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IGCEP 2025–35:
BUILDING A POWER SYSTEM

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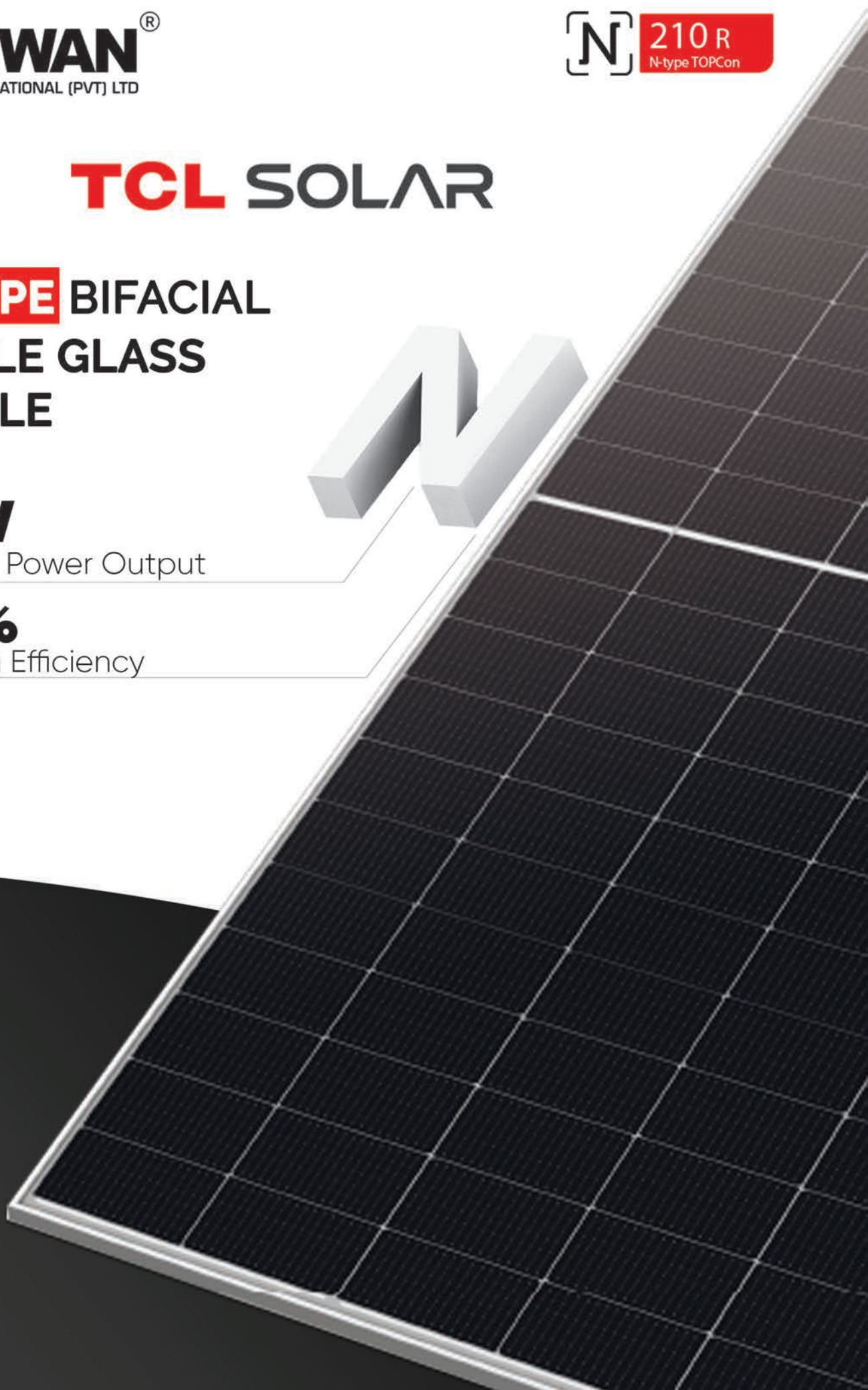

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FROM THE

Editor's desk...

Emergency Declaration: Same Promises, No Delivery

The federal government has declared a climate and agriculture emergency in the country in view of the devastating floods and rains that have affected Punjab and Sindh provinces.

The decision came at a meeting of the federal cabinet, which was chaired by Prime Minister Shehbaz Sharif. The cabinet also announced the formation of a special committee led by Planning Minister Ahsan Iqbal to recommend measures to mitigate the impact of the floods on the country.

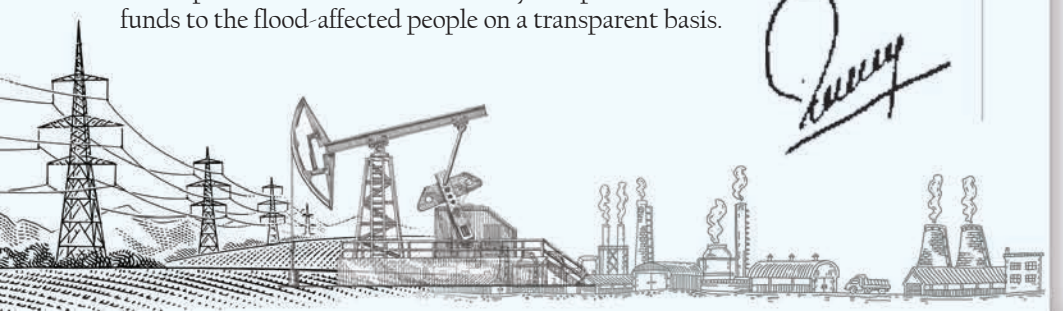
The need is to include members from all provinces in the special committee to show provincial harmony in tackling the natural disaster. This is not the first time that a special committee has been formed to mitigate the impact of the floods and rains, but the fact is that several such committees were also formed in the past, but no real outcome could be achieved from them due to massive corruption in flood and rain relief funds. Furthermore, the 2022 floods' relief money donated by the UN and other international organisations has still not reached many affected people.

The imposition of the climate and agriculture emergency is a welcome move that can help reduce the biodiversity and economic losses from ongoing floods and rains that have killed over 842 people, displaced 1.2 million others, affected more than 4 million, mainly in Punjab, and threatened economic losses between $6–10 billion so far. Rescue operations have been hampered by shortages of boats, helicopters, and trained staff. There is a lack of interest in performing relief operation.

According to a report, a significant funding gap remains for the UN's 2022 Pakistan Floods Response Plan, with substantial amounts still needed for urgent relief and rehabilitation. There is a critical need for ongoing support in rebuilding homes, restoring livelihoods, and implementing disaster risk reduction measures. A systematic response is required to address the long-term evolution of needs, including the crucial issue of documentation, which is essential for access to services and assistance.

The scale of the disaster overwhelmed the response, which relied more on debt financing than grants, and faced challenges like logistical barriers, discrimination in aid distribution, and the long-term impacts of insufficient support for recovery and reconstruction. Pakistan should use all available climate funds and also make an emphatic appeal for additional climate change funds. Feeling pain of the flood victims, the UN and Asian Development Bank have announced $6 million in relief aid each, while the UK has also announced £1.33 million in humanitarian aid to support Pakistan's monsoon response.

It will be good if new global relief aid funds are distributed through international agencies rather than the Pakistani government. There is also a dire need to accelerate rescue operations in all areas. It is hoped that the government will adopt a positive approach to perform relief operations with utmost sincerity and provide relief funds to the flood-affected people on a transparent basis.



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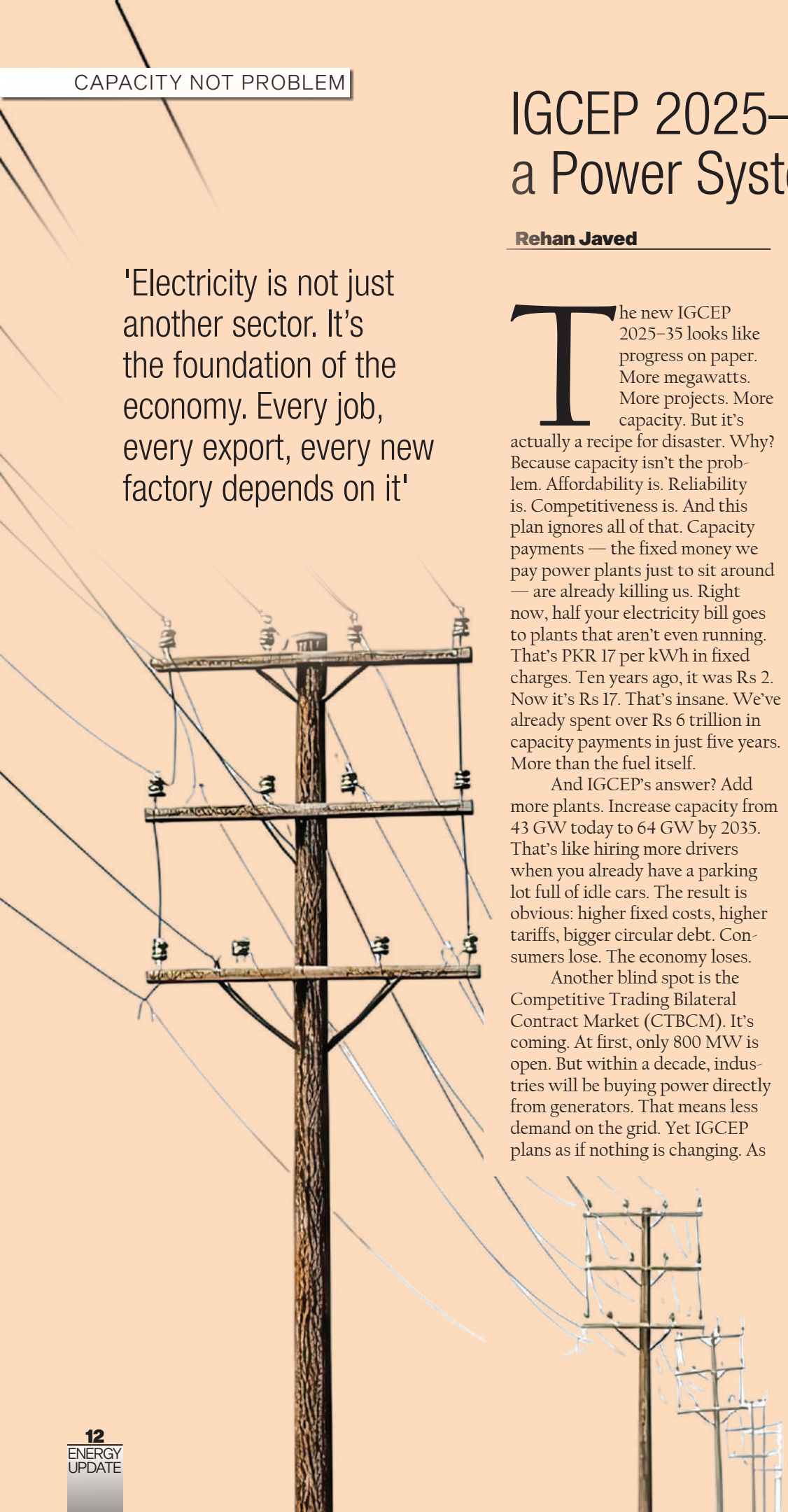
IGCEP 2025–35: Building a Power System

Rehan Javed

'Electricity is not just another sector. It's the foundation of the economy. Every job, every export, every new factory depends on it'



The new IGCEP 2025–35 looks like progress on paper. More megawatts. More projects. More capacity. But it's actually a recipe for disaster. Why? Because capacity isn't the problem. Affordability is. Reliability is. Competitiveness is. And this plan ignores all of that. Capacity payments — the fixed money we pay power plants just to sit around — are already killing us. Right now, half your electricity bill goes to plants that aren't even running. That's PKR 17 per kWh in fixed charges. Ten years ago, it was Rs 2. Now it's Rs 17. That's insane. We've already spent over Rs 6 trillion in capacity payments in just five years. More than the fuel itself.

And IGCEP's answer? Add more plants. Increase capacity from 43 GW today to 64 GW by 2035. That's like hiring more drivers when you already have a parking lot full of idle cars. The result is obvious: higher fixed costs, higher tariffs, bigger circular debt. Consumers lose. The economy loses.

Another blind spot is the Competitive Trading Bilateral Contract Market (CTBCM). It's coming. At first, only 800 MW is open. But within a decade, industries will be buying power directly from generators. That means less demand on the grid. Yet IGCEP plans as if nothing is changing. As if every megawatt will still flow through the same old single-buyer system.

That's fantasy. When industry defects, the system will be left holding contracts for plants it doesn't need. Stranded costs. More circular debt. And the consumers still stuck on the grid will pay for it. It's like Netflix

ignoring streaming and doubling down on DVD rentals. The IGCEP also ignores reality: demand is falling. In FY2025, electricity demand dropped 3.6%.

Industrial consumption fell 4%. Agriculture collapsed by 34%. Why? Because prices are too high. People are switching to solar. Farmers are pumping water with diesel. Factories are running their own generation. Rooftop solar has exploded 300% in just two years. Over 150,000

households and businesses are producing their own electricity. Millions more are thinking about it. This isn't a temporary blip. It's the start of a structural shift. Higher tariffs push people off the grid. When they leave, the fixed costs get dumped on those who remain. Tariffs go up again. More people leave. That's the death spiral. IGCEP pretends this isn't happening. Big mistake.

In Pakistan, location is everything. Demand is in the North. Cheap generation is in the South. Transmission in between is weak. That's why we've got power plants sitting idle while expensive ones run. Modern systems use locational pricing to fix this. We don't. IGCEP still treats every

megawatt as equal, no matter where it's built. That's like building factories in the desert and then wondering why shipping costs are so high.

And then there's industry. Industry is the backbone of any economy. Ours is already struggling.

Industrial electricity demand has dropped to just 26% of total consumption. That's catastrophic.

Why? Because we're charging them nearly double what India and China charge their industries. Our manufacturers pay around 13–14 cents per kWh. India and China? 6–7 cents. Europe, even with its crisis? 11 cents. This is a death sentence for exports. And IGCEP doesn't even

mention industrial competitiveness. No tailored power packages. No incremental consumption policies. No demand stimulation. Nothing. It's like writing a business plan for Tesla and forgettingcars.

So what does a sane plan look like? Simple. Stop adding capacity blindly. Only add plants when demand actually grows, not before. Integrate CTBCM and model scenarios where industries defect to bilateral contracts.

Acknowledge demand defection honestly — solar, captive, efficiency — all real, all accelerating. Plan by location. Build generation where it saves transmission costs and improves reliability. Put industry first and target tariffs of 6–8 cents/kWh, because that's the global benchmark. Compete or die. Stimulate demand smartly with permanent incremental packages, encourage EVs, encourage off-peak consumption. Make electricity affordable enough to use. This is not about more megawatts. It's about cheaper megawatts. Usable megawatts.

Electricity is not just another sector. It's the foundation of the economy. Every job, every export, every new factory depends on it. Right now, we're building a system that's big but brittle. Lots of plants. High tariffs. Falling demand. Rising debt. That's not a system; that's a trap. Pakistan doesn't need more capacity. It needs more wisdom. Smarter planning. Honest math. Courage to stop chasing shiny new projects and instead make the system work for the consumer, not justthe financiers.

NEPRA has a choice. Approve IGCEP as it is, and lock the country into another decade of unaffordable electricity. Or demand revisions that focus on affordability, competitiveness, and industrial growth. This is not about ticking boxes. It's about survival. If we keep doing what we've been doing, the lights may be on, but the economy will be off. We've seen this story before: build capacity, ignore demand, raise tariffs, watch industry collapse.

The IGCEP 2025–35 repeats that playbook. It's time to throw out the playbook. ■

DEBT GAMBLE

Pakistan's trillion-rupee power fix debt relief or delay?

Israr Khan

Pakistan's power sector has long suffered from inefficiency and poor planning, with "circular debt" — a cycle of unpaid bills between producers, distributors and the government — at its core.

The debt has been driven by high generation costs, weak performance of distribution companies, delays in tariff setting, heavy line losses, poor revenue collection, delayed government subsidies to Discos and K-Electric, and mounting financial charges.

The cycle has drained billions from the economy, discouraged investment and fueled mistrust. By May 2025, circular debt had climbed to Rs2.47 trillion, about 2.1 percent of GDP, acting like a hidden tax that caused blackouts, larger subsidies and eroded business confidence. The government said it cut the debt to Rs1.61 trillion by June through lower line losses, better bill recovery and savings from renegotiated power contracts, but the total rose again in July by Rs47 billion to Rs1.66 trillion.

In this difficult situation, the government has taken a bold step. It recently signed a huge financing deal worth Rs1.225 trillion with 18 commercial banks to settle a big portion of the debt. This is the largest financial agreement in Pakistan's history. The repayment will come through a special Debt Service Surcharge (DSS) of Rs3.23 per unit of electricity. This way, money from electricity bills will directly fund the repayments, making the system more transparent.

The deal is not just another bailout. It is designed to shorten the repayment period from more than eight years to under six years. At the same time, it will save the country around Rs377 billion in late payment interest, money that otherwise would have been added to the burden of consumers. From an economic point of view, the agreement is well-structured. It is priced at a rate of KIBOR minus 0.90 percent, which shows banks' confidence in the repayment mechanism. It reduces borrowing costs by about 1.5 percent annually. More importantly, it creates predictable cash flows, so banks and investors know their money is safe.

This frees up government funds for other important needs such as health, education, and infrastructure. For power producers and companies who have been struggling due to unpaid dues, this injection of liquidity will help them pay for fuel, keep plants running, and avoid defaults. For consumers, there is also a promise: once the debt is fully paid by 2029-2031, the DSS will end, resulting in cut in electricity bills.

Civil-Military Alliance, IMF Pressure Drive the Deal

The political side of the story is equally important. For decades, the debt has been a political football, with successive governments blaming each other but failing to solve it. This time, however, there seems to be stronger alignment between the civilian leadership and the military establishment. Prime Minister Shehbaz Sharif called the deal an "existential economic and security risk," showing how seriously it is being treated. Finance and Power Ministers managed the technical aspects, while the military's involvement ensured implementation discipline.

The International Monetary Fund (IMF), however, also played a crucial role in shaping this deal. Under the ongoing Extended Fund Facility, the IMF has been pressing Pakistan to stop temporary bailouts and instead adopt structured and verifiable solutions. The Fund demanded reforms in subsidy management and better governance in power distribution companies. This deal is a direct outcome of that pressure.

The bigger challenge, however, is to prevent the problem from coming back. Circular debt is not only about unpaid bills; it is deeply linked with inefficiency and mismanagement. Pakistan's power companies lose more than 20 percent of electricity through theft and technical losses. Expensive contracts with Independent Power Producers also add to the problem. Unless Pakistan introduces smart meters, controls theft, invests in renewables, and takes politics out of tariff-setting, circular debt will rise again. For the general public, it offers hope of fewer blackouts, more reliable supply, and lower tariffs in the long run. But hope will only become reality if the government uses this breathing space wisely to fix the structural problems. ■

Solar power: A lifeline for Pakistan's flood-hit communities

Mustafa Tahir

The Writer is Deputy Editor of Energy Update

The devastating floods that struck Pakistan in 2022 left an indelible mark on the nation. But even today, as recent flood emergencies continue to batter rural areas, communities face repeated destruction, displacement, and loss of essential infrastructure. The flood-hit communities urgently need solar systems not only for their survival in times of crisis, but for their resettlement and long-term rehabilitation.

Flood emergency: A crisis of survival, infrastructure

When massive rains and flooding overwhelmed rivers and dams, whole villages were submerged, roads washed away, homes destroyed, and electricity networks shattered. In many of the most affected remote and rural regions, restoring the electricity grid is a monumental task that could take months or even years. Without electricity, survivors cannot refrigerate food or medicine, pump or purify water, charge phones to call for help, or light their homes after dark. In the wake of the 2022 floods, this was not merely an inconvenience—it was a direct threat to life.

