Act 1910/Electricity Rules 1937).

Thereafter, in 1958, the Water and Power Development Authority (WAPDA) was set up – basically, with the view to developing both water and power infrastructure in Pakistan, which in the process also took over the operations of the then wards of the provincial electricity departments. Now WAPDA was operating alongside the likes of Campbellpur Electric Supply Company, the REPCO, the MESCO, STESS and the KESC. These private companies, however, had a serious issue relating to financial outlays. These entities would only invest on areas from where predictable profits could accrue. Actually, these entities had no appetite to take risks and thus were of no use to the recently independent country.

Consequently, huge swaths of jurisdictional areas were left un-electrified. Incidentally, because of absence of any regulatory oversight, the owners/operators did not feel any requirement to change their policy. Specific to the Colombo plan of the then very dynamic Commonwealth Organization, WAPDA undertook a nationwide village electrification plan when WAPDA extended the existing infrastructure and provided electricity to thousands of villages across the length and width of the country. This nearly doubled the holdings of WAPDA's power wing, and in fact, became the harbinger of continued effort to bring the facility to the rural areas of Pakistan.

In 1973, these entities, including the KESC, were nationalized and placed under the then Federal Government's Ministry of Water & Power, which remained as such till 1980-81, when most of these were merged with WAPDA.

The scribe was himself instrumental in the merger of MESCO and the STESS in 1981. With this merger, all of the country barring Karachi was serviced by WAPDA, while the port city and environs including Bela, Uthal, Hub and Winder – small towns of south-eastern Baluchistan, remained serviced by the KESC. ■

INVERTER FANS

Beating the heat, cutting the cost

As electricity prices remain high, middle-income group consumers in Pakistan are turning to inverter fans; inverter fans offer an affordable one-time solution that significantly lowers electricity consumption

Imaduddin

As electricity prices remain high, middle-income group consumers in Pakistan are turning to inverter fans, considering it a cost-effective alternative to reduce their energy bills. Unlike solar panels, which require a hefty upfront investment and ongoing maintenance, inverter fans offer an affordable one-time solution that significantly lowers electricity consumption.

Introduced in Pakistan in 2013, inverter fans have rapidly gained popularity, with demand surging by 20-30% in recent years, according to Shahzaib Ilyas, marketing manager at Khurshid Fans told Business Recorder. He noted that conventional fans now make up only 2-3% of the market as consumers seek energy-efficient options to cope with rising power costs. Consumers surveyed have also confirmed that they observed their electricity bills dropping by

over 25% after replacing conventional fans with inverter or AC/DC fans. Syed Hunain Abbas Jafri, who recently switched to inverter fans, said he saw his power bill dropping by Rs3,000 per month. Another consumer, Muhammad Danish, noted that his electricity bill, which previously ranged from Rs25,000 to Rs28,000, fell to Rs17,000-Rs18,000 since making the switch.

Pakistan's inverter fan industry is also expanding beyond domestic demand, with 80% of production now happening locally except circuits that are being imported. These fans are also being exported to countries such as Yemen, Sudan, Egypt, and Ethiopia.

As Pakistan continues to grapple with high electricity costs, inverter fans have emerged as an accessible and practical solution to an extent for middle-class households. Their affordability, combined with substantial energy savings, makes them an increasingly essential household item in the fight against soaring utility bills.



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Pakistan and the tariff shock

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The US has opted for a strategic trade policy over free trade by prioritising security, industrial and economic policy over market liberalisation.

US President Trump initiated this policy in 2017 by imposing tariffs on steel, aluminum, and Chinese imports, aiming to protect domestic industries and correct the trade imbalances. Now, extending the state-driven trade strategy, the US has imposed reciprocal tariffs on goods from several countries, including Pakistan.

According to the new plan, US President Donald Trump has announced 'baseline' tariffs of at least 10 per cent on all imports to the US, with rates rising as high as 60 per cent for trading partners with trade surpluses. These proposed rates are comparable to those seen during the Great Depression of the 1930s.

Consequently, Pakistan will have to face a 29 per cent tariff on its products to the US, as the president emphasised that Pakistan has imposed a 58 per cent tariff on US goods. This raises a fundamental question: How severely will these tariffs affect Pakistan's exports to the US market?

Historically, Pakistan has not been a major trading partner of the US, with its exports accounting for merely 0.16 per cent of the total US imports of \$3.36 trillion in 2024. However, from Pakistan's standpoint, such export value of \$5.8 billion is significant, as it constitutes 18.6 per cent of total exports to the US. Textile and apparel products dominate Pakistan's exports to the US, accounting for 80 per cent of total exports.

In 2024, Pakistan's top products to the US included house linen (\$1.4 billion), non-knit women's suits (\$478 million) and knit sweaters (\$419 million). Pakistan faces tough competition from China and

Pakistan should, in the long run, aim for geographical diversification for its products to mitigate external shocks

Country	Tariff Charged to the U.S.	U.S. Tariff on Country's Imports
China	40%	35%
European Union	30%	20%
Vietnam	90%	46%
Taiwan	64%	32%
Japan	36%	21%
India	53%	26%
South Korea	90%	23%
Thailand	72%	36%
Switzerland	61%	31%
Indonesia	64%	32%
Malaysia	47%	23%
Cambodia	97%	49%
United Kingdom	10%	10%
South Africa	40%	30%
Brazil	10%	10%
Bangladesh	74%	37%
Singapore	10%	10%
Israel	33%	17%
Philippines	24%	17%
Chile	10%	10%
Australia	10%	10%
Pakistan	58%	29%
Turkey	10%	10%
Sri Lanka	80%	44%
Colombia	10%	10%

Country	Tariff Charged to the U.S.	U.S. Tariff on Country's Imports
Peru	10%	10%
Nicaragua	36%	18%
Honduras	10%	15%
Costa Rica	17%	10%
Jordan	10%	20%
Dominican Republic	10%	10%
United Arab Emirates	10%	10%
New Zealand	20%	10%
Argentina	10%	10%
Ecuador	12%	10%
Guatemala	10%	10%
Honduras	10%	10%
Madagascar	93%	47%
Myanmar (Burma)	60%	44%
Russia	53%	28%
Kazakhstan	24%	27%
Serbia	74%	37%
Egypt	10%	10%
Saudi Arabia	10%	10%
El Salvador	10%	10%
Côte d'Ivoire	11%	21%
Laos	95%	48%
Botswana	74%	37%
Trinidad and Tobago	12%	10%
Mexico	10%	10%

Turkey in these product lines. Under the new plan, China will face higher tariffs than Pakistan, while Turkey is expected to accrue a competitive advantage over Pakistan.

In a nutshell, these tariffs will impact the trade relationship of all countries with the US, and a major shift in the global trade patterns is inevitable. However, for Pakistan, this new arrangement will reduce trade volume, and immediate replacement of the US market is not a viable option due to its scale and the importance of the relationship. A prolonged IMF programme, supported by the US, is vital for stabilising Pakistan's economy.

One short-term solution to mitigate the negative impact would be to subsidise the products to enhance competitiveness; however, under the IMF economic reform programme, such a practice may not be allowed. Pakistan should strive to cut down the production costs, particularly by reducing energy prices for industries, which are significantly higher than those of regional competitors like Bangladesh and Vietnam.

The global economic strategy, led

by the US, has shifted from the slogan of free trade to strategic trade, where state power is now viewed as a key foundation of competitive advantage. In line with this new world order, Pakistan should focus on building competitiveness through innovation and technological advancement in industries where it holds the potential.

The role of the state is vital in creating and sustaining a competitive edge. Pakistan should strive for selective trade agreements and foster technology transfer through partnerships with advanced economies. It is imperative to revisit existing free trade agreements and move towards a strategic or guided trade approach. For instance, Pakistan runs a huge trade deficit with China, which could plausibly be offset by increased export and remittances from China.

The government should prioritise investment in Research and Development (R&D) and human development, which are prerequisites for a strong industrial base. While the US remains a major trading partner, Pakistan should, in the long run, aim for geographical diversification for its products to mitigate external shocks. ■



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Pakistan's energy conundrum: challenges and elucidations

Usman Ahmad

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

Rising global energy costs, rupee depreciation, and political instability behind energy crisis

Pakistan's energy sector faces significant challenges such as frequent power outages, high transmission losses, and reliance on imported fuels, prompting the introduction of IPPs to bridge the electricity gap.

The rising costs of global energy, coupled with the depreciation of the Pakistani rupee and domestic political instability, are pushing the country towards a severe energy crisis. Pakistan's energy is generated by fossil fuels, which account for 60% of total energy production, primarily relying on imported LNG, domestic natural gas, and coal.

Hydropower contributes 25% and nuclear energy makes up 8%. Renewable energy (RE) sources (wind and solar) constitute 7% while India and Afghanistan rely on RE 10% and 13%, respectively.

In the 1990s Pakistan faced severe energy shortfalls, with demand far exceeding supply and the concept of (IPPs) was first introduced in the early 1990s under the Power Policy of 1994. That policy allowed private companies to establish power plants and sell electricity to the national grid under



long-term agreements, primarily through the “take-or-pay” model.

As a result, several thermal plants were commissioned, most of which relied on imported furnace oil, significantly increasing electricity generation costs. To overcome the generation cost Power Policy 2002 was introduced, and the purpose of this policy was to focus on hydropower and indigenous coal to reduce reliance on imported fuels. However, despite these efforts, Pakistan remained dependent on fossil fuels.

Pakistan’s energy crisis worsened, leading to the CPEC energy projects in 2015. Under the CPEC framework, several new coal-based IPPs were established, further locking Pakistan into expensive power purchase agreements. While these projects helped alleviate power shortages, they added to the financial strain due to sovereign guarantee and the dollar-indexed capacity payments.

As of March 2024, Pakistan’s installed electricity capacity reached 42,131 MW and currently more than 80 IPPs are operational across Pakistan, contributing to the nation’s energy mix. Out of the total installed capacity, IPPs collectively are generating 24,958 MW.

Out of them, 10 major IPPs account for 53% of this capacity, while the remaining IPPs share the other 47%. 40% of the total capacity payments are made to 10 large IPPs and these IPPs accounts for 25% of Pakistan’s total circular debt — a

key issue threatening the stability of the economy. The “capacity payment” to IPPs has been a significant cause of financial distress in the energy sector, where the government is bound to pay IPPs for their full capacity regardless of actual electricity consumption.

This system has led to an exponential increase in circular debt, surging from Rs. 1.2 trillion in 2018 to Rs.2.6 trillion by the end of current fiscal year.

The circular debt makes it more difficult for producers to invest in upgrading existing power infrastructure. The cost of these payments is ultimately passed on to consumers due to high electricity tariffs, making energy unaffordable for households and industry. To address these challenges, the government has renegotiated contracts with 14 IPPs, and claimed to save Rs.1.4 trillion for these agreements.

Moreover, contracts with five IPPs have been prematurely terminated, expected to save Rs.411 billion. However, these measures alone are insufficient to overhaul the energy sector. The removal of energy subsidies in 2023 led to a staggering rise in electricity and gas prices, pushing inflation to unprecedented levels.

Electricity prices in Pakistan are 45% higher than those in other regional countries. While the average regional electricity cost is 8-9 cents per unit, Pakistan stands at 15 cents per unit, with domestic consumers paying an average of Rs.40 per unit. The gas tariff also witnessed historic increases of 174% for domestic consumers, 137% for commer-

cial, and 193% for industries.

To overcome energy challenges its imperative to explore alternative energy sources like solar, wind and coal. Renewable power resources such as solar, and wind are abundant in Pakistan.

Pakistan Council of Renewable Energy Technologies (PCRET) highlighted Baluchistan, Sindh and the deserts in Punjab-Cholistan as areas with great potential for the production of solar energy.

The sun shines for above 2300-2700 hours a year in the south-western province of Balochistan and the north-eastern region of Sindh. According to International Renewable Energy Agency (IRENA), in 2023 Pakistan’s total solar installed capacity was 1,244 megawatts an increase of 17% compared to 2021.

Wind corridors, particularly in Sindh (Gharo, Jhimpir), offer significant potential for wind power generation. Solar and wind energy are weather-dependent, necessitating the development of energy storage solutions and smart grids to ensure a stable supply.

With reference to coal reserves stand at an estimated (185 billion tonnes), valued at (US\$30 trillion), only (20%) of the country’s electricity is generated from coal, compared to (70%) in India and (60%) in China. If utilized efficiently through environmentally friendly technologies, Pakistan’s coal reserves could generate (100,000 MW) of electricity for 250 years.

Pakistan has massive untapped clean energy potential of energy with nearly 60,000 MW from hydropower, 40,000 MW from Sun and 346,000 MW from wind. To secure an energy-independent future, Pakistan must prioritize structural reforms and reduce its dependence on conventional energy sources. This includes shifting from costly capacity-based power contracts to a competitive bidding system, modernizing its transmission infrastructure, and reducing transmission losses.

The government, private sector, and civil society need to work together to address the challenges facing the energy sector.

Additionally, policies should be aligned to promote renewable energy integration while ensuring consumer affordability. By diversifying the energy mix, increasing energy efficiency, and encouraging private sector participation, Pakistan can overcome its energy crisis and achieve sustainable economic growth. ■





Unlocking climate funds for Pakistan

Malik Amin Aslam Khan

The writer is a former climate change minister

Government budgetary space needs to be allocated towards climate action; inconsistency in policymaking, like the recent flip-flop on solar tariffs does not help the cause

While the need for urgent climate finance remains an inescapable priority for Pakistan the key to unlocking it remains a mystery.

Our policymakers often bemoan climate vulnerability and the absence of such climate finance as the main bottleneck impeding climate action. This approach is flawed. Claiming climate victimhood in a global arena where everyone is a victim does not attract climate finance and the demands for justice in an unjust world continue to remain mere demands.

