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ENERGY UPDATE

A STORY OF PAKISTAN'S
POWER SECTOR

RS500 STILL
BILLION QUESTION

KARACHI THE CITY THAT
ENERGISES PAKISTAN BUT
STRUGGLES TO POWER ITSELF

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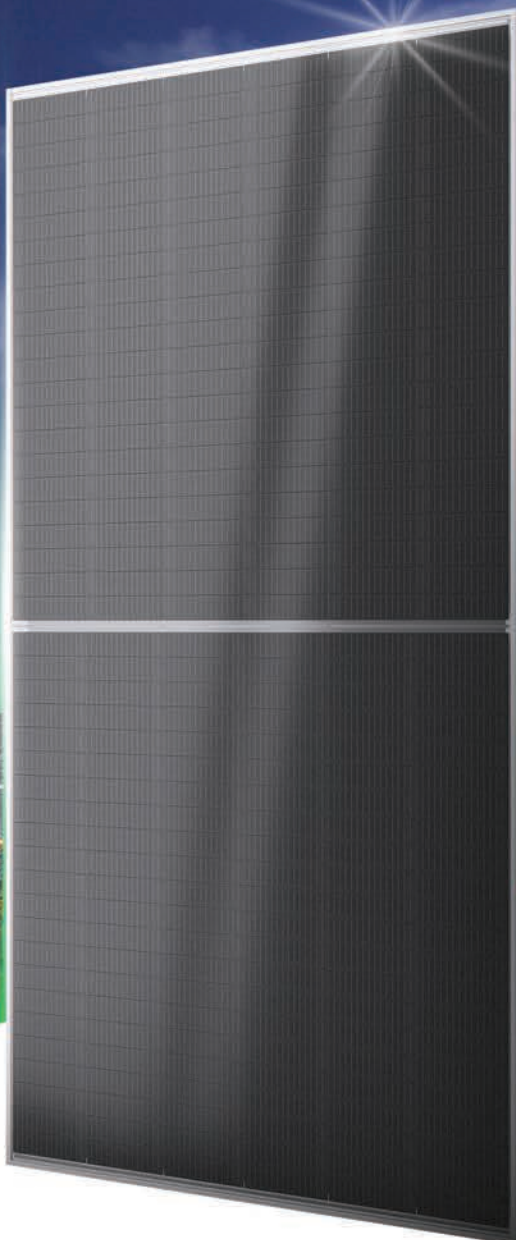
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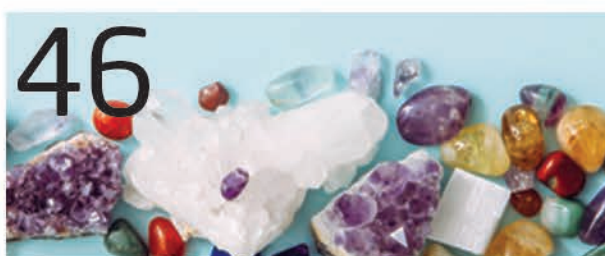
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FROM THE Editor's desk...

Energy Price Shocks in Summer-Winter Gap

Pakistan's energy crisis is no longer merely a problem of expensive fuel or electricity bills. It has become a cost-of-living crisis affecting almost every household and every productive sector of the economy. Higher petrol and diesel prices raise transport fares, food prices, agricultural costs, manufacturing expenses and the price of essential services. Electricity and gas tariffs add another burden to household budgets, while businesses face higher production costs and declining competitiveness.

The increase comes at a particularly difficult time when winter is expected within two months, yet consumers have little expectation of meaningful relief in energy prices. The fundamental question is why Pakistan remains trapped in an energy crisis despite repeated government assurances, reforms, negotiations with international lenders and billions of rupees spent on the energy sector.

The government has understandably linked the recent increase in petroleum prices to international oil-market disruptions caused by the conflict involving Iran and the resulting uncertainty around the Strait of Hormuz. These are just lame excuses. The real fact is bad governance.

The first major problem is dependence on imported energy, which needs to be reduced gradually by boosting solar energy in every sector of life with lucrative facilities. Pakistan imports a substantial share of its petroleum requirements. Whenever international oil prices rise or the rupee comes under pressure, the cost is quickly transmitted to consumers.

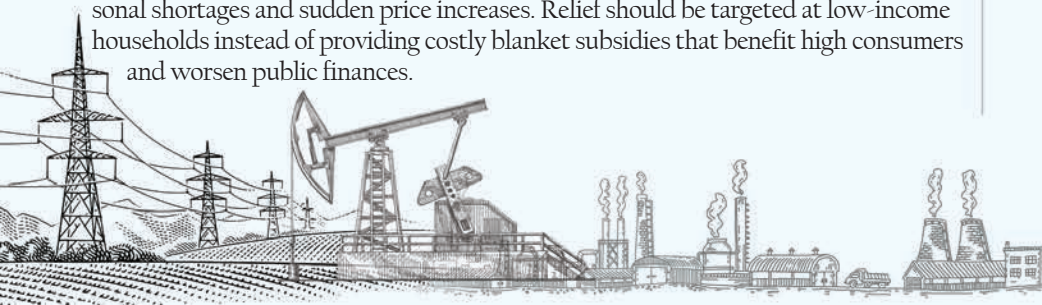
The second problem is the circular debt. Pakistan's power sector has repeatedly accumulated huge unpaid liabilities because electricity is not being recovered efficiently from all consumers, transmission and distribution losses remain high, theft persists and the financial structure of the sector remains weak. When power companies cannot recover their costs, the financial burden is transferred through higher tariffs, subsidies, delayed payments and government borrowing.

The third problem is electricity theft and technical losses. Honest consumers effectively pay part of the cost created by those who steal electricity or do not pay their bills. The fourth is inefficient distribution companies. Persistent losses in several DISCOs mean that consumers are paying for an inefficient system rather than receiving electricity at the lowest possible cost.

The fifth is problem is policy inconsistency as the governments frequently announce energy reforms but struggle to maintain them across political cycles. Long-term energy planning requires decisions that may take years to produce results, while governments often prefer short-term measures.

The approaching winter makes the situation more complicated. Pakistan's energy demand changes dramatically between summer and winter. Electricity demand may decline as temperatures fall, but gas demand rises sharply because households require gas for heating, cooking and water heating.

The government should also develop a long-term national energy plan that remains consistent across political governments. Inefficient power and gas distribution systems need restructuring, with clear targets for reducing losses and improving service quality. Before winter, authorities should ensure adequate gas and LPG supplies, strengthen strategic storage and improve the distribution network to prevent seasonal shortages and sudden price increases. Relief should be targeted at low-income households instead of providing costly blanket subsidies that benefit high consumers and worsen public finances.



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A story of Pakistan's power sector

Engr Syed Faizan Ali Shah

Write is Advisor of Minister Energy Pakistan

Sometime in the summer of 2023, a schoolteacher in Faisalabad opened her electricity bill and didn't recognize the number. It wasn't a mistake. Her usage hadn't changed much. What had changed was everything happening thousands of kilometres away, in currency markets, in gas terminals in Qatar, in a war in Ukraine she'd never think to connect to her ceiling fan.

Multiply her story by tens of millions of households, and you have the real starting point for this article: not a policy paper, but a five-year emergency that hit ordinary Pakistanis first, and that the Power Division has spent the last two years trying to bring under control. This is the story of how that happened; the storm that built up and the fight since 2024 to turn the ship around.

For most of the 2010s, Pakistan's power sector was, if not healthy, at least predictable. The price of a unit of electricity crept up slowly, from around Rs9.6 in 2013 to about Rs11 by 2019 and the rupee weakened gradually too, from roughly Rs100 to the dollar in 2013 to about Rs155 by 2019.

Behind the scenes, two costs made up every bill: what it actually cost to burn fuel, and a separate fixed fee paid to power plants simply for being ready to run, a retainer, paid whether the lights were on or not. That second cost quietly grew for years as Pakistan built more plants than it actually used. It was a slow-building problem, but a survivable one, because the currency hadn't yet betrayed it. Then, within the space of about eighteen months, three things went wrong at once.

The first blow was home-grown. As Pakistan's economy stumbled through 2022, the rupee didn't just weaken, it collapsed. From an average near Rs 178 to the

dollar in FY22, it slid past Rs 200 by year-end, then, in the chaos of 2023, briefly touched over Rs 300, a currency that had lost nearly two-thirds of its value in within two years. Because so many power plants are paid in dollars, this alone would have been enough to send bills soaring.

But it wasn't alone. In February 2022, Russia invaded Ukraine and Europe — cut off from Russian pipeline gas — went shopping for the same imported gas cargoes Pakistan depended on, bidding prices toward USD 70 per unit. Pakistan, a smaller and poorer buyer, simply couldn't compete. Contracted shipments didn't show up, and emergency cargoes had to be bought at exactly the worst possible price.

The result of these two forces colliding was brutal and fast. The average price of a unit of electricity, around Rs 11 in 2021, jumped past Rs 16 the following year, then nearly Rs 20, and by 2024 had reached almost Rs 25 — the highest in the country's history. Meanwhile, the amount lost every year to theft, unpaid bills, and leaking old wires at the companies that deliver power to homes had ballooned to nearly Rs 600 billion. It was, by any honest measure, a sector in crisis, squeezed from outside and drained from within. This is where the story could have simply ended in decline. Instead, starting in 2024, something shifted. The Power Division set out to fix what it actually could; not the war in Europe, not the value of the rupee, but the waste and the missed opportunities closer to home.

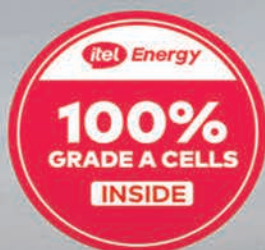
The first fight was against the "leaky bucket" i.e., the distribution companies bleeding money every year. Through merit-based leadership changes and tighter enforcement on billing and recovery, annual losses were pushed down from roughly Rs 591 billion in FY24 to about Rs 397 billion the next year and to around Rs 326 billion this year, over a quarter of a trillion rupees recovered in two years, money that no longer has to come out of consumers' pockets.



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SOLAR, STORAGE & PAKISTAN'S ENERGY TRANSITION

"Pakistan Is Our Most Important Market in the Indo-Pacific"

JinkoSolar Indo-Pacific GM **Daniel Liu** on energy independence, next-generation solar technology, storage and Pakistan's rapidly evolving solar market

Mustafa Tahir

INTRODUCTION

Pakistan's solar market is undergoing a fundamental transformation, moving beyond conventional grid-connected installations toward energy independence, battery storage and increasingly decentralized power generation. Against this backdrop, JinkoSolar is positioning Pakistan as a key market in its Indo-Pacific strategy.

With more than 425 GW of solar installations powered globally and its Tiger Neo series emerging as one of the industry's leading module platforms, JinkoSolar is expanding its focus on technology, installer training, after-sales support and solutions designed for challenging operating environments.

In this exclusive interview with Energy Update, Daniel Liu, General Manager of JinkoSolar Indo-Pacific, discusses Pakistan's growing importance for the company, the changing needs of commercial, industrial and agricultural consumers, the role of battery energy storage, and JinkoSolar's plans for the Pakistani market over the next 12 months.

Q1. Please introduce yourself and tell us about your role at JinkoSolar.

Daniel Liu: I am Daniel Liu, General Manager of Jin-



koSolar Indo-Pacific, leading operations across approximately 20 markets spanning Pakistan, India, Bangladesh, Thailand, Malaysia and the Philippines.

Since our founding in 2006 under the philosophy of "All In Solar," JinkoSolar has advanced that vision into a global commitment: "Solar For All." We have powered over 425 GW of installations worldwide, and our flagship Tiger Neo N-type series stands as the best-selling module family in the industry's history, with more than 250 GW shipped.

My mandate is to deliver this technology across the region through strong partnerships, rigorous training and dependable service.

Q2. Where does Pakistan sit among your regional priorities?

Daniel Liu: Pakistan stands as our most important market in the Indo-Pacific, and in several respects, it is ahead of where other markets in the region are heading.

While most countries are still focused on optimizing grid consumption, Pakistan's customers are actively pursuing energy independence. Commercial and industrial clients who installed systems two to four years ago are now returning for storage solutions to operate entirely off-grid. Notably, nearly 90% of end-users in the distribution network are farmers, for whom solar replaces diesel rather than utility costs. Independent research indicates solar adoption among the country's tubewells rose to 61% by 2025 — up from near zero in 2022 — as diesel usage fell from 79% to 28%.



These figures reflect a fundamental and lasting shift in how the nation sources its energy.

Q3. What does JinkoSolar bring to that shift?

Daniel Liu: We bring technology engineered specifically to withstand Pakistan's operating environment, not adapted to it as an afterthought.

Our Tiger Neo 3.0 platform is built for 45–50°C heat, heavy dust loading and unstable grid voltage — conditions that are occasional stress tests elsewhere but everyday operating reality here.

We have already shipped over 300 MW of Tiger Neo 3.0 into Pakistan through our partner network, and we back that performance in writing: a 12-year product warranty and a 30-year linear power warranty, guaranteeing 88.85% of rated output retained at year thirty.

Beyond specifications, we understand how trust is built in this market: through visible, proven performance on a neighbour's rooftop, still generating reliably years on. That is the standard we are engineering toward.

Q4. What is your priority for Pakistan over the next twelve months?

Daniel Liu: Our priority is depth over volume — building enduring strength, not chasing noise.

That means expanding certified installers, delivering technical training in the local language of every province and city, and sharpening after-sales response.

We are also looking beyond today's rooftop and tubewell base toward where demand is heading. As data centers, EVs and industrial digitization take hold, we at JinkoSolar see a stable, steadily growing future, with demand settling at a sustained 13–15 GW annually in the years ahead. Solar, paired increasingly with storage, is the foundation that lets Pakistan meet this demand on its own terms. Modules are commoditized; what's scarce is a manufacturer standing behind its systems in year ten and year thirty.