Solar systems: immediate relief, long-term renewal

This is where solar energy systems enter as a vital solution. During emergencies, when fuel is scarce and generators are expensive and difficult to transport, solar systems—panels, inverters, and batteries—can be deployed rapidly. They provide essential power for survival: lighting, communications, water purification, and medical care. But beyond survival, solar energy supports resettlement (rebuilding homes with off-grid energy) and rehabilitation (restarting livelihoods, sustaining education, and enabling productive work).

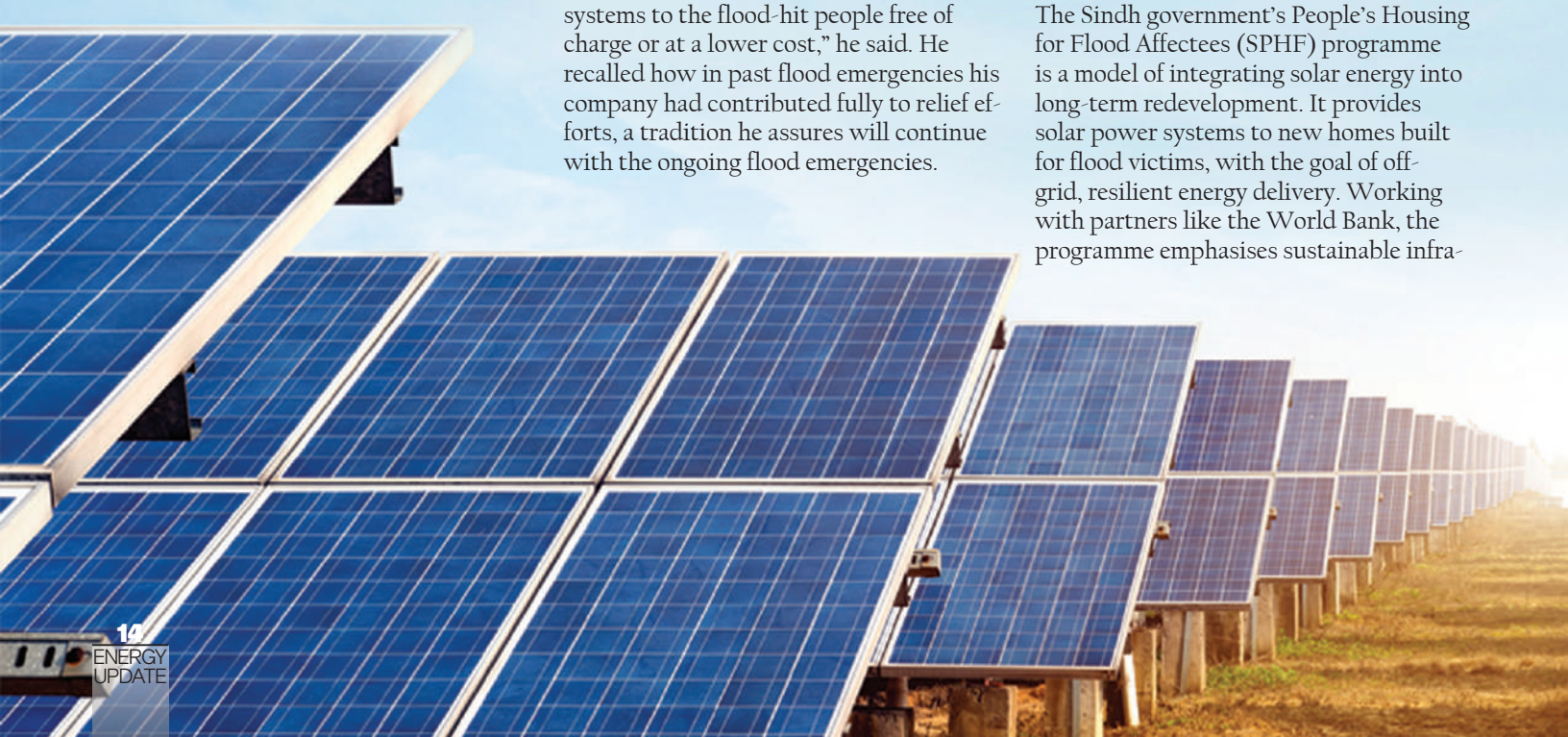
Voices from industry: willingness to help

Muhammad Zakir Ali, CEO of Inverex Solar Energy, has pledged his company's complete support under a public-private partnership model. "We are more than willing to assist the government in this drive, whether it plans to give the solar systems to the flood-hit people free of charge or at a lower cost," he said. He recalled how in past flood emergencies his company had contributed fully to relief efforts, a tradition he assures will continue with the ongoing flood emergencies.

Likewise, Faaz Diwan, Director at Diwan International—a major solar power trader in Pakistan—notes that the rural, underprivileged communities have borne the brunt of recent and prior floods. "The floods have severely battered the electricity networks in these areas, whose restoration isn't possible anytime soon," he says. With nearly no electrical service, daily life in these flood-hit villages was deeply disturbed. Diwan emphasises that the emergency installation of solar systems could quickly resolve the energy woes of these villagers. He insists that complete solar systems, packaged with panels, inverters, and batteries, could immediately restore functionality to households and community centres alike. Diwan International is offering to provide these systems either on a cost-to-cost or near-cost basis to enable the government to broaden its emergency relief drive and extend solar home systems to as many affected families as possible for immediate recovery and long-term rehabilitation.

Government programmes: sustainable, off-grid solutions

The Sindh government's People's Housing for Flood Affectees (SPHF) programme is a model of integrating solar energy into long-term redevelopment. It provides solar power systems to new homes built for flood victims, with the goal of off-grid, resilient energy delivery. Working with partners like the World Bank, the programme emphasises sustainable infra-



structure in off-grid desert and Kohistan regions, where reconnecting to the grid may never be fully feasible. Such initiatives help shift focus from merely rebuilding to building back better—creating communities better prepared for future shocks, more self-sufficient, and less reliant on fragile grid infrastructure.

A path forward: survival, resettlement, rehabilitation

In both the recent and earlier flood emergencies, solar energy has proven to be more than a stopgap; it is a foundation for survival, resettlement, and rehabilitation:

Survival: Immediate power for water purification, lighting, refrigeration of medicines, communication, and basic cooking.

Resettlement: As displaced families return or rebuild, solar systems allow homes to be functional even in off-grid locations. Rehabilitation: Powering schools, clinics, small business equipment, irrigation pumps, enabling economic activity, reducing dependence on diesel or uncertain grid supply. Public-private partnerships, like those Diwan International and Inverex have proposed, along with government-led programmes like SPHF, provide a roadmap to ensure that flood-hit communities are not left powerless—literally—during emergencies and after.

Conclusion

The recent flood emergency in Pakistan has underscored one harsh truth: without electricity, recovery is stalled. Solar energy systems offer a chance not only to survive in the wake of disasters, but to resettle with dignity and build resilience for the long haul. The time to invest in solar relief and rehabilitation is now—because the communities devastated by floods deserve power, stability, and a future that is brighter and more sustainable. ■

Mining shadows on Thar's landscape

Dr Imran Aziz Tunio

The writer is a researcher and development and water sector professional

Over the past decade, the Thar desert subdistrict of Islamkot, located in district Tharparkar, has experienced a dramatic transformation.

What was once a mostly barren landscape has now given way to expanding infrastructure with the distinctive stamp of industrialisation. This change, accelerated by the development of Pakistan's largest lignite coal reserves, is often welcomed as a sign of national development and energy self-sufficiency. However, there are complications.

Though proponents of the Thar coal project highlight jobs, infrastructure, and energy security, the timing and model of this development call for scrutiny. Has this transformation shown any sign of long-term ecological foresight, or has it been hurried under the banner of 'development at any cost'?

Evidence of environmental consequences of open-pit coal mining, saline water reservoirs, and poorly planned urban expansion are beginning to surface. And while the imagery of green patches and water bodies may suggest renewal, the reality is that much of it is artificial, seasonal, or environmentally unsustainable.

Between 2015 and 2023, satellite imagery shows an abrupt drop in barren land from 3,285 square kilometres to 2,190 square kilometres, with 969 square kilometres replaced by vegetation, 114 square kilometres of built-up areas, and mining areas spanning 32 square kilometres. On paper, this may imitate variation, but the surge in vegetation is mainly reliant on unpredictable rains. The built-up area has expanded ten times, driven by population growth and coalfield development.

The arrival of the artificial reservoir, Gorano Pond, has altered local hydrology. Mining areas, which were vague in 2014, now spread over 32 square kilometres, leaving marks on Tharparkar's rich desert ecology. These figures, validated through NASA-USGS data, tell a story of fast, unbalanced variation, one driven further by extractive drive rather than sustainable planning.

The expansion of coal mining has led to the extensive shift of natural flora and fauna, resulting in the irreversible degradation of Thar ecosystems. Groundwater resources are being overextracted, with further risk of contamination from the disposal of saline wastewater posing long-term risks to freshwater aquifers.

Furthermore, coal dust pollution may become a rising health hazard for adjacent villages, contributing to lung illnesses and degrading air quality. Meanwhile, climate change, soil erosion and land degradation have compromised traditional grazing paths and farming, which many local people depend on for survival.

Groundwater governance must be reinforced by applying integrated groundwater monitoring systems and promoting rainwater harvesting to prevent both depletion and contamination. Future urban development should follow eco-sensitive infrastructure planning, incorporating green belts, safeguard zones, and renewable energy components to minimise environmental disruption.

Equally significant is the inclusion of local communities in the decision-making process through transparent, equitable compensation and participatory planning to protect their rights and livelihoods. Finally, a gradual shift toward clean energy can reduce the region's dependency on coal and pave the way for a more resilient and sustainable energy future.

These are not optional to include but necessary bannisters for any responsible development in Thar due to the ecologically sensitive zone. The story of Islamkot must not become yet another case study in myopic planning. With the right policies, inclusive governance, and a commitment to environmental responsibility, Thar can still become a model of sustainable energy development, one that powers the nation without darkening the future of its own land and people. ■

Rethinking dam debate in Pakistan

Amna Hashmi

The writer is pursuing M Phil in International Relations from Kinnaird College for Women, Lahore

By 2040, Pakistan is projected to be among the most water-stressed countries in the world; groundwater in Punjab and Sindh is already overexploited

By 2040, Pakistan is projected to be among the most water-stressed countries in the world. The river Indus, which supplies more than 240 million inhabitants, is experiencing great pressure due to the growing demand, receding glaciers as well as unpredictable monsoons. This has motivated a fierce debate: should Pakistan double down on mega-dams, or pivot toward softer, nature-based solutions?

Famous physicist Dr Pervez Hoodbhoy has on several occasions challenged the obsession of Pakistan with big dams, terming them an expensive project that consumes the resources of the country without addressing deeper malfunctions of governance. The same doubt is shared by water resources scientists like Dr Hasan Abbas and he strongly supports the idea of floodplains, aquifers and wetlands as the answer to both floods and scarcity. These criticisms are quite justified pointing out the faults of the state fascination with concrete structures, but they run the risk of overshadowing the brutal truth: Pakistan cannot afford to do without giant reservoirs of water.

The 2018 campaign "Water will end by 2025" shows the problem. Critics, including Abbas, argue it was little more than a slogan engineered by dam lobbies to trigger panic and attract funding. Indeed, the campaign lacked robust data and pushed the government toward hasty announcements. But while the politics behind it may have been questionable, the underlying issue it spotlighted remains: Pakistan's water flows are seasonal and uneven. Without storing summer surpluses for the dry months, agriculture, drinking supplies and even industry would collapse.

An argument is that dams do little to prevent floods, and can even make them worse. Never, however, was the dam intended to serve as a great shield against every flood. The main activity they perform in Pakistan is regulation: to maintain uniform supply of crops, cities and electricity production. Flood protection is a secondary, though still valuable, benefit.

Sedimentation is another complaint. Dams, skeptics observe, progressively become filled up with silt, reducing their storage capacity and necessitating costly renovation. Globally, engineers have come up with ways to overcome this; sediment flushing, bypass tunnel, dredging and management of watersheds. Tarbela and Mangla have already had their working lives extended through such measures. To abandon reservoirs because of silt is like abandoning roads because they develop potholes; maintenance, not abandonment, is the answer.

Other methods, however, must not be rejected. The aquifers in Pakistan are of tremendous magnitude and the natural systems like wetlands and floodplains provide an ecological buffer. European models like the Netherlands' "Room for the River" highlight the benefits of giving rivers more space. But, the Netherlands has strict zoning laws and the resources to relocate communities. Pakistan, by contrast, has millions of people living directly on floodplains, fragile governance and little capacity to enforce relocation. It is unrealistic to expect that natural systems should exist to handle the Indus Basin on its own.

There are also limits of aquifers. Groundwater in Punjab and Sindh is already overexploited, resulting in depletion, contamination and salinity. Paradoxically, surface reservoirs play an important role in recharge of these underground reserves. Aquifers will be depleted at a faster rate without the controlled releases by dams.

The way forward is not to choose sides. Pakistan needs an integrated approach: dams for storage, regulation and energy; aquifers for reserves; wetlands for resilience; and floodplains for ecological balance. Each has a role, and none alone can address the scale of the crisis.

The task of the policymakers is not to oppose concrete and nature, but to develop an integrated transparent water policy to tap both — something that puts its engineering to the service of its security and its ecology to the service of its sustainability. ■

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The Writer is Managing Editor of Energy Update and Environment Activist

Our company has been at the forefront of Pakistan's clean energy transition; we're already active in 11 African and Middle Eastern countries, and we're exploring opportunities in the Far East, says Mujtaba Haider Khan

Reon Energy has been at the forefront of Pakistan's clean energy transition, playing a pivotal role in the sector's fast growth and expansion. Now, the company has made headlines with a bold and first-of-its-kind step in the region, importing refurbished wind turbines from Europe and installing them for industrial use in Pakistan.

Energy Update sat down with Mujtaba Haider Khan, CEO of Reon Energy, to talk about this unique initiative, the company's wider clean energy solutions, and what's next for Pakistan's renewable energy landscape. Here are the important excerpts from this interview for our readers:

Energy Update: Reon is pioneering refurbished wind turbines in Pakistan. How did this idea take shape?

Mujtaba Haider Khan: We've started procuring decommissioned wind turbines from Europe and refurbishing them with the help of original equipment suppliers, who replace any faulty components. Our aim is to give these turbines a second life at industrial sites in Pakistan.

The first project is with Gul Ahmed Textile Mills, where two refurbished 2.5 MW turbines will be installed at their Landhi plant. We're modifying the turbines to meet the 123-metre height restriction in the area. Detailed feasibility studies have been carried out, and top clean energy consultants such as TUV NORD are supervising the project. These turbines are expected to serve for another 15-plus years. It's the first initiative of its kind in the region, and we're very excited about it.

For Pakistan, an even better long-term option would be to transition towards the indigenous production of concrete wind turbines, rather than relying on conventional steel ones. Steel is a more expensive option in terms of market rates, while concrete turbines are not only more affordable but also more durable and better suited to local conditions. Developing this capability at home could give Pakistan a strategic edge in scaling up wind energy at lower cost while simultaneously building domestic manufacturing expertise.

EU: Why Europe, and why refurbished turbines?
Mr Khan: Europe is a goldmine for this. There are around 100,000 wind turbines across the continent, and that number is set to triple in the next five years. Every year, 5,000 to 6,000 turbines are decommissioned—not because they've failed, but because they're being replaced with higher-capacity machines.

Most of these turbines are simply recycled for their metals, but they still have a lot of useful life left. Power produced from a refurbished 2.5 MW turbine costs ~12 PKR per kwh compared to 34 PKR industrial tariff today, and third-party inspections have already proven that the refurbished ones are reliable and sound. Unsurprisingly, several industrial players in Pakistan are eager to get on board.

EU: Reon's work isn't just about installing solar and wind. What's happening on the technology side?
Mr Khan: You're right—our focus goes far beyond panels and turbines. Traditionally, electricity grids rely on engines or turbines with natural inertia to keep them stable. But renewable energy systems run on power electronics and don't have that inertia.

To fill the gap, we've developed technology that creates artificial inertia for renewable-powered grids. We've been delivering this technology for about three to four years now, making a 100 per cent clean energy transition possible for our customers.

EU: One of your landmark projects is with Lucky Cement. What makes it special?
Mr Khan: Lucky Cement's Nooriabad plant is one of the largest cement production facilities in Pakistan. It now runs on six wind turbines (28.8 MW), a 30 MW solar system, and a waste heat recovery setup. On top of that, we've designed and installed a 20.7 MW/22 MWh lithium-ion battery —the largest of its kind for any industrial site in Pakistan.

This battery is the backbone of the plant's grid system. It forms the grid during high renewable periods, manages voltage swings, and helps the plant run entirely on clean power during the summer months. What's more, the system is software-driven, AI-controlled, and fully autonomous, with predictive algorithm accuracy levels close to 100 per cent.

EU: How big a role does Reon play in Pakistan's industrial battery market?
Mr Khan: We're the pioneers in this area and today almost 90 per cent of the large industrial-scale batteries installed in Pakistan are from Reon. We don't just provide the hardware, we design and deliver complete solutions: designing, installation, commissioning, operations, troubleshooting, and more.

That one-window service, combined with our autonomous battery and controls platform REFLEX and unmatched experience, give us a clear edge in the market. We've executed more such projects than anyone else in the country.

EU: And internationally—how far has Reon's reach extended?
Mr Khan: We're already active in 11 African and Middle Eastern countries, and we're exploring opportunities in the Far East. Recently, we've also entered the European market to source turbines and plan to expand our business footprint there.

With electricity costs climbing everywhere, there's a strong global demand for AI-driven, software-backed renewable solutions. We see a huge opportunity to take our expertise beyond Pakistan.

EU: Finally, how do you view Pakistan's clean energy market?
Mr Khan: It's one of the most dynamic in the region. Just last year, nearly 20 GW of solar panels were imported, and the numbers this year are already higher. Analysts and experts across the board have praised the sector's phenomenal growth.

That said, there's also a downside. With industries moving to solar, distribution companies have suffered increased T&D losses. To counter this, the government needs to fast-track the rollout of the Competitive Trading Bilateral Contract Market (CTBCM). It's crucial for the survival of the grid while keeping the renewables momentum going. ■

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COMSATS
Hosts International Seminar on Future of Energy

EU Report

The Commission on Science and Technology for Sustainable Development in the South (COMSATS), in collaboration with a number of national and international partner organizations, held international seminar on The Future of Energy: Innovations in Renewable and Clean Energy Technologies.

Federal Minister for Power Sardar Awais Ahmed Khan Leghari, graced the inaugural ceremony of the event, as Chief Guest, held at COMSATS University Islamabad (CUI). Ambassadors and diplomats of Palestine, Philippines, Somalia, Syria, Sudan, and Zimbabwe also attended the inauguration.

The Federal Minister noted that although Pakistan contributes less than 1% of global emissions, it ranks among the most climate-vulnerable nations. "Harnessing our abundant solar, wind, and hydro potential is a national priority for energy self-sufficiency and sustainability," he said.

The Executive Director COMSATS highlighted that 15 collaborators from COMSATS Member states and International Partner organizations was a manifestation of the importance attached to Renewable Energy Technologies. He viewed energy security as a cornerstone of sustainable development and therefore called for ensuring access to reliable, affordable, and clean energy, as enshrined in SDG-7, He considered it essential to integrate digital technologies in energy systems. Ambassador Zakaria highlighted COMSATS' initiatives to promote clean energy, particularly the development of indigenous Electric Vehicle (EV). He proudly shared that COMSATS Tech Partner has developed EV technology indigenously.