It is now established that climate finance flows follow climate action rather than the other way around. Country policies and strategies are required facilitators but can never be a substitute for demonstrated action. Pakistan's NDCs, submitted to the UN, chart out the required climate action pathway. It is premised on the two pillars of building up the country's green infrastructure through forestry and protected areas, and a shift towards low-carbon

development by deploying renewable energy and electric mobility.

Pakistan needs to follow up this stated intent with action if it is to become a stakeholder in attracting a slice of the global \$1.3 trillion climate finance flows. More importantly, it must learn some important lessons derived from the global financial architecture.

Firstly, if backed by political commitment, a major part of the requisite climate finance can be generated internally through efficient reprioritisation of public investment funds. Almost 85 per cent of the total climate finance globally is raised and spent domestically while almost half is through private sector mobilisation.

The formula is simple. Government budgetary space needs to be allocated towards climate action and this needs to catalyse private sector flows. This, interestingly, is also the prescription being now driven by the IMF in its latest C-PIMA (Climate Public Investment Management Assessment) for Pakistan whereby green responsive budgeting has been advised to drive the country's own resources towards building climate resilience and low-carbon growth.

Meanwhile, inconsistency in policymaking, like the recent flip-flop on solar tariffs does

not help the cause. Promoting zero-carbon home solar should have been a no-brainer for Pakistan instead of penalising it to support the capacity payments of carbon-polluting IPPs.

Secondly, acting with domestic funds enhances a country's green credentials which then creates traction to attract not only global appreciation but also innovative climate financing. China is a prime example; it alone accounts for 51pc of global domestic spending on climate finance and, in turn, remains the top country for attracting this finance, accounting for almost 25pc of all green bond funds. For us, any future thrust towards attracting cutting-edge nature financing, such as through green, blue or nature bonds, must be driven by this philosophy.

In tandem with the lessons above, the past two years have seen a rapid transformation of the global financial architecture, which now views all mainstream development financing through the lens of climate change. The issue is no longer considered just an ecological challenge but, increasingly, as an unprecedented economic challenge, with impacts on macroeconomic and fiscal policy, debt trajectories, trade positions and asset valuations. It is no surprise that large multilateral institutions are rapidly realigning their lending strategies, with the World Bank committing 45pc of its yearly financing to climate change by 2025 and the IMF committing to enhancing concessional funding for climate resilience, through the Resilience and Sustainability Facility (RSF).

While all this opens up new financing opportunities for Pakistan, it also ratchets up the challenge of putting our own house in order. The recent enactment of a green taxonomy is the correct step and needs to be supported by enhancing the credibility of our climate data and disclosures while adhering to a home-grown climate compatible development pathway as outlined in the NDC. Against this backdrop, it is welcome that the IMF has not only announced \$1.3 billion in climate funding, through the RSF, but has also been reportedly pushing Pakistan to commit at least 1pc of its "own" budget towards enhancing climate resilience.

This is logical, as Pakistan's losses due to climate change are predicted to rise dangerously, devouring up to 9pc of our GDP by 2050 unless resilience is built into our physical and financial infrastructure. More importantly, by investing domestic budgetary funds, Pakistan will again reinforce what has been discussed above — that access to climate finance follows demonstrated climate action, prioritised by the country itself. This remains the simple key to unlocking climate finance. ■

ENERGY NEWS

Dasu Hydropower project cost surges to Rs1.7 trillion amid delays, mismanagement



Shahbaz Rana

The cost of Pakistan's Dasu Hydropower Project (Stage-I) has skyrocketed to a staggering Rs1.7 trillion (\$6.2 billion), making it the country's most expensive hydropower scheme to date. The Central Development Working Party (CDWP), chaired by Planning Minister Ahsan Iqbal, referred the revised proposal to the Executive Committee of the National Economic Council (ECNEC) for final approval—pending cost rationalisation and responses from WAPDA.

Originally approved at Rs486 billion in 2014, the project's cost has jumped by 240%, raising the per-megawatt cost from Rs236 million to Rs804 million. By comparison, the Tarbela 5th Extension costs Rs148 million per megawatt.

Minister Iqbal voiced concerns over the "astronomical increase" in cost, attributing it to project delays, poor management, and design changes with-

out prior approvals. Despite repeated ECNEC instructions, WAPDA failed to appoint a full-time project director or a professional CFO—raising questions over financial oversight. Moreover, the awarding of a road contract in foreign currency was labeled "criminal negligence."

WAPDA now seeks over \$1 billion in additional foreign funding from the World Bank and commercial lenders, plus Rs350 billion in domestic loans. Of WAPDA's Rs289 billion equity, Rs98 billion has already gone toward interest during construction.

With only 23.6% of core dam works and 15% of underground structures complete, the project is now expected to finish by 2028—four years behind schedule. The revised PC-I also includes land acquisition, resettlement, access roads, and a new 132 kV transmission line.

Despite the cost escalation, the government emphasized the project's strategic value for national water and food security and green energy transition.

Dr Farrukh Saleem



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The case for the Soan Dam

Syed Hussain El-edroos

The writer is a freelance contributor

A survey team from World Bank had proposed building of this dam in 1955

It is important to share several important geographical facts about Pakistan and its need for water storage. The first is climate change. Due to rising temperatures, we will have floods followed by water shortages once most of the glaciers have melted.

Second, the population of Pakistan has crossed 250 million. By 2060 the population is expected to grow to 367 million. Currently, 40 per cent of Pakistanis live below the poverty line. Third, Pakistan is ranked 14th among the 17 'extremely high-water risk' countries of the world. With 2.8 per cent of the global population, Pakistan accounts for 0.5 per cent of global water renewable water resources.

Fourth, water stored in Pakistan's dams is only for 30 days, compared to the US's 900 days and India's 170 days. Fifth, about 35.6 million acre-feet of water (\$21 billion worth) flows into the Arabian Sea unused, which is one-fourth of the total water fed in by glacier melt and rain. This water flows during the rainy/flood season for about three months.

Sixth, due to a lack of river water during the

remaining 9 months, seawater intrusion into the Indus River Delta damages fertile agricultural land. Seventh, unlike the Punjab, underground water in most of Sindh and Balochistan is unfit to drink or to use for irrigation.

The Soan Dam site at Dhok Pathan is located in northern Punjab. It has been proposed as a solution to address several water management challenges in the country. Please note that a dam survey team from the World Bank had proposed the building of this dam in 1955. The Soan Dam's planned water supply would not only come from the Soan River itself but also from a 100-kilometre-long canal that draws water upstream of the Tarbela Dam.

The dam would help address water shortages in this region, particularly during dry spells. By capturing and storing excess water during the monsoon season, the dam would provide a reliable water supply during the dry season, which is crucial for sustaining agricultural productivity in an area that relies heavily on irrigation. It would have a storage capacity of 38 to 48 MAF (million acre-feet) of water, eight times the storage capacity of the Tarbela Dam or the Basha Dam. It would also produce over 5,000MW of electricity.

The Soan Dam could play an important role in flood control by capturing excess water during periods of heavy rainfall and releasing it gradually to avoid downstream flooding. In the case of the 2022 floods, where one-third of the country was underwater and damages of \$16 billion were caused, water could be held back in Soan Dam mitigating the floods in Punjab and Sindh. By improving water access, the Soan Dam could also support the expansion of irrigation networks, which in turn would promote food security, reduce poverty, and improve rural livelihoods. Given that agriculture is a key



sector in Pakistan's economy, enhancing irrigation infrastructure can contribute to economic stability in rural areas. Building of the dam would contribute \$90 billion to the economy.

Currently, large dams are being constructed on the Indus River at Dasu and Basha, with live storage capacities of 1.14 MAF and 6.4 MAF, respectively, and on the Swat River in Mohmand Agency, with a live storage capacity of 0.67 MAF. Once completed, these dams will increase water storage capacity from 30 to 55 days. However, these dams alone cannot match the storage capacity that the proposed Soan Dam would provide. Also, they would partially make up for water storage capacity lost at Mangla, Tarbela and Chashma Barrage due to silting.

If constructed, the Soan Dam would help reduce flooding in the Nowshera Valley area by diverting floodwaters from the Indus River to the Soan Dam, so that there is no backflow at Attock for the Kabul River. In addition, water from the Indus-Soan River canal could be used to supply water to the water-starved Rawalpindi-Islamabad area, especially the multiple housing societies that are being developed.

The intrusion of seawater into the Indus River Delta is a serious environmental issue, exacerbated by the reduction in freshwater flow from the Indus River due to upstream dams and water diversions. As less freshwater reaches the delta, seawater moves further upstream, leading to the salinisation of agricultural lands, loss of biodiversity and disruption of the livelihoods of local communities. As mentioned above, the stored water in Soan Dam would be released to keep seawater out of the Indus River Delta throughout the year. The volume of water required is from 10 to 15 million acre-feet, which could only be met by Soan Dam. While the dam could help mitigate some of the impacts of climate change and water shortages, it could also pose challenges, such as managing water distribution, protecting ecosystems, and ensuring that the project's benefits are equitably shared. The government of Pakistan should seriously consider constructing the Soan Dam, given the worsening water shortage and rapidly growing population. The cost of building the dam would be lower than that of the Diamer-Basha Dam.

A historical comparison highlights its potential: In 1994, the per capita incomes of Pakistan (\$440) and China (\$490) were similar. In the same year, China began constructing the Three Gorges Dam. This project, along with many other dams, has significantly benefited the Chinese economy, particularly by ensuring competitive goods through inexpensive hydropower. Why can't we do the same? ■

EVENT REPORT

Pakistani firms spotlight renewable energy at Middle East Energy 2025



Renewable energy took center stage for Pakistani exhibitors at Middle East Energy (MME) 2025, held from April 7 to 9 at the Dubai World Trade Centre. Among 1,600 global companies, a select group of Pakistani firms showcased innovative clean energy solutions aimed at addressing energy challenges both locally and internationally.

Babar Shahzad, Director of Shahzad Pumps, highlighted the relevance of solar-powered submersible pumps, especially in regions like Africa where energy crises are severe. "These pumps operate directly with solar panels without the need for converters or inverters," he explained. Rising electricity and fuel costs are pushing consumers in Pakistan, the Middle East, and Africa toward sustainable alternatives, he added.

At the forefront of innovation, Fast Cables unveiled their entry into LED lighting, aiming to provide high-specification lighting at accessible prices.

"We identified a gap in the market and responded to the demand," said Ali Shahzad, Manager Business Development.

Meanwhile, PEL (Pak Elektron Limited) emphasized its push into international markets, exporting transformers to the US, Africa, and the Middle East. However, Jawad Khalid, Manager Business Development - Export, voiced concerns over domestic export hurdles, from banking issues to export duties. Despite these challenges, PEL is upgrading its manufacturing to meet IEEE and UL standards for the US market.

Osaka Batteries, part of ACM Group of Industries, presented its new lead acid and graphene EV batteries, tailored for the UAE's delivery sector. The company is also investing in battery recycling and plans to establish a lithium-ion battery facility in Pakistan.

The 49th MME exhibition underscored Pakistan's growing commitment to sustainable technologies and the global shift towards clean, smart energy solutions. ■



Huge environmental and biodiversity loss Indus Delta, where ecosystem dying, lifeline vanishing

Once-fertile lands
turn to desert;
construction of
Tarbela, Mangla,
and other dams
and controversial
canals significantly
reduces water
flow to the delta;
the region is
continuously being
devasted due to
the sea intrusion
caused by no
water flow from
Kotri downstream

Muhammad Naeem Qureshi

The Writer is Managing Editor of Energy
Update and Environment Activist

The Indus Delta's once-thriving ecosystem has been devastated to a large scale due to reduced Indus River water flow and seawater intrusion, leading to a huge land loss, salinity issues, and the decline of mangrove forests and migration of local people. The Indus Delta is the 5th largest delta in the world, and is a vital ecosystem located in the Sindh province of Pakistan, where the Indus River flows into the Arabian Sea, and is home to the 7th largest mangrove forest system.

A study by the US-Pakistan Center for Advanced Studies in Water showed that the Indus Delta shrunk from 13,900 square kilometers in 1833 to just 1,067 square kilometers in 2018, a 92% decline.

The flow of freshwater into the Indus Delta has declined drastically due to upstream water diversions for irrigation, hydroelectric projects, and dam construction. The 1960s was the decade of dam building in Pakistan – Guddu Barrage and Mangla Dam in 1962, and Tarbela Dam in 1968 were

the biggest. All affected water flow to the Indus delta.

Before the 20th Century, the Indus River naturally flowed into the Indus Delta, creating a vast network of 17 major creeks and sustaining a rich ecosystem. Annual freshwater discharge at that time was estimated at 150-200 million acre-feet (MAF). The delta supported mangroves, fisheries, and coastal communities and maintained a balance between freshwater and seawater intrusion.

Later, major water control structures like barrages, canals, and dams were built to regulate water flow for irrigation and power generation. By the 1960s, freshwater flow to the delta started declining. After the Indus Water Treaty (1960) between India and Pakistan, water distribution changed, and Pakistan built large reservoirs.

Ideally, the delta requires a minimum of 10 million acre-feet (MAF) of water annually to maintain its ecological balance. However, in many recent years, the flow has been alarmingly low, sometimes reaching as little as 0.79 MAF. The Kotri Barrage, the last major diversion point, now sees little to no water flow for months. Over 1.2 million people in the delta region face water scarcity, land degradation, and loss of livelihoods.



The reduction in freshwater flow to the region has led to severe consequences for numerous villages and towns in the region. Several localities in Thatta and Sujawal districts have been severely affected. Once-thriving settlements like Ketī Bunder, Khārō Chan, Shāh Bunder, and Jātī have witnessed large-scale displacement of local people due to seawater intrusion and land degradation.