Powering Energy Independence: Farmhouse with Huawei C&I BESS

EU Report

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Energy Storage:
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Photovoltaic &
Battery Energy
Storage System
(BESS): Achieves
intelligent scheduling
of photovoltaic
and storage systems
through cloud-edge
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The photovoltaic-storage scheduling system performs high-precision photovoltaic power forecasting and load forecasting through online algorithm learning.

It continuously optimizes the scheduling plan without the need for manual intervention. The farmhouse has achieved a combination of three modes: maximizing self-consumption of photovoltaic power, achieving optimal peak-valley arbitrage through BESS, and flexibly reducing demand charges (Grid+DG). Compared to traditional energy storage control methods, the Farmhouse's system has been calculated to increase the comprehensive benefits of photovoltaic and storage systems by reducing energy charges from 0.5M PKR to >30k PKR/month.

OGDC, US Energy Technology Company Baker Hughes Sign Deal

EU Report

Oil and Gas Development Company Limited (OGDC), Pakistan's largest exploration and production company, has signed a contract with Baker Hughes, a leading US energy technology company, to deploy Mature Assets Solutions (MAS) aimed at revitalising ageing oil and gas wells and increasing Pakistan's indigenous hydrocarbon production. The contract signing ceremony was held at OGDC Headquarters in Islamabad. Special Secretary Petroleum Mirza Nasiruddin Masood Ahmad and US Chargé d'Affaires Natalie A. Baker attended the ceremony as chief guests. MD/CEO OGDC Ahmed Hayat Lak, alongside senior leadership of OGDC and Baker Hughes, also attended the signing ceremony.

Mature Assets Solutions is designed to help operators unlock greater value from established fields that are experiencing natural production decline. Under the contract, Baker Hughes will bring its technical expertise, advanced technologies and integrated capabilities to support OGDC in identifying production opportunities and addressing challenges across mature assets. The partnership is part of OGDC's comprehensive Production Optimisation Drive to maximise its existing production portfolio.



Circular debt crisis never purely a liquidity problem: Rs500 still billion question

Earlier this year, the prime minister stood before the cameras and declared that Rs1.2 trillion of Pakistan's power sector circular cleared

Ali Talha

The writer is a management professional in a multinational company.

Earlier this year, the prime minister stood before the cameras and declared that Rs1.2 trillion of Pakistan's power sector circular debt had been cleared. It was framed as a headline achievement, a policy win to wave at the next IMF review, proof that the state had finally got its house in order. Banks were roped in to restructure old loans and extend fresh financing. Power producers were told their overdue payments were on the way.

Pakistan State Oil, the country's largest fuel supplier, was billed as one of the biggest beneficiaries of the entire exercise. It wasn't. Nine months on, PSO still hasn't seen the cash it was promised, and the debt has, in fact, grown.

The numbers tell a story that no press conference will. PSO's receivables have not shrunk since that announcement; they

have swelled past Rs900 billion. More than half of that figure, over Rs500 billion, is owed by a single entity: Sui Northern Gas Pipelines Limited, itself a state-owned company. This is not a case of a private defaulter dodging its obligations or a rogue distribution company gaming the system. This is one arm of the state failing to pay another, while the government tells the public and the IMF that the problem has been resolved.

And the picture beyond PSO is no better. Despite a written commitment to the IMF to hold circular debt flat, the sector-wide stock has kept climbing through the fiscal year, comfortably missing the government's own zero-net-addition target. A trillion-rupee clearance was announced. The debt grew anyway. That is not a rounding error or an accounting quirk. It is the state borrowing from Peter to avoid paying Paul, then holding a press conference to announce that Paul has been paid in full.

This ought to matter to people who have never read a circular debt report and

do not own a single PSO share, because fuel supply is not a niche corporate issue but a matter of national security. PSO imports the crude oil, the RLNG and the jet fuel that keep the power plants running, the factories turning and, not incidentally, the national airline in the air. When the country's largest fuel supplier is starved of cash because other state-owned entities will not settle their bills, the exposure belongs to the whole economy. A country does not run out of fuel overnight; it chokes slowly, invoice by unpaid invoice, long before anyone outside the finance ministry notices the tank running dry.

When the country's largest fuel supplier is starved of cash because other state-owned entities will not settle their bills, the exposure belongs to the whole economy

So if the circular debt is not being resolved and PSO is not being paid, the obvious question is where the money is actually going. The answer is the banks. Unable to collect the more than Rs 500 billion it is owed by SNGPL alone, PSO is not simply waiting patiently for the government to sort out its internal IOUs -- it is borrowing heavily from commercial banks to fund its working capital, just to keep fuel moving while Islamabad's ledgers stay unreconciled. That borrowing carries a rate. That rate is effectively guaranteed. And it is underwritten, one way or another, by the sovereign itself.

Seen from a banker's chair, the incentive is obvious: why take on the risk of lending to a private manufacturer, an exporter or an SME that could genuinely default, when you can lend instead to a state-owned enterprise trapped in a circular debt loop and collect a government-backed spread year after year, with next to no credit risk attached? Banks in Pakistan do not need to compete for private-sector borrowers when the state itself, tripping over its own unpaid bills, is such a reliably profitable client.

Pakistan's banking sector has long been criticised for its preference for government paper over private credit -- for parking money in treasury bills rather than lending it to entrepreneurs and industry. Circular debt financing is that same instinct wearing a different suit: a mechanism that quietly converts a policy failure into a guaranteed income stream for the banking sector. Which brings us to the question nobody wanted asked: when the institutions profiting most from the debt staying unresolved are also among the loudest voices in the country's economic policymaking, what real incentive is there to fix it? Untangle the circular debt properly, and PSO gets paid, SNGPL settles its books and a highly profitable, virtually risk-free lending relationship disappears overnight. Leave the knot tied, and the returns keep flowing exactly as they have for years.

Rs1.2 trillion was announced as cleared. Circular debt rose anyway. PSO is still owed north of Rs500 billion by a fellow state-owned enterprise, and the working capital gap in between is being bridged by bank borrowing at guaranteed rates -- capital that would otherwise be financing the real economy.

Pakistan's circular debt crisis was never purely a liquidity problem. It is an incentive problem, dressed up as a technical one. Until someone with actual power over this system has a genuine reason to want it solved, the press conferences will keep coming, the announcements will keep being made, and so will the invoices that nobody actually pays. ■



SSGCL Board urged to Address Governance Challenges

EU Report

Federal Minister for Petroleum Ali Pervaiz Malik has directed the Board of Sui Southern Gas Company Limited (SSGCL) to develop a comprehensive strategy and sustainable business model with special focus on UFG control to transform SSGCL into a financially viable organization, with public service as the foremost priority. The Federal Minister chaired a meeting with the Chairman and Board of Directors, Managing Director and senior management of SSGCL in Karachi to review the company's performance, key achievements, operational challenges and future reform priorities. The Chairman SSGCL Board welcomed the Federal Minister, while the Managing Director briefed the Minister on the company's milestones, achievements and challenges. The management highlighted a significant improvement in the company's gas distribution system, with UFG reduced by approximately 57 percent in volumetric terms. Secretary Petroleum, during the meeting, emphasized that the Board operates independently in accordance with the spirit of the State-Owned Enterprises (SOE) Act. He said the Board should exercise its mandate and take all necessary measures required for the betterment, efficiency and long-term sustainability of SSGCL. ■

Govt Fuel Bill Surges 190% in Five Years

EU Report

The federal government's expenditure on fuel surged by around 190 percent over the past five years, increasing from Rs7.52 billion in FY2020-21 to Rs21.77 billion in FY2024-25. According to a document presented before Parliament, fuel expenditure by federal ministries, departments and attached institutions rose steadily during the period, with the government attributing the increase primarily to higher fuel prices. Fuel spending stood at Rs7.52 billion in FY2020-21, rising to Rs8.35 billion in FY2021-22. It then nearly doubled to Rs15.66 billion in FY2022-23. The expenditure remained almost unchanged at Rs15.67 billion in FY2023-24, before climbing sharply to Rs21.77 billion in FY2024-25. In its response submitted to Parliament, the government stated that the substantial increase in fuel expenditure was mainly due to rising fuel prices. The response did not provide a separate breakdown indicating whether higher fuel consumption also contributed to the increase. ■

INVERTER BATTERY

When Should You Add Water and How Much Is Enough?

With power outages still common in many parts of Pakistan, inverter systems have become an essential backup solution for households. However, simply using an inverter is not enough. Proper battery maintenance is equally important, particularly for conventional lead-acid batteries that require periodic water checks. Neglecting battery maintenance can reduce backup time, affect performance and shorten the battery's overall service life.

Check the Water Level Regularly

In conventional lead-acid batteries, the electrolyte level gradually decreases during use. Therefore, the water level should be checked periodically. If the inverter is used occasionally, the battery can generally be inspected every two to three months. Batteries that are used more frequently may need to be checked sooner. Allowing the water level to fall too low can expose internal components and potentially reduce the battery's lifespan.

Signs That the Battery Needs Attention

Reduced backup time, unusual battery heating or declining performance can be signs that the battery needs inspection. However, these problems are not always caused by low water levels. If performance continues to deteriorate after checking the water level, the battery should be inspected by a qualified technician.

Add Water Only to the Recommended Level

When adding water, check the minimum and maximum level markings on the battery. The electrolyte level should remain within the recommended range. If the level has fallen below the minimum mark, add an appropriate amount of water. Do not fill the battery above the maximum level. Overfilling can cause electrolyte to spill or leak, potentially damaging the battery and surrounding equipment.

Use Distilled Water

For conventional lead-acid batteries, distilled water is generally recommended. Tap water may contain minerals and other substances that can affect the battery's internal components and reduce its performance. However, always follow the battery manufacturer's instructions, as requirements can vary between battery types and models.

Not Every Inverter Battery Requires Water

It is important to remember that not all inverter batteries are designed to be topped up with water. Maintenance-free, sealed and other battery types may not require or permit routine water addition. Before opening a battery or adding anything to it, check the manufacturer's instructions and confirm what type of battery you have.

Regular Maintenance Can Extend Battery Life

Checking the water level at appropriate intervals, using the correct type of water, preventing overfilling, keeping the battery clean and following the manufacturer's maintenance instructions can help keep an inverter battery in better operating condition.





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Karachi

The City That Energises Pakistan but Struggles to Power Itself

People continue arriving from other parts of Sindh and Pakistan because Karachi remains one of the country's biggest sources of employment, business and education; World Bank says half of Karachi's population lives in informal settlements, while access to basic infrastructure and services has deteriorated significantly; the city needs investment, institutional clarity, accountability and long-term planning.

Mustafa Tahir

Writer is Deputy Editor Energy Update

Karachi is Pakistan's economic powerhouse, financial centre, industrial heartland and gateway to international trade. It hosts the country's two major ports, thousands of industries, major financial institutions and a vast services economy. But the city that generates enormous economic value is increasingly struggling to provide its own citizens with reliable water, electricity, transport, employment, infrastructure and security. The question confronting Karachi today is no longer whether the city has problems. It is whether Pakistan can afford to allow those problems to continue growing.

A city growing faster than its infrastructure

According to the 2023 Census, Karachi's population stands at around 20.3 million. The city has grown dramatically since independence, when its population was approximately 450,000. The official figure, however, does not fully capture the city's economic footprint or the scale of

daily movement into Karachi. People continue arriving from other parts of Sindh and Pakistan because Karachi remains one of the country's biggest sources of employment, business and education. Migration itself is not the problem. The problem is that population growth has not been matched by planned investment in housing, transport, water, sewerage, energy and jobs. The World Bank estimates that nearly half of Karachi's population lives in informal settlements, while access to basic infrastructure and services has deteriorated significantly.

Karachi earns, but does it receive enough?

Few issues generate greater frustration among Karachi's residents than the city's contribution to national revenue. The Large Taxpayers Office Karachi collected approximately Rs3.256 trillion during FY2024-25, representing around 29 percent growth over the previous year. This does not mean every rupee collected in Karachi originates economically from Karachi—federal taxes can reflect national business activity and port transactions. Nevertheless, the figures demonstrate the extraordinary concentration of economic activity in the city.



The contradiction is that this economic powerhouse continues to face deteriorating roads, inadequate public transport, water shortages, poor drainage and insufficient civic infrastructure. Karachi therefore needs a transparent revenue-to-investment mechanism. Citizens should be able to see how much revenue is generated, how much is allocated to Karachi and where development funds are actually spent.

Water: a crisis waiting to become worse

Water may ultimately become Karachi's most serious challenge. The city has long suffered from a substantial gap between supply and demand. The World Bank has described Karachi's water and sewage networks as meeting only roughly half of the city's needs.

The K-IV project is expected to provide an additional 650 million gallons per day, but increasing bulk supply alone will not solve the crisis. Karachi also needs to reduce leakage, illegal connections and distribution losses, modernise pipelines, introduce metering and improve the financial and operational performance of the water utility. The solution is therefore not simply "bringing more water". It is a well-known fact that an economic city cannot operate in darkness, as energy shortages remain another major obstacle. The severity of the problem was again visible on August 23, 2026, when residents in several Karachi neighbourhoods staged massive protest demonstrations, blocking roads and disrupting commercial activity. For ordinary households, outages mean heat, water-pumping problems and disruption to daily life. For industry and commerce, they mean something more serious: lost production, higher operating costs and reduced competitiveness. Karachi needs an energy strategy that combines grid strengthening with rooftop solar, battery storage, energy efficiency, industrial solarisation and improved distribution infrastructure. The objective should not merely be more electricity generation. It should be reliable electricity at a competitive price.

Karachi's transport system has failed to keep pace with its population. The World Bank estimates that the city has around 10,000 kilometres of roads, but the overwhelming majority are local roads, while major arterial routes represent only a small share. Millions of daily trips are made through a combination of buses, motorcycles, cars, rickshaws and informal transport. The result is congestion, long commuting times, air pollution and productivity losses. Karachi does not need to solve its transport crisis by simply building more roads. It needs mass public transport. Green Line, Orange Line, Red Line, Yellow Line and People's Bus Service should ultimately function as one integrated metropolitan network—with common ticketing, feeder routes, safe pedestrian connections and reliable schedules.