The event attracted over 70 in-person and 80 online participants. These included scientists, researchers, policy makers, faculty members, and students from Bangladesh, China, Indonesia, Jamaica, Morocco, Nigeria, Pakistan, Palestine, Sri Lanka, Sudan, Syria, Türkiye, the United States, and Zimbabwe. ■

OGDC's five new oil and gas discoveries in a year is a testament to vast hydrocarbon potential: Malik

The Federal Minister for Petroleum Ali Pervaiz Malik held a meeting recently with the Managing Director and senior executives of the Oil and Gas Development Company (OGDC) at company's head office.

The meeting focused on a comprehensive briefing by the OGDC management on the company's operational activities and a strategic production optimization drive aimed at reducing the decline in its mature hydrocarbon fields.

Minister Ali Pervaiz Malik was apprised of the various initiatives undertaken to enhance recovery and maintain production levels. He highlighted that "the indigenization of the energy sector is the way forward, and our Exploration & Production (E&P) companies are working diligently towards this national goal." The Minister emphasized that enhancing the company's operational and financial performance is intrinsically linked to improved governance across the sector. He expressed his full support for the reforms in the Petroleum sector, stating they are essential for ensuring sectors long-term sustainability and contribution to the national economy.

SOGO Group of Companies is proud to take another bold step towards transforming Pakistan's renewable energy landscape! Canadian Solar Inc. has been built on trust and a shared vision for clean energy. Today, they have signed an MOU to import and supply 500 MW of solar panels to Pakistan — a remarkable milestone that will accelerate the country's clean energy transition.

Rethinking flood finance

Pakistan is once again faced with devastating floods. How reassuring is our flood relief and rehabilitation financing?

Dr Abid Qaiyum Suleri

The writer heads the Sustainable Development Policy Institute and is a member of the Asian Development Bank Institute's Advisory Board. His LinkedIn handle is Abidsuleri

In the summer of 2022, Pakistan was engulfed by its worst floods in living memory. A third of the country was underwater, affecting 33 million people. The United Nations' post-disaster needs assessment (PDNA) estimated the damage at $14.9 billion, losses at $15.2 billion and the cost of resilient recovery at $16.3 billion. Sindh bore nearly three-quarters of the burden and Balochistan accounted for another fifth. Housing, agriculture and transport topped the damage tables.

Rethinking flood finance

Bilateral and multilateral development partners were quick to respond. At a conference held in Geneva in January 2023, donors pledged more than $10 billion for reconstruction under the Resilient Recovery, Rehabilitation and Reconstruction Framework. The headline numbers looked generous. Three years on, with Pakistan once again under water, the financing story has proved far less reassuring.

The composition of Geneva's pledges tells the tale. The Islamic Development Bank offered $4.2 billion; the World Bank $2 billion; the Asian Development Bank $1.5 billion; the Asian Infrastructure Investment Bank $1 billion; and Paris Club countries $0.77 billion. Most of this came in the form of loans and project finance; grants were scarce ($0.54 billion). The imbalance matters a lot for a country already servicing debt with more than half of its federal revenues.

Another aspect of those pledges is that 58 percent of this amount is project financing, whereas 42 percent is oil financing.

By June 30, 2025, a large share of pledges had been converted into commitments and approvals; approximately $6 billion in approved projects and $1.9 billion in oil financing.

Flagship projects included a $450 million World Bank package for resilient housing in Sindh approved in December 2024; an ADB $400 million concessional loan for housing and community infrastructure approved in July 2024; and an IsDB envelope of around $200 million for co-financing. Together, these targeted up to 770,000 homes with flood-resilient core designs.

The challenge is not that the Geneva pledges will increase our debt burden. The issue is that some of the flows have been re-labelled: commodity financing, budget support or deposits at the central bank rather than direct reconstruction funds. The real issue is that millions of people still live in tents.

I gave this lengthy preamble to set the scene for this year's floods. The 2025 monsoon is still ongoing so that it is too early to assess the loss and damage. However, if 2022 is the benchmark, the eventual bill will again be counted in tens of billions. Furthermore, considering the quality and speed of disbursement of external financing for floods in 2022, we should temper our expectations from external financiers.

Another lesson from the 2022 floods is that we should now be quite familiar with what works and what does not. The federal government negotiates external resources; the

provinces deliver on the ground; and the local governments (if present) are the best assessors of losses. However, the three, often don't connect. On the other hand, even when concessional, debt-financed recovery compounds fiscal stress. Multilateral development bank projects move slowly by design, with feasibility studies and safeguards. Housing schemes are easier to replicate but transport, irrigation and schools lag behind. Reconstruction has favoured titled landowners over sharecroppers, formal settlements over informal ones. Grants for tenants or labourers have been sporadic. Projects that are highly visible, such as housing blocks and paved roads, attract financing faster than those that are less photogenic but equally vital, such as drainage rehabilitation or fodder support.

Floods are no longer once-in-a-generation event. With glaciers melting, monsoons becoming more erratic, and India's lack of cooperation on vital data exchange, they are recurring fiscal shocks.

We should also develop rolling damage assessment systems using satellites, drones and digital registries, publishing fortnightly updates to enable development partners to disburse funds in tranches instead of waiting months for a final PDNA. Development partners should publish disbursement dashboards that clearly distinguish between grants, loans and repurposed budget support, narrowing the perception gap between pledges and reality.

Pakistan cannot borrow its way out of climate vulnerability, nor can development partners keep recycling loans as if they were relief. Development partners should work with Pakistan by providing contingent instruments that automatically release funds when specific thresholds are crossed. If both sides act, floods will still batter lives and livelihoods, but they need not paralyse the economy every time. Without such pragmatism, we will remain trapped between rising waters and rising debt. ■

ENERGY NEWS

Denmark to soon launch energy cooperation with Pakistan

Mushtaq Ghumman

Denmark is poised to launch a three –year Strategic Sector Cooperation (SSC) in Pakistan's energy sector from January next year aimed at development of low-carbon pathways, cost-efficient NDC implementation and upscaling and setting long-term variable renewable energy targets based on collaboration, technical assistance, exchange of information and awareness raising within the selected thematic areas on green energy transition and climate mitigation.

In a letter to the Power Division, Danish Charge' d'Affaires to Pakistan, Peter Emil Nielsen, has appreciated the Division's efforts to receive the high-level delegation from the Danish Energy Agency on Aug 18, 2025, to kick-start the programming of a new SSC programme in Pakistan for the 2026-2028 period.

During the 5-day mission to Pakistan, the Danish Energy Agency and the Danish Embassy in Islamabad met with several ministers, government partners, energy companies, NGOs, think tanks, international donors (GIZ, World Bank), and others to present and discuss the most important topics/areas for future cooperation under the new SSC programme.

The meetings with the stakeholders were very productive, with positive and strong support for the new SSC programme. There was a high demand for capacity building and technical assistance within the three thematic areas: (i) energy planning; (ii) Integration of renewable energy; and (iii) energy efficiency in industry, which the SSC programme is expected to continue from DETI.

Building on this progress, the Embassy of Denmark proposed the following next steps with the esteemed the Power Division to ensure timely and smooth approval of the SSC to initiate the official launch by Jan 1, 2026: (i) Power Division should share the "SSC Project Document Consultation note" with the relevant stakeholders including ISMO, NGC, NEECA and Nepra, etc, for their written feedback and insights on the result framework for the SSC program no later than, Friday Sept 26, 2025; (ii) Power Division's input on the approval process for the SSC program in Pakistan and the requirements for MoU signing in November 2025 ;(iii) SSC program will be governed by a Steering Committee, which will meet once a year to review and approve annual work plans and progress reports, and to make adjustments if necessary. ■

Pakistan produced record 21.7TWh nuclear energy in 2024

Khaleeq Kiani

Yearly report on nuclear energy criticises Chashma-5 for high cost, precedence over renewable energy projects; World Nuclear Industry Status Report says solar outshone nuclear in terms of efficiency, cost; reveals Pakistan's renewable energy, including hydro, rose to 15.2GW from 14.2GW in 2023

ISLAMABAD: Pakistan's net nuclear energy generation touched a record 21.7 terawatt-hours (TWh) in 2024, even though overall electricity costs and inefficiencies reached a systematic tipping point, forcing consumers to switch to renewables, particularly solar, said the World Nuclear Industry Status Report (WNISR) 2025.

"Pakistan operates six nuclear reactors with a combined (net) capacity of 3.3 gigawatts (GW). Nuclear electricity production has increased from 21.3TWh in 2023 to a new all-time high of 21.7TWh (net) in 2024," it said, adding Pakistan started developing another 1200MW plant in December 2024 with Chinese support.

The share of electricity from nuclear power plants to the commercial grid increased from the 16.2pc peak in 2023 to a record 17pc in 2024, it said, adding all operating reactors were built by the China National Nuclear Corporation (CNNC). This includes two Hualong One reactors (Kanupp-2 and Kanupp-3) outside Karachi and four CNP-300 nuclear reactors in Chashma.

CNNC was also building another 1200-MW Hualong One reactor in Chashma (Unit 5). The agreement to build this reactor dates back to 2017, but it took over seven years to progress to the formal construction start, i.e. first pour of concrete for the base slab of the reactor building, which occurred on December 30, 2024. It is China's only ongoing nuclear newbuild project abroad and represents the first non-Russian construction start anywhere in the world in the past five years.

In January this year, the National Electric Power Regulatory Authority published an estimated overnight cost of Rs966 billion ($3.4bn) for the Chashma-5 project and the total cost (including financing and other costs) of Rs1.125 trillion ($4 billion). The majority of the cost is planned to be covered by credit from China for the project to start production by 2030, the report said, adding the project had been criticised for its high cost of power, and shelving renewable energy projects to make way for it.

The report said India had 21 operational nuclear power reactors, with a total net generating capacity of 7.4GW, more than double that of Pakistan (3.3GW), and New Delhi planned to add another 100GW by 2047, a target unlikely to be met.

Renewables vs nuclear

Talking about global trends, the report said solar energy added hundreds of gigawatts globally while nuclear remained irrelevant in market development in 2024. "As storage passed a trigger point, there are first signs of a revolution behind the meter and low-income countries are starting to leapfrog," it said.

In 2024, total investment in non-hydro renewable electricity capacity reached a record $728bn, 21 times the reported global investment in nuclear energy. "Solar and wind power capacities grew by 32 per cent and 11 per cent, respectively, resulting in 565GW of combined new capacity, over 100 times the 5.4 GW of net nuclear capacity addition. Global wind and solar facilities generated 70 per cent more electricity than nuclear plants".

Not only this, as challenges of integrating nuclear power into the energy system remain, new energy technologies

disrupt markets and systems. Photovoltaics directly produce electricity from solar radiation in harmless nanometre-thin semiconductor junctions, allowing for ongoing steep cost reductions and performance increases. This is complemented by similar advances in power electronics and batteries.

Together these new technologies are evolving towards a highly flexible fully electrified energy system with a decentralised control logic outcompeting traditional centralised fossil and nuclear systems. "Nuclear energy increasingly has difficulties to survive in this context. 2024 has been a pivotal year as battery storage costs have dropped by 40pc."

As behind-the-meter installations continue to scale, their capacity is becoming increasingly important. This was recently illustrated in Pakistan, the report noted.

The 10pc decline in power demand in the public grid between 2022 and 2023, while the economy grew, can be partly explained by examining the import statistics for PV panels. In 2024 alone, the imported solar generation capacity amounted to 22GW (compared to 46GW of mostly conventional capacity operating in the public grid in 2023), primarily adding to private installations behind the meter.

"The chaotic development, intensified by sharply rising public electricity prices and unsatisfactory reliability of the grid, is creating new opportunities but also causing social problems," it said. It highlighted new challenges in managing the transition in emerging economies with intense sunshine. "In the case of Pakistan, it appears that a combination of key cost trends has reached a systemic tipping point," the report said.

Pakistan's renewable electricity capacity was 15.2GW in 2024, up from 14.2GW in 2023. While hydropower, with a total capacity of 11.5 GW, was the most important component of this capacity, solar energy is the fastest-growing source of energy. In 2024, the total capacity of solar energy was 1.4GW, up from 1.2GW at the end of 2023, while wind constituted 1.8 GW, the same as the two previous years. ■

Courtesy Dawn

POWER PROJECTS

Despite debt cut, risks to linger with Chinese IPPs

Khaleeq Kiani

Despite securing Rs1.225 trillion in new financing from commercial banks to reduce circular debt, the power sector will remain vulnerable to exchange rate fluctuations for up to eight years due to dollar-indexed investments, particularly those linked to Chinese power projects.

Speaking at a news conference on Friday, Power Minister Sardar Awais Leghari said power projects commissioned after 2015 — largely under the China-Pakistan Economic Corridor (CPEC) — were financed in US dollars and remain exposed to currency depreciation. These projects, with a generation capacity exceeding 11,000 megawatts, have locked-in dollar-based tariffs and debt servicing, placing ongoing pressure on power sector finances.

"The dollar-linked debt will remain sensitive to exchange rate fluctuations for the next 7–8 years," Mr Leghari said. He noted that when the contracts were signed during the PML-N government, the exchange rate stood at Rs100 to a dollar. "The Rs18 per unit capacity charge today would have been Rs8-9 lower if the exchange rate had remained unchanged."

Mr Leghari did not comment on whether the government was pursuing revisions to post-2015 contracts, as was done with pre-2015 independent power producers (IPPs) and state-owned plants. Islamabad has repeatedly sought concessions from Beijing on CPEC power terms, but with little success so far.

The minister confirmed that the newly secured Rs1.225tr syndicated financing was finalised with 18 commercial banks at Kibor minus 0.9pc, and had been discussed with the International Monetary Fund (IMF), which raised no objections. The facility replaces earlier high-cost debt of Rs660bn borrowed at Kibor plus 2.5-4pc through the Power Holding Company.

The refinancing, backed by sovereign guarantees, is expected to enhance cash flows, eliminate government guarantees, and alleviate the financial burden on the sector. The minister claimed the new terms were favourable, despite Finance Minister Muhammad Aurangzeb's recent statement that some corporates were borrowing at Kibor minus 2-3pc amid easing interest rates.

With this injection, the minister projected that the remaining circular debt — estimated at Rs390bn — could be brought down to zero well before the earlier six-year target. He said the circular debt had already fallen from Rs2.4tr in March 2024, when the coalition government took office, to around Rs400bn now, without increasing the burden on consumers.

Mr Leghari attributed the Rs800bn reduction to three key areas: Rs242bn through improved power company performance, Rs175bn from macroeconomic stability and falling interest rates, and Rs363bn through renegotiated contracts with older IPPs — all achieved without coercion.

He criticised the PTI government, claiming that the PML-N had left a circular debt of Rs1.1tr in 2018, which grew to Rs2.28tr by 2022 due to inefficiencies, mismanagement, and alleged fraud. By the time the current administration took over, the debt had reached Rs2.4tr.

The minister also claimed that tariff reforms had brought down power rates for industrial users by 38pc, and for various domestic and commercial categories by 11-18pc, despite falling consumption and growing solarisation. He said over six million consumers had reduced their usage below 200 units per month by installing solar panels, increasing the protected consumer base from 12m to 18m.

He noted that, for the first time, circular debt was being reduced through structured planning rather than temporary measures. He said the government had committed to internal fiscal constraints to prevent further debt accumulation and improve investor confidence. The Rs3.23 per unit debt servicing surcharge, he added, would be gradually phased out over the next five to six years. ■

Rooftop solars reducing power grid demand

Omer Rizwan

The writer works in the power sector and has an extensive expertise on studying grid technologies

As electricity prices rise, more consumers are moving towards rooftop solar to reduce their electricity bills, which has resulted in an increase of net metering connections. While the surge in net-metering connections empowers consumers, it poses a new challenge to Pakistan's traditional electricity distribution network, which was designed to deliver electricity in one direction- from the grid to the user.

The current tariff package for net-metering offers an attractive payback period of 2-4 years for 5-25 kilowatt (kW) solar PV installations. The simple economics has resulted in entire neighbourhoods shifting towards rooftop solar. What this means for the utility is that individuals that were simple consumers have now become "prosumers", i.e., individuals that produce and consume electricity.

The issue starts when the "prosumers" start producing more electricity and stop consuming electricity from the grid. The traditional electricity grid has a uni-directional power flow; electricity is produced by the power plants transported via the transmission network, gets connected to the local grid and then flows through the distribution network to reach the end consumers.

When prosumers start producing more electricity it results in a "reverse power flow". Unlike household appliances that can simply be switched off when not needed, the national grid has no off switch. When prosumers stop consuming and begin exporting excess solar energy, the grid must absorb it, whether it's needed or not.

The reverse power flow from solar PV exports lies in the third quadrant of the transformer quadrant loading model, where both active and reactive power flow in the grid. This results in over-excitation of the transformer core resulting in core saturation. This can result in increased core losses, thermal stress and accelerate insulation aging, thereby significantly reducing the life of a distribution transformer.

The over-excitation can also result in voltage swings and production of harmonics, which can significantly impact the power quality of the network. To address the voltage fluctuations, utilities like "K-Electric" may change the tap position on the transformer to stabilize the voltage.

However, if solar output changes, the voltage levels would change again thereby requiring the tap position to be changed again. The frequent change in transformer tapping accelerates the mechanical risk, resulting in an increase in maintenance costs and failure risks.

Utilities require a multi-pronged strategy, one that goes beyond manual tap changes, to rectify the negative impact of reverse power flow. Utilities should ensure consumers install smart inverters with autonomous "Volt-Var" Control, a function that adjusts the reactive power output of the inverter based on local voltage conditions.

While this feature may not stop reverse power flow, it helps stabilize voltage and reduces stress on transformers and other equipment. Utilities, in parallel, should also ensure that the inverters installed are compliant with IEEE 1547-2018, which ensures that inverters have special functionalities that can help with grid stability.

IEEE 1547-2018 is an internationally recognised standard for interconnecting distributed energy resources (DERs) like rooftop solar panels, battery storage, wind systems, etc., with the electric power grid.

Similarly, AEDB certified installers should demonstrate competency that they have proper understanding of these features and can calibrate the inverter accordingly. For a long-term grid resilience strategy, utilities should plan for the integration of distributed energy resources with Advanced Distribution Management System (ADMS).

Another option that utilities should also consider is the installation of local Battery Energy Storage Systems (BESS) on the Low-Tension side of the distribution transformers. Batteries can absorb excess energy produced from solar generation during daytime and supply it back to the consumers during night hours.

Installation of BESS on the low-tension side can significantly reduce reverse power flow (if proper sizing is done) and can save the utility from expensive network upgrades. Utilities in Australia are already piloting "Pole mounted Batteries" to increase network reliability and optimize existing grid capacity without upgrading the network. ■

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NEECA SIMPLIFIES EV CHARGING STATION APPROVALS, REGISTRATION PROCESS

Dr Sardar Mohazzam
Managing Director NEECA

NEECA MD Dr Sardar Mohazzam says electricity tariff for EV charging stations has been reduced by 45 per cent; states our fan replacement programme is ready for launch and will soon be unveiled by the Prime Minister; hopes together, we can reduce wastage, cut costs, and build a sustainable energy future for Pakistan

Mustafa Tahir

Dr Sardar Mohazzam, Managing Director of the National Energy Efficiency and Conservation Authority (NEECA), spoke to Energy Update about the Authority's recent reforms, sectoral interventions, and upcoming energy efficiency initiatives. He highlighted that the once lengthy and complicated procedure for obtaining permissions to set up EV charging stations has now been drastically simplified—investors can complete the entire registration process within merely 15 days through a dedicated online portal.