Seawater intrusion has engulfed over 1.2 million acres of fertile land in Thatta and Badin alone, turning once-productive farmlands into barren wastelands. Farmers and fishermen who have relied on the delta for generations have lost their livelihoods, forcing them to abandon their ancestral homes in search of survival elsewhere.

The Indus Delta was once home to a diverse range of species, including mangrove forests, fish, and migratory birds. However, the environmental degradation has caused a sharp decline in biodiversity.

Mangrove cover has decreased from approximately 260,000 hectares to less than 80,000 hectares. The decline in freshwater flow has led to the near-extinction of Palla fish, a species once abundant in the Indus Delta. Many species, including migratory birds and reptiles, have disappeared as the delta's habitat has deteriorated. Once a major contributor to Pakistan's seafood exports, shrimp production in the delta has declined by nearly 80%.

The ongoing water crisis has forced large-scale migration from the delta region. An estimated 250,000 to 300,000 people have been displaced from the In-

duś Delta over the past two decades. People are leaving their villages en masse as they cannot farm, cannot fish, and have no freshwater due to almost no water from downstream Kotri. Many have moved to Karachi and other urban areas of Sindh, seeking alternative means of survival. The displaced communities face economic hardships, lack of employment opportunities, and deteriorating living conditions in their new urban settlements.

Not only have vocational opportunities shrunk, but in many parts of the Indus delta, basic services such as potable water or sanitation do not exist. As we noted, fishing is becoming less viable—according to one estimate, up to 70 percent of the fish stocks have been depleted—and coastal residents are in a continuous battle with encroaching seawater. Unable to increase the flow of water through the Indus delta, residents along the coastal stretches of the Indus Delta have resorted to building embankments to hold back seawater. While embankments hold back surface water, seawater makes its way inland as rising groundwater. The result is salination, which has made the land unsuitable for agriculture.

The main reason for reduced water flow downstream of Kotri is the construction of upstream dams and barrages that divert Indus River water for agricultural and hydroelectric projects. The construction of Tarbela, Mangla, and other reservoirs significantly reduces the water reaching the delta. Extensive irrigation projects, such as the Chashma-Jhelum and Taunsa-Panjnād link canals, di-

vert large amounts of Sindh's water for agriculture. As a result, the Indus Delta is continuously being devastated by sea intrusion.

To prevent further degradation and restore the Indus Delta's ecosystem, immediate measures should be taken to implement the 1991 Water Accord in its true spirit, ensure that at least 10 MAF of water reaches the delta annually, limit the construction of new dams and canals that reduce freshwater availability for the delta.

Large-scale afforestation projects should be initiated to restore the lost mangrove cover, which acts as a natural barrier against seawater intrusion. There is also a need to involve local communities in conservation efforts and provide them with alternative livelihoods, such as eco-tourism and sustainable fishing practices.

The Sindh government also needs to collaborate with international environmental organizations to secure funding and technical support for delta restoration projects. To reduce the impacts of climate change, policies should focus on sustainable water management to mitigate future risks to the delta.

The Indus Delta is a neglected ecosystem that has collapsed due to reduced freshwater inflows, biodiversity loss, and large-scale displacement of local communities. Immediate and effective measures are required to restore its ecological balance. Ensuring adequate water supply, reducing upstream diversions, and initiating large-scale conservation projects can help revive the delta and protect the livelihoods of those who depend on it. ■





KE turns to startups to help solve energy woes: will it work?

Bilal Hussain

In the world of big businesses, innovation often takes a backseat. Large corporations, with their rigid hierarchies and deeply ingrained processes, tend to struggle with the agility and fresh thinking that drive meaningful change.

When a power utility like K-Electric (KE)—a dominant player in Pakistan's biggest city, Karachi—launches an initiative like the Energy Progress & Innovation Challenge (EPIC 2025), it raises an important question: will these startups succeed where others have failed?

Launched in March this year, KE's EPIC 2025 aims to bring in fresh perspectives to help solve Pakistan's deeply rooted energy sector challenges. Even if startups present groundbreaking solutions, KE will still need support to integrate them into its operational framework. The programme invites entrepreneurs, startups, researchers, and academia to develop practical and scalable solutions for issues ranging from grid stability and energy theft to demand forecasting and infrastructure reliability.

"The initiative harnesses Pakistan's exceptional talent, ingenuity, and creativity to develop innovative, locally-relevant solutions for the country's unique energy challenges," said Imran Rana, Head of Communications, Innovation & Insights at

K-Electric. It builds upon KE's earlier 7/11+ Innovation Challenge that was launched in March 2022, broadening its scope and integrating it further into the company's strategic priorities.

On paper, the initiative makes sense. Startups are known for their ability to disrupt industries, finding new ways to approach long-standing problems. With the Pakistani startup ecosystem growing and bringing innovation to sectors like mobility, fintech, and e-commerce, it seems logical for KE to tap into this momentum. By outsourcing some of the innovation, KE can present itself as a forward-thinking company seeking external expertise to modernise its operations.

However, there is a paradox in KE's approach. While it encourages external innovators to rethink energy sector challenges, is the company fostering a culture of innovation within its own ranks? In large organisations, employees often work under bureaucratic constraints that discourage risk-taking and out-of-the-box thinking. A recent report in *The Guardian*—where KE's Roshni Baji programme was highlighted—suggests the utility is making efforts, even if the change is only one step at a time.

Meanwhile, EPIC 2025 focuses on critical energy challenges such as tamper-proof load-shedding mechanisms, real-time fleet tracking, automated demand forecasting, and energy theft detection using artificial intelligence. Additionally, it seeks solutions for predictive maintenance of transformers, optimising solar energy integration, and developing battery energy storage systems. The goal is to make electricity distribution more efficient, reliable, and future-proof. A key component of the initiative is KE's "30 by 30 vision," which aims to increase the company's share of renewable energy to 30% by 2030.

Will KE be able to provide an ecosystem where these startups can implement

their solutions effectively, or will their ideas get lost in the tangled web that is Pakistan's power sector? While this is an laudable target, it remains unclear whether the power sector has the structural flexibility to implement the breakthrough ideas that EPIC 2025 might generate.

Pakistan's energy sector is not just about technological gaps; it suffers from regulatory hurdles, financial instability, and deeply entrenched inefficiencies. Even if startups present groundbreaking solutions, KE will still need support to integrate them into its operational framework.

Moreover, startups thrive on speed and execution. Corporate partnerships, on the other hand, can bog them down with lengthy approval processes and risk-averse decision-making. Will KE be able to provide an ecosystem where these startups can implement their solutions effectively, or will their ideas get lost in the tangled web that is Pakistan's power sector?

KE's EPIC 2025 has potential to foster a culture of collaboration between startups, academia, and industry experts. It presents an opportunity for Pakistani entrepreneurs to address real-world problems and scale their innovations. However, KE must ensure that this initiative is not merely an exercise in futility but a genuine commitment to integrating external innovation into its core business.

The deadline for submissions is April 11, 2025, and the response to EPIC 2025 will be a test of how willing KE is to embrace change. Will KE's reliance on startups bring the energy revolution Pakistan desperately needs, or will it be yet another well-intended initiative that fails to deliver real impact? Time will tell, but if executed properly, EPIC 2025 could be the spark that could ignite some meaningful transformations in the country's struggling power sector. ■

Courtesy: Business Recorder

Higher Profitability

More Energy Less Maintenance Costs

Huawei FusionSolar C&I Smart Hybrid Cooling ESS

Model: LUNA2000-215 Series





pioneers electric vehicle revolution in Pakistan's Solar market



M. Naeem Qureshi

Managing Editor Energy Update

Inverex is set to become the first Pakistani solar energy company to venture into the electric vehicle (EV) market, heralding a new era in promoting clean energy sources and improving environmental conditions in Pakistan. The company plans to offer affordable battery-powered two-wheel-

ers and four-wheelers, reinforcing its core mission.

This exciting announcement was made during a special event in Kuala Lumpur, Malaysia, where Inverex showcased its latest clean energy products tailored for the Pakistani solar market. The event attracted key stakeholders from Pakistan's clean energy sector, including dealers, contractors, installers, buyers, and advocates for renewable power options. Top Inverex management also attended the event.

Ahmed Shariq, Head of Solar Solutions at Inverex, emphasized that the introduction of EVs aligns with the company's mission to provide the most efficient green energy solutions. He highlighted the urgent need to combat the climate crisis exacerbated by the heavy reliance on fossil fuels for transportation and electricity generation.

Shariq stated that Inverex's electric vehicles would mark a significant milestone in the ongoing efforts to reduce the carbon footprint of Pakistan's transportation and automobile sectors. He assured that the EVs would be priced affordably, enabling middle-income families to transition from conventional modes of transportation to cutting-edge electric options. These vehicles will feature a high DC voltage charging system, compatible with both residential and commercial charging stations.

Inverex is set to launch three models of electric vehicles capable of traveling 140 kilometers, 220 kilometers, and 320 kilometers on a single charge, along with two models of electric two-wheelers that can cover distances of 80 kilometers to 170 kilometers.

During the Kuala Lumpur event,



Inverex also unveiled a range of new products, including upgraded versions of its equipment designed to optimize solar energy utilization for both domestic and commercial consumers in Pakistan.

Among the highlights was the launch of an 8kW '3 phase' Hybrid inverter, which addresses market needs by encouraging consumers to adopt battery-supported systems and fostering a shift from on-grid to hybrid inverters. Historically, three-phase hybrid inverters started at 10-12 kW, making them less accessible due to higher costs.

Inverex introduced an innovative feature in its on-grid inverters, allowing them to supply 20% of their rated power even during load shedding, a significant improvement over current on-grid models, which provide zero power in such instances. This feature is effective during peak solar PV radiation hours.

Additionally, the company announced the launch of balcony-based 1kWh and 2kWh portable plug-and-play batteries, perfect for high-rise apartments where solar panels can be mounted on balconies to charge these batteries.



Furthermore, Inverex has released 12V 100Ah/200Ah lithium iron phosphate residential batteries to replace traditional lead-acid options.

Looking ahead, Inverex officials highlighted the critical role that batter-

ies will play in shaping Pakistan's energy landscape. 'The opportunity to grab is here, and change is constant,' they noted. 'We must evolve and embrace growth as a market, remaining open to policy changes.'

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Promise of decentralised community-driven energy

For nearly 12 million people in Pakistan, access to electricity remains a distant dream

EU Report

For nearly 12 million people in Pakistan, access to electricity remains a distant dream. The country faces severe challenges — its national grid struggles to reach remote regions, energy prices soar, and energy security remains fragile.

In northern Khyber Pakhtunkhwa (KP), over half the population lives below the poverty line, and in the newly merged districts, this figure jumps to 72 per cent. For these communities, access to energy isn't just a convenience, it's a lifeline. High electricity prices push families into energy poverty, forcing them to rely on costly, unreliable alternatives.

Decentralised, community-driven solutions, particularly hydropower, could offer a way out. KP alone has the potential to produce up to 64,000 MW of electricity through small hydro projects — enough to power millions of homes sustainably. Over the past decade, the provincial government has embarked on an ambitious journey to electrify its remote regions by building over a thousand micro-hydropower (MHP) units. These projects, supported by well-regarded local organisations such as the Sarhad Rural Support Programme (SRSP), the Aga Khan Rural Support Programme (AKRSP), and Haashar Association, take a community-based approach, aiming to empower local residents through energy. The initiative promises to transform lives, and hundreds of MHPs have succeeded in bringing electricity to the region.

But as with any ambitious plan, challenges abound. Field reports indicate that over 150 units installed since the early 2000s are now non-operational. What can we learn from these successes and setbacks? To find out, we conducted a detailed assessment of MHP infrastructure, combining field visits, key stakeholder interviews and in-depth case studies of three projects in Chitral and Swat. Here, we share the key insights and lessons learned.

When it comes to small hydropower projects, success doesn't just depend on the technology. It's as much about the people and communities using the technology. In energy projects, this blend of the social and technical — the "socio-technical" approach — shapes how well these projects deliver real benefits. And in northern Pakistan's remote areas, this approach has made a tangible difference.

Community-based MHP projects in KP have catalysed substantial socio-economic improvements in impoverished communities, which can be seen in enhanced educational opportunities, poverty reduction, economic development, and women's enhanced entrepreneurship and health.

Take Kalam, for example. Thanks to two SRSP-managed power plants, there has been a noticeable boost in girls' school enrolment. The reliable electricity has also powered up healthcare, small businesses, and agriculture, creating new income opportunities and reducing food insecurity. At the same time, the Jungle Inn MHP has been a game changer for local hotels and businesses, allowing them to stay open longer, attract more tourists, and slash their energy bills.

On a household level, these MHPs have helped families switch from costly wood and biomass to cleaner, cheaper electricity. The shift has led to better health

outcomes, with fewer respiratory problems and lower medical expenses. According to SRSP, since 2016, these projects have cut carbon emissions by 66,000 tonnes annually and reduced community reliance on fossil fuels.

But it's not all smooth sailing — MHPs face tough challenges, especially with the unpredictable weather patterns in northern Pakistan. Variability of water flow, increasing droughts and flash flooding cause technical problems while extreme vulnerability to climate change is making things worse. Transporting machinery to remote areas is also a logistical nightmare due to rough terrain and poor road access, impacting project cost and complexity.

The projects that thrive are those with strong community involvement and good governance. Unfortunately, many struggling MHPs are held back by poor maintenance, limited technical expertise, community conflicts and local disputes. Our research also uncovered a serious lack of record-keeping in terms of monitoring and evaluation. Many projects have no hydrological data or performance records, and there's no public information on why some MHPs have failed. This lack of transparency and oversight limits the growth of small-scale renewables, despite their potential to significantly enhance the country's energy landscape.