Employment and the informal economy

Karachi generates economic activity, but it is not enough for its rapidly growing population. The informal economy has become the safety valve—absorbing street vendors, home-based workers, transport workers, small retailers, mechanics and thousands of micro-businesses. Instead of treating the informal economy only as a problem, Karachi should gradually bring it into the formal economy through simplified registration, affordable licensing, microfinance, training and social protection.

At the same time, industrial investment must be encouraged through reliable utilities, serviced industrial land

and predictable taxation. Karachi could create major employment opportunities in IT, logistics, renewable energy, electric vehicles, recycling, manufacturing, pharmaceuticals, food processing and maritime services.

Infrastructure and the governance problem

Karachi's infrastructure crisis is not simply a shortage of funds. It is also a governance crisis. Responsibility is divided among the Sindh government, Karachi Metropolitan Corporation, district administrations, cantonment boards, development authorities and federal agencies. When roads fail, drains overflow, garbage accumulates, or water disappears, accountability becomes difficult to identify. The city needs a clearly defined metropolitan governance structure with one institution responsible for coordinating major urban services and one publicly accountable performance framework. The Sindh government has invested substantially in Karachi. In 2022, the provincial government reported Rs137.3 billion spent on Karachi development schemes over five years, covering roads, water, sewerage, storm-water drains and transport. The challenge is to ensure that such investment becomes part of a long-term metropolitan strategy rather than a collection of disconnected projects.

Law and order and the "Dala Culture"

Karachi has made progress against the large-scale violence that once paralysed the city, but street crime, extortion, land grabbing and the culture of informal influence continue to affect public confidence. The emerging debate around "Dala Culture" should also be understood more broadly—not merely as a vehicle issue, but as a culture in which power, connections or intimidation can appear to place individuals above ordinary rules. A modern city cannot function when citizens believe that rules apply differently to different people. Karachi needs more than another development package. It needs a Karachi 2040 Compact between the federal government, Sindh government, local government and citizens. The priorities should be straightforward:

Firstly, establish transparent metropolitan governance; secondly, create a predictable revenue-sharing and infrastructure fund for Karachi; thirdly, complete K-IV while reducing water losses and modernising distribution; fourthly, integrate all major public transport systems into one network; fifthly, strengthen electricity distribution while aggressively promoting solar and battery storage; sixthly, develop industrial and technology clusters linked directly to employment; seventhly, modernise drainage, waste management and roads through climate-resilient infrastructure; and the last but not the least, reintroduce technology-driven policing and stronger action against extortion, organised crime and encroachments.

Most importantly, every major project should have a publicly available budget, deadline and performance indicator. The city contributes disproportionately to Pakistan's industrial output, trade, employment and tax base. If Karachi becomes more productive, the entire country benefits. If its infrastructure continues to deteriorate, the economic cost will eventually be paid nationwide. The city needs investment, institutional clarity, accountability and long-term planning. It has already proved that it can generate wealth for Pakistan. The next challenge is to ensure that Pakistan invests enough in Karachi to allow the city—and its people—to benefit from the wealth they help create. ■

Nepal's Glacier Collapse Catastrophe:

A Wake-Up Call for Pakistan

**Special Report by
M Nawaz Khuhro**

Early warning must reach people for protection; Pakistan faces a rising threat from glacier bursts as Himalayan ice melts; the Himalayas stretch across several countries, including Nepal, China, India, Bhutan and Pakistan; the climate warms and mountain systems become increasingly unstable; governments cannot rely solely on post-disaster rescue

A catastrophic flash flood triggered by a glacier collapse has killed hundreds of people in Nepal and Tibet and left thousands missing, turning parts of the Himalayan border region into a vast disaster zone. The disaster struck on Aug 26, 2026, when a huge mass of ice, rock and mud swept into river valleys near Nepal's border with China. The resulting surge devastated settlements, roads, bridges, hydropower facilities and border infrastructure along the Lhunde Khola, Bhote Koshi and Trishuli river systems.

By Aug 30, 734 people had been confirmed dead in Nepal and 16 in China's Tibet Autonomous Region, while more than 3,000 people remained missing across the two areas, according to the latest reported figures.

In recent months, several areas of Gilgit-Baltistan have experienced flash floods and GLOF-related disruptions, with roads cut off and

communities temporarily isolated. The Pakistan Meteorological Department issued repeated warnings in July about increasing GLOF risks in Gilgit-Baltistan and Khyber Pakhtunkhwa. It said unusually warm conditions combined with intermittent rainfall could accelerate snow and ice melt, increase water levels in existing glacial lakes and create new lakes.

The National Disaster Management Authority also warned in August that continued glacier and snowmelt, elevated temperatures and monsoon rainfall could trigger sudden increases in river flows, GLOFs, flash floods and landslides. The areas identified as vulnerable include Ghizer, Hunza, Nagar, Shigar, Gilgit, Rondu, Tangir, Darel, Diamer, Astore, Skardu, Ghanche and Kharmang, as well as parts of Khyber Pakhtunkhwa and Azad Kashmir. These warnings are significant because glacier-related disasters can occur with little time for communities downstream to respond. Pakistan has already begun using satellite technology to monitor dangerous glacial lakes.

According to the Space &

Upper Atmosphere Research Commission (SUPARCO), 131 potentially dangerous glacial lake locations have been identified by provincial disaster management authorities, the Gilgit-Baltistan Disaster Management Authority and WAPDA's Glacier Monitoring and Research Centre.

SUPARCO is using satellite imagery to monitor changes in these lakes and support early-warning and disaster preparedness efforts. The concentration of these lakes in mountainous regions means that a relatively small event at high altitude can have devastating consequences for communities, roads, bridges and hydropower infrastructure located downstream.

Nepal disaster that unfolded within minutes

The flooding was exceptionally destructive because the initial mountain collapse rapidly transformed into a torrent carrying enormous quantities of water, rock, ice and sediment down narrow Himalayan valleys. Preliminary geological and satellite assessments indicate that an ice-rock avalanche or glacier-related collapse at high altitude may have initiated the chain of events. The force of the flood destroyed sections of the trans-Himalayan transport network and swept away vehicles, buildings and other infrastructure. The Chinese rescue team that reached the devastated Gyirong border crossing reported finding an area reduced largely to ruins.

Climate change raises wider concerns

The disaster has renewed concerns about the growing vulnerability of the Himalayan region to climate-related hazards. Scientists caution that climate change should not automatically be identified as the sole cause of a particular glacier collapse. However, rising temperatures are con-

tributing to changes in glaciers, snow cover, permafrost and mountain slopes, potentially increasing the instability of high-altitude environments.

The latest disaster demonstrates how a relatively small failure in a remote mountain environment can develop into a cascading catastrophe involving glaciers, landslides, rivers and densely populated valleys. The Himalayan region contains thousands of glaciers and glacial lakes, many of which are being closely monitored because sudden releases of water can produce devastating floods downstream.

Economic consequences

Beyond the immediate loss of life, the floods are likely to impose a major economic burden on Nepal. The destruction of roads, bridges, hydropower projects, homes and tourism infrastructure could take years to repair. Nepal's government has estimated that rebuilding could cost between \$4 billion and \$5 billion, equivalent to a significant share of the country's economy.

The August 2026 Nepal floods are among the most devastating natural disasters to hit the Himalayan region in recent years. What began as a high-altitude glacier or ice-rock collapse rapidly developed into a destructive flood carrying water, mud, ice and rock through mountain valleys. The enormous death toll and thousands of missing people underline the vulnerability of communities living along Himalayan rivers. The disaster also provides a stark warning: as the climate warms and mountain systems become increasingly unstable, governments cannot rely solely on post-disaster rescue. Early-warning systems, glacier monitoring, resilient infrastructure and cross-border disaster cooperation will be essential to protect Himalayan communities from future catastrophes.

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Tariq Electric

Makes Strong Mark as Platinum Sponsor at 15th IEEEEP

EU Report

Tariq Electric Pvt. Ltd. made a strong impression at the 15th IEEEEP Fair 2026, participating as a prestigious Platinum Sponsor of the three-day exhibition held from August 18 to 20 at the Karachi Expo Centre.

Organized by the IEEEEP Karachi Centre in collaboration with Badar Expo Solutions, the 15th IEEEEP Fair brought together more than 200 local and international exhibitors representing the electrical, electronics, renewable energy and related technology sectors. Tariq Electric's participation as a Platinum Sponsor reflected the company's commitment to supporting Pakistan's engineering and electrical industry while providing a platform to showcase its products, solutions and technological capabilities to a diverse audience of engineers, consultants, industry professionals, business leaders and other stakeholders.

The company's professionally designed and well-presented exhibition stall attracted significant attention throughout the event, offering visitors an opportunity to explore Tariq Electric's portfolio and engage directly with its team. The stall served as a platform for technical interaction, business networking and discussions around emerging opportunities in Pakistan's rapidly evolving energy and electrical landscape.

Haris Tariq, Chief Executive Officer of Tariq Electric Pvt. Ltd.,** actively participated in the exhibition and engaged with industry representatives, professionals and visitors. His presence reflected the company's leadership-driven approach towards building stronger industry relationships, exploring new business opportunities and contributing to technological advancement in Pakistan.

Speaking during the event, Haris Tariq highlighted the im-



portance of industry platforms such as the IEEEEP Fair in bringing manufacturers, technology providers, engineers and decision-makers together. Such exhibitions, he noted, provide valuable opportunities to exchange ideas, understand market requirements, establish strategic connections and promote innovative solutions.

The IEEEEP Fair 2026 also focused strongly on Pakistan's drive towards local manufacturing and innovation. During the inauguration, FPCCI Senior Vice President Saquib Fayyaz Magoon called for greater investment in technology-driven manufacturing, research and development, industry-academia collaboration and export competitiveness.

IEEEEP Karachi Centre Chairman Engr Naveed Akram Ansari also emphasized the "Make in Pakistan" initiative and announced the Made in Pakistan Excellence Award, aimed at recognizing outstanding locally man-

ufactured products and encouraging indigenous engineering capabilities. The exhibition featured product-specific presentations, B2B meetings and industry discussions, creating opportunities for companies to strengthen commercial partnerships and showcase their latest technologies.

Tariq Electric's presence as a Platinum Sponsor further underlined its commitment to the development of Pakistan's electrical and engineering ecosystem. Through its participation, the company demonstrated its continued focus on innovation, quality, industry collaboration and the advancement of locally driven technological solutions.

The successful participation of Tariq Electric at the 15th IEEEEP Fair 2026 reinforces its position as an active industry stakeholder and highlights the company's vision of contributing to a stronger, more innovative and technologically advanced Pakistan.

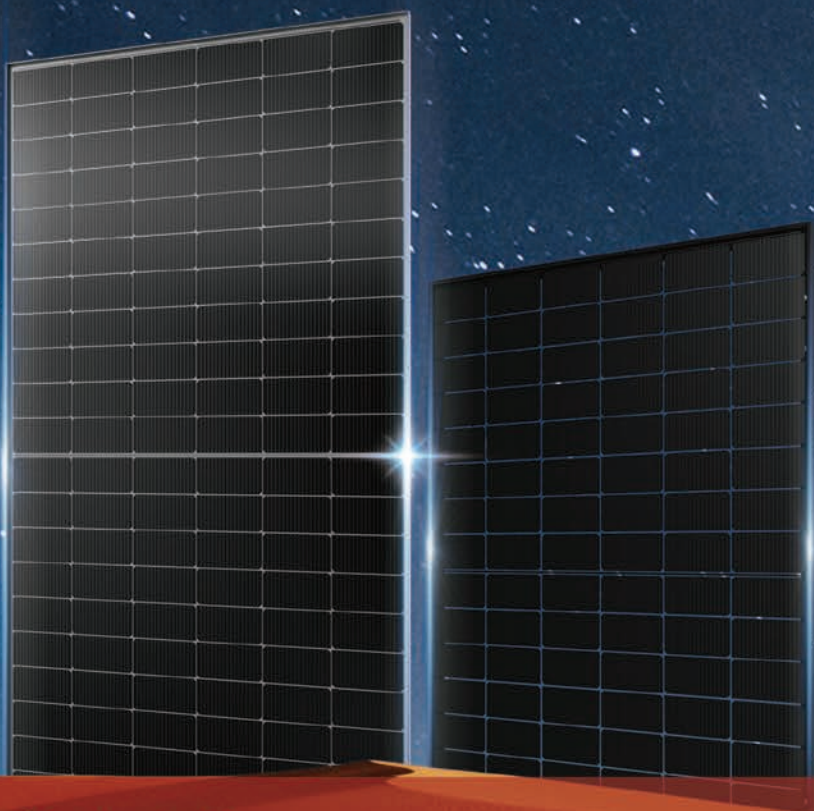


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Beyond Price Notifications A National Reset for Pakistan's LPG Market

Owais Mir

The writer is the leading entrepreneur in Pakistan's energy and engineering sector. The views expressed in this article are personal

The decision before the Prime Minister and the Minister for Petroleum is not what LPG should cost for one month. It is whether Pakistan will build a market capable of delivering an honest price, secure supply and safe fuel throughout the year in sustainable manner.

For millions of households beyond the natural-gas network, as well as restaurants, small businesses and industrial users, liquefied petroleum gas is essential energy. Yet the public debate still begins and ends with a monthly price notification - far too narrow a response to a structural market problem.

A notified price cannot protect consumers when imports are weakly documented, local and imported costs create arbitrage, terminal storage is insufficient, licenses are held without serious operating capacity and unsafe practices/ cylinders remain in circulation. References to an LPG 'mafia' cannot substitute for regulation. Pakistan needs a federal market reset built around the following seven decisions.