Energy Update: Could you please tell us about the overall strategic plan NEECA has developed, and which sectors are being prioritised under this framework?

Dr Sardar Mohazzam: We have developed a strategic plan for NEECA that defines the priority areas and sectors where the Authority will intervene. Our key focus sectors include residential buildings, transport, industry, agriculture, power, and petroleum. Alongside this, we undertook significant regulatory work for electrical appliances by introducing minimum energy performance standards. We also worked on revising the building code and initiated action plans for these priority sectors. At present, we are moving towards the implementation stage. Importantly, under the directives of the Prime Minister, we revised the building code for energy conservation in partnership with the German government and coordinated with civic and land control agencies, including the CDA, for building code enforcement. We are also closely working with provincial agencies to achieve national energy efficiency and conservation goals.

EU: Energy Update understands that a major breakthrough has been achieved in easing the procedure for EV charging station approvals. Could you elaborate on this?

Dr Mohazzam: Yes, this is a milestone reform. The government has graciously reduced the electricity tariff for EV charging stations by 45 per cent, which makes the business more viable. More importantly, NEECA has simplified the entire registration process for prospective investors. Now, the whole procedure can be completed in just 15 days through an online portal—without the need for applicants to physically visit any government office. This ease of doing business has attracted multiple foreign companies, including from China, the USA, and Europe, to invest in Pakistan's EV charging infrastructure. The upcoming charging facilities will also include battery swapping services for two- and three-wheelers.

EU: What is the current investor response and progress on the establishment of EV charging stations in Pakistan?

Dr Mohazzam: Previously, businesses struggled with low returns on EV charging stations due to the high electricity tariff. But now, with reduced tariffs, profit margins have improved, and investor interest has surged. We are receiving daily applications from new investors. So far, around 84 to 85 prospective investors have already secured provisional approvals and are completing the remaining formalities. Over the next few months, Pakistan will see a significant expansion in its EV charging footprint.

EU:NEECA has also been involved in regulatory reforms for household appliances. Could you highlight some of the Authority's achievements in this area?

Dr Mohazzam: One of our major successes was shutting down the production of conventional incandescent bulbs, which were highly inefficient. Pakistan used to produce 16 to 20 billion of these bulbs annually, each consuming around 100 watts. Through regulations, we encouraged the adoption of energy-efficient alternatives. Additionally, we have introduced new regulatory frameworks for air-conditioners, refrigerators, motors, fans, and LED bulbs. Thanks to these efforts, consumers in Pakistan now have access to far more energy-efficient appliances in the local market.

EU: The upcoming fan replacement programme is being seen as a landmark energy-saving initiative. Can you share details of how this will work and its expected impact?

Dr Mohazzam: Yes, our fan replacement programme is ready for launch and will soon be unveiled by the Prime Minister. The Power Division of the Federal Government will lead the initiative, while banks will mobilise financing for consumers to replace their old fans. After collection, the replaced fans will be sent back to manufacturers for transformation into energy-efficient models. According to survey estimates, there are about 147 million old fans in use across the country, each consuming 100–120 watts. The new energy-efficient fans will consume just 30 watts. With nationwide rollout, we expect savings of 4,000 MW during peak summer demand, which will significantly help Pakistan in managing its seasonal power shortages. Tackling peak demand has always been a top priority for NEECA, and this programme will play a transformative role in energy conservation.

EU: Finally, Dr Mohazzam, what message would you like to give to stakeholders, policymakers, and the public regarding NEECA's vision and future role?

Dr Mohazzam: Our vision is to mainstream energy efficiency and conservation as a national priority, not just a technical matter. Every unit of energy saved contributes to the country's economic stability, environmental sustainability, and energy security. With the support of the government, private sector, and international partners, NEECA is determined to create a culture where energy efficiency becomes part of everyday decision-making—whether in homes, industries, or transport. I urge all stakeholders to actively participate, adopt efficient technologies, and support our initiatives. Together, we can reduce wastage, cut costs, and build a sustainable energy future for Pakistan. ■

330MW HPPs in KP to start production in two years

EU Report

Secretary Energy and Power Khyber Pakhtunkhwa Mohammad Zubair has said that work is underway on three hydropower projects in Swat. The projects of 330megawatt capacity will start production in the next two years. He expressed these views during his visit to ongoing hydropower projects including 84MW Matiltan, 88MW Gabral Kalam, 40-kilometer long 132/220kW transmission line project sites and the 36.6MW Daral Khor Hydropower Plant affected by the recent flood.

Chief Executive Officer (CEO) Provincial Energy Development Organisation (PEDO) Habibullah, Deputy Commissioner (DC) Swat Saleem Jan also accompanied him.

The Secretary said that construction work has also been accelerated on laying a 40-kilometer-long transmission line on the Swat corridor, which will be completed next year, with the completion of which cheap electricity will be sold to the industrial sector of the province. ■

PR saves billions

EU Report

Pakistan Railways has recorded impressive savings—amounting to billions of rupees in electricity costs over the past eight months—thanks to initiatives such as solarisation, meterization, and strict measures to curb electricity pilferage.

These developments were shared during a meeting chaired by Federal Minister for Railways Muhammad Hanif Abbasi. The meeting was told that Pakistan Railways has achieved notable savings in electricity costs across several divisions over the past eight months.

The Lahore Division saved Rs 416.6 million, while the Mughalpura Workshop recorded savings of Rs 243 million. Quetta Division contributed Rs 38 million, Rawalpindi Division Rs 75 million, Karachi Division Rs 26 million, Sukkur Division Rs 60 million, Multan Division Rs 9.6 million, and Peshawar Division Rs 6.46 million. ■

Pakistani Installers Shine as HUAWEI Hosts 4th Global Installer Summit

Huawei Pakistan with the exceptional participation of 24 skilled Pakistani installersappeared at the 4th Global Installer Summit, marking a significant milestone for the Pakistan, this achievement reflects Pakistan's strong resurgence in the global new energy sector and reaffirms our position as a key player in advancing sustainable technologies.
This accomplishment is a testament to the relentless dedication, technical proficiency, and global competitiveness of our teams and partners. It highlights Huawei Pakistan's ongoing commitment to excellence, innovation, and the development of a robust ecosystem for clean energy solutions in the country.

Driving the Future of Sustainable Energy

These achievements reinforce Huawei Pakistan's leadership in promoting

renewable energy solutions and supporting local talent in the clean energy transition. Together with our partners and installers, we remain committed to empowering Pakistan's energy future through innovation, collaboration, and sustainable growth.

Recognizing Creative Excellence in the Huawei FusionSolar Creator Cup

Huawei Technologies Co., Ltd. recently introduced creators cup, where Huawei Installer can participate and win exciting prize, for this recently two installers won the global positions in Huawei. By demonstrating creativity, passion, and professionalism.

- Best Picture of the Month – ***DSG***
- Second Prize Globally – Best Annual Video – ***SMART SOLAR***

Global Best Installer Contest:

Ehsan Ali's entry from Futex Engineering showcased his company's inspiring journey with Huawei, emphasizing his exclusive commitment to Huawei installations—a dedication that earned him global recognition in the form of the Bronze Award.
Bronze Award (Global) –
Ehsan Ali, Futex Engineering

Apart from this Ecube, Dewmak, Pleasant Energy, Nizam Energy and EBR were also the highlight of the awards, showcasing their longterm journey with Huawei.

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Pakistan must shape its clean-energy future

EU Report

Cheaper batteries from China are driving an energy shift in a country beset by power cuts, but some worry about waste and the people left behind.

In the hot summer sun of southern Punjab, the roof of Lucky Cement's factory glints with solar panels soaking up rays. Below, inside a quiet control room, sit rows of lithium-ion batteries made by Chinese company CATL. While the plant usually draws from the national grid when possible, these batteries can power it during the blackouts that have become an almost daily problem.

Across Pakistan's busy industrial zones – from Faisalabad's textile mills to food processing units in Sindh – an increasing number of businesses are turning to solar panels paired with batteries. They, along with wealthier households, are trying to cope with soaring electricity prices and frequent load shedding, where power is shut off to parts of the grid to ease the strain on power stations. Helping drive this change is an unexpected factor: China producing more batteries than it can use.

But rather than continuing to rely on Chinese battery and solar products, Pakistan needs policies that promote their manufacture domestically, that make this tech accessible to poorer communities, and encourage safe recycling.

China has, over the last few years, massively expanded its battery-production capacity to meet the needs of its electric vehicle (EV) industry and government green-energy goals. Over three-quarters of the world's batteries are produced in China, according to the International Energy Agency (IEA). However, EV sales in Europe and other markets have recently slowed, leaving Chinese companies with a surplus.

Pakistan, meanwhile, has been facing a growing energy crisis marked by regular power outages and unaffordable electricity. The main causes are underinvestment in infrastructure and reliance on expensive fossil-fuel imports. Pakistan is therefore an ideal market for Chinese battery manufacturers, who are now exporting their products at lower prices.

Though the precise proportion is not publicly available, Pakistan currently imports the majority of its lithium batteries from China, according to the In-

stitute for Energy Economics and Financial Analysis (IEEFA).

The price of lithium-based battery packs fell by 20% in 2024, partly driven by competition among Chinese companies, according to the IEA. Data from IEEFA indicated a significant uptick in Pakistan's lithium battery imports in the first two months of this year. If that trend continues, imports could nearly double in 2025 compared to 2024.

Pakistanis have been using solar panels for years, especially in rural areas. However, without proper storage, the benefits can only be felt during the day. Now, the combination of solar panels with battery-storage systems is transforming how power is managed. In the nine months between July 2024 and March 2025, Pakistan imported 12.7 gigawatts (GW) of solar PV – astonishing given its total installed power generation capacity from all sources of 46.6 GW.

If they already have solar panels, people are connecting them to Chinese lithium batteries to store the power they generate. Meanwhile, commercial consumers and people in newly electrifying areas are purchasing combined solar-battery systems. These new solar-battery systems make power available at night or during outages. For factories, shops and offices that need a constant power supply, and usually rely on diesel generators, this is a major improvement.

In Faisalabad, a textile mill owner told me that he cut his diesel consumption by 70% after installing a 1.5 megawatt-hour battery system. "It cost us a lot upfront," he said, "but we expect to recover the investment in three years. More importantly, we are no longer at the mercy of the utility company". In wealthy urban neighbourhoods of Lahore, developers are now offering houses with built-in solar-and-battery systems as standard features. In Sindh, some wealthier farmers are using solar-powered tube wells with battery backup to pump water even at night.

This silent revolution is happening across the country. From cold storage units in Balochistan to small IT firms in Islamabad, solar-battery combos are helping people stay productive during hours-long power cuts.

But while businesses and wealthier families are benefiting, many poorer communities are being left behind. Solar-battery systems are still expensive, and government support for clean energy is minimal. Microfinance loans for solar installations are hard to come by, especially in rural area and informal urban settlements. Underprivileged people often lack land papers or collateral, making banks and microfinance groups hesitant to issue loans.

Asad Mehmood, a development specialist in Islamabad, warns this trend could worsen inequality. "When clean energy becomes a luxury for the few, you risk deepening social divisions. Energy access is a right, not a privilege," he says.

In many katchi abadis (informal settlements), people still rely on illegal electricity connections. Poorly ventilated diesel generators are also common, exposing people to high energy costs and health risks. Meanwhile, small shopkeepers and farmers, already struggling with inflation, find it difficult to invest in solar setups even though it would save them money long term. Without policy support, clean energy may remain out of reach for the people who need it most.

There is also growing concern among energy experts that Pakistan might become over-reliant on Chinese manufacturers. On condition of anonymity, an energy researcher at the Lahore University of Management Sciences says: "Yes, we are getting affordable technology, but we are also becoming extremely dependent on one source. What if China changes its export policies or battery prices go up again?"

There is also the growing need to properly recycle or dispose of batteries. Currently, Pakistan has a 0% e-waste collection rate, according to the Global E-waste Statistics Partnership. Most lithium-ion batteries end up in landfills or are dismantled by informal workers without any safety measures. This can lead to chemical pollution, fire hazards and severe health risks.

In 2020, Pakistan pledged to generate 60% of its electricity from renewable sources by 2030. By 2023, the proportion was 40% if nuclear is included and 26% if not, according to Ember. Solar-battery systems could help achieve the 60% target faster than large-scale dams or wind farms, which often face delays and political hurdles.

But right now, this green shift is happening without proper rules or planning. There are no dedicated national standards for battery installation, storage or safety. There is no clear integration of small solar-battery systems into the main power grid. Most of the transition is being driven by private individuals and businesses acting out of necessity.

Pakistan's move to solar-battery systems offers a real chance to address the country's energy problems while helping the planet. But we must be careful. The current shift is happening more because of market pressure than proper planning. ■

CPEC Phase-2

Pakistan, China Unveil New Roadmap

EU Report

The 14th Joint Cooperation Committee (JCC) meeting of the China-Pakistan Economic Corridor (CPEC) concluded in Beijing, ushering in Phase-II of the landmark initiative with a comprehensive roadmap for the next decade. However, the long-standing issue of capacity payments to Chinese Independent Power Producers (IPPs) remained unresolved, as Islamabad sought an extension in repayment timelines.

Federal Minister for Planning Ahsan Iqbal, in his closing remarks, hailed CPEC Phase-II as a "corridor of industrialisation, technology, sustainability, and shared prosperity." The new action plan, signed earlier this month, sets out ambitious targets across industrial cooperation, Special Economic Zones, agriculture modernisation, maritime development, mining, and flagship connectivity projects, including the ML-1 railway upgrade, Karakoram Highway (KKH) realignment, and Gwadar port development.

While China expressed willingness to move ahead, it pressed Pakistan for firm commitments on partial ML-1 financing, particularly in the context of Islamabad's ongoing IMF programme. Highlighting the "five corridors" of Phase-II — growth, innovation, green development, livelihood, and regional connectivity — the minister aligned them with Pakistan's URAAN 5Es framework, stressing urgency in fast-tracking ML-1 and KKH projects for uninterrupted connectivity and regional integration. He proposed holding JCC meetings every six months and Joint Working Group sessions quarterly to ensure effective oversight. ■

Water crisis: between industrial mismanagement and climate disasters

Abida Naurin

The writer is a Research Fellow at Pakistan Institute of Development Economics (PIDE)

Pakistan today faces a dual water emergency—crippling scarcity on one hand and recurring floods on the other. Ranked among the world's most water-stressed countries, the nation's water woes are aggravated not just by climate change, but also by years of poor governance, industrial negligence, and weak enforcement of environmental policies.

The recent floods that inundated vast areas of Sindh, Punjab, and Khyber Pakhtunkhwa are only the latest reminder of how fragile and mismanaged Pakistan's water system has become.

Industrial water mismanagement- Industrial activity, which contributes nearly 20 percent to Pakistan's GDP, is a key driver of water stress.

Over the last decade, industrial water consumption has surged by nearly 20 percent, with textiles, tanneries, chemicals, and cement industries at the forefront. More than 90 percent of industries, particularly those in Punjab and Sindh, depend on unregulated groundwater extraction. This has not only led to aquifer depletion but also triggered saline intrusion, reducing the availability of freshwater for both domestic and agricultural needs.

The bigger tragedy is the near absence of wastewater treatment. Less than 5 percent of industrial units are equipped with functional effluent treatment plants (ETPs). In Karachi, home to over 6,000 industries, untreated waste—including heavy metals, dyes, and toxic chemicals—is dumped directly into rivers and the Arabian Sea. Lahore, too, contributes hundreds of millions of tons of liquid and solid waste into the Ravi River each year. Such practices not only contaminate surface water but also seep into groundwater, which millions rely on for drinking.

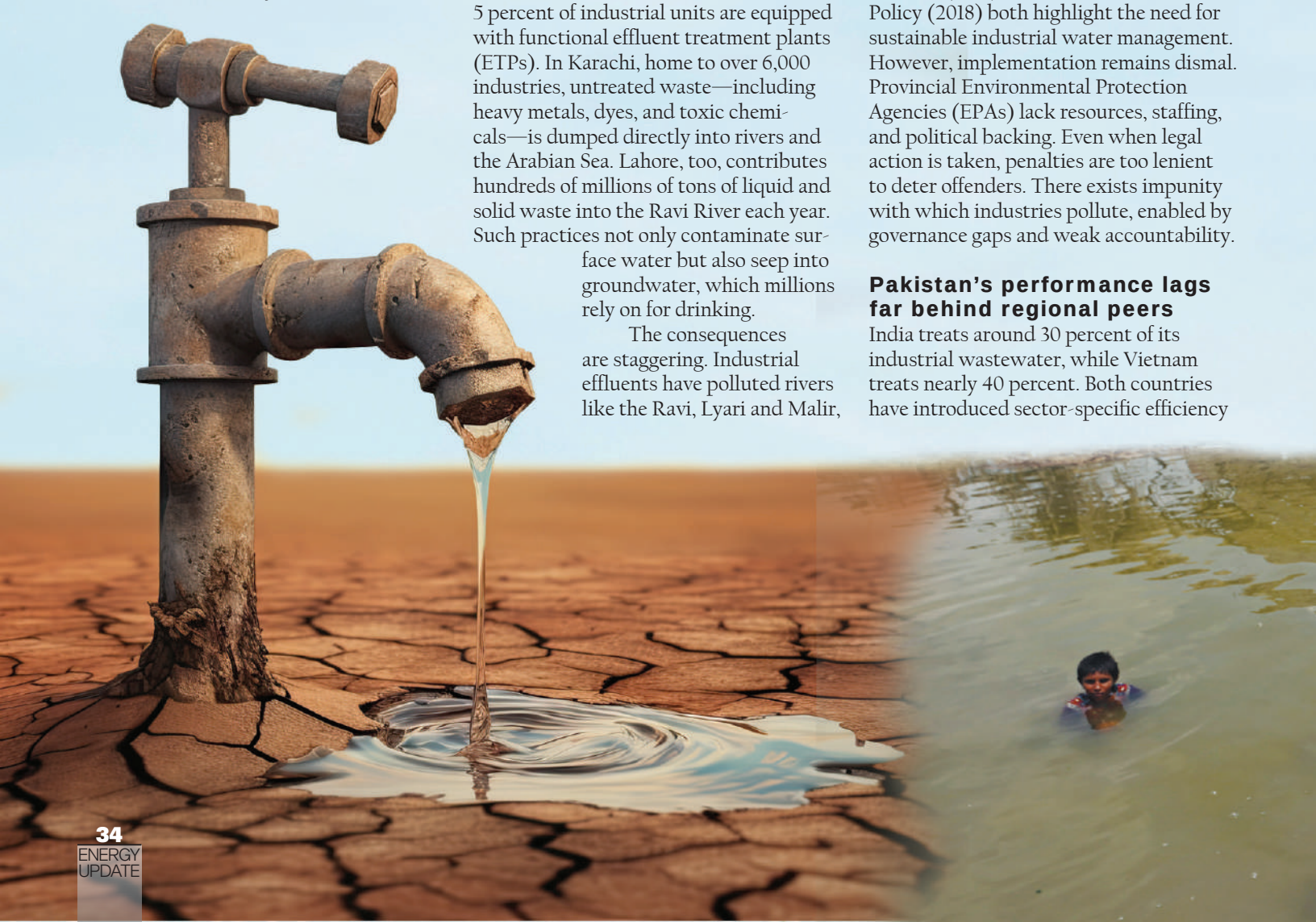
The consequences are staggering. Industrial effluents have polluted rivers like the Ravi, Lyari and Malir, decimating aquatic biodiversity and poisoning farmland. Communities living near industrial clusters face soaring cases of skin infections, gastrointestinal diseases, and long-term exposure to carcinogenic pollutants. Agricultural produce irrigated with contaminated water has further introduced toxins into food chains, endangering human health on a mass scale.