Decentralising energy projects sounds like an ideal solution — more control for local communities and energy systems designed to fit their needs. But it's no silver bullet. In northern Pakistan, where energy infrastructure is slowly expanding to reach underserved areas, decentralisation has exposed serious challenges in governance.

MHP projects are intended to be collaborative efforts, built on participatory decision-making.

They bring together a wide range of players: government departments such as the Pakhtunkhwa Energy Development Organisation (Pedo), non-profit organisations (NGOs), Rural Support Programmes (RSPs), local authorities, donors, community organisations, and engineering consultants. Ideally, these stakeholders would work in harmony to plan, fund, and operate the plants under a shared "build-operate-transfer" framework. But that's not always how it plays out.

The reality is often messy. Governance can break down due to vague roles, imbalanced responsibilities, and a lack of formal ownership agreements. These gaps lead to mismanagement and inefficiency. Communities have reported that funds generated from electricity sales were poorly managed and that promised job opportunities never materialised. Internal issues like nepotism and local power struggles further undermine the fairness of decision-making, reinforcing existing inequalities. Adding to the strain, local governments often lack the capacity to manage these technical projects effectively.

The broader context doesn't help either. Sectarian violence and political conflicts in the region create instability that can derail projects. Even with recent governance reforms in KP, the region still relies heavily on foreign aid. Donor-led initiatives, with their rigid priorities and short-term funding cycles, can hinder local capacity-building and long-term resilience. That said, there are signs of progress.

Social enterprise models are emerging as a promising alternative, though much more needs to be done. Strengthening local governance frameworks, diversifying funding sources (through options like public-private partnerships, green bonds, and carbon financing), and increasing community involvement are crucial steps forward. ■

Pakistan's Energy Future Brightens: Breakthrough Discoveries and Strategic Partnerships Pave the Way

EU Report

Pakistan's Minerals Investment Forum 2025 marked a significant milestone in the country's pursuit of energy independence. The two-day event brought together industry leaders, government officials, and investors to discuss the nation's ambitious plans for harnessing its vast petroleum and mineral resources.

Key Takeaways from the Forum

Discovery of Copper-Gold Mineralisation: National Resources Limited (NRL) announced the discovery of significant copper-gold mineralisation in Chagai, Balochistan. The company has identified 18 new prospects, with one of them, 'Tang Kaur', progressing to an advanced drilling stage.

Gas/Condensate Discovery: Mari Energies Limited announced its fourth gas/condensate discovery at Spinwam-1 exploratory well in the Lockhart Formation, Waziristan Block, Khyber Pakhtunkhwa. The well tested at a flow rate of 70.3 million standard cubic feet per day of gas and approximately 310 barrels per day of condensate.

Pakistan-Turkiye Partnership: Pakistan and Türkiye signed a joint bidding agreement to participate in offshore bid rounds in Pakistan. The agreement was signed between Mari Energies, OGDCL, Pakistan Petroleum Limited, and Türkiye Petrolleri Anonim Ortaklığı (TPAO).

Investment Opportunities

Reko Diq Project: Canadian mining giant Barrick Gold plans to raise \$3 billion in international financing for the Reko Diq Copper & Gold Project in Balochistan. A financing pact with the World Bank and International Finance Corporation (IFC) is expected to be signed by mid-year.

Offshore Block Bid Round: The government of Pakistan announced an



offshore block bid round, offering 40 offshore blocks in Makran and Indus basins for exploration licences.

Government Initiatives

Special Investment Facilitation Council (SIFC): The SIFC aims to facilitate investment in key sectors, including minerals and energy. The council has three tiers: Apex Committee, Executive Committee, and Implementation Committee, which will hold meetings quarterly, monthly, and fortnightly, respectively.

Ministry of Energy (Petroleum Division): The ministry is working to promote investment opportunities in Pakistan's energy sector, including the Pakistan Minerals Summit, which

focuses on "DUST TO DEVELOPMENT: INVESTMENT OPPORTUNITIES IN PAKISTAN".

Challenges and Opportunities

Energy Independence: Pakistan's pursuit of energy independence requires significant investment in exploration and production activities. The country has vast potential for mineral and hydrocarbon reserves, which can be harnessed to reduce dependence on imports.

Sustainable Growth: The minerals and energy sectors can drive sustainable growth and innovation in Pakistan. However, this requires careful planning, investment, and collaboration among stakeholders. ■



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Solar flipflops and the energy crisis

ECC claims this rapid expansion is unfairly burdening grid consumers: solar capacity exploded from 321MW in 2021 to over 4,124MW by Dec 2024; number of net-metering consumers rose from 226,440 in October 2024 to 283,000 by year's end

Yousuf Nazar

The writer is the former head of Citigroup's emerging markets investments and author of 'The Gathering Storm'

Pakistan's energy landscape is in upheaval. The government's recent slash of the net-metering buyback rate -- from Rs27 to Rs10 per unit -- has sparked fierce debate. Awais Leghari, the energy minister, insists it's a necessary measure to shield grid users from soaring costs, while critics argue it undermines the nation's clean energy revolution at a time when power shortages are crippling the country.

Solar capacity exploded from 321MW in 2021 to over 4,124MW by December 2024, and the number of net-metering consumers leapt from 226,440 in October 2024 to 283,000 by year's end. The Economic Coordination Committee (ECC), chaired by Finance Minister Muhammad Aurangzeb, claims this rapid expansion is unfairly burdening grid consumers. According to government figures, net-metering users shifted costs of Rs159 billion by December 2024 -- a figure projected to balloon to Rs4.240 trillion by 2034 if no action is taken.

Yet this crisis is not solely about solar policy. A long-standing grievance is the legacy of high tariffs negotiated with Independent Power Producers (IPPs) during 2013-2018. These contracts, struck under less competitive conditions, have locked in some of the highest electricity tariffs in Asia. Critics argue that these exorbitant rates not only burden the national economy but also exacerbate the cross-subsidisation that the

revised net-metering framework now seeks to address. In effect, Pakistani consumers continue to foot the bill for a system built on overpriced generation.

Originally introduced under the 2006 Renewable Energy Policy to combat load-shedding and promote cleaner energy, net metering enabled consumers to generate power for self-use while earning credits for surplus energy fed back into the grid. This system was once hailed as a win-win solution, reducing reliance on expensive fossil fuels and empowering households to contribute to a sustainable future. However, as solar panel prices have plummeted and installations have surged, the unintended consequences of the policy are now impossible to ignore.

Energy Minister Awaiz Leghari and the ECC argue that the explosive growth in solar adopters is unfairly shifting costs onto grid users. With net-metering consumers proliferating rapidly, the fixed costs of power distribution and transmission are increasingly borne by those who remain on the grid. This, they claim, is why urgent measures -- like the reduction in the buyback rate -- are needed to recalibrate the cost distribution.

Senator Sherry Rehman, who chairs the Standing Committee on Climate Change, is blunt in her criticism: "Solar customers are now going to pay the costs for a dirty power system". She contends that penalising solar adopters not only shortchanges the environmental benefits of renewable energy but also perpetuates dependence on ageing, polluting thermal power plants -- plants whose inefficiencies are compounded by those high IPP

tariffs. Her stance resonates with many who view the revised policy as a punitive measure against an inherently green technology that should be encouraged rather than penalised.

Some experts warn that the lower buyback rate may have unintended long-term effects. With battery storage becoming ever more affordable, reduced returns from net metering could prompt households to abandon grid connectivity altogether. An energy analyst observes, "People will still invest in solar, but in a different way". Some experts caution that instead of integrating solar power more efficiently into the national grid, the policy might hasten its abandonment by those who can afford to go off-grid.

On the face of it, recalibrating the buyback rate seems like a logical step towards a fairer energy pricing structure. However, critics contend that focusing solely on this tariff adjustment risks stifling Pakistan's renewable energy ambitions. By reducing the incentive for new solar investments, the move could extend payback periods and ultimately stall the country's solar revolution -- a dangerous prospect when clean energy is desperately needed.

The revised policy also sidesteps a glaring systemic issue: Pakistan's power sector is riddled with inefficiencies. High transmission and distribution (T&D) losses, which inflate costs and contribute significantly to the nation's enormous circular debt, remain unaddressed. Former finance minister Miftah Ismail has been scathing, asking: "Why is the government selling electricity for Rs48.8 per unit while buying from new consumers for only Rs10? If excess capacity abounds, why isn't power priced closer to its marginal cost?" His comments show that the policy is merely treating the symptoms of a deeply flawed system rather than tackling its root causes.

Another critical factor is the concentration of net-metering consumers. Approximately 80 per cent are clustered in nine major, predominantly affluent cities. This geographical imbalance means that fixed costs for power distribution and transmission are disproportionately borne by those who still rely on the grid, thereby exacerbating urban-rural inequities.

Some industry experts warn that dampening the economics of net metering might slow the diffusion of renewable energy technologies. A decline in solar investments could trigger a ripple effect, stifling growth in related sectors such as battery storage and energy management systems. In a market fuelled by rapid technological

advances and falling equipment costs, any factor that curbs investor enthusiasm risks derailing progress at a time when clean energy is paramount.

Yet there is a counterargument. Proponents assert that by discouraging the installation of oversized solar systems -- designed primarily to export surplus power -- the new framework will compel consumers to optimise for self-consumption. This could lead to more efficient resource utilisation and a steadier, more reliable grid, provided that incentives are carefully recalibrated.

However, Pakistan's energy crisis cannot be solved by tinkering with net-metering tariffs alone. A comprehensive overhaul of the power sector is urgently needed. Reducing T&D losses, modernising the ageing grid infrastructure, rationalising tariffs, and even retiring underutilised thermal plants -- especially those burdened by legacy high-tariff IPP contracts -- are essential steps. Recent moves by the National Electric Power Regulatory Authority (Nepra) to consider legal action against power distribution companies, blamed for contributing to a circular debt of Rs276 billion, highlight the magnitude of the systemic inefficiencies that must be addressed.

Diversifying the renewable energy mix is critical. While rooftop solar has taken centre stage, the potential of wind, hydro and biomass should not be overlooked. A balanced portfolio of renewable sources would not only reduce grid strain but also enhance energy security and foster economic resilience.

Pakistan's revised solar policy is emblematic of a broader struggle: balancing sustainable development, energy equity and economic efficiency. On one side lies the imperative to modernise the power sector and eliminate cross-subsidisation; on the other, the risk of stifling renewable energy investment and further entrenching high electricity prices -- prices that are, in part, a legacy of the steep IPP tariffs negotiated between 2013 and 2018, which have made Pakistani power among the highest in Asia.

The true measure of success will not lie in mere tariff adjustments but in the government's ability to transform Pakistan's energy infrastructure into a modern, efficient, and fair system. Without bold, holistic reforms, the nation risks remaining mired in inefficiency and inequality -- a stark warning for other countries navigating the renewable energy transition in today's challenging global landscape. ■



Alleged lack of merit in solar systems delivery

Mustafa Tahir

Deputy Editor Energy Update

Sindh govt
needs to
conduct
a probe
into the
allegations:
Report

The allegations have been making rounds regarding a lack of transparency and merit in the distribution of solar home systems under the World Bank-assisted drive of the Sindh government to promote clean energy in the province and provide cheap electricity solutions to the underprivileged families who are mostly off-grid.

The Sindh government, on its part, maintains that it has been relying on the Benazir Income Support Programme (BISP) to ensure meritorious selection of the beneficiaries of the solar home systems distribution campaign to benefit the bona

fide rural households in both rural and urban areas.

The controversy erupted in this regard over the distribution of solar-powered electricity systems in Sindh and contains allegations of political influence and favoritism in the selection of beneficiaries. The Sindh government had launched an initiative to provide solar-powered electricity systems to mostly rural households, aiming to promote renewable energy and reduce reliance on traditional power sources.

However, sources within the provincial government have revealed that the distribution of these systems has been influenced by local politicians, who have allegedly prioritized their supporters, voters, and constituents over other deserving households.

The allegations suggest that the selection process was not transparent and that many deserving households were overlooked in favour of those with political connections.

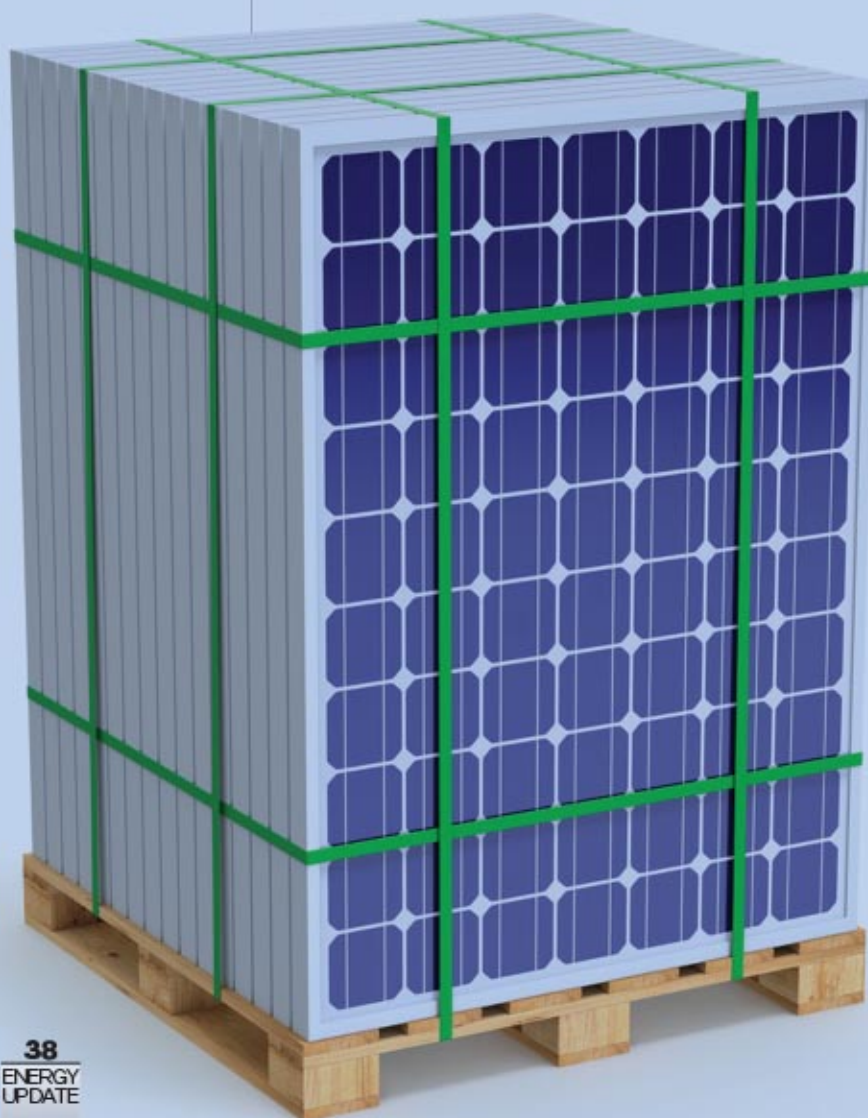
The controversy has sparked concerns about the misuse of public funds and resources and has raised questions about the accountability and transparency of the provincial government's initiatives. The Sindh government has been urged to investigate the allegations and ensure that the distribution of solar-powered electricity systems is fair, transparent, and based on merit.