The Policy Reset: Seven Decisions

1. Create one Transparent Pricing Framework:

Pakistan needs one coherent national pricing framework for locally produced and imported LPG, without concealing their different costs. OGRA should publish source-wise price build-ups for indigenous production, seaborne imports and land-route imports and determine a consumer reference price or monitored corridor from the weighted supply mix. Taxes, duties and policy charges should be rationalised to remove unintended arbitrage, while vulnerable households should receive targeted support rather than a blanket subsidy that weakens the market signal.

2. Curb indiscriminate growth of storage and filling plants:

More terminal storage does not justify indiscriminate growth of small storage and filling plants. Before licensing further capacity, OGRA should complete a national and provincial assessment of demand, existing utilisation, transport routes, emergency coverage, zoning, fire protection and population exposure through technology intervention by using digitalization through out the sector. New facilities should be encouraged in underserved areas and paused in saturated locations. Pakistan should not repeat the CNG experience: unchecked expansion can produce financially distressed plants, weaker safety incentives and coercive commercial relationships with distributors. Need-based planning protects both responsible investment and public safety.

3. Build strategic storage at terminals and key inland hubs:

Pakistan requires additional storage where it strengthens national resilience: at import terminals, bonded facilities and strategic inland hubs. An evidence-based minimum stock obligation should reflect seasonal demand, import lead times, logistics and emergency needs, while terminal capacity should be available on transparent, non-discriminatory terms. Verified inventory and automatic measurement would allow government to identify supply risks before shortages and price spikes reach consumers.





4. Lock in imports through a government-supported supply plan:

Imports should follow a rolling national demand-supply balance approved by the Petroleum Division, supported by pre-qualified suppliers, predictable procurement windows, quality verification, port and foreign-exchange coordination, bonded storage where appropriate and an emergency mechanism before winter pressure arrives. Every imported tonne should be digitally traced from contract, customs value and product specification to terminal receipt, storage and onward sale, giving Customs, FBR, OGRA and the Petroleum Division one integrated record as the case for oil supply chain here.

5. Move from roughly 500 fragmented entities to about 40 accountable operators

The licensing and trading universe is widely described within the industry as comprising roughly 500 entities across the chain. OGRA should publish an authoritative audit and progressively rationalise the active marketing and importing segment towards about 40 technically capable, well-capitalised and traceable corporate operators. Renewal should depend on audited accounts, tax compliance, disclosed ownership, storage access, trained personnel, digital reporting, quality controls and safety performance. This must be a transparent qualification exercise - not arbitrary cancellation or a route to oligopoly - with legitimate distributors remaining registered. A licence must be an operating obligation, not a tradable 'plot file'.

6. Use bulk LPG and LPG AIR MIX (SNG) as tactical balancing tools:

Bulk LPG and synthetic natural gas produced through LPG-air mixing can serve off-grid communities, commercial clusters and selected industrial users, while helping manage seasonal or local shortages. They should remain tactical tools, supported by project-specific economics, safety controls, transparent tariffs, controlling deforestation/climate change effects, performance benchmarks and periodic review - not permanent substitutes for reform of the wider gas and LPG markets in strategic terms.

7. Make cylinder and supply-chain safety non-negotiable:

A substandard cylinder and attached accessories are a mobile industrial hazard. OGRA, PSQCA, provincial authorities and law-enforcement agencies should operate one cylinder-safety programme covering approved design, manufacturer identification, digital serialisation, periodic testing, recall and verified destruction of condemned stock. Large or non-standard cylinders should not reach consumers without certified fitness, while cross-filling, illegal decanting, counterfeit valves and roadside filling should attract meaningful permanent penalties. Safety performance must directly affect license renewal.

The Way Forward:

The Prime Minister should direct a time-bound LPG Market Reform Programme, led by the Minister for Petroleum and jointly delivered by the Petroleum Division, OGRA, Finance and Commerce Divisions, FBR/Customs, PSQCA, the Competition Commission and provincial authorities. During the first 30 days, the government should publish one national demand-supply balance, source-wise price build-up, licence audit, storage map and cylinder-safety baseline; by day 60, it should approve the pricing framework, import calendar, operator qualification criteria and strategic-stock methodology; and by day 100, it should launch end-to-end digital traceability, risk-based licence renewal and a national cylinder testing and recall campaign. Over the following 12 to 24 months, the programme should complete qualification-based consolidation, commission priority terminal storage, enforce minimum stocks and review SNG and bulk-LPG schemes, with progress published on a simple dashboard.

Success should be measured not by notifications or licences, but by whether consumers receive safe LPG at a price reflecting real costs, winter demand is met from visible stocks, imports are traceable from invoice to end-user and unsafe or speculative operators can no longer exploit regulatory gaps. LPG is called the poor man's fuel; that description carries an obligation to make it available, honestly priced and safe. Pakistan does not need another isolated notification or a new policy - it needs institutional discipline from import contract to consumer cylinder in an end-to-end manner. ■



Nestlé Pakistan

Turning Agricultural Residue into Cleaner Steam for a Sustainable Future



Nestlé Pakistan marked another step in its climate action journey with the inauguration of the Biomass Steam Plant at its Sheikhpura site by Chief Minister Maryam Nawaz Sharif

From agricultural residue to cleaner steam

On 31st July'26, the stone laying and inauguration of the Sheikhpura Biomass Steam Plant by Chief Minister Maryam Nawaz Sharif, alongside Nestlé Pakistan's leadership including CEO and Managing Director Jason Avanceña, Head of Corporate Affairs & Sustainability Sheikh Waqar Ahmad and Head of Technical Faisal Nadeem, marked an important step in advancing cleaner manufacturing in Pakistan. The

occasion reflected Nestlé Pakistan's Creating Shared Value approach, where business growth is aligned with positive outcomes for communities, farmers and the environment. The USD 4.5 million investment will use 72,000 tons of agricultural residue annually to generate 30 tons of steam per hour, reducing approximately 24,345 tons of carbon emissions each year. It is also expected to generate estimated annual fuel cost savings of around USD 2.15 million, while supporting cleaner operations, reducing reliance on fossil fuels and contributing to Pakistan's climate action priorities.

SHEIKHUPURA BIOMASS STEAM PLANT STONE LAYING AND INAUGURATION



Beyond Sheikhpura, Nestlé Pakistan continues to advance renewable energy across its operations through site-specific solarization and biomass initiatives. Together, these projects reflect the company's commitment to reducing greenhouse gas emissions, improving energy efficiency and supporting a just transition toward cleaner energy across manufacturing sites and supplier networks

Cleaner energy, Regenerative farming practices

For Nestlé, Creating Shared Value means delivering long-term value for society while ensuring the sustainability of its business. This approach is reflected in actions that support a regenerative food system and strengthen resource efficiency across the value chain. Guided by its sustainability priorities of climate action, regenerative agriculture and circularity, Nestlé Pakistan continues to connect cleaner energy with responsible resource use and stronger farming practices. Alongside investments such as the Sheikhpura Biomass Steam Plant, the company is working with farmers to promote regenerative agriculture practices that help strengthen soil health, improve water efficiency and support biodiversity. To date, Nestlé Pakistan has initiated the implementation of regenerative agriculture practices on over 125 farms of maize, alfalfa, oats, sorghum and wheat across Punjab to promote soil health and conserve water.

Supporting climate action at scale

Linked to the United Nations Sustainable Development Goals, including SDG 7 on Affordable and Clean Energy and SDG 13 on Climate Action, the plant supports Nestlé's Net Zero Roadmap. Under this roadmap, Nestlé aims to reduce greenhouse gas emissions by 50% by 2030 from a 2018 baseline and reach net zero by 2050 at the latest. By 2025, Nestlé had achieved more than a 45% reduction in greenhouse gas emissions compared to the 2018 baseline, demonstrating continued progress toward responsible operations and long-term environmental stewardship.

Scaling Solar Energy in Manufacturing

Nestlé Pakistan has expanded solarization across its manufacturing footprint, with more than 9.6 MW of installed solar capacity across its sites. This includes 6.1 MW at Sheikhpura and 2.8 MW at Kabirwala, helping reduce dependence on grid electricity while supporting lower-carbon manufacturing operations.



Biomass Steam Plant at Kabirwala

At the Kabirwala factory, a 20 ton/hour biomass steam plant is helping replace fossil fuel-based thermal energy with renewable steam. The plant utilizes agricultural residue to provide more than 75% of the factory's thermal energy and reduces over 10,500 tons of CO₂ emissions annually, strengthening Nestlé Pakistan's contribution to lower-carbon operations.



Renewable Energy at Dairy Farms

From 2021 to 2025, Nestlé facilitated dairy farmers in installing solar systems at 135 dairy farms, helping improve access to renewable energy within its supplier network.



Climate-Smart Biogas Digesters for Supplier Farms

Between 2021 and 2025, Nestlé supported the installation of 25 biogas digesters at supplier farms, enabling more efficient waste management while supporting renewable energy generation at farm level.



Beyond Capacity: What Defines a High-Quality Energy Storage Battery in Pakistan?

In Pakistan's fast-growing solar market, battery capacity is often the first number buyers notice. But a larger kWh rating does not necessarily mean better performance, longer service life or greater reliability.

For batteries operating through intense summer heat, frequent power outages and repeated daily cycling, the real test comes after installation. A high-quality battery must do more than store energy — it must perform consistently under demanding conditions, and remain dependable over years of use.

A Battery Is Only as Good as Its Cells

"Capacity and cycle life are important, but they should not be the only indicators of battery quality," said Muhammad Ahsan, Technical Manager at itel Energy Pakistan. "Cell consistency, system engineering and safety are equally important. This is why we only use 100% Grade-A cells for our battery portfolio, no mixed-grade cells, no compromise."

This approach is applied across the itel Energy 12.8V, 25.6V and 51.2V battery range, as well as its portable Power Series. For buyers, this distinction matters. Two batteries with the same nominal capacity can behave very differently depending on the cells and the system design.

"Customers should be able to understand what is inside the product they are buying rather than relying only on a headline specification," Ahsan added. "At itel Energy, we provide QR codes with each cell and pack to ensure transparency, so that customers and installers can review key technical details more easily."

100% Grade A Is Not Just the Cell — It's the System

Battery quality does not depend on one component or one certification. It is created through a combination of cell quality, intelligent monitoring of BMS, mechanical design, manufacturing control and proper installation.

"The cell is the foundation, but the battery has to operate as one complete system," Ahsan said. "The BMS, balancing strategy, electrical connections and overall integration all need to work together."

itel Energy says its battery systems combine 100% Grade-A cells with an intelligent BMS featuring more than 50 monitoring and protection algorithms. Selected models also support automatic parallel connection for easier capacity expansion, while comprehensive testing is conducted to help ensure system safety and reliability.

Standards such as IEC 62619 and UN 38.3 provide important safety benchmarks, while proper ventilation, temperature control, component material, cable sizing, electrical protection and enclosure rating remain

CSS for Smarter Connection & Stronger Performance

A fully integrated cell contact system replaces complex wiring, maximizing space for a compact, high-efficiency battery pack.



essential to safe operation. In Pakistan, all itel Energy batteries are backed by a replacement warranty within 48 hours and supported by a service network covering more than 33 cities.

"Grade-A quality should not stop at the cell," Ahsan said. "It should carry through the entire system and every stage of the customer experience — from production and testing to installation, warranty and after-sales service," added Ahsan, "Grade-A cells, Grade-A system and Grade-A service — we are here for our customers every step of the way, 100%."

About itel Energy

itel Energy is a clean energy brand under TranESS, the energy storage business unit of Transsion Holdings. With in-depth market experience and extensive channel resources, itel Energy focuses on solving everyday power challenges. Its practical and accessible solutions are designed for individuals, households, businesses and beyond. Operating in more than 20 countries, itel Energy continues to expand through a global-local partnership network, practical customer-inspired solutions, and strong execution across emerging markets. ■

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Environment: the lightning strikes of Thar

Dolat Chandani & Hussain Dada

Dolat Chandani is a rights activist
Hussain Dada is a member of staff

It was an overcast evening on July 31, 2026. Taj Muhammad Shah, 49, was ploughing his small plot of land with a tractor on the outskirts of his village, Borli Mahmood Shah, also known as Borli Muhammad Shah, near Islamkot in Tharparkar, Sindh.

Several workers were with him, including 40-year-old Sajan Meghwar and his 11-year-old son Amrat, who worked as farmhands. After finishing the day's work, Shah and the father-son duo lay down under a tree to rest. The other workers rested nearby.

The stillness of the sandy, arid landscape was broken by successive peals of thunder, accompanied by bolts of lightning zigzagging through the sky. One such strike hit the tree under which Shah and his two workers were resting, killing all three. Several others nearby sustained

injuries but survived. "It happened so fast, we didn't have any opportunity to react," says Diam Meghwar, one of the survivors. Once welcomed as a sign of rain and relief, lightning has become a source of fear in Tharparkar. As coal mining transforms the landscape, scientists are examining whether climate change, industrial activity or both are altering the region's storms

A BLESSING NO MORE

For generations, rain has been celebrated in Tharparkar, where persistent droughts have left agricultural communities heavily dependent on pastoralism. "We would be glad to see lightning and hear thunder because they brought hope," says 50-year-old villager Seeta. But that relationship has changed in recent years, as lightning strikes have resulted in mounting losses of life, livestock and property.

According to 2025 data from the District Disaster Management Authority (DDMA) Tharparkar, more than 350 people have lost their lives in lightning strikes across Tharparkar since 2018, while thousands have been injured. Thousands of cattle have also been lost during this period.

WHAT HAS CHANGED

So, what is the reason for this apparent change? For many residents of Tharparkar, the answer seems to be simple: coal mining and power generation.

The Sindh Engro Coal Mining Company (SECMC) started mining operations in Tharparkar in 2016. A joint venture of the Sindh government and Engro Powergen, SECMC has 13 investment blocks, stretching over 9,000 square kilometres of the district, with an estimated 158.75 billion tonnes of lignite coal buried beneath.



Currently, two blocks are operational — Thar Coalfield Blocks I and II (TCB-I and TCB-II) — with associated power plants generating 2,620 megawatts of electricity for the national grid.