Environmental degradation has compounded the problem. Fertile lands are losing productivity due to toxic irrigation, while aquatic ecosystems that once supported livelihoods are collapsing. Instead of serving as engines of progress, industries are fast becoming catalysts of ecological decline.

Pakistan is not without policies. The Pakistan Environmental Protection Act (1997) and the National Water Policy (2018) both highlight the need for sustainable industrial water management. However, implementation remains dismal. Provincial Environmental Protection Agencies (EPAs) lack resources, staffing, and political backing. Even when legal action is taken, penalties are too lenient to deter offenders. There exists impunity with which industries pollute, enabled by governance gaps and weak accountability.

Pakistan's performance lags far behind regional peers

India treats around 30 percent of its industrial wastewater, while Vietnam treats nearly 40 percent. Both countries have introduced sector-specific efficiency



benchmarks, water pricing mechanisms, and incentives for recycling. Pakistan, by contrast, treats less than 5 percent of its wastewater and lacks any sectoral efficiency norms.

This failure to benchmark and adopt best practices leaves Pakistan with an industrial base that is water-inefficient, environmentally damaging, and globally uncompetitive.

The 2022 floods displaced millions and caused damage exceeding $30 billion. The floods of 2025 are once again testing Pakistan's resilience. But beyond displacement and destruction, these floods have also carried untreated industrial waste across rural and urban landscapes. Polluted floodwaters have contaminated drinking supplies and farmland, spreading waterborne diseases such as cholera, typhoid, and dysentery.

Ironically, while floods bring an excess of water, Pakistan lacks the infrastructure to store and manage it. Much of the water rushes into the sea, wasted, even as other regions continue to experience drought. Industrial waste exacerbates the disaster by clogging storm drains, reducing the capacity of urban centers to cope with heavy rainfall. Instead of mitigating the effects of climate shocks, Pakistan's industrial practices worsen them.

Addressing Pakistan's water crisis demands urgent reforms centered on industrial water management. Effective industrial water management in Pakistan requires a comprehensive package of reforms.

Mandatory water audits should be introduced, compelling industries to disclose their water consumption and effluent discharges, with strict penalties imposed for false reporting. At the same time, investment in wastewater treatment infrastructure, particularly common effluent treatment plants (CETPs) for industrial clusters, must be prioritized through shared financing models between the government and private sector.

Strengthening the capacity of provincial Environmental Protection Agencies (EPAs) is equally critical, equipping them with adequate resources, monitoring technologies, and legal authority to enforce compliance. Introducing water pricing mechanisms to regulate and charge groundwater extraction would discourage unsustainable overuse. Furthermore, effective public–private partnerships involving industry associations, donor agencies, and civil society can play a key role in accelerating the adoption of water-efficient technologies.

Finally, industrial planning must be made flood-resilient by ensuring that waste management and drainage infrastructure in industrial zones is climate-proofed, thereby reducing the risks of pollution during extreme weather events.

Pakistan's water future cannot be secured by focusing only on agriculture or climate adaptation. Industrial mismanagement lies at the heart of the crisis, silently undermining water security, public health, and ecological sustainability. The floods of recent years serve as a grim reminder: when unchecked pollution collides with climate shocks, the damage multiplies.

Water is not just an economic input—it is the foundation of life. Pakistan must act decisively, ensuring industries become part of the solution rather than the problem. If reforms are further delayed, the country risks drowning in its own negligence—sometimes in floods, sometimes in scarcity, but always in crisis. ■

PM pledges 62% renewables in energy mix by 2035

EU Report

Prime Minister Shehbaz Sharif on Wednesday announced that Pakistan would raise the share of renewables, including hydropower, to 62% of the country's energy mix by 2035, calling it a key step in building climate resilience.

Speaking at the Climate Summit 2025 on the sidelines of the UN General Assembly, the premier also pledged to increase Pakistan's nuclear energy capacity to 1,200 megawatts by 2030. He also announced the government's plan to shift 30% of public transport to environment-friendly energy sources, a commitment that aligns with Punjab Chief Minister Maryam Nawaz's ongoing push to introduce electric buses in the province.

Shehbaz underlined that Pakistan, one of the countries most vulnerable to climate change, has already suffered immense losses due to recent floods and extreme weather events. He said promoting climate-resistant and environment-friendly agriculture will also be a priority in the coming years.

By contrast, Chinese President Xi Jinping used the same platform to set out new targets, saying China aims to cut economy-wide greenhouse gas emissions by 7 to 10% by 2035 from its peak and raise the share of non-fossil fuels to over 30% of total consumption.

He added that the country's installed wind and solar capacity will reach 3.6 billion kilowatts by 2035, more than six times the 2020 level. UN Secretary-General Antonio Guterres, meanwhile, called on all signatories of the Paris Agreement to adopt new and more ambitious climate plans for 2035. ■

Rs780 Billion Circular Debt Reduced in One Year, Rs1.225 Trillion Deal Signed

EU Report

Federal Minister for Power Sardar Awais Ahmed Khan Leghari has said the government has made a record reduction of Rs 780 billion in circular debt within one year.

Circular debt has been a huge burden on Pakistan's economy, rising from Rs 1,100 billion in 2018 to about Rs 2,400 billion before PML-N returned to power. By controlling theft, losses, renegotiating power purchase agreements, and cutting interest rates, the government saved billions and reduced circular debt significantly.

The remaining Rs 1,225 billion circular debt has been resolved through an agreement with 18 banks, promising to eliminate this debt within six years. The current surcharge of Rs 3.23 per unit will be eliminated in 5-6 years as well. The minister highlighted the reforms will boost investor confidence and benefit consumers by improving the energy sector's financial health.

Prime Minister Shehbaz Sharif officially launched this historic circular debt reduction scheme recently.

Analysis

While officials celebrated at the Prime Minister's House for this landmark borrowing, every consumer has been quietly handed a six-year bill in the shape of Rs. 3.23 per unit as a guarantee to secure Rs 1.225 trillion from 18 banks to pay off circular debt owed to IPPs.

Instead of recovering Rs 1,000 billion in excess profits from Independent Power Producers (IPPs), or fixing theft, inefficiencies, and policy failures, the government chose the easy route: borrow more, and make citizens pay. Rs 3.23/unit surcharge on electricity—already in place—will now continue for six more years, collecting Rs 323 billion annually. Total cost to citizens: Rs 1.938 trillion.

For a household using 300–400 units monthly, that's Rs 1,000–1,300 extra per month. Over six years, it's Rs 75,000–100,000 drained from budgets meant for groceries, school fees, medical care, and savings. For a shopkeeper earning Rs 40,000, it's four days of income lost every month. For a teacher, it's a choice between meals and education. For a factory worker, it's 5% of income gone. For small businesses, it's a death sentence—while regional competitors thrive.

Meanwhile, IPPs continue to enjoy dollar-indexed returns, guaranteed payments for unused electricity, and "take-or-pay" contracts that bleed the public dry. Pakistan's generation capacity is 46,000 MW, but peak demand barely touches 30,000 MW. Yet citizens pay capacity charges year-round—for idle plants.

The restructuring includes Rs 660 billion in existing loans and Rs 565 billion in fresh financing. But it doesn't touch the remaining Rs 1.175 trillion in circular debt or the Rs 1,000 billion in excess profits that could've been recovered. Instead, the surcharge—originally temporary—is now locked in for six more years.

Other countries—South Korea, South Africa, India, the Philippines—forced power companies to cut profits, renegotiated contracts, and conducted forensic audits. Pakistan did the opposite: preserved corporate profits, maximized citizen pain, and called it "economic development."

This deal was a centerpiece of the IMF's $7 billion programme. The IMF loves it—guaranteed repayments from captive consumers. Investors love it—guaranteed profits. The regime loves it—zero accountability. But the people? They get load shedding, inflated bills, and six more years of financial suffocation.

The structural flaws that created circular debt remain untouched. IPPs plan to add another 7,460 MW by 2032, while government projects add 11,550 MW more—ensuring capacity charges continue growing.

This is a moment of mourning and not celebration. Because through this legalized vandalism consumers will pay for the blunders of officials who signed these agreements with IPPs.

Instead of burdening the consumers, the government should reduce its expenses by taking back the hefty increase in Parliamentarians' salaries and perks, do away with free units and fuel allowances. Provincial Governments should do the same and contribute the collective sums to pay the circular debt. ■

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Why we need to shift from survival to scale

Syed Asad Ali Shah

The writer is a former managing partner of a leading professional services firm and has done extensive work on governance in the public and private sectors

The US resets the frontier because ideas find top talent, risk capital and strong legal protection. China turns policy continuity into scale – special zones, reliable infrastructure and engineers who deliver. Different paths, same engine: private enterprise led by capable people under credible, predictable rules.

A perspective check. Through much of the 1980s, Pakistan's income per person was higher than China's; China's larger total GDP simply reflected its bigger population. Then Deng Xiaoping's 'reform and opening' (from 1978) rewired incentives – SEZs, dual-track pricing, VC-friendly FDI, export push – unleashing productivity and investment and propelling China to the world's second-largest economy. If smarter incentives and disciplined delivery transformed an economy that started behind Pakistan on a per-capita basis, why can't we engineer our own version now?

We cannot run a US-style, consumption-led model financed by the rest of the world. Whenever domestic demand outruns our ability to earn foreign exchange, we hit the external wall – devaluation, inflation and another IMF reset. Sustainable growth must be earned: raise firm-level productivity with technology and better management, and turn that productivity into exports.

The urgency is sharper in the era of AI, Generative AI and Agentic AI, which is compressing product cycles and automating complex workflows. The US is commercialising these tools through universities, startups, cloud platforms, and deep capital markets; China is embedding them at scale in manufacturing and logistics. Countries that harness AI will gain productivity and export share; laggards will fall permanently behind.

Yet we still manage to the next tranche, not the next decade. Pakistan is in its 25th IMF programme – three-year arrangements that prevent default but don't build competitiveness. With debt above $130 billion, deficits are closed via higher taxes and import compression, not by installing a productivity-and-exports engine. Add a culture of complacency, low risk-taking and short-termism, and reform stalls. The obstacle is will – to slim and refocus an overgrown state and to back private enterprise with stable rules, as both the US and China did in their own ways.

Below is an eight-point agenda – grounded in those lessons and tuned for an AI-accelerating world – to move from crisis management to productivity-led growth.

One, make investment worthwhile: predictable rules and lower taxes. Legislate a 10-year path that cuts the effective direct tax burden from around 50 per cent to 20–25 per cent, lowers GST to 10–12 per cent, and sets a transitional 5.0 per cent rate for highly informal sectors to pull them into the net. Abolish turnover/

minimum taxes; cap routine withholding at low, creditable rates; zero-rate exports with automatic, time-bound refunds and make capital goods and export inputs duty-free. Pair lower rates with digital, even-handed enforcement (e-invoicing, POS integration, risk-based audits) so compliant firms aren't undercut.

Two, break the three-year trap. Adopt binding, self-enforcing rules that outlast politics: a legal fiscal anchor (debt-to-GDP and primary balance) with automatic correction triggers; a medium-term revenue plan that broadens the base while lowering rates; and a cross-party five-year Export & Human-Capital Compact. Create an independent Productivity & Competition Commission (global-calibre experts, protected tenure, ring-fenced budget) to expose bottlenecks and cartels. Link parts of federal/provincial transfers from NFC to measurable outcomes.

Three, put people first: education and skills. Human capital is the binding constraint. Keep girls and boys in school; address literacy and numeracy issues; link learning to work via short, employer-led training and modern apprenticeships. Use public-private partnership models (for example, Punjab/Sindh Education Foundations with strong boards with reasonable independence from governments) to produce talent at scale and quality for the 21st century.

Four, make technology adoption a priority. Technology is doing today's work better, cheaper and more reliably. Use scalable levers: tax incentives for software and automation; matching grants for digital operations, quality systems, and energy management; open testbeds for AI/robotics; and digital public rails (identity, payments, filings) that cut transaction costs. Rule of thumb: people × tech = productivity.

Five, build the capital ladder – from ideas to scale. Banks mostly fund government and a few large firms; new ideas lack collateral. Shrink government deficits so credit flows to business and expand risk finance: a professional fund-of-funds to co-invest with private VC/growth investors; prudent pension/insurance allocations under strong governance; predictable exits via modern listing and M&A rules. Protect minority investors and IP so founders and backers trust each other. The state shouldn't pick winners – just ensure good ideas find money.

Six, launch a National Productivity Mission. Shift incentives instead of micromanaging. Offer time-bound tax credits for verified productivity gains, low-cost finance for energy-efficiency retrofits and stronger quality infrastructure (standards, testing, certifications) so exporters meet buyer requirements quickly. Publish cluster scorecards – on-time delivery, defects, energy intensity – to drive learning and peer pressure. Make it cheaper to improve than to stand still.

Seven, put exports at the centre. Merge China's export discipline with America's product innovation. Digitise borders end-to-end (single window, standard data, service-level guarantees); expand bonded storage and cold chains; ensure steady, fairly priced power for export clusters. Keep the exchange rate realistic. Choose few, focused wedges where global demand is rising and Pakistan can be competitive within 3–5 years; align standards, finance, and promotion; measure outcomes, not announcements.

Eight smaller, sharper government: cut waste to fund growth. Do fewer things well. In 12 months, map entities; abolish or merge overlaps; sunset authorities that fail cost-benefit tests. Cap non-priority current spending below inflation for three years while protecting education, health, maintenance, and export logistics.

Freeze non-essential hiring; reduce administrative headcount via attrition/voluntary separation while paying for skill in frontline services and regulators. Move HR, payroll, procurement, and IT to shared services; hard-budget commercial SOEs, privatise/close chronic loss-makers, list viable ones. Mandate e-procurement and open contract data; tie secretaries' and CEOs' tenure and pay to quarterly KPIs.

Sceptics will ask if any of this is possible in a system with a deeply entrenched culture of status quo and live review-to-review. The answer is bold leadership – changing incentives so reform is rewarded and inaction is costly; making performance visible through public dashboards; and admitting what IMF programmes won't: we cannot tax and import-restrict our way to prosperity; we must produce, compete and export.

The path is aligned with successful precedents – from the US and China to smaller high performers: rule of law and risk capital on one side, and discipline and execution on the other. Build capital markets that promote big thinking and smart risk-taking. Make exports the organising principle of logistics, energy, and standards. Enforce competition, not connections. Hold the state to the same standard we ask of business: deliver what you promise, on time.

Our future cannot be borrowed; it must be earned – or we risk becoming a country lost in time while others build tomorrow. ■

Sindh Chief Minister Syed Murad Ali Shah meets Ms. Natalie Ashton Baker, U.S. Charge d'Affairs, at CM House.

Sindh Chief Minister Syed Murad Ali Shah meets with the newly appointed Consul General of Turkiye, Mr Ergul Kadak, during a courtesy call at CM House

Can EVs help break Pakistan's fossil fuel dependency?

The country hopes to increase electric vehicle adoption with its new policy, but a deep dependency on fossil fuels stands in the way, experts say

Mohammad Bilal

Mohammad Bilal is a seasoned journalist with nearly a decade of experience covering economic and business affairs. His work focuses on macroeconomic trends, industry developments, and policy analysis in Pakistan

Pakistan imports billions of dollars' worth of oil annually. This has not only kept its foreign reserves under pressure, but also entrenched inflation and worsened urban pollution. As the country navigates an energy and environmental crisis, experts and activists are asking: can Pakistan switch gears from polluting vehicles to electric vehicles (EVs) and embrace a cleaner and more sustainable future?

The country has set ambitious goals with its New Energy Vehicle Policy 2025-30 launched in June to replace the original of 2019. It wants 30% of all new vehicle sales to be electric by 2030, and by 2050, all new vehicles. Though encouraging on paper, these goals are being held back by policy inconsistency, inadequate EV infrastructure and a slow-moving industrial base. Taking the steps to achieve them in a country structurally dependent on fossil fuels will not be easy.

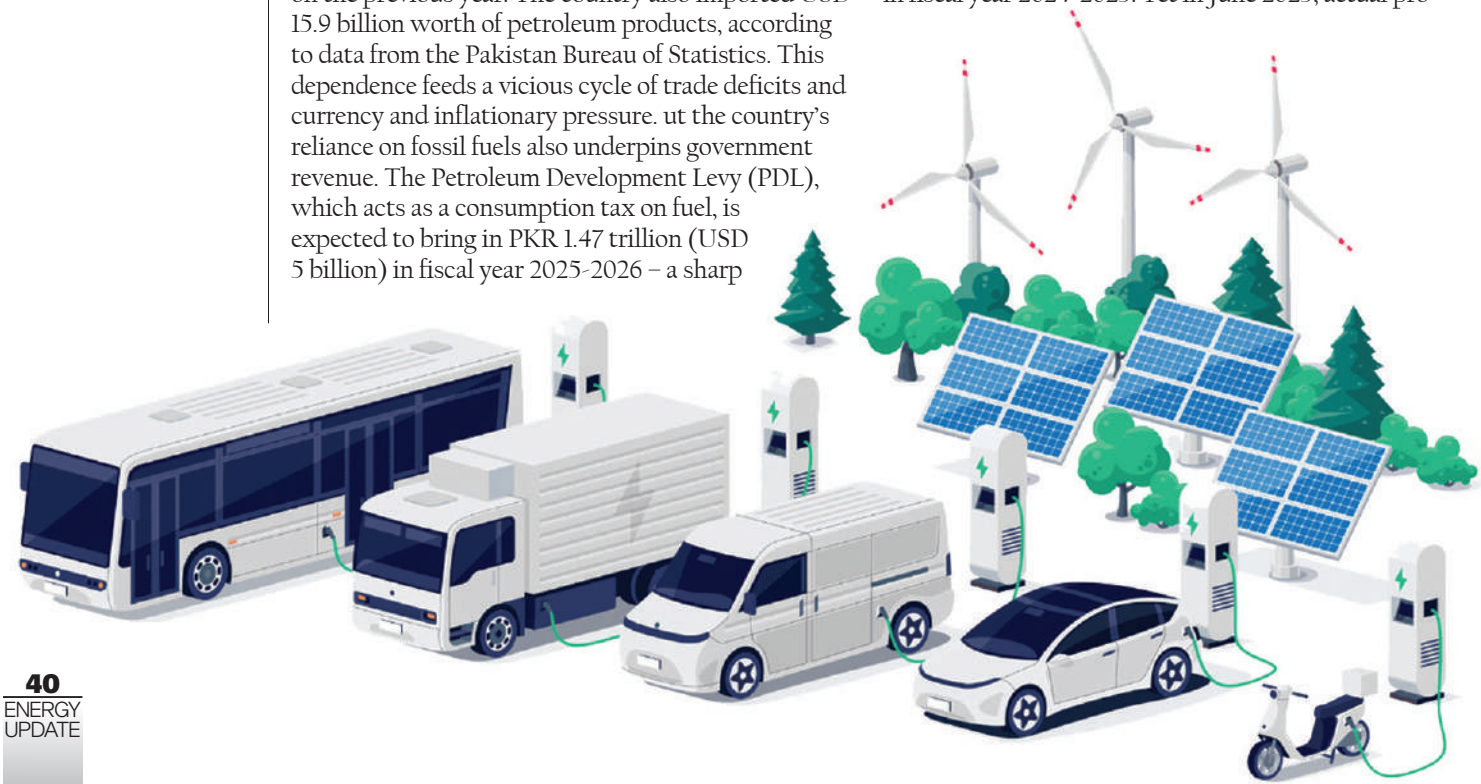
Pakistan's deep relationship with petrol

The transport sector accounted for 80% of Pakistan's total petroleum consumption in 2024-25, up by 8% on the previous year. The country also imported USD 15.9 billion worth of petroleum products, according to data from the Pakistan Bureau of Statistics. This dependence feeds a vicious cycle of trade deficits and currency and inflationary pressure. ut the country's reliance on fossil fuels also underpins government revenue. The Petroleum Development Levy (PDL), which acts as a consumption tax on fuel, is expected to bring in PKR 1.47 trillion (USD 5 billion) in fiscal year 2025-2026 – a sharp rise from PKR 1.16 trillion the previous year. This comes after the government removed all restrictions on where it can set the levy, which was previously capped at PKR 70. The new budget has also introduced a carbon levy of PKR 2.5 per litre, which is expected to double next year. These levies were introduced as part of a funding agreement with the International Monetary Fund (IMF).