Meanwhile, in a statement recently issued to media, the Sindh government stated that the procurement process of 200,000 home solar system kits, including battery, charge controller, DC fan and three LED lights, has been completed expeditiously, and the delivery of 100,000 home solar systems has been received during the current financial year.

The distribution to poor households under the BISP criteria has been started throughout the province under the WB-funded Sindh Solar Energy Project.

An additional procurement of 250,000 home solar systems has been started under the provincial development budget to benefit more than an additional 1.2 million people in electricity-deprived areas.

Development of projects under private sector investments includes a 50MW waste-to-energy project in Karachi, a 500MW green hydrogen project in Jhimpir, a 500MW floating solar project at the Keenjhar Lake, and a 4MW floating solar



project at the Hyderabad Water Filtration Plant.

MoUs for a 350MW Solar Wind Hybrid with Battery Storage for Korangi Industrial Area Karachi and a 75MW Solar Wind Project for Kotri Industrial Area Hyderabad were signed with international firms under B2B arrangements during the visit of Pakistan's president to China this February.

The Sindh government maintains that faulty planning at the Centre has slowed down renewable energy expansion across provinces, including Sindh. Despite these barriers, the Sindh government's energy department has initiated an alternative provision of free solar energy to consumers having electricity consumption of up to 300 units.

Despite systemic barriers, Sindh leads Pakistan in energy production and resource utilization. The province is home to Thar coal reserves, which contain 175 billion tonnes of lignite coal, the largest untapped coal reserves in the world. These reserves are producing 2,640MW of electricity, with plans for further expansion.

Sindh is providing the cheapest electricity of 100 MW from Nooriabad to the K-Electric grid system. The province has achieved Pakistan's lowest tariff of 3.4 cents through international competitive bidding for its Karachi sites developed in the Malir and West districts with the support of the World Bank.

Sindh contributes 50 per cent of Pakistan's total gas production and a significant share of oil production, making it a crucial player in the national energy mix, and the highest wind energy capacity in Pakistan, accounting for over 75 per cent of the country's total wind energy generation.

Sindh is also the first province in the country to successfully initiate hybrid (wind plus solar) energy projects with battery storage technology and the lowest-ever costs.

Forty-five public sector buildings, mostly district-level hospitals, are now running on 28MW of solar energy, while 656 schools and 211 rural health centers are currently being solarised.

An additional 310 public buildings, including all 24 district-level libraries and all 67 centres for special children under the Department of differently abled persons, are being solarised in the current financial year. ■

Tossing Peanuts to Public

Real math behind electricity price reduction

EU Report

The Government of Pakistan recently announced a significant reduction in electricity tariffs — around Rs7.59 per unit. While this move brings some relief to consumers, it has also raised important questions about how such a reduction was achieved, especially considering the persistent burden of capacity payments in the power sector.

The Official Narrative: IPP Renegotiation Savings

The government has highlighted that renegotiated contracts with Independent Power Producers (IPPs) yielded an estimated saving of Rs1.5 per unit (let say), which has contributed to the reduction. However, this gives the impression that the bulk of the relief stems from these IPPs — but the numbers tell a different story.

Breaking Down the Capacity Payment Structure

According to recent NEPRA data and the power sector inquiry report:

Government-owned power plants contribute to 49% of total capacity payments. CPEC power plants (mostly imported coal) contribute around 36%. Only 15–16% comes from the older IPPs (established under 1994–2006 policies). So, if Rs1.5/unit saving comes from only 16% of the capacity pool, how did the total tariff reduction jump to Rs7.59/unit?

Government Plants and "Reprofiling"

IPPs (16%) saved Rs1.5 per unit. If the same logic is applied proportionally to the 49% share of government-owned capacity, that implies: $\text{Rs}1.5 \times 3 = \text{Rs}4.5$ per unit saving from that segment (through reprofiling, deferment, or subsidy adjustment). Add to this some fuel tariff reductions (due to international fuel price drops, increased solar input, or improved merit order dispatch): Likely Rs1.5–2.0/unit from reduced energy costs.

Total Estimated Reduction:

- IPP adjustment: Rs1.5
- Government capacity reprofiling: Rs4.5
- Fuel cost savings: Rs1.5–2
- Rs7.5–8 per unit, aligning with the Rs7.59 per unit government announcement.

A Word of Caution

While this tariff cut is welcome, it's important to recognize that:

- CPEC plants (36%) remain untouched, and their dollar-indexed contracts continue to strain the system.
- The underutilization of installed capacity (installed: ~41,000MW vs. baseload: ~12,000MW) means capacity charges remain high, regardless of actual power consumption.
- Regulatory oversight remains weak — issues like inflated invoicing and unverified supply claims continue to go unchecked.

Way Forward

If Pakistan wants sustainable power sector reform, it must go beyond quick wins and:

- Retire inefficient government plants,
- Enforce strict monitoring of IPP performance,
- Push forward with Competitive Trading Bilateral Contracts Market (CTBCM),
- Move towards market-based tariffs and demand-responsive capacity planning.

Conclusion

The Rs7.59 per unit tariff reduction is partly real and partly accounting-based. While renegotiated IPP contracts helped, the major impact likely came from internal cost adjustments on the government side, particularly reprofiling of its own 49% capacity obligations.

It means the government has been minting money for years from capacity charges on its old, inefficient power plants — and now it's tossing peanuts to the public in the name of relief. True reform demands transparency, accountability, and structural changes — not just cosmetic adjustments. ■

Growatt's SPM Hybrid Inverter helps Pakistani homes

Company's hybrid inverter integrating photovoltaic conversion, battery storage, smart energy control to empower households with 24/7 energy autonomy

EU Report

Across Pakistan's urban centers from Karachi to Lahore, eight-hour daily blackouts cripple households and businesses alike. With 68% of families relying on diesel generators that consume 35% of their income (NEPRA Report) and voltage fluctuations damaging 1 in 3 appliances in rural Sindh, the energy crisis demands urgent solutions. Growatt, a global leader in solar energy, confronts this critical need with its SPM 3000-10000TL-HU hybrid inverter, integrating photovoltaic conversion, battery storage, and smart energy control to empower households with 24/7 energy autonomy.

Technical Specifications & Scalability

The SPM 3000-10000TL-HU series offers models ranging from 3kW to 10kW, making it suitable for homes from compact apartments to large villas with varying energy demands. The entire series features a 1.5 DC/AC ratio, ensuring optimal system efficiency and LCOE. Equipped with multiple MPPT channels (up to 3), it could harvest power from rooftop of different orientations as well as significantly reduces energy loss in shaded conditions.

The 3-6kW models support 22A input current per string, while 8-10kW models handle 16A per string, perfectly compatible with various high-power modules. The 200A max charging/discharging current ensures efficient energy storage and quick backup power activation.

Robust Design for Extreme Conditions

"Featuring IP65-rated enclosures, the inverter operates reliably across -25°C to 60°C environments. The dust-proof and waterproof construction allows flexible installation in garages, rooftops, or outdoor walls without performance degra-

dation," Growatt emphasized. Compatibility with Growatt AXE, Hope, and ALP LiFePO4 battery systems enables modular expansion up to 400kWh capacity, while a 93% depth of discharge extends cycle life.

Smart Energy Management

Featuring an uninterruptible power supply with seamless backup (<10ms switchover), its smart load prioritization automatically shifts power between critical and non-essential loads through dual output ports. Users can choose between four operation modes: On-Grid Mode for selling excess solar power to the grid; Self-Consumption Mode for maximizing solar usage; Zero-Export Mode for off-grid compliance; and Time-of-Use Mode for optimizing energy use based on electricity pricing. The CT direction can be corrected remotely, eliminating costly on-site service calls. A standout feature is the remote CT direction correction capability, eliminating costly on-site service requirements.



User-Centric Innovation

The inverter supports parallel expansion (6-unit stacking for 60kW output) and three-phase configurations with full unbalanced load tolerance. Through the ShinePhone App, users monitor real-time energy flows, including solar generation, household consumption, and battery SOC.

Global Deployment Validation

The Growatt SPM series has been widely applied in residential projects in Myanmar, South Africa, the Philippines, Vietnam, and other markets, demonstrating its reliability in diverse climates. As Mian Fahad, Senior Country Manager for Pakistan, frequently observes, its compatibility with leading battery brands ensures seamless integration into existing solar setups. With its high efficiency, robust safety features, and intelligent energy management, Fahad confirms: "The SPM 3000-10000TL-HU will stand out as a top choice for Pakistani homeowners."

He stated: "This solution directly addresses our market need for energy resilience. It delivers three critical benefits: energy independence, cost savings, and - most importantly for load-shedding affected families - true peace of mind." ■



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POWERING A SUSTAINABLE TOMORROW
WITH SOLAR BREAKTHROUGHS

AUGUST 28, 2025

NISHAT HOTEL, LAHORE

Pakistan simultaneously experiences too much water, too little water

Muhammad Zeshan

The writer is head of the Trade, Industry & Productivity (TIP) research group at the Pakistan Institute of Development Economics (PIDE), Islamabad

Pakistan faces a simple but urgent truth: our water crisis won't wait. As someone who has watched floodwaters devastate communities one year and drought parch farmlands the next, I have come to realise that our approach to water must fundamentally change. Integrated Water Resource Management (IWRM) isn't just a fancy policy term – it is our lifeline to survival in a climate-changed world. Pakistan is simultaneously experiencing too much water and too little water. During monsoon seasons, especially in recent years, catastrophic floods have displaced millions and caused billions in damages. The 2022 floods affected over 33 million people – a staggering one-third of our country underwater. Yet, paradoxically, Pakistan ranks among the most water-stressed countries globally, with per capita water availability plummeting from 5,600 cubic meters at independence to less than 1,000 cubic meters today.

Our current approach is reactive rather than proactive. We build embankments after floods and drill deeper wells during droughts. This cycle is unus-

tainable and increasingly dangerous as climate change intensifies both extremes.

Consider our water infrastructure: much of it dates back to colonial times. The massive canal system, once an engineering marvel, now loses up to 40 per cent of water through seepage. Our storage capacity can only hold about 30 days of water – compare that to 1,000 days in Egypt or 220 days in India.

Meanwhile, groundwater is being depleted at alarming rates. In Punjab, the breadbasket of Pakistan, the water table drops approximately one meter annually. Farmers respond by drilling deeper, using more electricity, increasing their costs, and accelerating the problem.

This is where Integrated Water Resource Management enters the picture. But what exactly does it mean for ordinary Pakistanis?

First, IWRM requires recognising water as a finite resource that must be managed across sectors. Agriculture uses over 90 per cent of our freshwater, often inefficiently through flood irrigation. Industry pollutes waterways with minimal treatment. And growing cities increase demand while struggling with inadequate infrastructure.

Second, IWRM demands coordination between provinces, which historically has been challenging. The Indus Waters Treaty with India addresses international water sharing, but interprovincial water disputes remain contentious despite the 1991 Water Apportionment Accord.

So how do we implement IWRM

practically? Let's start at the farm level. Traditional flood irrigation wastes enormous amounts of water. Transitioning to drip and sprinkler systems could reduce water usage by 50-70 per cent while maintaining or even improving yields. But this requires investment and training programmes targeted at small farmers who may be reluctant to change generations-old practices.

At the community level, we need thousands of small and medium reservoirs rather than just a few massive dams. Local rainwater harvesting systems can capture monsoon rains for use during dry periods. Traditional wisdom like karezes (underground aqueducts) in Balochistan should be revitalised alongside modern techniques. For cities, the answer begins with fixing leaking supply systems. Karachi loses up to 35 per cent of its water to leakage and theft. Wastewater treatment and reuse must become standard practice, not the exception. Building codes should mandate rainwater collection systems for new developments.

Implementing these changes demands political courage. Water pricing remains a controversial topic – we treat water as if it were infinite when it's anything but. A graduated pricing system that ensures basic needs while discouraging waste would drive conservation, but politicians fear backlash from consumers accustomed to heavily subsidised water.

Similarly, enforcing regulations against industrial pollution means confronting powerful interests. Negotiating water-sharing arrangements



between provinces requires putting national interests above regional politics.