WHAT THE SCIENCE SAYS

Climate scientists have warned that a warming world can intensify extreme rainfall and alter the conditions that favour severe thunderstorms in some regions.

While attributing every ecological change directly to mining would be scientifically inaccurate, dismissing local concerns would be equally unwise, says Prof Fahim Khokhar, who heads the environmental sciences department at the National University of Science and Technology (NUST) in Islamabad.

At the same time, Prof Khokhar continues, local changes in Tharparkar may also be a contributing factor. Large-scale mining operations, thermal power generation, increased vehicular traffic, land-use changes, wastewater reservoirs and industrial emissions have altered local environmental conditions.

LIGHTNING ON THE GROUND

One factor that may increase the danger posed by lightning in Tharparkar, says Prof Khokhar, is the region's dry, sandy soil, which has relatively high electrical resistivity. "The soil lacks moisture and organic matter, making it

In the nearby village of Godanagri, residents have installed three earthing rods in recent years. "We have not suffered any losses to lightning since then," says one resident Deewan Kumar. At least one local charity, the Umerkot-based Association for Water, Applied Education and Renewable Energy, has been working with communities to raise awareness about safety measures during lightning strikes.

"Tharparkar requires systematic, long-term monitoring of lightning, rainfall, temperature and thunderstorm patterns, so that we can establish how lightning frequency and intensity are changing and understand the relationship with climate change," says Ali Akbar Rahimoo, its executive director. Until that evidence emerges, for the people of Tharparkar, the safest response may be to treat every rumble of thunder not as a promise of rain, but as a warning to seek shelter. ■



Petroleum Minister Visits PARCO to Review Energy Security



EU Report

Federal Minister for Petroleum Ali Pervaiz Malik, accompanied by Secretary Petroleum Hamed Yaqoob Sheikh, visited the corporate headquarters of Pak-Arab Refinery Company Limited (PARCO) in Karachi, where they were received by Managing Director Irteza Ali Qureshi and the company's senior leadership.

During the meeting, the participants discussed the changing dynamics of Pakistan's energy landscape and the need for a reliable, resilient and efficient petroleum supply chain to meet the country's growing energy requirements.

The Petroleum Minister appreciated PARCO's role in supporting Pakistan's energy security and maintaining the reliability of the petroleum supply chain.

PARCO management reiterated the company's commitment to contributing to national energy security and supporting economic activity through efficient and reliable petroleum infrastructure. ■

PSO, Kuwait Petroleum mark 50 years of strategic partnership

EU Report

Pakistan State Oil Company Limited (PSO) commemorated 50 years of its strategic partnership with Kuwait Petroleum Corporation (KPC), a relationship that has ensured uninterrupted supplies of gasoil and jet fuel to Pakistan for five decades, according to a statement.

Senior executives from both companies gathered to mark the milestone and discuss the future direction of the partnership. "The bond between Kuwait and Pakistan transcends business. It is a relationship of solidarity, mutual respect and friendship between two nations," a PSO spokesperson said.

"PSO and KPC have the privilege of translating that national friendship into tangible value for the people of Pakistan, and we intend to keep doing so," the spokesperson added. ■

Greener route to energy security

Prolonged disruption in Strait of Hormuz could add \$4.5 billion to import bill; Under CPEC 2.0, the proposed Green Corridor provides an opportunity to place renewable energy alongside industrialisation, agriculture, mining and digital cooperation

Sarim Zia

The writer is a researcher at the Sustainable Development Policy Institute (SDPI)

Arfa Ijaz

The writer is an environmental engineer and an energy researcher working at the Sustainable Development Policy Institute (SDPI), Islamabad

Pakistan's next economic shock may be triggered far beyond its borders, but its impact could be felt directly in household budgets, businesses and the country's already fragile external position.

A prolonged disruption in the Strait of Hormuz could add an estimated \$4.5 billion to the import bill, large enough to place renewed pressure on an economy still struggling to rebuild its external buffers and avoid another IMF adjustment.

Energy shocks travel quickly; a spike in fuel prices raises transport costs, feeds into food and manufacturing prices, squeezes businesses, and reduces the purchasing power

of working households. Pakistan has spent decades responding to these disruptions after they occur rather than building an energy system capable of absorbing them in the first place. Genuine macroeconomic stability will therefore remain elusive as long as economic growth is tied to expensive and volatile imported fossil fuels. The immediate task is twofold: reduce the vulnerability of the fuel we still need to import while accelerating the transition toward energy we can produce domestically.

The first step is therefore logistical. Pakistan has already explored having oil supplies rerouted through the Red Sea port of Yanbu, allowing shipments to bypass the Strait of Hormuz. Diversifying import routes and building alternative supply corridors can provide some insulation from sudden geopolitical disruptions. But they should be treated as strategic risk management. Rerouting imported fuel changes the route of dependence; it does not eliminate the dependence.

That distinction makes the longer-term transition far more important. Under CPEC 2.0, the pro-



posed Green Corridor provides an opportunity to place renewable energy alongside industrialisation, agriculture, mining and digital cooperation at the centre of Pakistan-China economic engagement.

In practice, however, renewables cannot compensate for the institutional inertia that has already prevented Pakistan's Special Economic Zones from becoming productive industrial ecosystems. Of the nine SEZs designated during the first phase of CPEC, only four, Rashakai in Khyber Pakhtunkhwa, Allama Iqbal Industrial City in Punjab, Dhabeji in Sindh, and Bostan in Balochistan, have progressed beyond the planning stage, with development remaining partial, largely because gaps in utilities, land-title security, approvals, electricity distribution and investor-developer dispute resolution continue to deter investment. These weaknesses are further compounded by inadequate logistics and transmission infrastructure and the absence of a clear, sector-specific proposition for Chinese investors. Fiscal incentives alone cannot overcome such structural barriers, particularly when approval processes remain fragmented and time-consuming.

Distributed solar is effectively the first stage of household energy resilience. It reduces dependence on grid purchases, lowers exposure to rising tariffs and can ease pressure on the system during periods of peak demand. But as the grid becomes more constrained and the regulatory framework shifts away from traditional net metering, solar generation alone will not be enough.

The next stage must therefore be storage. Hybrid rooftop systems combining solar with battery energy storage systems can allow households and small businesses to maximise self-consumption and shift solar energy into evening peak hours, reducing their dependence on the grid when electricity is most expensive. This also creates an opportunity to think beyond the technologies that currently dominate global battery markets. Sodium-ion batteries could eventually offer a lower-cost and more thermally stable alternative for stationary applications, particularly in a country where extreme summer

temperatures make thermal performance important.

This opportunity becomes even more significant when domestic resources are considered. Pakistan possesses substantial rock-salt resources, including the high-purity salt associated with the Khewra region. Turning those resources into battery-grade sodium compounds would not, by itself, create a domestic battery industry; the manufacturing chain requires specialised chemical processing, cathode and anode materials, cells, electronics and quality-control capabilities, but it could provide one domestic building block for a broader sodium-ion ecosystem. The objective should therefore not be to leap immediately from raw salt to complete batteries, but to build the industrial capabilities progressively.

That makes local battery assembly and manufacturing the logical next step. Pakistan should begin by developing domestic assembly capacity, technical standards, recycling systems and testing infrastructure while gradually localising components and chemical processing. The same approach should extend to solar equipment and other clean-energy technologies, linking domestic demand with industrial policy. In this way, the transition would do more than replace imported fuels; it could create new manufacturing capabilities, strengthen domestic supply chains and generate export opportunities.

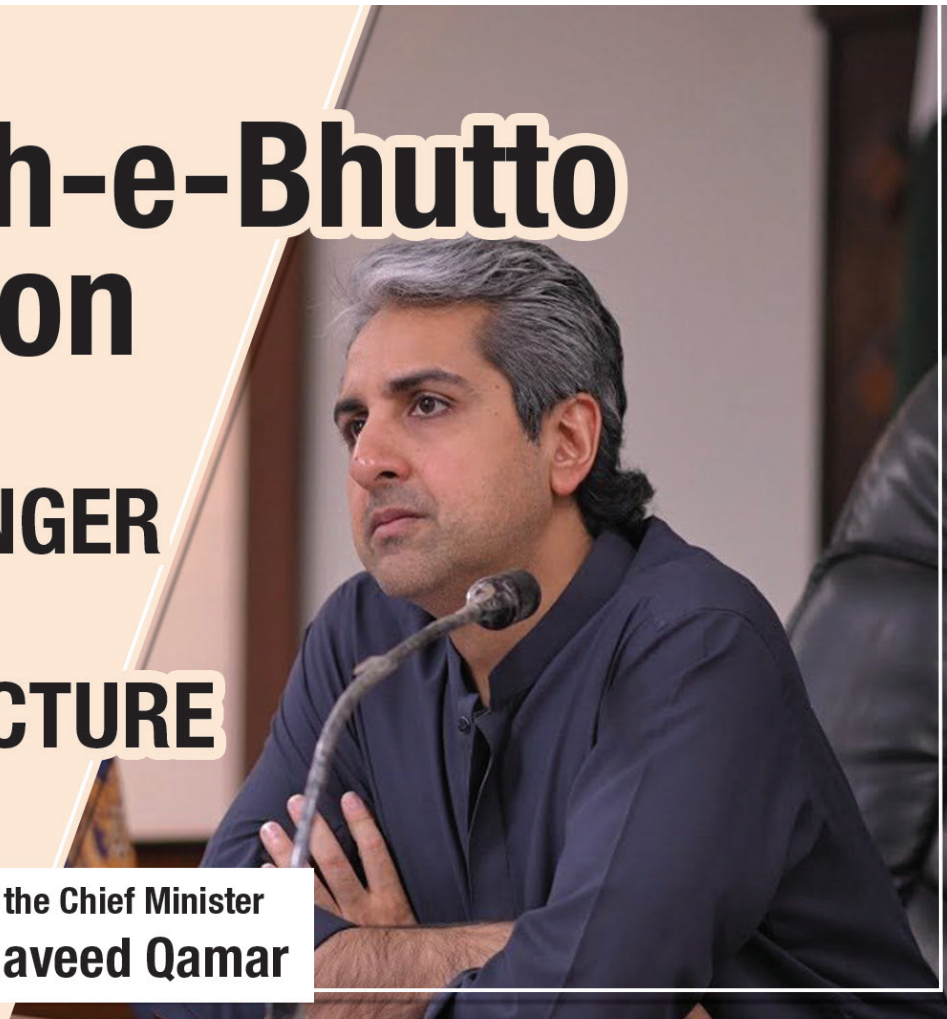
Ultimately, Pakistan's energy transition must be pursued as a strategy for both climate resilience and economic security. In the short term, that means diversifying the routes through which we import the fuel we cannot yet replace. At the household level, it means moving from rooftop solar towards solar-plus-storage systems that reduce exposure to grid volatility.

An economy so dependent on external energy markets will remain vulnerable to shocks it cannot control. Diversifying energy sources, decentralising generation and building domestic clean-energy manufacturing can change that trajectory. That said, the energy transition is steadily becoming a pathway to greater economic resilience, energy security and sovereignty.



Shahrah-e-Bhutto Extension WILL BE A GAME-CHANGER FOR CIVIC INFRASTRUCTURE

Special Assistant to the Chief Minister
Syed Qasim Naveed Qamar



Karachi is poised for a major infrastructure and investment push, with the Sindh government preparing to fast-track the extension of Shahrah-e-Bhutto from Qayyumabad to Karachi Port under the public-private partnership (PPP) model. Described as the next major PPP infrastructure project to be rolled out rapidly in the city, the signal-free, tolled highway is planned for completion in just two-and-a-half years and is expected to fundamentally improve the movement of heavy goods vehicles to and from the country's principal port.

The project forms part of a much wider investment agenda being pursued by the Sindh government, encompassing an electric vehicle charging network across Karachi, a proposed Sindh International Financial Centre, greater support for technology and women-led enterprises, and the development of Ketu Bandar as a deep-sea port.

In an exclusive interview with Energy Update, Syed Qasim Naveed Qamar, Special Assistant to the Sindh Chief Minister on Investment and Public-Private Partnership, explains the government's plans to improve Karachi's infrastructure, facilitate entrepreneurs and attract domestic and foreign investment.

Energy Update: The extension of Shahrah-e-Bhutto from Qayyumabad to Karachi Port appears to be one of the most ambitious upcoming infrastructure projects for Karachi. What is the vision behind it?

Syed Qasim Naveed Qamar: The extension of Shahrah-e-Bhutto from Qayyumabad to Karachi Port will be the next major infrastructure project that we intend to roll out rapidly under the public-private partnership model. We see it as a potentially transformative project for Karachi's civic infrastructure.

Its primary purpose will be to facilitate the safe and round-the-clock movement of heavy goods vehicles to and from Karachi Port. At present, the movement of heavy vehicles is subject to restrictions and, under court directives, their operations are largely possible only after 11pm. This creates considerable difficulties for the port, transporters, businesses, and the city itself. We have set an ambitious target of completing this signal-free and tolled highway in just two-and-a-half years. Like Shahrah-e-Bhutto, various components of the project will be prefabricated and subsequently installed. This is a novelty in Pakistan's engineering sector and will significantly accelerate construction.

The Sindh government has also recently constructed a new link road connecting the M-9 motorway with the National Highway in Karachi's suburbs under the PPP model. That project is also intended to facilitate the movement of heavy vehicles carrying goods.

EU: Karachi is also witnessing growing interest in electric mobility. What are the government's plans for developing an EV charging infrastructure?

Mr Qamar: We have received approaches from prospective investors from China, Türkiye and Pakistan's business community interested in establishing a network of electric

vehicle charging stations across Karachi. The objective is to promote cleaner and more sustainable transportation in Sindh. However, the success of electric mobility depends on the availability of reliable charging infrastructure. We have already held meetings with the Mayor and Commissioner of Karachi in this regard. We have requested the Karachi Metropolitan Corporation to provide at least two premises in

each district of Karachi where charging points for electric vehicles and electric scooters can be established. This can become an important component of Karachi's transition towards cleaner urban mobility. We want the private sector to play a leading role in developing this network, while the government facilitates investors by helping provide suitable locations and addressing regulatory requirements. ■

NFEH Demands LG Minister, Mayor Karachi's Action Against Culprits

Police Need to Register FIR Over Cutting of Ancient Banyan, Neem and Other Trees; Environmentalists Warn of Risks Post to Trees

Despite concerns over the alleged illegal cutting of nearly 80-year-old banyan, neem and other mature trees in Landhi Town, the concerned police have reportedly failed to register an FIR, prompting environmental organisations to demand immediate action.