While positioned as a climate action tool, the carbon levy is also a small money maker, anticipated to add PKR 45 billion to annual revenues in the next fiscal year, equivalent to 0.3% of the total tax revenue of PKR 14.131 trillion. Combined with the PDL, this makes 10.72%. Transitioning to electric mobility will therefore directly impact the government's fiscal machinery. Additionally, "the absence of earmarked spending or compensatory schemes makes the levy appear more like a budget-balancing act than a climate response", noted Saad Ali Ahmed, research assistant at Islamabad-based non-profit, Sustainable Development Policy Institute (SDPI), in The News. He added that "the term 'carbon levy' also suggests a climate-focused policy tool, but there is little indication of a structured plan to use the revenue for environmental or social objectives."

The New Energy Vehicle Policy

In the power sector, Pakistan's generation capacity far exceeds current consumption, offering an incentive for greater adoption of EVs. The country's installed electricity generation capacity was 46.6 GW in fiscal year 2024-2025. Yet in June 2025, actual pro-



duction stood at just 41% of that, at 13,744 GWh (19.1 GW). Danish Khaliq, vice president of sales and strategy at BYD Pakistan, says "this inefficiency is "glaring." EVs could absorb this surplus power and improve grid utilisation, he notes.

The NEV Policy 2025-30 could address the issue. In total, the policy is expected to reduce annual fuel use by just over 2 billion litres. It includes over PKR 100 billion in subsidies over the policy period and provides significant reductions in electricity tariffs for charging infrastructure – a move that began earlier this year with a 45% tariff relief approved for EV charging stations.

Local EV manufacturing and adoption

China's dominance in EV manufacturing has positioned it at the centre of Pakistan's green transport transition. The 2024 arrival of BYD in the country was viewed as a significant breakthrough. Partnering with a subsidiary of Hubco, Mega Motor Company, BYD announced plans for a USD 200 million local assembly plant in Karachi to be completed in 2026, aiming to roll out thousands of vehicles as well as the network of fast chargers.

EV adoption in Pakistan hasn't been limited to personal transport, though. Heavy-duty electric mining trucks are on the road in Thar and Balochistan's coal-rich belts. Public transport is also beginning to gain traction: the World Bank has approved a USD 300 million loan to help Punjab replace diesel buses with electric ones, starting in cities like Lahore. Yet local manufacturing progress on EVs so far has been modest. Roughly 40,000 to 45,000 electric bikes and only a few hundred electric cars were produced in 2024-25, according to a government official familiar with the data, who requested anonymity. The official noted that while over 60 companies have received licences to manufacture EVs, many have yet to begin production.

The country also depended on fossil fuels for 53% of its electricity in 2024. Motorists wait to fill their vehicles' tanks at a petrol station

Motorists queue at a petrol station in Peshawar after a government fuel price hike.

The IMF, which gave Pakistan a USD 7 billion loan in 2024, opposed sales tax concessions for locally sold EV parts, and said that no future concessions should be introduced, reportedly arguing that they would affect revenue generation and fiscal discipline. Reversals in renewable-energy policies – like cuts to solar net metering rates – are also likely to shake investor confidence. Additionally, despite strides towards wider adoption of EVs with its NEV Policy, Pakistan is still actively investing in its fossil fuel infrastructure and oil and gas resources.

The country has a USD 1.2 billion financing facility with the Saudi Fund for Development in place, allowing for the import of oil from Saudia Arabia on deferred payment for a year. Islamabad also has long-term LNG import contracts with QatarEnergy, a 3 million tonne annual supply 10-year contract with Qatar Petroleum, and signed a 14-year contract with Italy's Eni in 2017.

Looking ahead

Though there is a belief that elements of the NEV Policy will produce results, experts say that for EVs to truly break fossil fuel dependency, more needs to be done to increase adoption, primarily by reducing costs and changing perceptions. In 2024, Pakistan's Urban Unit, a policy advice organisation, noted in its report outlining policy recommendations for EV adoption that such vehicles are on average 20-30% more expensive than petroleum-based competitors, and are "way above the affordability limits of a low-income household".

Khalid Waleed, a research fellow at the SDPI with over a decade of experience in Pakistan's energy sector, emphasised the importance of retrofitting schemes, such as those that install EV capabilities on old motorbikes at low cost. "We've seen promising models where banks accept old bikes as collateral and offer retrofitting for around PKR 100,000 (USD 352). Such initiatives can significantly accelerate adoption." ■

Suspension of Indus Water Treaty

Implications for Pakistan's Power, Economy, and Water Security

Mustafa Tahir

Write is Deputy Editor of Energy Update

Recent developments surrounding India's suspension of the Indus Waters Treaty (IWT) have raised serious concerns in Pakistan about electricity costs, agricultural stability, and long-term environmental and economic risks. Experts, including Dr Khalid Waheed of SDPI, argue that Pakistan is entering a critical period. This article examines the facts, figures, and potential consequences.

What Has Happened

On 23 April 2025, India declared the IWT to be in "abeyance" following a deadly attack in Pahalgam that India attributes to Pakistan.

Along with suspending the treaty, India has halted the sharing of hydrological data that had been part of the treaty obligations—such as flood warnings, river-flow data, glacier melt information, etc.

India has also fast-tracked hydropower and reservoir projects on the "western rivers" (i.e. those that feed into Pakistan) and in some cases, carried out actions (like reservoir flushing) without consultation.

Hydropower and Electricity: The Risk of Higher Costs

Hydropower constitutes a significant portion of Pakistan's electricity mix. Reports estimate around 25–27 percent of electricity generation capacity comes from hydropower projects tied to the Indus, Jhelum, and Chenab systems.

Dr. Khalid Waheed of SDPI has warned that any reduction in water flow will reduce hydropower generation, forcing Pakistan to fill the shortfall with expensive fossil fuel-based power. Even a 1 percent drop in river water flow is estimated to add Rs 5.8 billion to electricity generation costs. A one-rupee depreciation of the rupee, he says, would add another Rs 8.2 billion in generation expenses. Without treaty protections, unpredictability in river flows and withholdings of hydrological data mean less ability to plan for droughts, floods, and peak power demands.

Broader Economic and Social Impacts

Agriculture: The Indus Basin supplies about 80 percent of Pakistan's irrigation water. Disruptions in water flow or timing affect crop sowing (especially cotton, rice, sugarcane), yields, and food security.

Water scarcity is becoming more severe. Pakistan's per-capita surface water availability has dropped from 5,260 cubic meters in 1951 to ~1,000 cubic meters by 2016, with projections for ~860 cubic meters by 2025. These levels are below the standard threshold of water stress or scarcity. Economic growth and debt burden: The strain on agriculture, electricity, and subsidies can slow GDP growth. Industries will face higher production costs (electricity + water for processes), inflation in food and energy may follow. Pakistan already has substantial circular debt in the energy sector.

Policy Responses & Reforms

Dr. Khalid Waheed has advocated for reforms tied to environmental sustainability, including moving toward cost-reflective tariffs (electricity pricing based more closely on actual generation costs), reducing cross-subsidies, and shifting subsidy delivery from electrical bills to social support such as through BISP (Benazir Income Support Programme). He also proposes providing solar panels to low-income households to reduce dependence on grid power and recurring subsidy costs.

The government's agreement with the IMF under its Climate Resilience Program includes phasing out slab-based billing, reducing the fraction of electricity consumers defined as "protected" from tariff increases. Currently ~54% of electricity users are protected; under reforms this may fall to ~40%. These reforms are meant to promote efficiency but may increase costs for lower-use households. (Dr. Waheed)

Challenges & Risks

Technical feasibility: While fears exist that India could physically reduce water flows, many analysts say India currently lacks the infrastructure to completely stop flows

from western rivers. However, the risk from smaller incursions (manipulating release timing, controlling data sharing, reservoir operations) remains real.

Environmental and disaster risk: Without river data sharing, flood forecasting suffers. During monsoon seasons, absence of timely information increases risk of damage. Downstream ecosystems (river deltas, groundwater recharge zones) could suffer from reduced or erratic flow. Social and economic equity: Changes in electricity tariffs and subsidies could hit small farmers, low-income households, and rural consumers much harder unless compensatory measures are carefully designed. Sudden cost increases in electricity and water tend to become inflationary, especially in food prices.

What This Means for Electricity Costs & Pakistani Consumers

Based on combined inputs:
Electricity costs are likely to go up, potentially substantially, if hydropower generation decreases and reliance shifts toward fossil fuel generation.

The cost increase will be felt both by the government (through subsidies, fuel imports) and consumers (through higher tariffs) unless policy offsets are put in place. Depreciation of the rupee, inflation in fuel and transport, and supply chain challenges will further amplify cost pressures. Lower reliability of hydropower may mean more load-shedding or less stable power supply, which imposes hidden "costs" (business losses, health, etc.).

Conclusion

The suspension of the Indus Waters Treaty is more than a diplomatic or environmental issue—it has direct economic and social implications for Pakistan. Analysts like Dr Khalid Waheed, supported by independent reports, suggest that even modest reductions in water flow or treaty-related disruptions could lead to billions of rupees in extra costs for electricity generation, and set off chain reactions affecting agriculture, food inflation, and overall economic stability. Mitigation will require transparent policy action: investing in renewable energy (particularly solar and wind), improving water management infrastructure, reforming tariff structures with protections for the poor, and pushing for renewed international dialogue and treaty mechanisms. ■

ISMO's revised list highlights cheapest, costliest power plants

Khalid Mustafa

As Pakistan battles rising fuel prices and a widening energy shortfall, the Independent System and Market Operator (ISMO) has issued a revised Economic Merit Order (EMO) — a crucial document that lays bare the true cost of powering the country.

The latest EMO, issued in coordination with the Central Power Purchasing Agency (CPPA-G), aims to optimise electricity dispatch based on real-time fuel prices. The merit order assumes ideal plant performance — full-load efficiency, uninterrupted fuel availability, and zero outages. In practice, dispatch decisions are rarely so straightforward. Fuel stock positions, especially for RFO-based plants, are often outdated or unavailable, while dedicated gas plants have strict minimum-dispatch clauses written into their contracts.

The cheapest power plant in the merit order is Uch-I, generating electricity at Rs3.113/kWh. Liberty Power follows it at Rs5.1206/kWh. Next comes Thar Coal Block-I with a generation cost of Rs 5.5171/kWh, followed by Engro Thar Power at Rs6.5174/kWh, Thar Energy Limited at Rs6.5273/kWh, and Thal Nova at Rs6.5300/kWh.

Following these are gas-based plants such as the 747 MW Guddu (Combined Cycle), producing electricity at Rs9.664/kWh. Then comes Foundation Power at Rs11.1201/kWh, Lucky Electric Power Company at Rs11.3800/kWh, and Engro Powergen Qadirpur at Rs11.6533/kWh. Port Qasim, an imported coal-based plant, follows closely at Rs11.8668/kWh.

The Uch-II plant, when its generation exceeds 152,375 MWh, produces electricity at a slightly higher cost of Rs12.1679/kWh. Jamshoro (coal) follows at Rs13.5756/kWh, while the 747 MW Guddu (Open Cycle) plant costs Rs13.8450/kWh. Uch-II, another gas-based plant, generates at Rs14.4844/kWh, while Engro Qadirpur (gas bdr/PEL) comes in at Rs14.5812/kWh.

Moving higher, Sahiwal Power produces at Rs16.6498/kWh. RLNG-based plants such as NPPMC-HBS (Combined Cycle) generate at Rs19.6565/kWh, followed by NPPMC–Baloki (Combined Cycle) at Rs19.8565/kWh, and QATPL–Bhikki (Combined Cycle) at Rs20.0131/kWh. Punjab Thermal Power (RLNG) comes next at Rs20.4755/kWh, and China Power Hub Generation Company (coal) at Rs20.7993/kWh.

Liberty Power, after crossing 61,904 MWh, rises to Rs21.4105/kWh. Other RLNG-based plants include Orient Power Company Ltd at Rs24.2531/kWh, Nandipur (Combined Cycle) at Rs24.6553/kWh, Halmore Power at Rs24.7171/kWh, Sapphire Electric Company at Rs24.7627/kWh, and Saif Power at Rs24.8272/kWh.

Next, KAPCO Block-I (RLNG) costs Rs26.0660/kWh, followed by KAPCO Block-II (LSFO) at Rs26.7396/kWh. The same block on RLNG rises to Rs28.0167/kWh, and on LSFO again to Rs29.0167/kWh. Then comes Nishat Power Limited (RFO) at Rs29.2416/kWh, Altern Energy Ltd (Phase II, RLNG) at Rs29.3130/kWh, and FKPCL (RLNG) at Rs29.3233/kWh.

Costs rise further with K-Electric (RFO) at Rs31.0875/kWh, followed by Davis Energy (RLNG) at Rs32.1463/kWh, Nishat Chunian Power Ltd (RFO) at the same Rs32.1463/kWh, and Narowal Power (RFO) at Rs32.1587/kWh. Altern Energy (Phase I, RLNG) then jumps sharply to Rs36.9650/kWh.

At the high-cost end, Attock Gen (RFO) generates at Rs43.2591/kWh, while NPPMC-HBS (Combined Cycle, HSD) rises to Rs44.3070/kWh. Liberty Power (RFO) follows at Rs45.9370/kWh, and Punjab Thermal Power (HSD) at Rs53.8368/kWh. QATPL–Bhikki (Combined Cycle, HSD) is also among the highest at Rs51.7161/kWh, while NPPMCL-Baloki (Combined Cycle, HSD) comes in at Rs53.4577/kWh.

Among the most expensive are Orient Power (HSD) at Rs58.0221/kWh, Halmore Power (HSD) at Rs58.4464/kWh, Sapphire Electric Power (HSD) at Rs58.5967/kWh, and Saif Power (HSD) at Rs58.7404/kWh. Topping the list as the most expensive plant is Engro Powergen Qadirpur (HSD) at a staggering Rs72.8483/kWh. ■

The real promise of the Saudi pact

Dr Abid Qaiyum Suleri

The writer heads the Sustainable Development Policy Institute (SDPI) and is a member of the advisory board of the Asian Development Bank Institute

Saudi Arabia currently holds $5 billion in deposits with the State Bank, with $2 billion maturing in December 2025; Riyadh now has a strategic stake in Pakistan's stability that goes beyond sentiment; on minerals, Saudi Arabia's Manara Minerals has shown interest in Reko Diq

Pakistan and Saudi Arabia recently signed a strategic defence pact. While most commentary has centred on military cooperation, the more urgent question is whether this moment can also mark an economic turning point for Pakistan. Defence partnerships can stabilise borders, but economic partnerships transform nations.

For decades, our relationship with Riyadh has followed a predictable script: Saudi deposits parked at the State Bank to shore up reserves, oil-on-deferred-payment to ease import bills, and a temporary boost in confidence whenever Pakistan stumbled into a balance-of-payments crisis. These gestures were generous and they kept Pakistan afloat during difficult moments, but they were always stopgaps. They bought time rather than created resilience. This defence pact offers a chance to break that cycle and use political capital to build lasting institutions.

Saudi Arabia currently holds $5 billion in deposits with the State Bank, with $2 billion maturing in December 2025 and the rest by mid-2026. Every year, markets watch nervously to see if Riyadh will renew, with speculation shaking investor confidence and ratings. Pakistan should replace this annual cliffhanger with certainty – by negotiating three- to five-year terms or, ideally, a swap line with automatic rollover linked to IMF programme performance. That single change would end the drama of 'will Riyadh renew' and stabilise markets.

Likewise, the $1.2 billion oil-on-deferred-payment facility revived this year should not remain ad hoc. Institutionalise it as a standing arrangement, tied to a price band with an emergency top-up clause during commodity spikes. For a country spending a quarter of its import bill on fuel, predictability matters as much as quantum.

Energy security must be another pillar. The long-discussed Saudi-backed refinery has remained stuck at the memorandum-of-understanding stage for years. Pakistan should use this moment to lock in binding offtake agreements, storage facilities, and local-content requirements. Done right, the refinery could anchor Pakistan's downstream industry and reduce reliance on imported volatility. Left vague, it risks becoming another unfulfilled promise.

Renewables are equally urgent. ACWA Power, a Saudi giant, already

operates in Pakistan. With nearly 3GW of viable solar sites identified in national planning documents, Islamabad should push for gigawatt-scale projects and desalination plants for Karachi and Gwadar. But the deals must be auctioned competitively, with costs indexed transparently – not hidden in opaque 'take-or-pay' contracts that have bled the treasury and saddled the country with circular debt.

On minerals, Saudi Arabia's Manara Minerals has shown interest in Reko Diq. This project could reshape Pakistan's resource economy, but only if handled wisely. Any agreement must require onshore smelters and refineries, backed by export credit for downstream industries, with revenues shared transparently with provinces and local communities. Exporting raw ore alone would repeat the mistakes of the past, where Pakistan lost strategic assets on unfair terms.

Labour mobility remains Pakistan's hidden Saudi dividend. Remittances touched $38.3 billion in FY2025, with Saudi Arabia the single largest source. Yet most of our migrants remain trapped at the lowest rung of the skills ladder – drivers, construction labourers, domestic workers. Valuable though they are, this is not a strategy for growth. Pakistan should instead use this pact to negotiate a 'skills compact': Saudi-financed training centres in Pakistan, mutual recognition of qualifications and portability of pensions and insurance. Migration must become a deliberate export strategy, not just a social safety valve.

The cost of sending money home is another unnecessary drain. A one-point reduction in transaction fees would free up $300 million to $400 million annually for households. Pakistan has already joined the Saudi digital payment gateway Buna, but the corridor is underutilised. The priority now is to operationalise the Raast–Buna digital link so wages flow directly into Pakistani wallets at capped fees. Piloting payroll-to-wallet schemes in Saudi megaprojects like NEOM could both improve worker welfare and channel funds more efficiently.

Trade between the two countries remains sharply lopsided: Pakistan imports about $4.5 billion, mostly oil, while exports barely cross $0.8 billion, mainly textiles, rice and meat. This imbalance is not inevitable. Even modest tariff-quota windows for rice, halal meat, pharmaceuticals and IT services could narrow the gap and generate jobs at home.

A related ask is logistics: pre-clearance for perishables at Saudi ports, dedicated cold-chain corridors and Saudi co-investment in reefer transport. If Pakistani mangoes and meat reach Riyadh with the same reliability as Australian beef, market share will follow.

The Saudi Public Investment Fund (PIF) could also be transformative. By taking anchor stakes in upcoming privatisations – distribution companies, LNG terminals, container ports – PIF could bring credibility and attract other investors. But Pakistan must meet it halfway: governance safeguards, board seats, transparent audits and clear exit options. Pairing the PIF's long-term capital with sukuk issuances for restructuring state-owned enterprises could convert bailout money into real market depth.

What makes this moment unique is the defence pact itself. Riyadh now has a strategic stake in Pakistan's stability that goes beyond sentiment. This changes the political equation. It gives Islamabad leverage – if it chooses to use it. But leverage is not one-sided. Saudi Arabia will not commit billions without guarantees.