Despite these challenges, successful models exist. The Participatory Irrigation Management programme in some parts of Punjab has empowered farmer organisations to maintain canals and distribute water more efficiently. The Salinity Control and Reclamation Projects have rehabilitated waterlogged and saline lands. These successes can be scaled up with proper investment and political will. International cooperation will be essential as well. Pakistan shares watersheds with Afghanistan, China, and India. Climate change doesn't respect borders, and neither can our water management strategies.

Beyond survival, there's a compelling economic case for IWRM. Water scarcity already costs Pakistan an estimated 3-4 per cent of GDP annually. With proper management, that loss could become a gain through increased agricultural productivity, reduced disaster damages and new opportunities in water-efficient industries. As citizens, we must demand action. Water management can't remain buried in technical reports and policy documents. It must become a national priority discussed in every home, school and workplace.

The solution to Pakistan's water crisis isn't simply more dams or deeper wells but a fundamental rethinking of how we value, manage and conserve our most precious resource. Integrated Water Resource Management offers a framework, but its success depends on implementation at every level of society. Our future depends on it. In the end, water isn't just about survival — it's about what kind of Pakistan we want to build for generations to come. ■

POWER RATES

Solar setback to put dent on govt reputation

Proposal to slash buyback rate for surplus solar electricity from Rs27 to Rs10 per unit ignites debate

Zorays Khalid

The writer is an electronics engineer from GIKI and leads one of Pakistan's first 15 certified net metering firms

The Pakistani government's proposal to slash the buyback rate for surplus solar electricity from Rs27 to Rs10 per unit has ignited debate. I have seen this policy evolve since its inception in 2018. Once a visionary step, it now faces a regressive shift that prioritises thermal power interests over consumer benefits.

Net metering has empowered 286,000 consumers, driving solar capacity to 4,124MW by 2024. A typical middle-class household with a 10kW system generated 1,000 units monthly, consuming 650 directly and exporting 350 to offset nighttime usage. This reduced electricity costs significantly. However, the new policy, announced this month, introduces gross metering, forcing users to sell energy at a meager rate while buying at inflated tariffs, disrupting affordability and adoption. Energy Minister Awaiz Leghari justifies the change, citing a Rs150 billion burden on 40 million non-solar consumers, alleging they pay Rs1.5 per unit extra. Former finance minister Miftah Ismail disputes this, stating solar purchases amounted to Rs34.3 billion in bill reductions, far from the alleged Rs150 billion. He highlights that DISCOs suffer far greater losses -- 24,020GWh in transmission and distribution -- compared to solar's 1,269GWh contribution.

Pakistan's energy crisis stems from its 62.24 per cent dependence on thermal power, which accounts for 49.01 per cent of electricity generation. Renewables contribute only 4.75 per cent, a stark contrast to global trends where oil giants like BP, Shell and Aramco invest in solar and hydrogen. While these corporations pivot toward sustainability, Pakistan's policy undermines solar growth, making consumers reliant on

costly fossil fuel imports.

The shift dismantles net metering's financial viability. Under the previous model, a consumer using 1,000 units but generating 500 through solar effectively paid for 500 grid units. Gross metering forces them to sell all 500 units at Rs10 each, earning Rs5,000, while still buying 1,000 at Rs50 each -- resulting in a Rs45,000 bill instead of Rs25,000. This discourages solar adoption and benefits DISCOs, thermal plants, and fossil fuel importers at consumers' expense.

Earlier gross metering attempts failed due to technological constraints; imported inverters default to net metering. Moreover, solar inverters improve grid stability by delivering synchronised pure sine waves, reducing transformer stress. Instead of addressing corruption -- where net metering applications require bribes of Rs25,000-Rs45,000 -- the government penalises legitimate users.

Pakistan's flawed energy policies have long favoured large captive power plants under USD-pegged contracts at 5-10 cents per kWh when global rates were under one cent. The same misstep now threatens solar consumers, shifting the burden onto middle-class households seeking relief from Rs48.8 per unit grid tariffs.

A pragmatic solution involves peak shaving, allowing solar users to offset peak demand, a fixed fee model instead of rate cuts, digitalised governance to curb corruption, and consistent policy aligned with international commitments to renewables. With solar adoption growing by 1,200MW annually, reinstating net metering could save Pakistan Rs250 billion in fuel costs by 2025. Pakistan must balance fiscal prudence with its Vision 2025 renewable targets. Slashing net metering rates while protecting fossil fuel interests is a strategic blunder. The government must reverse this decision to ensure energy security, economic stability and a fair renewable transition. ■





Eid Millan Reception at
Central Prison Karachi

Sindh to build special hostels to empower former female prisoners

Ruqiya Naeem

The Sindh government intends to build special hostels to provide secure accommodation facilities to former female prison inmates to help their drive to gain economic independence in their lives after release from jail.

Sindh Minister for Women Development, Shaheena Sher Ali, disclosed this while speaking at an Eid Millan reception organised at the Central Prison Karachi for its female prisoners and their accompanying minor children. The National Forum for Environment & Health (NFEH) hosted the reception. Speaking to the reception participants, the Women Development Minister noted that female prison inmates, after their release from imprisonment, had to face social ostracisation, and even their family members weren't able to accept them back into their fold.

She said that a proper shelter should be available to a former female prisoner to empower her to live her free life with respect after she faced rejection from her family, increasing her socio-economic vulnerability. If this shelter was missing, then there is a greater chance that these women would again commit a crime and



**Next provincial budget
will contain financial
allocations for
building such hostels:
Minister Shaheena**



land back in jail, said the Women Development Minister. She said the central prisons in Sindh were full of such female inmates who faced multiple imprisonments after the recurrence of crime.

She said the Sindh government would build special hostels to help former female prison inmates gain economic self-reliance to live their lives freely and honorably with no chance that they would again commit a crime due to their vulnerability. She informed the audience that the next provincial budget would contain the financial allocations for building such hostels.

The Women Development Minister said the Sindh government would fully assist the drive of the female prison inmates to acquire formal education and professional skills to become properly learned and skilled members of society after their release. She said the provincial government would also provide proper schooling facilities to children who stayed with their imprisoned mothers at the jail.

DIG Women Prison, Sheeba Shah, told the audience at the reception that certificate courses based on 10 different vocational skills were offered to female jail inmates to help them join lucrative professional fields after their release from prison. She said the certificates issued by the National Vocational & Technical Training Commission and Sindh Technical Education and Vocational Training Authority shouldn't contain any indication that they were given to prison inmates to help them respectfully secure jobs or establish their businesses after they are released from jail.

NFEH President Naeem Qureshi appreciated that the Prison Department, in partnership with the Sindh government and committed NGOs, had been striving hard to transform central prisons in the province into correctional facilities with skill and education facilities for the prisoners.

NFEH Secretary General Ruqiya Naeem said that her NGO would soon conduct a breast cancer awareness session for female prison inmates and other events aimed at safeguarding their health and that of their children.

NFEH Vice-President Engineer Nadeem Ashraf expressed gratitude to the administration of the women's prison block for letting its inmates participate in Eid festivities. The Eid reception's various components, including Qirat, Naat, the national anthem, poetry recitation, and songs, featured talented female prisoners and their children. ■



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Environmental issues could reduce Pakistan's GDP by **18-20pc by 2050**

Yousaf Hussain

The writer is President OICCI and President & CEO Faysal Bank

Climate change is a pressing reality for Pakistan, directly impacting millions of lives. Ranked as the fifth most vulnerable country to climate change despite contributing just 0.88 per cent of global greenhouse gas emissions, Pakistan faces a dire crisis with severe implications.

The far-reaching effects of climate change in Pakistan underscore the urgency of the issue. Rising temperatures, erratic rainfall, frequent floods, droughts, and glacial melting have become the norm. Between 1960 and today, the average temperature in Pakistan has risen by 0.5°C, with projections suggesting an additional 1.3°C to 1.5°C rise by 2050.

This increase has translated into economic losses of over \$40 billion from floods alone, such as those experienced in 2022, which claimed over 1,700 lives and injured 12,000 others. By 2044, an estimated five million Pakistanis will be exposed to extreme river floods annually. Coastal areas, too, face heightened vulnerability, with one million people expected to be affected by rising sea levels and coastal flooding by the century's end.

Extreme weather events result in

catastrophic challenges, especially for rural communities, as they disrupt livelihoods, disturb academic activities, displace families, and increase the prevalence of waterborne and vector-borne diseases such as diarrhoea and malaria. Malnutrition worsens as food insecurity becomes more prevalent due to erratic crop yields caused by unpredictable rainfall patterns.

The World Bank projects that the combined effects of climate change, environmental degradation, and air pollution could reduce Pakistan's GDP by 18-20pc by 2050, stalling progress on poverty reduction and sustainable development.

The World Bank projects that the combined effects of climate change, environmental degradation, and air pollution could reduce Pakistan's GDP by 18-20pc by 2050, stalling progress on poverty reduction and sustainable development. This underscores the necessity of immediate, coordinated action. Fortunately, relevant stakeholders are beginning to act.

At COP29, Pakistan took significant steps to reinforce its commitment to global climate action. The launch of a climate finance framework was a notable achievement, aimed at attracting investments to support sustainable initiatives. This aligns with Pakistan's ambitious Nationally Determined Contributions (NDCs), which target a 30pc reduction in carbon emissions and a renewable energy mix of over 60pc by 2030.

While these goals demonstrate the country's dedication to environmental sustainability, challenges such as regulatory bottlenecks, financial constraints, and the need for a cohesive policy approach remain key hurdles in realising these commitments.

In this context, the Overseas Investors Chamber of Commerce and



Industry (OICCI) has been playing a key role in furthering Pakistan's climate agenda. Through initiatives such as the Pakistan Climate Conference, OICCI has created a collaborative platform where stakeholders from the public and private sectors, NGOs, academics, and international organisations can engage in meaningful dialogue. These conferences serve as a catalyst for action, fostering discussions on renewable energy, climate-resilient infrastructure, disaster preparedness, and sustainable business practices.

Building on the success of past dialogues and commitments, the committed of relevant stakeholders to driving these discussions forward remains evident. Previous climate conferences have shed light on key areas such as green finance, carbon reduction strategies, and policy recommendations for fostering a sustainable economy. Future conferences will continue to serve as catalysts in shaping the nation's climate resilience roadmap by facilitating knowledge exchange, strengthening policy advocacy, and promoting actionable solutions for climate adaptation and mitigation.

Addressing Pakistan's climate challenges requires a multifaceted approach. Strengthening infrastructure to withstand extreme weather events, developing climate-resilient housing, and enhancing irrigation systems are critical to protecting vulnerable communities. The adoption of green technologies, such as solar and wind energy, can further reduce the country's dependence on fossil fuels and mitigate climate risks. Additionally, increasing public awareness and advocacy efforts can help mobilise grassroots movements and drive stronger policy frameworks.

Pakistan stands at a pivotal moment in its climate journey. The commitment demonstrated at local and international platforms, coupled with the continued efforts of organisations and individuals, highlights the urgency of collective action.

Through sustained dialogue, strategic policymaking, and investment in sustainable solutions, Pakistan can navigate the path toward a greener, more resilient future. It is imperative for all stakeholders — government, businesses, and civil society — to work together to turn climate commitments into tangible progress. Now is the time to act before it is too late. ■

LONG-DREADED AMENDMENTS

Govt to make it harder to get solar panel systems, net-metering

Grid users are escaping soaring IPP surcharges; solar users will likely be slapped with a higher fixed-charge component

Ahsan Gardezi

In a move set to rattle the country's growing solar energy consumers, the Power Division will push forward with long-dreaded amendments to net-metering rules in the upcoming Budget 2025-26, sources confirmed to ProPakistani.

Top officials said that after failing a few weeks ago with bringing the solar buyback rate to Rs10 from Rs27 per unit, the federal government has realized that it cannot control the increasing number of solar net-metering consumers without making some big changes in power tariff laws. Equipment fees will rise, a new tax structure will be implemented on service and installation charges, while imports will be levied with a standard fee through the Revenue Division, sources added.

Grid users are slowly but silently shifting to alternative energy to escape soaring Independent Power Producer (IPP) surcharges. These charges are set to climb even higher, despite the International Monetary Fund's willingness to slash power tariffs across the board.

Under the revised framework, the Power Division will hammer down the buyback rate from the National Average Power Purchase Price (NAPP) to Rs10 per unit — a figure that was earlier planned for implementation but rejected by the federal cabinet after severe backlash from the public. Sources said sales tax will increase and the buyback rate will likely fall below Rs10 per unit for new users. Instead of periodic adjustments, the National Electric Power Regulatory Authority (NEPRA) will be allowed to enforce a one-time cut through the Finance Bill 2025, slashing rates effective July 1, 2025.

Sources maintained that existing net-metering consumers with valid licenses, agreements, or regulatory concurrences will remain shielded from the changes until their contracts expire, sources confirmed.

However, newcomers to the system will be offered drastically reduced buyback incentives. Rooftop solar adoption will get more complicated next fiscal year, sources added.

A drastic overhaul of the net-metering settlement mechanism is the only way it seems. The government will separate imported and exported units for billing as planned in February 2025, meaning exported solar power will be purchased at the slashed Rs. 10 per unit rate, while imported grid electricity will be billed at standard peak and off-peak tariffs stacked with taxes and surcharges.

Sources disclosed that the government is increasingly alarmed by the record drop in solar panel prices, which has triggered an explosion in net-metering adoption. As of December 2024, solar net-metering consumers had shifted a staggering Rs159 billion burden onto grid consumers — a figure projected to balloon to a jaw-dropping Rs4,240 billion by 2034 if left unchecked.

Installed capacity has surged from just 321MW in 2021 to a massive 4,124 MW by the end of 2024, fueling government fears over worsening grid instability. Officials say that with no way to store surplus solar energy, grid consumers are left bearing the brunt of rising electricity costs.