National Forum for Environment and Health (NFEH) President Muhammad Naeem Qureshi and Khawaja Mazhar Iqbal, Chief Save the Trees, expressed serious concern over the delay and urged the Sindh Minister for Local Government and Mayor Karachi to take strict action against those responsible.

Mr Qureshi said letters had been sent to the Minister for Local Government and Mayor Karachi, requesting immediate notice of the incident and legal action against the culprits.

He said it was unfortunate that while IG Sindh has demonstrated a commitment to environmental protection and tree plantation, the concerned police officers were allegedly not cooperating in the registration of the FIR. He urged the IG Sindh to direct the relevant officers to register the case and conduct a transparent investigation.

Meanwhile, KDA Director Parks Shakeel Ahmed Khan stated that although the land belongs to KDA, legal action over the tree cutting falls under the responsibility of the

concerned police station and Landhi Town.

Qureshi said NFEH had also approached the DG KDA for protection and transplantation of the mature trees, but no response had so far been received.

He recalled that the Sindh High Court, through its September 30, 2024 order in Constitutional Petition No. D-3287/2022, issued directions against illegal tree cutting across Sindh and specifically directed that trees in Karachi should not be cut unless absolutely unavoidable situation occurs.

NFEH and Save the Trees demanded immediate coordination among the police, Local Government Department, KMC and KDA to register the FIR, protect the remaining trees and prevent any further illegal cutting or encroachment. ■



Wapda Pushes Ahead With Five Major Hydropower Projects

Diamer Basha, Dasu, Mohmand, Tarbela 5th Extension and Keyal Khwar projects being implemented to increase clean energy generation and water storage; with 4,500MW of installed capacity Diamer Basha will become one of largest sources of renewable electricity

Engineer Hussain Ahmad Siddiqui

The writer is a retired chairman of the State Engineering Corporation.

Pakistan's Indicative Generation Capacity Expansion Plan (IGCEP) 2025-2035 envisages a substantial expansion of hydropower capacity as part of the government's policy to reduce dependence on fossil fuels, particularly imported fuels, and increase the share of indigenous renewable resources in the national energy mix. The plan envisages around 21,400 MW of additional hydropower capacity by 2035.

The Water and Power Development Authority (Wapda) is currently implementing several major hydropower and water-storage projects, including Diamer Basha, Dasu, Mohmand, Tarbela 5th Extension and Keyal Khwar. These projects are intended to increase electricity generation while, for major storage dams, also improving water regulation and irrigation supplies. At the same time, WAPDA is rehabilitating and upgrading existing facilities such as Mangla and Warsak power stations to restore or enhance their generation capacity.

Among the projects under construction, Diamer Basha, Dasu and Mohmand are of exceptional importance because of their combined contribution to electricity generation, water storage and national food security. Their implementation, however, has been affected by financing constraints, rising costs, land acquisition and resettlement issues, difficult terrain, procurement challenges and delays in construction. These difficulties have recently attracted parliamentary scrutiny, with a subcommittee of the Senate Standing Committee on Economic Affairs examining delays and cost escalation in major hydropower dam projects.

Among these projects, the Diamer Basha Dam and Hydropower Project is arguably the most strategically significant. It is being constructed on the Indus River in the mountainous region near Chilas, at the boundary of Gilgit-Baltistan and Khyber Pakhtunkhwa. It is one of the largest and most technically challenging infrastructure projects ever undertaken in Pakistan.

Wapda estimates annual electricity generation at approximately 18,097 GWh. The importance of Diamer Basha therefore extends well beyond power generation. Its principal strategic benefits are expected to include additional water storage, improved irrigation supplies, sediment management and the generation of large quantities of indigenous renewable, cost-effective electricity.

The project was conceived more than two decades ago, but implementation was delayed by financing difficulties and other institutional and technical factors. The dam component was approved by the Executive Committee of the National Economic Council (ECNEC) in April 2018 at a cost of Rs474 billion. This figure, however, does not reflect the

current cost of the complete project, since subsequent approvals, escalation, financing arrangements and the separate power-generation component have substantially altered the project's overall financial requirement.

Construction of the main dam and associated works commenced in 2020 under a joint venture of PowerChina (Power Construction Corporation of China) and Pakistan's Frontier Works Organisation (FWO). PowerChina, a leading global engineering and construction company, was one of the main contractors for the 22,500MW Three Gorges hydropower station in China. The Diamer Basha Consultants Group, a consortium of 12 engineering companies including Pakistan's NESPAK and international firms such as Stantec/MWH, AFRY/POYRY, Mott MacDonald, Nippon Koei, and Dolsar, is undertaking design and construction supervision of the project. An international Panel of Experts has also been engaged to provide high-level technical oversight during the engineering and construction phases. The panel comprises specialists in geology, rock mechanics, dam engineering, and civil & structural engineering from Germany, Australia, the United States, and Colombia.

The project is now being financed through a combination of government allocations, WAPDA resources and borrowing arrangements. The financing structure is particularly important because a substantial part of the equipment and specialised procurement is exposed to foreign currencies, while much of the project expenditure is incurred in Pakistani rupees.

The most important justification for Diamer Basha is its contribution to Pakistan's water security. The project will add approximately 6.4 MAF of live storage to the Indus Basin system. This additional storage will help regulate seasonal flows and provide greater flexibility in supplying irrigation water.

Construction is progressing simultaneously at several major work sites. The river-diversion system has been completed, allowing the river to be diverted away from the main dam construction area. Foundation works and construction of the main RCC dam are progressing, alongside excavation and development of associated structures. The scale of the construction operation is massive, as the mountainous terrain presents difficult geological and logistical conditions, and the project requires extensive excavation, concrete production and placement, heavy lifting and transportation facilities, river management, and the development of supporting infrastructure.

The project also involves reconstructing or relocating infrastructure affected by the reservoir. Of particular significance is the Karakoram Highway, portions of which will be submerged by the future reservoir. Relocating approximately 280km of the highway is itself a major undertaking and will be coordinated with reservoir development. WAPDA's current project information places the completion target for Diamer Basha at October 2030. This represents a significant change from earlier schedules and reflects the project's complexity and delays.

The hydropower component will consist of two underground powerhouses located on opposite sides of the Indus River. Together they will accommodate 12 tur-

bine-generator units, each rated at 375MW. Installing the generating machinery will be a major undertaking in itself. Large turbines, generators and associated electromechanical equipment must be transported to a remote mountainous site and installed in underground enclosures. The successful completion of the dam therefore represents only one part of the challenge.

The cost of power generation facilities is estimated at Rs751 billion, as per the original PC-1, which now awaits ECNEC approval. Wapda is finalising the order for the electromechanical equipment for the powerhouses in line with the physical progress and anticipated completion of the dam. Financing for this component is expected to come from WAPDA's own resources, commercial loans, and foreign suppliers' credit.

The power-evacuation framework is also being finalised now. Establishing grid connectivity through 765-kV extra-high-voltage (EHV) transmission lines will be a major physical and financial undertaking. The transmission network is expected to extend over approximately 400 km to connect the project with major load centres in the downstream areas. The government is exploring the possibility of securing foreign financing from various international sources for the grid-connectivity component. This means that the benefits of Diamer Basha cannot be measured solely by the date on which the dam structure is completed. Full utilisation of its generating capacity will depend upon the timely completion of the powerhouses, electromechanical equipment and transmission network.

The cost of Diamer Basha has increased substantially from the amount originally approved for the dam component. Several factors have contributed to this escalation, including the long gestation period, construction delays, inflation, exchange-rate depreciation and increases in the cost of imported machinery and other specialised equipment.

However, it is important to distinguish among the various cost figures quoted for the project. The Rs474 billion ECNEC approval of 2018 relates to the dam component, whereas the complete project also includes power-generation facilities, land acquisition, resettlement, infrastructure relocation, roads and other associated works.

The most important justification for Diamer Basha is its contribution to Pakistan's water security. The project will add approximately 6.4 MAF of live storage to the Indus Basin system. This additional storage will help regulate seasonal flows and provide greater flexibility in supplying irrigation water during periods of low river flows. Wapda estimates that the project will provide irrigation benefits covering approximately 1.2 million acres.

With 4,500MW of installed capacity and estimated annual generation of about 18 billion units, Diamer Basha will become one of Pakistan's largest sources of renewable electricity once fully operational. The project also provides an opportunity to diversify Pakistan's electricity mix. However, its full economic benefit will depend on efficient operation of the reservoir, completion of the associated transmission system and integration of its output into the national grid.



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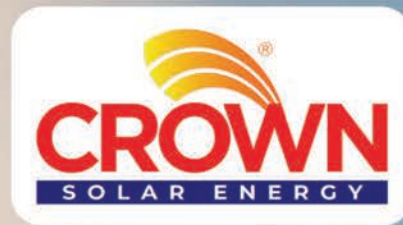


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Pakistan has no strategic oil reserves — not even for a single day

EU Report

By any measure, Pakistan's oil security rests on a precarious foundation: the country has no government-controlled strategic oil reserves—not even enough to meet its needs for a single day.

This startling admission came from Federal Petroleum Minister Ali Pervaiz Malik during a recent appearance on a television news talk show hosted by senior journalist and anchorperson Nadeem Malik. The disclosure exposes a critical vulnerability in a country whose economy, transport system, industry and power sector remain heavily dependent on uninterrupted supplies of petroleum. The minister made it clear that Pakistan currently relies entirely on commercial oil stocks, rather than a dedicated national strategic reserve that the government could draw upon during a major international disruption, supply shock or other emergency.

Under the existing licensing and regulatory framework, the country's oil refineries are required to maintain crude oil stocks equivalent to five to seven days of supply, while oil marketing companies maintain refined petroleum products sufficient for around 20 to 25 days. These stocks, however, are not the same as a strategic reserve controlled by the state. The distinction is crucial. Commercial inventories exist as part of the normal functioning

of the petroleum supply chain. A strategic reserve, by contrast, is essentially an emergency national buffer—oil deliberately stored and held for release when normal supplies are threatened.

And Pakistan, according to its petroleum minister, has no such government-controlled buffer.

A minister without an emergency oil tap:

The minister offered another striking comparison. Unlike India, where the petroleum minister can reportedly order the release of strategic stocks during an emergency, Pakistan's petroleum minister does not have the authority to simply issue an order and make 60 to 70 days of oil supplies available from a government strategic reserve. In other words, there is no national oil stockpile sitting underground that the government can tap at the stroke of a pen. Instead, the government manages the petroleum sector through licensing arrangements, regulatory and governance mechanisms and the existing laws of the land. The actual stocks are maintained by commercial players within those regulatory requirements.

That may keep the normal supply chain functioning, but it leaves the country exposed when circumstances move beyond the normal. A geopolitical crisis, disruption of international shipping routes, sanctions, a sudden international supply shock or another major emergency could put enormous pressure on a system that has no dedicated government reserve to fall back upon.



The plan that has been waiting in the wings:

The government, however, appears to have recognised the gap. According to Ali Pervaiz Malik, around two to three years ago the international consultancy Mott MacDonald was engaged to prepare a feasibility study for establishing strategic oil reserves in Pakistan. The proposed infrastructure would not be a modest undertaking. The minister said the basic one-time storage cost alone would be around US\$30 to \$40 per barrel, with strategic reserves generally built underground.

The eventual project is expected to cost hundreds of millions of dollars.

The initial government target is to establish strategic stocks equivalent to 30 days of oil requirements—a significant improvement over the present situation, but still only half of the 60 to 70 days of strategic cover cited in the comparison with India. A working committee has now been constituted to take forward the recommendations of the feasibility study. The committee includes representatives of Pakistan's oil refineries, while Mott MacDonald has also been brought on board.

This suggests that the proposal has moved beyond the stage of merely recognising the problem and towards developing an implementation mechanism. More than just digging storage tanks: The proposed strategic reserve plan is also expected to examine the country's existing storage infrastructure. The exercise will map and measure the capacity of oil storage facilities in different parts of Pakistan, providing a comprehensive picture of where storage capacity exists, how much of it is available and how it could potentially contribute to national energy security. It will also examine redundant furnace-oil-based power plants that have been mothballed.

That element could prove significant. Rather than looking at strategic oil storage in isolation, the exercise appears intended to assess the country's wider petroleum and energy infrastructure and determine what existing assets could be

incorporated into an emergency-response framework.

The uncomfortable question: The minister's disclosure raises a fundamental question: how secure is Pakistan's energy system when the state has no strategic oil reserve of its own? For years, energy security has largely been discussed in terms of production, imports, refinery capacity, pipelines, terminals and electricity. But the ability to maintain supplies during a crisis depends on something equally fundamental: having sufficient stocks physically available when international supplies are interrupted. Pakistan currently has commercial inventories. Refineries hold five to seven days of crude, while oil marketing companies maintain 20 to 25 days of refined products. But these stocks operate within the commercial supply chain and are not equivalent to a national strategic reserve.

The proposed 30-day strategic reserve could therefore represent a major structural shift in the country's energy-security architecture. But building such a reserve will require more than announcing a policy. It will involve enormous capital expenditure, suitable underground storage, distribution infrastructure, security arrangements, financing mechanisms, replenishment policies and, crucially, a clear framework governing when and how the reserves can be released. The fact that Pakistan is only now working towards establishing its first strategic oil reserve is, in itself, a sobering reminder of how vulnerable the country remains to external energy shocks.