Pakistan must therefore offer: treaty-level investment protections with international arbitration, transparent power-purchase agreements and competitive auctions, one-stop investor clearance under the Special Investment Facilitation Council, transparent revenue-sharing with provinces, and robust compliance in digital payments. Without such governance assurances, even Saudi capital will hesitate.

There is a temptation among successive governments to treat every Saudi package as a fiscal crutch. That would squander this moment. Bailouts buy time; compacts build capacity. Pakistan must ask not just for dollars, but for durability. ■

Dubai's Wealth: More Than Just Oil

Many people think Dubai became rich only because of oil. The truth is very different. Today, oil makes up less than 1% of Dubai's GDP.

Instead, Dubai built its success on tourism, real estate, trade, and financial services. Tourism alone brings in a major share of income, with millions of visitors arriving each year to see the city's landmarks, shopping malls, and luxury lifestyle. Real estate and global business hubs also play a key role.

Dubai shows how smart planning and diversification can transform an economy. By not relying on oil, the city has become a global center for tourism and business - proving that vision and strategy can shape the future. Many people believe that Dubai became wealthy primarily due to oil. The truth is very different.

Petroleum Minister Hosts PARCO Board Members

Federal Minister for Petroleum Ali Pervaiz Malik hosted a dinner in Islamabad in honor of the Board of Directors of Pak-Arab Refinery Limited (PARCO). The gathering reflected the government's commitment to fostering collaboration with the energy sector and advancing Pakistan's refining and petroleum industry.

The event, held to welcome the foreign board members from Mubadla Energy, was attended by a gathering of high-profile dignitaries, including Federal Ministers, Members of Parliament, senior officials from the Petroleum Division, and other distinguished guests from the energy sector. Federal Minister Ali Pervaiz reiterated the government's resolve to address challenges facing the petroleum sector, while the Board members acknowledged his leadership and support in driving reforms and sectoral development.

The dinner was attended by Momin Agha, Chairman PARCO Board and Secretary, Ministry of Energy (Petroleum Division); along with other PARCO Board members Adnan Omar Bu Fateem, Vice Chairman PARCO Board and Chief Operating Officer, Mubadala Energy; Dr Mikael Berthod, Head of Joint Venture Management, Refining & Business Development, OMV Refining & Marketing MEA, Abu Dhabi; Zayed Al Mazrouei and Salem Al-Braiki, Representatives of Mubadala Energy; as well as Irteza Ali Qureshi, Managing Director, PARCO, and other dignitaries.

The event provided a platform to reinforce strong partnerships and align on shared priorities for Pakistan's energy future.

Team Energy Update at Canadian Solar product launch event

Sindh distributes scooties among women

EU Report

Pakistan Peoples Party Chairman Bilawal Bhutto Zardari handed over keys to women beneficiaries of the "Pink Scooty Scheme," a government initiative in Sindh that provides free electric scooters to women.

The scheme, launched by the Sindh Transport Department, aims to improve women's mobility and create greater access to transportation and employment opportunities across the province. Speaking at the event, Bilawal emphasised that the inclusion of women is essential for the development of any nation, economy, or society. He reiterated PPP's commitment to women's empowerment and highlighted the steps taken by the government to improve public transport access for women across the province.

"It is a matter of pride that Sindh has already introduced electric buses in public transport and then launched the dedicated Pink Bus Service for women," he said. "Today, we are taking another big step by distributing electric scooters free of cost to women, which will not only ease their daily commute but also provide greater access to employment opportunities," he added. ■

A picture of the Pakistan Business Summit (PBS), held in Peshawar. The Summit was jointly hosted by Nutshell Group and Al Baraka Bank Pakistan Ltd., with the Overseas Investors Chamber of Commerce & Industry (OICCI) as the Strategic Partner. Acting President & Chairman Senate of Pakistan Syed Yousuf Raza Gilani, Governor Punjab Faisal Karim Kundi attended as special guests, distributed awards.

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Pakistan should take advantage of China going green

Shahid Javed Burki

There is now growing consensus around the world that continuing use of fossil fuels for producing the increasing need for energy is causing global warming that has already had devastating consequences. Heavy rains and associated floods and wildfires have become common around the world. Pakistan has not been spared these weather events. The floods of 2025 have followed those that did a lot of damage in 2022 and more will come as the globe continues to warm.

This has been an unusual summer for many parts of the world. High temperatures and droughts have affected most of the American west. There were widespread fires that burnt significant acreage in California, Oregon and Washington states. Fires also burnt the forests on Canada's border with the United States. The smoke produced by the fires was visible in cities as far south as Washington, the American capital. There were also fires in Siberia. Heavy rains in India's western states resulted in floods. Heavy rains also affected Pakistan. This has now become a regular feature of the weather pattern in Pakistan. This time around, there were property damages and death in Chakwal, a city southeast of Islamabad.

Heavy rains in the hills that overlook the city brought landslides that destroyed many houses and killed scores of people. Several areas of Punjab, Pakistan's largest province, and the centre of its agriculture-based economy was severely affected. According to Umar Afzal, a deputy manager for hydrology at Pakistan's National Disaster Management Agency, "There

Continuing use of fossil fuels for producing the increasing need for energy is causing global warming

have been so many extreme weather events coming together — the urban floods, the cloudburst, the glacial outbursts and now these floods in Punjab. It's overwhelming."

The 1960 Indus Water Treaty signed by Pakistan's President Ayub Khan and Prime Minister Jawaharlal Nehru divided the six rivers of the Indus system into two parts. The Western rivers went to Pakistan and those in the east were given to India. Those going to India included the Ravi which flowed past Lahore. However, the river because of the diversion of water by India went dry. The floods of 2025 brought water and life back to the river.

The roaring Ravi River overflowed housing communities, both affluent and poor, built on its banks. In Punjab overall the deluge has forced more than 750,000 people to evacuate their homes, and submerged the crops of rice, maize and vegetables dotting once lush banks of rivers and canals. Coming just three years after record floods in 2022 that submerged a third of Pakistan, the heavy rains have underscored just how devastating and intense rainfalls have become the norm, rather than exception for the country.

Prime Minister Shehbaz Sharif has argued that not enough lessons were learnt from the 2022 floods, suggesting that human error such as construction near rivers and late warnings from the authorities have worsened the impact of the heavy rains. "Many of these catastrophes we have seen this summer - the floods in the north and in Punjab now — all have a common feature with communities built in the way of the rivers and interfering with nature. For instance, Park View City — a high-end residential area that was flooded in Lahore — was built with government's approval, on the banks of Ravi River. This was done despite repeated warnings from environmental activists and experts.

One way of dealing with this situation is for the world's industrial nations to move away from the use of fossil fuels for generating energy for industrial, transport and domestic use. Here China is setting an example that needs to be watched and matched around the globe. China's aggressive efforts to develop green energy, if followed by other industrial nations, should bring to an end the dependence the world has had on fossil fuels since the beginning of the industrial age. The Chinese dominance of clean energy industries is "creating the conditions for a decline in fossil fuel use", according to a report by Ember, a research group focused on the prospects for clean energy technologies.

The scale of Chinese production of batteries, solar panels and wind turbines has driven down the price of these technologies by 60 to 90 per cent. According to Ember, in 2024 more than 90 per cent of wind and solar projects commissioned worldwide produced more power cheaply than the cheapest available fossil fuel. China is the engine. It is changing the energy landscape not just domestically but in countries across the world.

"For too long, emerging economies have faced what seemed like a stark trade-off between growth and sustainability," said Suwit Khunkitti, Thailand's former deputy prime minister. The Ember report challenges that assumption. The global community that meets every year under the auspices of the UN has been pressing China to reduce the use of fossil fuels. China still burns more coal than rest of the world combined and emits more climate pollution than the US and Europe. The country has not yet seen a decline in the consumption of coal, though its GHG emissions have reached what seems like a plateau. But that is changing because of the actions taken by the government in Beijing that gave large subsidies for the development and production of products needed to develop green industries.

In 2024, China met 84 per cent of its electricity demand with solar and wind power. That meant that it was able to cut fossil fuel use by 2 per cent despite a growing demand for power. China's economy is now increasingly reliant on the clean energy sector.

Investment and production in clean energy in 2024 contributed nearly $2 trillion to China's GDP, a figure that was around one-tenth of the country's GDP. This is comparable to Australia's entire economy. According to the above cited Ember report, the clean energy sector grew at a rate three times that of China's overall growth rate.

As China is by far the largest foreign investor in the Pakistani economy, Islamabad should turn to Beijing to bring large-scale solar and wind power to Pakistan. On a previous occasion when Pakistan was faced with serious energy shortage which resulted in repeated power outages, Islamabad turned to Beijing for help. The Chinese responded by installing coal-fired plants, some of which were retired by the government in Beijing. This time around, Pakistan should take advantage of the enormous growth in China of green energy and have wind and solar plants included in CPEC, which is being currently redesigned. ■

Faulty coal & LNG policies

Dr Ikramul Haq

The writer, Advocate Supreme Court, Adjunct Faculty at Lahore University of Management Sciences (LUMS), member Advisory Board and Visiting Senior Fellow of Pakistan Institute of Development Economics (PIDE), holds LLD in tax laws

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In 2015, Pakistan's rulers stood before the nation, proclaimed coal, and liquefied natural gas (LNG) plants as "game changers". The fanfare was loud, the ribbon-cuttings grand, and the speeches triumphant. Yet a decade later, Pakistan stands buried under Rs 5200 billion (US$ 19 billion) in circular debt, crippled by imported fuel dependence, and battered by catastrophic floods that scientists link directly to climate change.

Where does lie the real tragedy? It is in the very ministries/politicians that sang songs of coal and LNG between 2015 and 2018! They are now lamenting and blaming climate change for Pakistan's suffering. Our Ministers of Planning and Climate Change appear at global forums and on television screens, mourning the floods of 2022 and 2025 as if they were helpless victims of calamity and climate change.

However, history records otherwise. Their policies, their choices, and their promises created the vulnerability they now decry. The question is not whether climate change is real — it is. The question is, who changed the game for Pakistan, and at what cost?

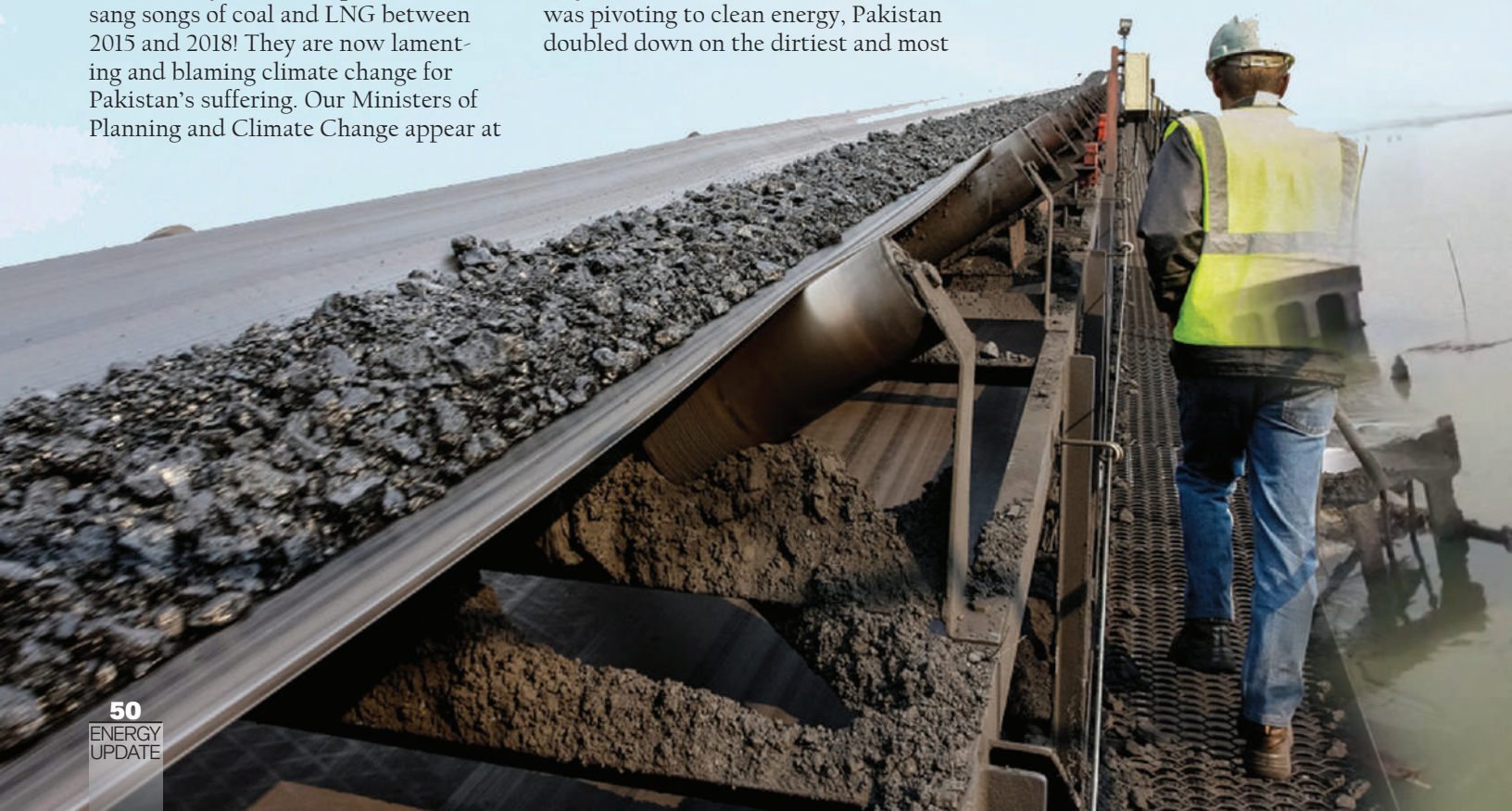
The coal and LNG-fired power projects were marketed as a bold leap forward. Imported LNG terminals were fast-tracked, and coal-fired plants in Sahiwal, Port Qasim, and Hub were inaugurated with patriotic fervour (sic). Speeches by then-ministers of planning and energy, hailed LNG as the "future of Pakistan"! Coal was dressed up as a cheap and secure fuel that would end power shortages forever. The numbers, however, tell a harsher truth.

According to 'Nepra's State of the Industry Report 2022', Pakistan's power mix had shifted dangerously toward imported fuels: 67 percent thermal (LNG, oil, coal), 29 percent hydro, and less than 1 percent renewables. At the very moment when the rest of the world was pivoting to clean energy, Pakistan doubled down on the dirtiest and most expensive fuels.

The result was devastating. Power-sector emissions surged. According to the Emissions Database for Global Atmospheric Research (EDGAR), Pakistan's CO2 emissions from power generation doubled between 1990 and 2015 — and then jumped sharply again after the new LNG and coal projects came online. Instead of reducing vulnerability, Pakistan locked itself into high-cost, high-emission, imported fuel dependence.

The financial and environmental consequences have been ruinous. By 2023, Pakistan's circular debt crossed Rs 5200 billion mark. The so-called "game-changer" plants became millstones around the economy's neck and environment disaster. Imported LNG prices, pegged to volatile global markets, drained foreign exchange reserves. Coal imports bled dollars we did not have.

The government raised tariffs, but consumers could not pay. The gap between billed revenue and actual recovery widened, feeding into circular debt — a cancer that now strangles the sector. The independent experts estimate that



these LNG projects alone inflicted an economic loss of nearly USD 50 billion — one of the most horrific policy blunders in global energy history.

While the nation bled, those who raised the alarm paid a heavy price. When one of us, Engineer Arshad H. Abbasi, warned relentlessly that LNG and coal would be a death sentence for Pakistan's economy when he wrote policy briefs, op-eds, and letters to prime ministers. He spoke on television, pointing to the evidence. For this, he had to undergo mental and physical torture, and survived multiple attempts on his life — punishment for telling the truth. This is a dark stain not only on Pakistan's history, but also on the conscience of the global community that now hears our ministers plead for aid.

Here lies the hypocrisy that must be called out. In 2022, when historic floods drowned one-third of Pakistan, our minister for planning stood at international forums demanding climate reparations. The man, who today is the face of climate diplomacy, spoke of Pakistan's "moral right" to aid. Rewind to 2015–2018, and these same voices glorified coal and LNG. They were not warning of climate change; they were promising salvation through fossil fuels. Their words are on record. The then Petroleum Minister and later Prime Minister of Pakistan, called LNG a "game-changer" and Planning Minister declared coal essential to "Pakistan's future growth"!

So let us ask plainly, who changed the game? Was it climate change, or was it the reckless policy decisions of Pakistan's leaders who ignored science, ignored global trends, and mortgaged the nation's future for short-term political gain?

Pakistan faces the worst floods, droughts, and heatwaves. However, the painful truth is that our own policies have exacerbated our vulnerability. The floods of 2022 and 2025 have not been "solely acts of nature". The ecological imbalances and climate worsening emanate from a decade of rising emissions, destroyed watersheds, and shortsighted planning. By locking Pakistan into coal and LNG, our leaders directly contributed to the greenhouse gas emissions destabilizing our climate.

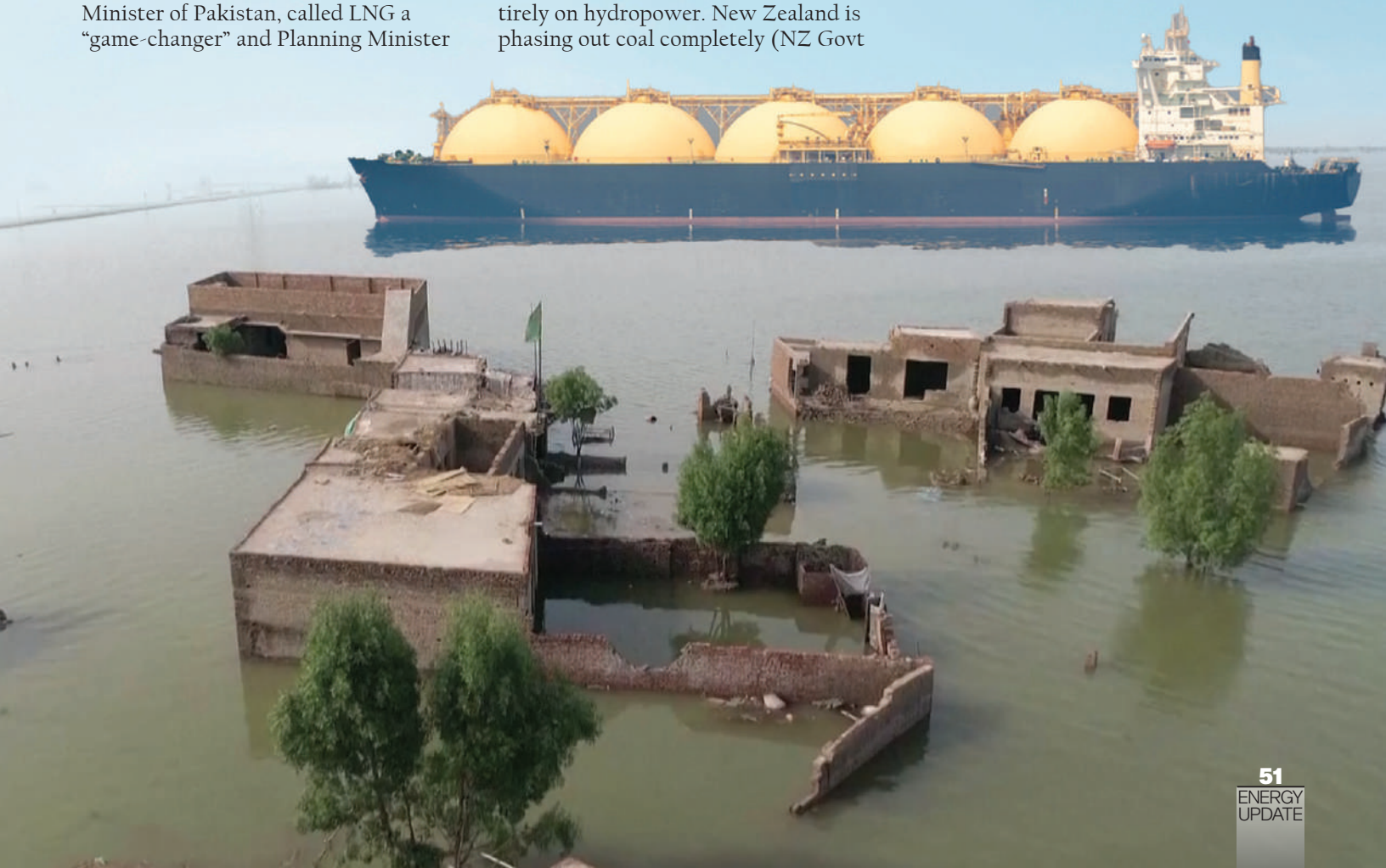
To blame only the global community while hiding our own complicity is deceitful. Yes, the world owes Pakistan climate finance (UNFCCC). Nevertheless, Pakistan also owes its people truth and honesty. We cannot cry for climate justice abroad while practising climate injustice at home.