As part of the budget exercise, solar users will likely be slapped with a higher fixed charge component in the new budget on their quarterly net-metered bills. This will include capacity charges and additional costs linked to power distribution and transmission networks. Power Division sources said that these measures are crucial to offsetting the pressure on conventional grid consumers, who bear the brunt of our tariff adjustments.

The proposed changes will require Cabinet approval before NEPRA integrates them into its regulatory framework. However, the writing is already on the wall — Pakistan's solar boom is facing its biggest challenge yet. While sources can only reveal so much, the upcoming budget exercise will be a tough one for renewable energy. ■



Fleeing lambs in Pakistan

Khurram Husain

The writer is a business and economy journalist

The federal cabinet recently took two correct decisions in its meeting. One was to send the changes to the net metering policy back to the energy ministry for reconsideration. And the other was to reinstate a tax rebate allowed to researchers and teachers in higher education institutions which everyone was told suddenly in December 2024 had been withdrawn in the budget announced in June 2022.

In both instances, we had a story that was rather typical of how things are done in Pakistan, and how it presents us with a problem to be solved. In the case of the solar policy, the energy ministry literally took the explosive success of their last net metering policy and presented it as a failure, arguing that all the beneficiaries of that policy were “elites” who had become a burden on the power system, and carrying this burden was the main reason that electricity bills had become so expensive.

This was a rather odd way to perceive success. One would think if they were able to add something like 7,100 megawatts of power generation capacity without paying anything from the state’s own money it would be a good thing. They said that 283,000 households had availed of the net metering policy, and this number was very small by comparison to the 40 million households on the grid.

The enduring problem here is that this figure — 283,000 — actually needs to rise to 40m, and the question they should have jumped to ask themselves was ‘what’s the best way to get there?’ Instead, they asked ‘how do we stop this?’

All’s well that ends well. But it’s a good idea nonetheless to find lessons to draw from such episodes.

It was something similar with the withdrawal of the tax rebate. I use this as an example because it impacted non-elite incomes, which have been under the anvil in any case as the government struggles to stabilise its fiscal equation, and also because it is illustrative of the way in which our tax bureaucracy has grown accustomed to operating over the decades. All those who run a business of their own have horror stories to share of their experiences with the tax authorities.

In the case of the rebate in question, universities around Punjab received a notice from their higher education department of the provincial government informing that ‘Clause 2, Part III, Second Schedule of the Income Tax Ordinance 2001 has been omitted’ in the Finance Act 2022. The clause covers the rebate enjoyed by teachers and researchers, and other notices served to the universities said that they will have to recover arrears from the previous two years as well.

Now you might surmise that teachers and researchers in Pakistan’s higher education system are not exactly ‘elites’, and undoubtedly many were quite worried that a very steep tax bill is about to be dropped on them for something that

nobody even knew about for two years. If the said rebate was withdrawn in 2022, how come everyone was asleep since then and only woke up in December 2024 to start demanding recovery of this tax, along with arrears?

Luckily better sense prevailed. News reports appeared shortly afterwards, citing the finance minister saying the government was asking the IMF for permission to allow this rebate to continue, and by now it appears this permission has been granted and the cabinet has agreed to reintroduce the rebate via some kind of legislative action, either an ordinance or perhaps inclusion in the money bill for the next budget and give it retrospective effect.

Likewise the tax rebate. It is good that the cabinet and the IMF agreed to bring it back. But the suddenness with which it was discovered that this rebate is “omitted” and notices started being served on universities speaks to how a predatory culture has taken root in the tax bureaucracy.

How could they think they could simply serve these notices and start collecting taxes without raising very important questions about their own professionalism and competence? It is this impunity within which the tax officialdom operates and which presents a problem here. Both episodes are solved, for now, but let’s hope the higher-ups in the respective bureaucracies and their ministers will deign to derive some lessons from them. Taxpayers and power consumers are not lambs to be fleeced at will. ■

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Enhancing national power consumption need of the hour

Ali Khizar

Ali Khizar is the Director of Research at Business Recorder

There are talks about an Rs8 per unit reduction in power tariffs; solar net-metering is the issue of the elite

There are efforts and actions being taken to reduce power tariffs and make the grid sustainable. These include negotiations with the IPPs, forcing industry to move from captive power generation by raising gas tariffs exorbitantly, shifts in the solar net-metering policy, and higher taxes on petroleum products to lower grid prices.

The prime focus of tariff reforms should be to make the industry competitive. Whatever fiscal and other space the government is creating should go to the industry.

The objective should be to bring the industrial tariff to 9 cents to make it regionally competitive. Industrial growth should be facilitated by bringing employment and business opportunities for domestic users. This will help households afford electricity and other goods and services.

There are talks about an Rs8 per unit reduction in power tariffs. Well, these numbers are grossly exaggerated, and getting even half of this is going to be a decent achievement.

The share of domestic consumers is double the industrial load on the grid. Thus, lower fiscal support is required to reduce industrial tariffs, and it would have a larger impact on the overall economy, which is in the quest of economic activity.

Unfortunately, media space and so-called experts' attention are given more to the solar net-metering issue than to broad-based energy reforms. Solar net-metering is a red herring. It is the issue of the elite (such as residents of higher income neighborhoods), and not even a middle-class problem. The government had a favorable policy, and it has now changed it. There are no violations of contracts. What is the fuss about?

Many countries have changed their solar net-metering policies over time. Pakistan's policy was much better than what existed in California or South Australia. And even after the revision, the payback period for Pakistani consumers was much lower than in those countries. In other countries, there are two to three forms of charges, including upfront connectivity, capacity, and distribution charges.

There are talks about revising the net-metering policy from 2022-23. It should have been done earlier. The net-metered consumers on NTDC doubled (from 141k to 283k) in the last six months or so. The pace should have been decelerated earlier. With fewer stakeholders, the media hype could have been lower.

According to renewable energy expert Faizan Ali, by June 2024, net-metering capacity was roughly 3GW (including KE) out of 14-15GW total installed capacity — it was at 20 percent. Today, net-metering is at 4.5GW out of 17-18GW

installed capacity. Still, net-metering is around 26 percent of total solar consumption.

Thus, net-metering is a fraction of total solar capacity and not the primary reason for the falling reliance on the grid. However, non-net-metered consumers are not adding any cost or burden to the grid. And last year, the government had already increased the capacity charge on them. But there was nothing on the net-metered consumers.

The real issue is the grid, which is becoming irrelevant and needs to be transformed and modernized. The solar influx is a global problem; it is not a Pakistan-specific issue. The problem here is that renewable capacity addition is outpacing base-load production growth. The grid needs to adapt. We should be looking forward to this, as the real solution lies in reforming the distribution companies.

There is no media space allotted to them. No one is doing press conferences. This is akin to talking about the current account balance without addressing the underlying factors related to low national savings and investment — the other side of the identity.

The national electricity grid is on a death spiral. This must be rescued. That simply cannot be done by tweaking tariffs. It must be revived by enhancing industrial consumption. The domestic three-phase net-metered users' reliance on the grid continues to decline, as they may start adopting battery solutions.

Many battery vendors have entered the Pakistan market. Experts estimate that BESS imports have doubled in 2024, and this is only going to grow with improvements in battery technology and the revised net-metering policy.

Thus, the government must focus on bringing industry back onto the grid. Many industrial players are shifting from captive gas but are looking for alternative avenues. Making grid prices cheaper and reliable can bring them back. For that, a wheeling policy at reasonable rates is imperative.

The point is that energy reforms are required, and enhancing grid consumption is the need of the hour. That cannot happen by focusing on domestic consumers. Base-load utilization must rely on industrial users. This is where policymakers must focus — or risk watching the grid collapse under its own weight. ■

UNJUSTIFIED TAXES

Zero tariffs on US electronics, machinery, EVs to pacify Trump

Farrukh Saleem

US President Donald Trump is doing what he is doing from a position of strength as the world reaps roughly \$800 billion annually from the US trade deficit. Next, while global leaders largely react to shifting circumstances, Trump has monopolised a proactive stance, setting the pace of international trade policy.

Trump appears guided by a clear strategy, in contrast to other world leaders who seem to lack a cohesive plan. Focusing on Pakistan, the US stands out among Pakistan's 190 trading partners as the only one with which Pakistan enjoys a multi-billion-dollar trade surplus. To preserve this valuable advantage, Pakistan must deploy every available tool — strategic diplomacy, economic logic and political appeal — with precision and purpose.

Trump requires a political victory to convince American voters that his aggressive tariff strategy is effective. Pakistan

should leverage economic logic to deliver what he seeks — a tangible win that bolsters his narrative.

Pakistan can deliver Trump a loud political win through shrewd economic calculus: zeroing out our tariffs on US electronics, machinery and electric vehicles (EVs). Last year, Pakistan's imports of these categories from the US totalled approximately \$350 million per HS codes 84 (machinery), 85 (electronics), and 87 (vehicles, including EVs).

Slashing these duties to zero would forfeit roughly \$17.5 million in revenue. In exchange, we'd negotiate reciprocal tariff concessions on our \$4.2 billion textile exports to the US — a linchpin of our trade portfolio under HS code 61-63 — securing market access for 40 per cent of our labour force, bolstering GDP growth and stabilising the rate of unemployment.

Pakistan must prioritise two key strategies: data-driven decision-making and a mutual-benefit framework, aligning with both the national interests of Pakistan and the political priorities of President Trump. ■

OGDCL, Mari Energies make new discoveries

EU Report

In a significant development, the two state-owned entities — Oil and Gas Development Company Limited (OGDCL) and Mari Energies Ltd (MEL) — have announced separate hydrocarbon finds in Sindh and Khyber Pakhtunkhwa, respectively.

OGDCL announced the successful revival of oil and gas production from Chak # 2-2 Well, a joint venture in the Sinjoro Block in the Sanghar district of Sindh. The Sinjoro Block comprises OGDCL as the operator with a 62.5pc working interest, alongside Government Holdings (Pvt) Ltd (GHPL) with 22.5pc, and Orient Petroleum Inc. (OPI) holding a 15pc share.

The produced hydrocarbons are now



being processed at the Sinjoro Gas Processing Plant, with the gas being injected into the Sui Southern Gas Company Ltd (SSGCL) network, ensuring a stable supply to the national grid, the statement said.

Separately, MEL also announced a third gas/condensate discovery at Spinwam-I exploratory well in Hangu Formation, drilled in Waziristan Block, in North Waziristan district, KP. ■

NRL Discovers Significant Copper-Gold Mineralization in Chagai

EU Report

National Resources Limited (NRL) has discovered significant copper-gold mineralization in Chagai, Balochistan. This was announced by Muhammad Ali Tabba, Chairman National Resources Limited and CEO Lucky Cement Limited while addressing the participants at Pakistan Minerals Investment Forum 2025 today.

NRL, a 100% Pakistani privately owned company and a subsidiary of Fatima Fertilizer, Liberty Mills Limited, and Lucky Cement, was awarded a lease in October 2023. The licensed area contained two known porphyry prospects with strong exploration potential. Over the 15 months, NRL has identified 18 new prospects. One of these prospects, 'Tang Kaur,' has rapidly progressed to an advanced drilling stage.

Mr. Tabba informed that NRL has completed 13 diamond drill holes (3,517 meters), all of which intersected significant porphyry-style alteration, sheeted and stockwork quartz vein sets, and sulfide mineralization. Assay results from the first six drill holes (1,500 meters) confirm strongly mineralized, near-surface zones with downhole intervals ranging from 48 to 148 meters, using a 0.2% copper cut-off grade and up to 10 meters of internal dilution. The average grade of the intercepts ranges from 0.23% to 0.48% copper, 0.09 to 0.14 g/t gold, and 1.30 to 6.21 g/t silver, resulting in a copper equivalent of 0.28% to 0.56%. The mineralized system remains open to the north, east, and at depth.

He said that advanced drilling at Tang Kaur is scheduled for May 2025, leading to an NI 43-101 Technical Report by year-end by internationally recognized consultants, who are already monitoring the project. This will be followed by 3-4 years of detailed exploration, culminating in feasibility studies, while exploration of the other prospects and leases continues.

Additionally, NRL has acquired a Lead-Zinc exploration license adjacent to a well-known deposit, where a Bankable Fea-



sibility Study has already been conducted. A comprehensive metal value chain is also being studied to assess the feasibility of downstream processing. NRL considers Indigenous populations as key stakeholders and actively supports social development through clean water, education, healthcare, and local employment/businesses. Our current ratio of local employment is above 90%. NRL fosters industry-academia collaboration and remains committed to sustainability. NRL believes mining prospers only when local communities are recognized as the most important stakeholder, and they directly benefit from such activities.

NRL is actively working with the Government of Baluchistan and the Special Investment Facilitation Council ("SIFC") to secure two additional Copper-Gold Exploration licenses in Chagai, Balochistan supported by a dedicated \$100 million exploration fund. We have also signed MOU with Oil and Gas Development Company to work on newly acquired leases together. Looking ahead, NRL plans to bring additional national and international investors into the project as required. We sincerely thank the GoB and SIFC for their support and cooperation. NRL remains committed to advancing mineral development in Balochistan, paving the way for Pakistan-led exploration. With their continued support, we are confident that more domestic companies will join the mining sector, driving its growth and development for the betterment of Balochistan and Pakistan. ■

Engro Energy Denies Breach, Terminates EPQL Share Sale Af

Engro Energy Limited (EEL), the parent company of Engro Powergen Qadirpur Limited (EPQL), has officially denied any breach of contract and terminated the share purchase agreement (SPA) for EPQL following the acquirer's withdrawal.

In a notice to the Pakistan Stock Exchange (PSX), EEL addressed the termination of the SPA signed with Liberty

Power Holdings Limited and its consortium—Liberty Mills Limited, Soorty Enterprises, and Procon Engineering via Master Group of Industries—for the sale of EEL's 68.9% shareholding in EPQL.