For a country that imports a substantial share of its petroleum requirements and whose economic activity depends on the uninterrupted movement of fuel, having no government strategic oil reserve even for a single day is not simply an energy-policy gap. It is a national vulnerability waiting for the wrong crisis to expose it. The proposed reserve may eventually provide Pakistan with a much-needed safety net. But until those barrels are actually underground and available for an emergency, the country's oil security will continue to depend primarily on commercial stocks—and on the uninterrupted functioning of an increasingly uncertain global energy supply chain. ■

45 CPEC Projects Completed at \$25.61bn

EU Report

A total of 45 projects under the China-Pakistan Economic Corridor (CPEC) have been completed at a combined cost of \$25.61 billion, according to government documents.

The completed projects comprise 17 energy projects, 15 infrastructure projects and 13 economic and social development initiatives, reflecting progress across several key sectors of the CPEC programme.

Major completed projects include the Sahiwal and Port Qasim power plants, Suki Kinari Hydropower Project, Multan-Sukkur Motorway (M-5) and the Lahore Orange Line Metro.

Despite the progress, several major CPEC projects remain delayed due to challenges related to financing, regulatory approvals and implementation.

Among the prominent projects facing delays are the 1,733-kilometre Main Line-1 (ML-1) railway upgrade, Karachi Circular Railway, Dera Ismail Khan-Zhob Highway and several projects planned for Gwadar. The delays have highlighted the financial and implementation challenges involved in executing large-scale infrastructure projects, particularly those requiring substantial external financing and coordination between multiple government agencies. ■

Parliamentary Secretary Visits PPL

EU Report

Parliamentary Secretary, Ministry of Energy (Petroleum Division), Mian Khan Bugti, visited the Islamabad office of Pakistan Petroleum Limited (PPL) on August 21 and held a meeting with the company's senior management.

General Manager Sui Gas Field & Support Services (GMSS), PPL, Brig Ajaz Ahmad Khan, SI (M) Retd., welcomed the Parliamentary Secretary and presented him with a commemorative shield. During the meeting, Bugti discussed PPL's ongoing Corporate Social Responsibility (CSR) initiatives and the company's plans for upcoming development projects, particularly those aimed at supporting communities in Sui, District Dera Bugti. ■



Pakistan's Hidden Climate Crisis: Heat Is Eating Away Output and Profits

Heat Is
Becoming
a Business
Emergency;
Climate
Change
Is Silently
Crippling
Pakistan's
Economy

Dur e Sameen Akhund

The writer is a senior manager for sustainability at the Pakistan Business Council's Centre of Excellence in Responsible Business.

AT some point this summer, somewhere along the value chain, output fell. Nobody logged it as a climate loss. It was absorbed instead as a missed delivery window, a spike in afternoon defects, an absenteeism figure that went unexamined. The cause was heat, and most Pakistani businesses are neither measuring it nor pricing it.

The backdrop is no longer deniable. This spring's pre-monsoon heatwave pushed temperatures across the region above 46 degrees Celsius, an event that scientists at World Weather Attribution found was made roughly three times more likely by climate change. The human toll is systematically undercounted: during Karachi's June 2024 heatwave, the Edhi

Foundation received 568 bodies in five days, against a normal average of about 40 a day, while the local government attributed just 13 deaths that month to the weather. If deaths on this scale can go unrecorded, quieter losses of output and productivity certainly do.

Corporate Pakistan is not ignoring climate change. CERB's case study on business climate readiness found companies working seriously on transition risk: decarbonisation targets, renewable procurement, positioning for a low-carbon economy. All of this is necessary, and investors reward it. But the same study found very few businesses with any grasp of physical risk — the direct hit a changing climate delivers to assets, operations and people. Almost none had a considered response to the most immediate threat of all, which is what heat does to worker health, safety and productivity. In the world's most climate-affected country, businesses prepare for the climate risk set out in regulation and miss the one unfolding on the ground. Part of the reason is that heat, unlike a flood, announces noth-

ing. It leaves no wreckage to photograph and no claim to file, only a slow leak of hours and output that is never traced back to its cause.

These are not sustainability numbers; they are operating numbers. The WHO and WMO report that “worker productivity declines by two to three per cent for every degree above 20°C”. The ILO finds that heat stress generally sets in above 35°C in humid conditions, and international benchmarks now call for outdoor work to stop when wet-bulb globe temperature exceeds 32.1°C. Karachi crossed 47°C in June 2024. Globally, heat stress is projected to erase the equivalent of 80 million full-time jobs by 2030, and Southern Asia stands to lose up to 5pc of working hours, placing it among the worst affected regions anywhere. No business would tolerate an unexamined 5pc hit to capacity from any other cause.

Pakistan's heat problem is a business problem.

Once businesses begin tracing these risks along the value chain, industry-specific patterns emerge. Take textiles, the country's largest export earner. The exposure starts in the field, where extreme heat during flowering cuts cotton yields before a single bale reaches the mill. It continues through ginning and spinning units sited in some of the hottest districts in Punjab and Sindh, and on to stitching floors where piece-rate workers, paid by output rather than hours, have every reason to work through heat stress instead of resting it out. Defects and accidents climb with the temperature, absenteeism follows, and load-shedding arrives just as cooling demand peaks. By the time the shipment leaves late, the invoice records everything except the cause.

So what?

None of this requires waiting for the government or for a regulatory requirement. It requires businesses to understand and measure their own vulnerability to rising temperatures. A climate risk assessment maps operations and suppliers against physical climate scenarios, identifies where heat, flooding and water stress leave them most exposed, and quantifies that vulnerability so it can be managed like any other risk. The interventions that follow are mostly unglamorous and affordable: shaded and cooled work areas, adjusted shift timings and heat protocols, supplier diversification and more resilient infrastructure. But none of them can be targeted until a business knows where its value chain is actually exposed, and the assessment is where that work has to start.

Transition risk is real and it deserves the attention it gets. But the more immediate threat needs no modelling: heat arrives every summer and it is already costing lives, hours and output. The companies that stress-test their exposure now will be better placed to keep delivering when the next heatwave sets records. For everyone else, the losses will not stop; they will simply keep appearing under other names.



Malik Calls for Strengthening Energy Security, Investment

EU Report

Federal Minister for Petroleum Ali Pervaiz Malik held separate meetings with the leadership of the Overseas Investors Chamber of Commerce and Industry (OICCI) and the management of Pakistan State Oil (PSO) in Karachi, reviewing key developments in the petroleum sector, energy security, investment opportunities and ongoing reforms.

During his visit to OICCI, the Minister met senior Chamber officials, industry stakeholders and representatives of foreign investors. The meeting was also attended by media representatives, who participated in discussions on sectoral developments, reforms and investment prospects. The minister briefed participants on the government's initiatives to strengthen oil and gas exploration, modernise refining infrastructure and advance reforms across the petroleum sector. He also highlighted measures aimed at enhancing energy security, including bonded storage and strategic petroleum reserve initiatives.

“Our objective is to build a petroleum sector that is more competitive, investment-oriented and responsive to Pakistan's long-term energy requirements. We are pursuing reforms across exploration, refining and downstream markets while engaging closely with industry stakeholders to address practical challenges and create an environment capable of attracting substantial domestic and foreign investment,” said Mr Malik.

Pakistan Short of Battery Testing Facilities

EU Report

Pakistan is facing a shortage of adequate battery-testing facilities for electric bikes, raising concerns over the quality and safety of batteries being used in the rapidly growing electric two-wheeler market. According to a report of a National Assembly subcommittee, more than 300,000 electric bikes have been manufactured in Pakistan since 2021-22. However, the country lacks sufficient facilities to test their batteries against international quality and safety standards. The report noted that, apart from the Pakistan Council of Scientific and Industrial Research (PCSIR), adequate battery-testing facilities are not currently available in the public sector. The committee recommended establishing battery-testing laboratories at the provincial level to ensure proper testing and certification of batteries used in electric vehicles.

Trees Hacking in Karachi Turns Environmental Economic And Health Disaster

Deforestation contributes to rising respiratory illnesses, asthma, allergies and cardiovascular diseases, besides causing socio-economic loss; experts warn that massive tree hacking makes Karachi more vulnerable to extreme heatwaves; the disappearance of trees further affects tourism, property values and the overall livability of the city

M Nawaz Khuhro

Karachi, Pakistan's largest city and economic hub, is witnessing an alarming increase in the illegal cutting and hacking of trees. Once known for its tree-lined avenues, shaded neighborhoods and coastal greenery, the metropolis has steadily lost thousands of mature trees over the past two decades due to rapid urbanization, road expansion, commercial development, encroachments and weak enforcement of environmental laws. The destruction of Karachi's urban forest is not only an environmental tragedy but also a growing public health and economic crisis.

Environmental experts warn that every mature tree removed from the city reduces natural cooling, increases air pollution, weakens biodiversity and makes Karachi more vulnerable to extreme heatwaves. Trees absorb carbon dioxide, trap dust particles, reduce noise pollution and provide shade that lowers temperatures by several degrees. Their disappearance is contributing directly to the city's worsening urban heat island effect.

A report found that only 7 percent of the city's land has trees or vegetation cover, far below the level considered healthy for a city of Karachi's size. Environmental experts have long recommended at least one tree per resident to maintain a balanced urban ecosystem, but Karachi remains well below that benchmark.

Although several plantation campaigns have been launched in recent years, they have failed to compensate for the continuous loss of mature trees. Projects such as the Clifton Urban Forest and the Lyari River Urban Forest have demonstrated that degraded land can be restored through intensive plantation. The Clifton Urban Forest now contains hundreds of thousands of trees, while the Lyari River project has planted more than 73,000 native trees over about 50 acres, which is a good omen. There is need to create more urban forests in surrounding areas of Karachi.

Karachi currently has between 2.5 million and 3.5 million trees, including roadside plantations, parks, institutional land, private gardens and mangrove forests within the metropolitan region. This is considerably below the number required for a city whose population exceeds 20 million. The city needs to double its tree cover better socio-economic life.

Environmentalists believe that during the 1970s



and early 1980s, before rapid urban expansion accelerated, Karachi had an estimated 5 to 6 million trees, with significantly better roadside plantations and larger green belts. Since then, continuous development and illegal tree cutting have substantially reduced mature tree cover.

Several parts of Karachi have experienced extensive tree loss over the past two decades. Among the worst affected areas are: Shahrah-e-Faisal, where repeated road widening and commercial construction removed large numbers of mature trees; University Road, where infrastructure projects reduced roadside plantations; Rashid Minhas Road; Korangi Industrial Area; SITE Industrial Area; Gulistan-e-Jauhar; Gulshan-e-Iqbal; North Nazimabad; Clifton and Defence Housing Authority (DHA), where commercial development and residential construction have replaced many old trees; Lyari Expressway corridor, where extensive construction altered existing vegetation; and Malir and Gadap, where agricultural lands and natural vegetation have steadily declined because of housing schemes and urban expansion.

The reasons behind tree hacking are numerous: road widening and infrastructure development; commercial plazas and housing schemes; illegal encroachments on public land; utility works for gas, water and electricity; fuelwood and charcoal production; removal of trees considered obstacles to advertisements, shop visibility or parking; weak enforcement of environmental regulations, and poor maintenance causing authorities to remove rather than conserve mature trees.

In many cases, mature trees are cut because they are viewed as obstacles rather than valuable public assets. Responsibility is shared among several stakeholders. Government agencies responsible for roads, parks and infrastructure sometimes authorize tree removal for development projects without ensuring adequate compensatory plantation. Municipal authorities, contractors and utility agencies have also been criticized for removing mature trees during construction without proper environmental assessment.

Illegal tree hacking is frequently carried out by private contractors, builders, encroachers, fuelwood traders and individuals seeking commercial gains. In many cases, trees are cut at night or during weekends to avoid public attention.

Environmental organizations have repeatedly called for stricter monitoring, mandatory environmental impact assessments and heavy penalties against those involved in illegal tree cutting. Environmental activists argue that municipal authorities have often failed to protect Karachi's trees. Critics say that weak monitoring, poor enforcement and inadequate supervision have enabled illegal tree cutting to continue.

The disappearance of trees further affects tourism, property values and the overall livability of the city. Businesses also bear indirect costs through higher cooling expenses and reduced employee comfort. Unless decisive action is taken, Karachi risks becoming an even hotter, more polluted and less healthy city. Protecting every remaining tree is no longer merely an environmental responsibility, but it is a public health necessity and an economic investment in the city's future. ■

Cnergyico Leadership Meets Petroleum Minister to Discuss Refinery Upgradation Policy

EU Report

Cnergyico CEO Amir Abbassciy and Vice Chairman Usama Qureshi met with Federal Minister for Petroleum Ali Pervaiz Malik, Secretary Petroleum Hamed Yaqoob Sheikh and Additional Secretary Zafar Abbas to discuss the refinery upgradation policy and key challenges confronting Pakistan's refining sector.

During the meeting, Cnergyico's leadership highlighted issues affecting southern refineries and the broader refining industry, stressing the need for supportive policies and timely resolution of operational and regulatory challenges.

The company's representatives appreciated the Petroleum Ministry's efforts and commitment to facilitating solutions to the issues faced by the refining sector.

The discussions also focused on the importance of modernising Pakistan's refining infrastructure to enhance efficiency, strengthen domestic fuel production and improve the resilience of the country's energy supply chain. ■

IMF restrictions blocking cheaper daytime electricity: Leghari

EU Report

Federal Minister for Power Sardar Awaiz Ahmad Khan Leghari has said that limitations arising from Pakistan's IMF programme are preventing the government from introducing a flexible and market-based electricity tariff system that could lower power costs, encourage battery storage and accelerate the country's clean energy transition.

Speaking during an interactive session at an international renewable energy conference, the minister said the government had been engaging with the International Monetary Fund over the past several months to introduce a time-of-use tariff, allowing electricity prices to reflect the actual cost of power generation during different hours of the day. Leghari said utilities in countries such as Australia have the authority to offer cheaper electricity during periods of surplus generation, particularly in daylight hours when renewable energy output is high. However, he said Pakistan has been unable to implement a similar mechanism because of restrictions linked to the IMF programme.