Examples from abroad show the path we could have taken. Costa Rica produces nearly all its electricity from renewables. Norway runs almost entirely on hydropower. New Zealand is phasing out coal completely (NZ Govt Energy Policy). Pakistan had the same opportunities. We sit on one of the best solar belts in the world. We have strong wind corridors in Sindh.

We have vast untapped hydropower potential in Khyber Pakhtunkhwa and Gilgit-Baltistan. Yet instead of harnessing these resources, we shackled ourselves to imported coal and LNG. The irony is that while the state clung to fossil fuels, ordinary villagers showed more wisdom by installing rooftop solar systems, quietly generating power and proving that survival instincts can triumph over elite folly.

The betrayal does not end with floods, debt, or emissions. The cruelest legacy of these policies is written in the suffering of ordinary people. As imported LNG and coal plants locked Pakistan into high tariffs, electricity bills skyrocketed to unbearable levels, plunging nearly 45% of the population below the poverty line.

Families who once survived on meagre incomes found themselves crushed by bills higher than their monthly wages. Fathers could not feed their children. Mothers wept as their homes went dark. In town after town, news emerged of desperate men and women taking their own lives — victims not of fate, but of reckless policy choices dressed up as "game changers". ■



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WB warns of Pakistan's failing growth model

Women and youth largely excluded from the labour force; rural poverty standing at 28.2% compared to 10.9% in urban areas; remittances reach only a small segment of the population

EU Report

The World Bank said on Tuesday that Pakistan's current economic growth model does not support poverty reduction, causing income gains to stall, with poverty already at an eight-year high in 2024.

The 'Reclaiming Momentum Towards Prosperity: Pakistan's Poverty, Equity and Resilience Assessment' report by the World Bank further disclosed that the aspiring middle class, which constitutes 42.7% of the population, is "struggling to achieve full economic security".

"The aspiring middle class is facing significant non-monetary deprivations, such as limited access to safe sanitation, clean drinking water, affordable energy and housing," the World Bank said, adding that this points to "poor public service delivery in Pakistan".

A troubling fact is that 37% of Pakistan youth, aged between 15 to 24 years, are not employed or participating in education or training because of high demographic pressures and misalignment of labour demand.

Bolormaa Amgaabazar, the World Bank's country director in Pakistan, said that the Bank wanted to study why the poverty rate did not fall as quickly as it was the case in the past. To a question, she added that the economy was not doing great in recent years.

"Recent compounding shocks have pushed poverty rates back up to a projected 25.3% in fiscal year 2023-24, which is at the highest level in eight years," according to the report. "In just the past three years, the poverty rate has increased by 7%," it added.

The report showed two different figures of poverty in Pakistan. According to the official national poverty line, the poverty rate was 25.3%, still the highest in eight years, but the international poverty line showed that the level of poverty was staggering at 44.7%.

Christina Wieser, the World Bank's poverty expert, said that from 2001 to 2015, the poverty rate reduced on an average by 3% per annum, which slowed down to just 1% annually during 2015-18.

Over the past two decades, Pakistan's economic growth has been low, volatile and consumption driven, with real GDP per capita growing only 2% annually, which is half of the regional average.

Perverse institutional incentives and elite capture limit Pakistan's expansion of its productive capacity and crowd out productive investments to equitably distribute the benefit of economic growth.

The report showed that the geographical inequalities persisted as another critical challenge with rural poverty standing at 28.2% compared to 10.9% in the urban areas. There were also startling provincial disparities with Balochistan facing 42.7% poverty compared to 25.3% national average.

Punjab has the lowest poverty rate of 16.3% among all the provinces but still houses 40% of

the total poor people because of being the most populated federating unit. Poverty rate in Sindh is 24.1%, followed by 29.5% in Khyber Pakhtunkhwa.

The report also shed light on the growing income inequality in Pakistan. It said that the true magnitude of income inequality in Pakistan is difficult to determine because the wealthiest families under-report their incomes, particularly income from the rent is not properly captured.

On the consumption patterns, the wealthiest families consume more than four times the poorest households. But the World Bank said that by using the FBR's data, the true income inequality can still be assessed.

The regional disparities were also vast. Seven of the 10 poorest districts are in Balochistan. However, due to population density three of the five districts with the largest absolute numbers of poor are in Punjab. Each of these districts — Muzaffargarh, Rahim Yar Khan and Dera Ghazi Khan — have more than 1 million poor people.

Districts that lagged decades ago remain behind today, creating entrenched geographic disparities in public services, resources, and opportunities. Poverty rates range from 3.9% in Islamabad to 76.9% in Tharparkar, according to the report.

The report revealed that the official number that 39% of the total population lives in urban areas is also understated. "Geospatial 'Degree of Urbanization' approach shows Pakistan is 60-80% urban vs 39% officially" stated the report.

After adding the towns, 88% of the population resides in urban areas, said Christina Wieser, the World Bank's poverty expert. Unplanned urbanisation has led to 'sterile agglomeration' - dense settlements with limited improvements in productivity or living standards, she added.

While shedding light on the reduction in poverty from 2001 to 2015, the World Bank said that non-agricultural income has driven poverty reduction over the past two decades, which contributed 57% in the poverty reduction over the period. The agriculture labour contributed only 18% in the poverty reduction. The social transfers contributed merely 2% in the poverty reduction.

The report said that despite their positive contribution to household welfare, remittances reach only a small segment of the population. Remittance flows are also unevenly distributed; rural and low-income households are mostly recipients of domestic remittances.

Labour market is also dominated by informal, low paying jobs with over 85% of employment informal. Urban men mostly work in low-paying wage jobs in construction, transport or trade, while rural men shift from stagnant farming to low productivity off-farm work. Women and youth largely excluded from the labour force and female labour force participation (FLFP) is very low at 25.4%, said Wieser. ■

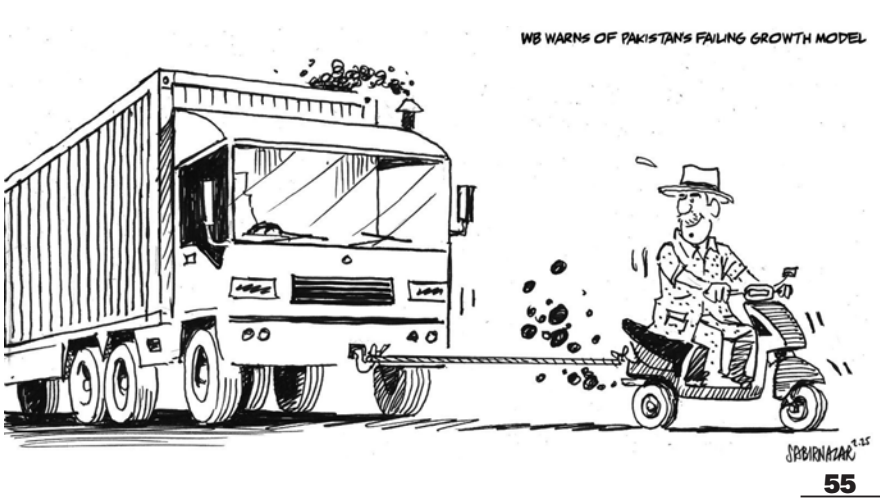
Pakistan, IAEA sign country framework

Pakistan and the International Atomic Energy Agency (IAEA) signed the fifth Country Programme Framework (CPF) for 2026-2031 on the sidelines of the ongoing IAEA General Conference recently in Vienna.

The framework was signed by PAEC Chairman, Dr Raja Ali Raza Anwar, and IAEA Deputy Director-General and Head, Department of Technical Cooperation, Hua Liu on behalf of their respective sides. The CPF 2026-2031 stands as a testament to the enduring partnership between Pakistan and the IAEA. Its implementation will strengthen Pakistan's socio-economic development and reinforce its role as a responsible member state committed to the global mission of the IAEA, a press release of PAEC says.

The country programme outlines national priorities where nuclear science and technology will directly support socio-economic development. It builds on decades of collaboration and aligns with Pakistan's development agenda and international commitments, including the Sustainable Development Goals.

Covering three technical cooperation cycles, it identifies five key areas: food and agriculture, human health and nutrition, climate change and water resource management, nuclear power, and radiation and nuclear safety. In agriculture, which contributes nearly a quarter of GDP and employs more than a third of the workforce, nuclear techniques will be used to boost crop yields, strengthen pest control, improve livestock health, and enhance food safety. Pakistan's participation in the IAEA's Atoms4Food initiative demonstrates its commitment to food security and climate-resilient farming. In health, rising cancer cases and non-communicable diseases make healthcare a central focus. Through the CPF, Pakistan will expand cooperation with the IAEA in nuclear medicine, radiation oncology, medical physics, and radiopharmaceuticals. The network of 20 Atomic Energy Cancer Hospitals (AECHs), already serving over a million patients annually, will be further equipped with advanced therapies, precision diagnostics, and locally produced radiopharmaceuticals for affordable treatment. ■



Pakistan's great solar escape: A revolution from below

Citizen-driven innovation shows how renewable adoption can leapfrog fossil fuels

Sajjad Ashraf

Sajjad Ashraf served as an adjunct professor at the Lee Kuan Yew School of Public Policy, National University of Singapore from 1973 to 2017. He was a member of Pakistan Foreign Service from 1973 to 2008 and served as an ambassador to several countries

In 2015, Pakistan quietly laid the foundation for what would become one of the most dramatic energy shifts in the world. The Net Metering Regulations allowed households and businesses to install rooftop solar panels and sell excess electricity back to the grid at the same rate they paid for consumption. At the time, it seemed a small, technical adjustment. A decade later, it has triggered nothing less than a solar revolution, making Pakistan one of the top three countries globally in renewable adoption.

The change was propelled not by government vision but by citizens' desperation. For decades, Pakistan's energy sector has been plagued by chronic shortfalls, mismanagement, and dependence on imported fossil fuels. Furnace oil–based generation locked the country into volatile global markets, while skewed contracts with Independent Power Producers (IPPs) forced Islamabad to pay for unused capacity. Transmission and distribution companies — riddled with inefficiency, theft, and political interference — piled losses year after year. By fiscal year 2024, the government admitted to a staggering Rs591 billion loss due to weak billing recovery and technical failures. For ordinary Pakistanis, this translated into power cuts lasting up to 18 hours a day and tariffs that sometimes exceeded the cost of rent.

Giant leap

Faced with state failure, citizens took matters into their own hands. Falling Chinese solar panel prices, combined with South Asia's highest retail electricity tariffs, made rooftop solar irresistible. In 2024 alone, Pakistan imported 22 gigawatts of solar panels — nearly half its total installed national capacity of 46 GW. By the first five months of 2025, solar contributed 24 percent of total electricity generation, overtaking gas, coal, nuclear, and even hydropower for the first time. This leap is all the more remarkable given that in 2020, solar accounted for just 2 percent of the mix. According to the global energy think tank Ember, Pakistan is now a global leader in rooftop solar, surpassing far wealthier nations in renewable adoption.

Singapore at 60: A manicured, choreographed masterclass in nation-building

Behind these statistics are human stories of desperation, initiative and resilience, where women have sold their jewellery – a prized collection, and bought basic units to power their homes. Owners of small factories have switched to solar, broke even in 18 months and now save Rs 1 million a month.

Such stories underscore the character of Pakistan's energy transition: it is bottom-up, crisis-driven, and largely unplanned. As Renewables First analyst Muhammad Basit Ghauri observed: "The great solar rush is not the result of any government's policy push. Residents made the switch out of frustration with a broken system."

Yet the solar boom is not without complications. Pakistan's grid is facing the classic "utility death spiral." As more affluent and industrial customers defect to solar, distribution companies (DISCOs) are left with fewer sales but the same fixed costs — from maintaining wires and transformers to servicing IPP contracts. To recover revenue, tariffs rise further, pushing even more customers toward solar and leaving the poorest consumers trapped in an increasingly unaffordable grid. Electricity sales dropped 2.8 percent year-on-year in June 2025, the second consecutive year of decline, while line losses remain near 18 percent - among the highest in the world.

This cycle is unsustainable. A March government report warned that the solar surge has created a "disproportionate financial burden" on grid-connected consumers, undermining sector stability. In other words, while rooftop solar is helping households escape the system, it is simultaneously hollowing out the system itself.

Challenges

The challenge is not unique to Pakistan, but its governance magnifies the risks. Short-termism, political manipulation of power tariffs, and decades of neglect have made the energy sector one of the deepest fault lines in the economy. Unless systemic reforms are made — from renegotiating IPP contracts to cutting circular debt, modernising billing systems, cutting theft, and investing in storage — the solar revolution will remain an escape route for the privileged rather than a national solution.

At the same time, the revolution presents an unprecedented opportunity. With over 300 days of sunlight annually, Pakistan is naturally positioned for solar dominance. It has already surged ahead of its 2030 target of 60 percent renewables in the energy mix, years ahead of schedule. The United Nations has hailed Pakistan's solar expansion as a model for energy sovereignty in the Global South. But the benefits remain uneven. More than 40 million Pakistanis — mostly in rural areas — still lack access to electricity. Without targeted policies for off-grid solar and community-based microgrids, the rural poor risk being left behind in the very revolution that has empowered urban households.

Inspiring journey

Pakistan's solar transformation is both inspiring and cautionary. It shows how citizens, when abandoned by the state, can innovate their way out of crisis. But it also exposes the fragility of a system where essential services — from health to security, water to education and power — increasingly depend on private fixes rather than public provision.

For now, Pakistan has become an unlikely global leader in solar adoption — not because of foresight, but because of necessity. Whether this revolution can be harnessed into a sustainable, equitable, and system-wide transition depends on choices still to be made. Without reform, solar may light up millions of homes, but it will also accelerate the death spiral of a grid already gasping for survival. ■

Courtey Gulf News

ENERGY NEWS

China's solar installations slows

EU Report

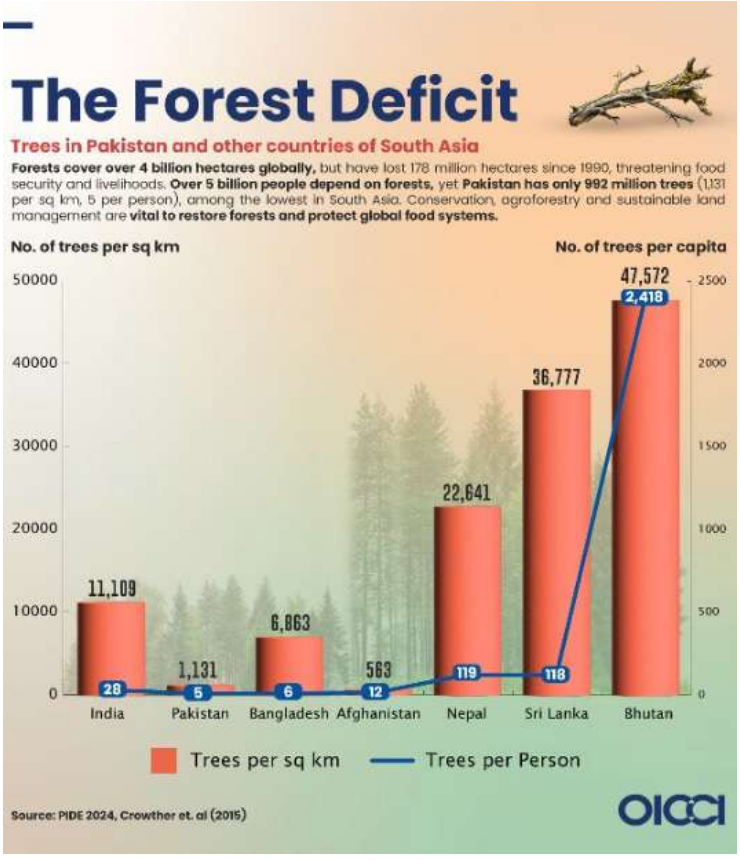
Solar panel installations in China slowed again in August to hit the lowest in nearly three years, as producers turned to overseas markets amid sluggish domestic demand, according to Bloomberg.

A total of 7.36 gigawatts of solar capacity was added last month, down a third from 11.04 gigawatts in July, according to data released by the National Energy Administration. That was the lowest level since November 2022, and continued a downward trend that started after the country hit a record of 93 gigawatts in May as people rushed to install panels ahead of policy changes.

Meanwhile, module exports surged 9.5 per cent on an annual basis in August to hit $2.4 billion, according to data from the General Administration of Customs. It also represents a 28 per cent climb over the previous month.

The export figure marked positive year-on-year (YoY) growth for the first time since June 2023, according to a Citi Research note by analysts including Pierre Lau. It was likely boosted by market expectations that module prices will rise due to the sector's efforts to curb excessive competition, as well as the potential removal of a value-added tax rebate for module exports by year-end.

The note attributed the rise in exports to demand from Europe, Africa and emerging markets like the Philippines, Pakistan and the UAE.China also added 4.17 gigawatts of wind power in August, while newly installed thermal power stood at 7.89 gigawatts, according to the NEA. ■



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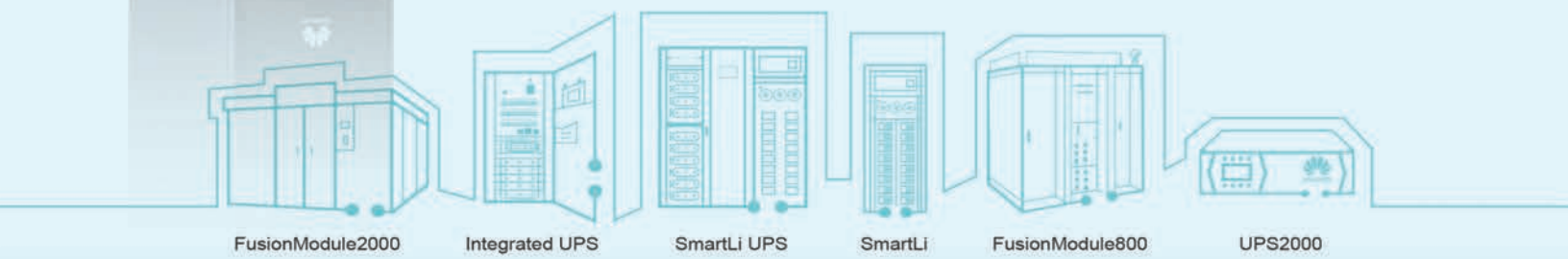

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