The acquirers had initially issued a public announcement of intention on December 3, 2024, but later withdrew it on April 3, 2025, citing an alleged material breach by EEL.

EEL, however, strongly refuted these claims, stating the alleged breach—related to EPQL's amendment agreement with the Government of Pakistan and CPPA-G—was both "baseless and unfounded." EEL clarified that the agreement was executed in the national interest, and Liberty Power had full knowledge of the negotiations, having signed a similar agreement under the 2002 Power Policy. ■

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OGDCL targets 2027 for production in ADNOC's Offshore Block-5

Pakistan's state-run Oil and Gas Development Company Limited (OGDCL) plans to commence production from Abu Dhabi's Offshore Block-5 by 2027, marking a major step in its international expansion, said CEO Ahmed Hayat Lak on Wednesday.

Speaking on the sidelines of the Pakistan Minerals Investment Forum 2025, Lak stated that while reserves in the ADNOC-partnered block are still under evaluation, the company anticipates production within two years.

Domestically, OGDCL aims to ramp up its oil production from 37,000 to over 50,000 barrels per day and increase gas output from 800 million to 1 billion

cubic feet in the next three years. Lak highlighted a new short, medium, and long-term strategy to invest in tight gas, following favorable revisions in pricing policies. He also revealed OGDCL's strategic pivot into mineral exploration. The company, which holds an 8.3% stake in the Reko Diq copper-gold project, has recently partnered with Barrick Gold for additional exploration licenses. "Our involvement in Reko Diq is a game-changer," said Lak, adding that lithium exploration will be a future priority. ■



First 120KW EV Charging Station Inaugurated

EU Report

Energy Minister Awaiz Leghari has recently inaugurated Pakistan's first 120KW fast-charging station for electric vehicles (EVs), developed by GoGreen Avenue, marking a significant step towards sustainable transportation.

Speaking at the inauguration ceremony, Leghari emphasized the government's commitment to clean energy and carbon reduction, stating that such initiatives are crucial for transforming the country's energy and transportation landscape.

As part of the drive to promote EV adoption, the minister announced a substantial reduction in electric charging rates, lowering the price per unit from Rs71 to Rs39. The move aims to make EV ownership more accessible and affordable for consumers.

Leghari also highlighted the importance of public-private partnerships in advancing Pakistan's sustainability goals, commending private sector investment in green energy solutions. He reaffirmed the government's continued support for projects that deliver long-term environmental and economic benefits. ■

Punjab Implements Advanced Thermal Imaging for Forest Monitoring

EU Report

The Punjab government has introduced cutting-edge thermal imaging technology for 24/7 satellite monitoring of forests, enabling real-time detection of forest fires, illegal logging, and unauthorized activities. Punjab is the first province in Pakistan to deploy thermal imaging for forest surveillance, launched under the directives of Chief Minister Maryam Nawaz Sharif. The initiative has commenced in Murree and Rawalpindi, with enhanced nighttime patrolling and live satellite feeds ensuring constant oversight. A specialized team of artificial intelligence (AI) experts will manage the system. The technology operates on advanced algorithms, enabling instant detection, data processing, analysis, and reporting. Senior Provincial Minister Maryam Aurangzeb highlighted the initiative's significance, stating: "We will not allow deforestation or forest fires. Illegal hunting will also be prevented, and criminals will now be caught using modern technology." Beyond forest conservation, this system will enhance urban crime prevention, support afforestation efforts, and protect agriculture, livestock, fisheries, and wildlife resources. ■

Energy sector circular debt hits Rs4,700bn

EU Report

The Ministry of Finance has declared circular debt of energy sector as a major fiscal risk, as it has reached Rs4,700 billion. According to finance ministry documents, circular debt of energy sector was recorded at Rs4,700 billion as of December 2024. The share of power sector is Rs2,400 billion, while that of gas sector

is Rs2,300 billion.

The ministry is of the view there is no clear strategy for paying off circular debt in the near future. According to the documents, the government does not have the financial capacity to pay off circular debt. There is little room for tariff adjustment. The ministry has warned if circular debt issue is not resolved, this permanent burden will weaken fiscal sustainability.

"Circular debt will limit essential development spending and increase borrowing requirements. Circular debt increases fiscal pressure", it said. According to the ministry, circular debt creates scope for subsidies, bailouts or debt restructuring. It said the federal budget does not include specific points to deal with the circular debt issue. The government, however, is responsible for paying off the circular debt, it said. ■

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Oil Industry Seeks Super Tax Abolition, Margin Revision in Budget 2026

EU Report

The Oil Companies Advisory Council (OCAC) has urged the government to abolish the super tax and address unresolved tax and margin issues in the upcoming Budget 2026, warning that continued neglect could jeopardize the financial viability of the petroleum sector.

In its formal proposals to the Federal Board of Revenue (FBR), OCAC emphasized that the Finance Act 2024's introduction of sales tax exemptions on petrol, HSD, kerosene, and LDO—previously zero-rated—has led to the accumulation of input tax. Since product prices are state-regulated, compa-

nies cannot pass on these costs, adding over Rs33 billion to their burden in Tax Year 2025 alone. The Council proposed reinstating petroleum products under the taxable regime to reclaim input adjustments.

OCAC also called for the abolition of the super tax, labeling it a recurring and damaging measure that undermines the formal sector's sustainability. It further recommended reducing the minimum tax under Section 113 to 0.25% for OMCs and refineries, as current margins are fixed and cannot absorb excessive tax liabilities.

The Council concluded that resolving these issues is critical to ensuring the energy sector's resilience amid smuggling threats, regulatory constraints, and rising operational costs.



FAST Cables hosts carbon-neutral dialogue

EU Report

FAST Cables convened the 'FAST Forward Sustainable Development Forum' at the University of Central Punjab (UCP) on Friday, initiating dialogue on achieving a carbon-negative and sustainable industrial future for Pakistan. The event, which brought together academics, industry leaders, and public and private sector representatives, focused on the critical role of industries in adopting sustainable practices.

Experts Convene at German Wind Power Museum to Boost Global Collaboration on Wind Energy Archives

EU Report

Experts in wind energy history gathered at the German Wind Power Museum in Stenwedde, northern Germany, to explore ways to enhance international collaboration in preserving the global heritage of wind energy. The event, part of an ongoing initiative by the World Wind Energy Association (WWEA), focused on improving the archiving and sharing of wind energy records by linking existing archives and advising archive holders worldwide.

A key partner in this effort is the UK-based Mills Archive Trust, which has amassed over three million items. The Trust plays a central role in WWEA's mission to consolidate historical documentation and promote public engagement with wind energy's legacy. Stefan Gsänger, Secretary General of WWEA, praised the cooperation: "This initiative honors the pioneers of wind energy and reminds us of our roots as we face today's challenges. We deeply appreciate the support from the Mills Archive Trust and the hospitality of the German Wind Power Museum."



PPL, Metso join hands to advance mineral exploration

EU Report

Pakistan Petroleum Ltd (PPL) and Metso Corporation of Finland, a global leader in sustainable technologies and services for the minerals processing industry, have entered a strategic collaboration to advance mineral exploration and processing across Pakistan.

A press release issued on Saturday said that the landmark memorandum of understanding was exchanged in the presence of Prime Minister Shehbaz Sharif and Chief of Army Staff General Syed Asim Munir between PPL Managing Director and CEO Imran Abbasi and Metso Corporation Director Lauri Pesonen.

The MoU was earlier signed during the Pakistan Mineral Investment Forum 2025 held in Islamabad.

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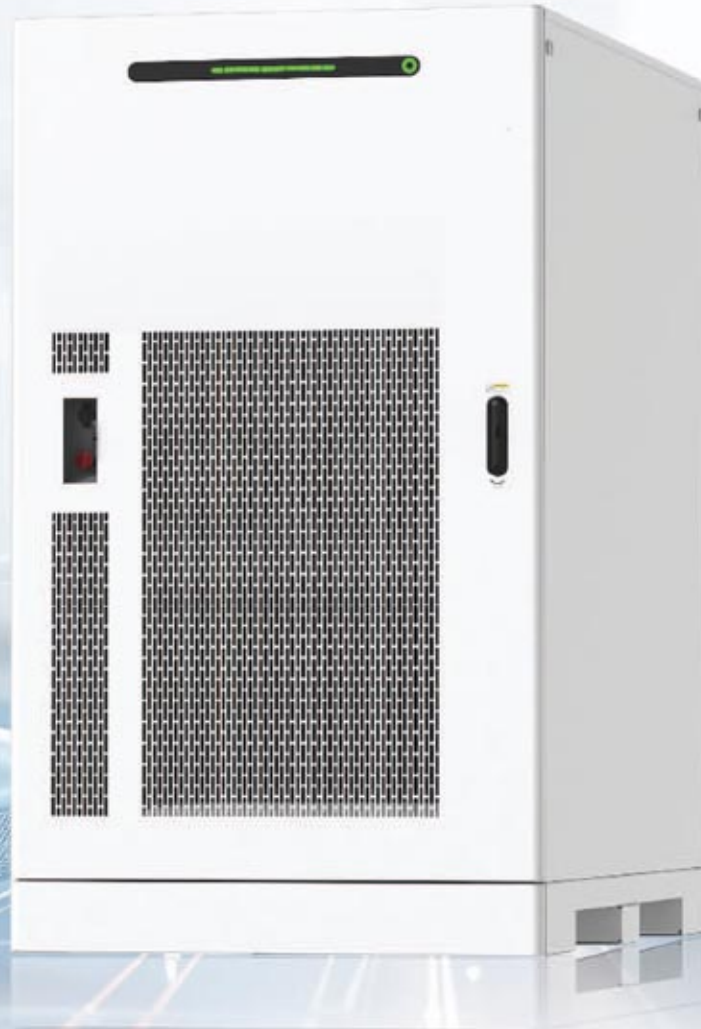
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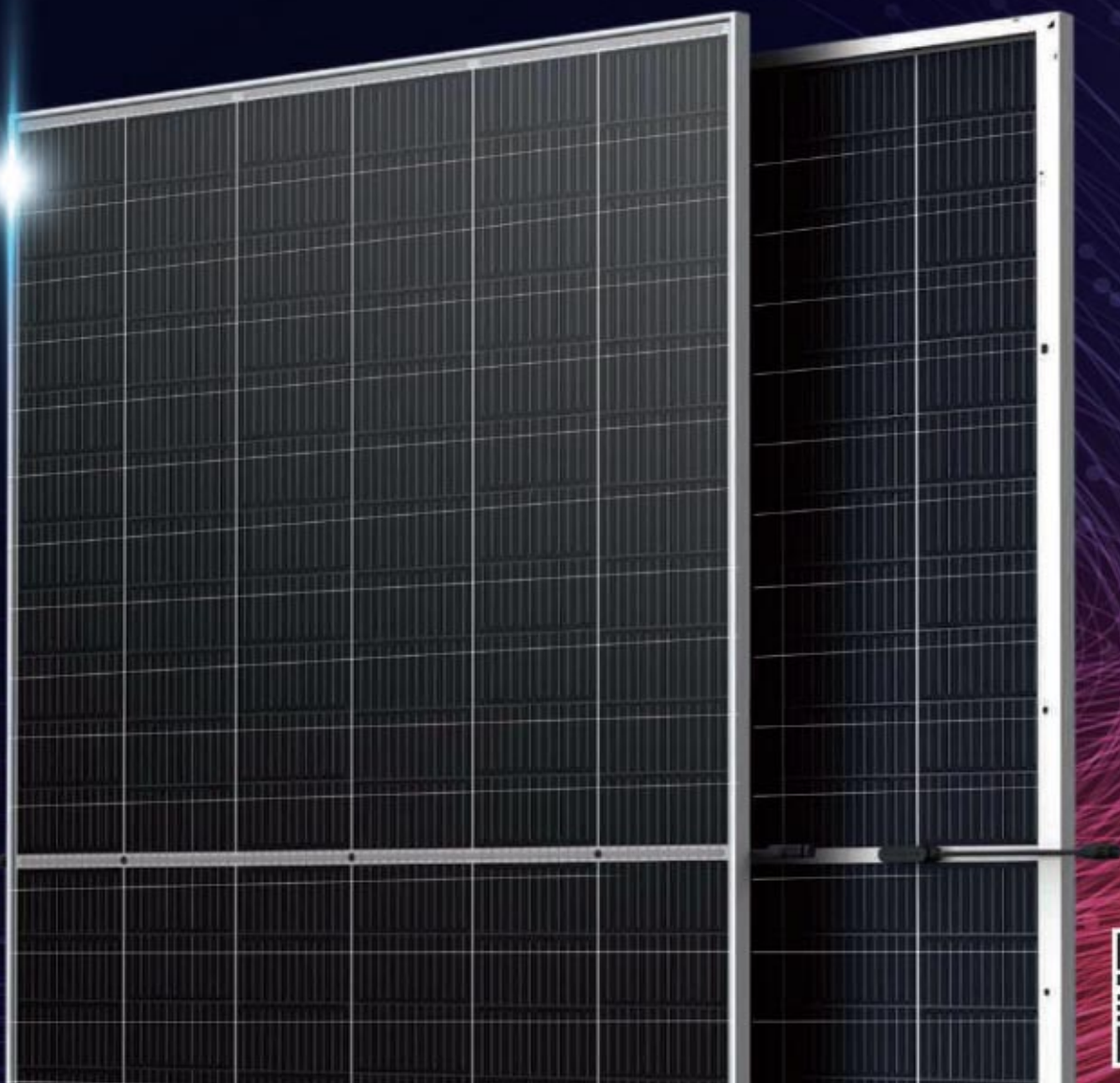



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