He argued that introducing electricity at a marginal daytime cost of around Rs6 per unit would encourage consumers to invest in battery storage, store surplus renewable energy and use it during expensive evening peak hours, thereby reducing pressure on the national grid.

The minister maintained that the proposed tariff reform would have no fiscal implications for the government and could significantly improve grid efficiency by flattening demand peaks while promoting greater use of renewable energy. ■

Pakistan's mineral corridor and China's interest

During the first half of 2026, Chinese BRI investment and construction engagement reached \$126.4 billion; metals and mining attracted \$21.8 billion;

Reko Diq represents one of Pakistan's most significant mineral assets, with estimated to contain about 13.1 million tonnes of copper and 17.9 million ounces of gold over a projected 37-year mine life

Saqib Ur Rehman Mughal

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The Belt and Road Initiative (BRI) is entering a new phase. China's overseas engagement is moving beyond roads, ports and power plants towards mineral processing, advanced manufacturing, energy technologies and industrial supply chains.

During the first half of 2026, Chinese BRI investment and construction engagement reached \$126.4 billion. Metals and mining attracted \$21.8 billion, accounting for 17.2 per cent of total engagement and becoming the second-largest sector after energy. For Pakistan, this shift presents an opportunity to place minerals at the centre of CPEC's next economic chapter.

The important change is not only the growing volume of Chinese mineral engagement, but its changing composition. Around 80.6 per cent of metals and mining engagement was linked to processing activities rather than extraction, while nearly 85 per cent of investment -- around \$13 billion -- went into processing-related projects. China is increasingly investing in smelters, steel plants, aluminium facilities and mineral-based manufacturing. The emerging BRI model is therefore focused on value chains, not simply resource extraction. This offers an important lesson for Pakistan.

Pakistan enters this transition with considerable geological potential but limited economic returns. The

country has around 92 known minerals, of which 52 are commercially extracted, with nearly 5,000 operational mines producing approximately 68.5 million metric tonnes annually. Yet, the mineral sector contributes only 2–3 per cent to GDP, and exports remain dominated by raw or semi-processed products.

Copper concentrate is Pakistan's leading mineral export, generating around \$842 million in 2024, while salt, stone, plaster, lime and cement-related products contributed more than \$500 million. The country also exports chromite, lead-zinc concentrates, marble, gypsum and gemstones. However, much of this trade captures limited value because processing and downstream industries remain underdeveloped. The central challenge is therefore not the availability of resources, but the ability to transform mineral wealth into higher-value products through stronger institutions, technology, processing capacity and industrial linkages.

Pakistan's strongest opportunity lies in copper and gold. Reko Diq represents one of Pakistan's most significant mineral assets, with estimated to contain about 13.1 million tonnes of copper and 17.9 million ounces of gold over a projected 37-year mine life. Pakistan also possesses copper resources at Saindak, lead and zinc at Duddar, chromite in Balochistan and Khyber Pakhtunkhwa, and prospects for lithium, nickel, cobalt and rare-earth minerals. Much of this geology remains underexplored. Pakistan's location on the Tethyan Metallogenic Belt gives it the potential to host additional large copper-gold systems, but geological promise should not be confused with economically recoverable reserves.

China is already familiar with Pakistan's mineral



sector. Chinese companies have operated the Saindak copper-gold project and the Duddar lead-zinc mine, while CPEC facilitated Chinese involvement in Thar coal mining and mine-mouth power generation. This experience gives both countries an institutional starting point. The next phase of CPEC should focus not only on mining but also on processing facilities, metallurgical expertise, testing laboratories, engineering services and mineral-based industries.

The development of Balochistan's mineral resources must be part of a broader economic transformation strategy. Local employment, technical training, revenue sharing, water protection and community infrastructure should be incorporated into project agreements.

Copper illustrates the scale of the opportunity. It is indispensable for transmission networks, renewable energy systems, electric vehicles, data centres and industrial electrification. If Pakistan exports only copper concentrate, much of the value is captured during refining and manufacturing outside the country. A more ambitious approach would explore domestic capabilities in selected areas such as refining, cable manufacturing, electrical equipment and other copper-based industries. The objective is not complete self-sufficiency but capturing a greater and feasible share of value within Pakistan.

CPEC Phase-I laid the foundation required for such transformation. It added 8,904MW of generation capacity, developed over 1,000 km of transport infrastructure, strengthened transmission networks and advanced Gwadar's connectivity. Pakistan also remains the largest historical recipient of Chinese BRI energy engagement, with cumulative energy-related engagement exceeding \$41.5 billion since 2013. The next challenge is to connect this infrastructure with productive activity. Roads and power plants become economically transformative only when they lower the cost of producing and exporting competitive goods.

A mineral corridor linking Chaghi and other resource-bearing areas with Gwadar could therefore become an important CPEC 2.0 initiative, but its design will determine its value. A corridor that merely moves raw minerals to a port will reproduce an extractive model. A productive corridor should integrate reliable electricity, water infrastructure, mineral-processing zones, railway and road links, skills development centres and local supplier network. Gwadar should serve as a wider logistics and industrial ecosystem connecting mines, processing facilities and regional markets.

Energy will remain a critical enabler. Mining, crushing, concentration, smelting and refining are energy-intensive activities. Pakistan cannot attract downstream mineral industries without reliable electricity

at competitive prices. Future Pakistan-China energy cooperation should therefore focus on integrated industrial energy systems combining renewable generation, storage, transmission improvements and dedicated power supply for mineral zones. The next phase of CPEC energy cooperation should support productive capacity, not only electricity generation.

The policy barriers are equally significant. Investors in mining work with long construction periods and pay-back horizons extending over decades. They require predictable taxation, security of tenure, transparent licensing and clear federal-provincial responsibilities. Pakistan's royalty structures differ considerably across provinces. The wider fiscal burden can also make potential mines commercially unattractive. Harmonising regulatory frameworks while respecting provincial responsibilities will be essential for creating investor confidence.

The development of Balochistan's mineral resources must be part of a broader economic transformation strategy. Local employment, technical training, revenue sharing, water protection and community infrastructure should be incorporated into project agreements. Environmental assessments must examine cumulative impacts on groundwater, biodiversity and local livelihoods rather than becoming procedural formalities. Responsible mining is not contrary to investment; it protects projects from social opposition, regulatory disputes and long-term reputational damage.

The H1 2026 BRI report recorded no new qualifying Chinese investment announcement or construction contract in Pakistan, even as BRI metals and mining engagement reached record levels elsewhere. This should not be presented as Chinese disengagement. It is a policy signal that Pakistan must offer investable projects aligned with the new BRI economy. As Chinese private companies now account for nearly 48 per cent of total BRI engagement, Pakistan must also expand beyond G2G negotiations and directly target Chinese mining, metallurgical, equipment and manufacturing firms.

CPEC's first decade helped Pakistan overcome infrastructure and electricity shortages. Its next decade should help the country overcome its low-productivity and weak-export structure. Success will not be measured by claims of mineral wealth, the number of memoranda signed or the volume of ore extracted. It will be measured by how much processing takes place locally, how many Pakistani suppliers and technicians participate, and how much value reaches mineral-bearing communities. Pakistan's mineral opportunity is underground. Its real economic value will depend on what Pakistan and China build above it. ■



Rs1.8 trillion punitive capacity payments shock people, businesses

Falling grid demand raises fresh challenge for power sector; rapid adoption of rooftop solar has cut grid consumption by about 5%; consumers continue to bear heavy capacity payments to IPPs

EU Report

Pakistan's power sector is confronting a new and increasingly complex challenge: consumers are rapidly turning towards rooftop solar and battery storage to reduce their dependence on the national grid, while the country's power producers continue to carry substantial capacity-related costs.

According to Islamabad-based senior energy sector journalist Syed Khalid Mustafa, the situation could leave electricity consumers paying around Rs1.8 trillion in capacity payments to independent power producers (IPPs) during the current year, despite a growing share of consumers no longer relying exclusively on grid electricity.

Speaking during his latest podcast, Mustafa highlighted the widening mismatch between electricity generation capacity and actual grid demand, warning that the rapid expansion of rooftop solar is creating significant economic and technical challenges for Pakistan's power system.

According to Mustafa, power distribution companies have reported approximately a 5% decline in grid electricity consumption, largely attributed to consumers shifting towards rooftop solar systems.

At the same time, IPPs remain contractually entitled to capacity payments even when their generation capacity is not fully utilised. This creates a difficult situation in which consumers who continue purchasing electricity from the grid effectively shoulder a growing portion of the system's fixed costs. In the latest quarterly tariff adjustment petition, distribution companies reportedly sought around Rs64 billion from consumers in capacity payments to IPPs.

Mustafa also pointed out that the country's net-metering-based solar capacity has reached approximately 7,000 MW, substantially changing the traditional dynamics of electricity consumption.

The rapid adoption of rooftop solar, however, has created a contentious question: who should pay for the fixed cost of maintaining the national grid when an increasing number of financially stronger

consumers use the grid less? According to Mustafa, consumers without rooftop solar are consequently facing an additional burden of around Rs2 per unit associated with the existing net-metering arrangements.

Pakistan was compelled to turn towards the international spot market to secure LNG cargoes and avert potential energy shortages. However, spot-market purchases came at significantly higher prices. The higher cost of RLNG-based generation consequently contributed to an increase of around Rs2.52 per unit in the basket price of electricity for end-consumers, according to the disclosures. Pakistan's generation mix also presents a major cost challenge.

According to Mustafa, the country currently produces approximately 12,000 MW of hydropower, while its major reservoirs have a combined storage capacity of around 13 million acre-feet (MAF). At present, approximately 11 MAF is reportedly stored due to strong river flows. The Mangla and Tarbela dams are consequently producing hydropower at close to optimum levels. Hydro-electricity provides Pakistan with comparatively low-cost generation, but its availability is highly dependent on seasonal water flows.

The country increasingly needs to determine what type of generation capacity it needs, where that capacity should be located and how consumers should pay for maintaining the grid. The rapid proliferation of rooftop solar has changed the traditional electricity business model. Households and businesses with sufficient financial resources can reduce their grid purchases by generating electricity themselves, while the national grid continues to carry substantial fixed costs.

Meanwhile, IPPs with contractual capacity obligations continue to require payments even when their plants operate below potential because demand has weakened. This creates what could become a vicious cycle: higher grid tariffs encourage more consumers to install solar; falling grid demand increases the per-unit burden on remaining grid consumers; higher tariffs then make rooftop solar even more attractive.

Mustafa argues that Pakistan should have pursued a more strategically coordinated solarisation programme, including the development

of larger solar parks and utility-scale projects. Such projects could have allowed the country to harness abundant solar resources while integrating renewable generation into the national transmission system in a more structured manner.

A utility-scale approach, combined with appropriate grid planning, battery storage and modern demand-management mechanisms, could potentially have reduced some of the technical and financial pressures now emerging from uncontrolled or poorly coordinated distributed generation. The issue is not whether Pakistan should embrace solar power. It is how Pakistan should integrate solar power into an already financially stressed electricity system.

The disclosures made by Syed Khalid Mustafa point towards a deeper structural problem confronting Pakistan's electricity sector. On one side is a rapidly growing consumer-led renewable-energy revolution, driven by high electricity prices, unreliable supply and falling solar and battery costs. On the other is a conventional power system carrying long-term contractual commitments, capacity payments and expensive thermal-generation costs.

The result is an increasingly difficult equation for policymakers. Pakistan cannot afford to discourage consumers from adopting cheaper and cleaner renewable energy. But neither can it allow the national grid to become financially unsustainable as more consumers partially or completely withdraw from conventional electricity consumption. The answer may therefore lie in fundamentally redesigning the relationship between rooftop solar, utility-scale renewables, battery storage, grid infrastructure, IPPs and electricity tariffs.

The country's solar revolution is already underway. The critical question is whether policymakers can now redesign the power market quickly enough to ensure that this revolution strengthens rather than destabilises the national electricity system. As Syed Khalid Mustafa's latest disclosures underline, Pakistan's power crisis is no longer simply about producing enough electricity. Increasingly, it is about paying for the electricity system that consumers are choosing not to use. ■

Pakistan Energy Conference concludes

EU Report

The Pakistan Energy Conference (PEC) 2026, the flagship forum of Pakistan's oil and gas industry organized by the Petroleum Institute of Pakistan, concluded on August 20 at Serena Hotel in Islamabad.

Held under the theme 'Shaping Energy Security through Policy Reform & Technological Innovation', the conference brought together senior government officials, industry leaders, regulators, energy experts, and technology professionals to deliberate on the opportunities and challenges facing Pakistan's energy sector. Discussions focused on policy reform, investment, energy security, technological transformation, and strengthening linkages across Pakistan's integrated energy value chain.

The conference opened with a welcome address by Amer Tufail, Chairman PIP & MD SNGPL, who reaffirmed PIP's commitment to providing a platform for constructive dialogue between the government, regulators, and industry.

The Minister of Energy (Petroleum Division), Ali Pervaiz Malik, graced the occasion as Chief Guest and outlined key initiatives being pursued by the Ministry to strengthen Pakistan's energy security and improve the efficiency and competitiveness of the sector. He highlighted plans to upgrade existing refineries into deep-conversion refineries through a new refinery policy, aimed at modernizing the downstream sector, improving product yields, and reducing dependence on imported refined products.

A key highlight of the conference was the address by Federal Secretary Petroleum Division, Hamed Yaqoob Sheikh, followed by keynote presentations from senior industry and energy experts, including Faheem Haider, MD/CEO Mari Energies; Jesus Lamas, President SLB MENA; Dr Naveed Arshad, Director LUMS Energy Institute; Azfar I Mir, Managing Partner AI MIR; and Muhammad Ali, CTIO Sky47 Limited.

The conference concluded with a strong consensus on the need for predictable policies, investment-friendly reforms, modernization of energy infrastructure, digital transformation, and closer government-industry collaboration to build a more resilient, efficient, and competitive energy sector. ■

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