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ENERGY UPDATE

10.8M STILL LIVE
WITHOUT ELECTRICITY

CTBCM: PAKISTAN CANNOT BUILD A MARKET
WHILE PREVENTING COMPETITION

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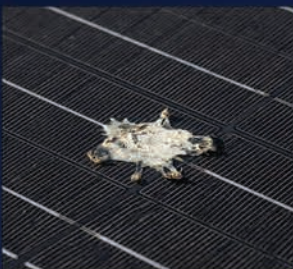
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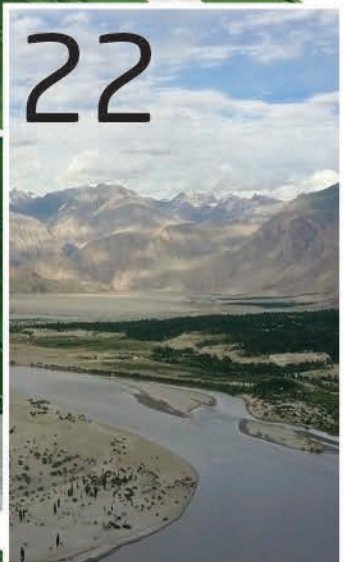


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FROM THE Editor's desk...

New Scheme to Reduce Oil Supply Shocks

Pakistan's decision to establish a strategic oil storage arrangement with Saudi Arabia, Kuwait and Qatar represents one of the most significant scheme undertaken in the country's energy sector in recent years. If approved by the Economic Coordination Committee (ECC), the proposed bonded storage scheme could reduce Pakistan's vulnerability to international oil supply disruptions while strengthening its role as a regional energy logistics hub.

Federal Petroleum Minister Ali Pervaiz Malik announced today that under the proposed scheme, Saudi Arabia, Kuwait and Qatar would store crude oil and petroleum products in bonded facilities located in Pakistan at their own expense. These reserves would remain available for international trade, while Pakistan would enjoy the first right to purchase the stored oil during emergencies or geopolitical crises.

According to assessments, Pakistan currently maintains commercial petroleum stocks equivalent to about 24 to 28 days of normal consumption, while crude oil available at refineries generally covers only 11 to 12 days because of financial and storage constraints. International best practices recommend maintaining strategic reserves sufficient for at least 90 days of consumption. This means Pakistan faces a strategic shortfall of around 60 to 65 days of emergency petroleum reserves, leaving the economy exposed during major geopolitical shocks.

Pakistan consumes roughly 500,000 barrels of oil per day, while domestic production is only about 70,000 barrels daily. Consequently, nearly 85 to 90 per cent of national petroleum requirements are met through imports, primarily from Gulf countries. This heavy dependence on imported fuel underscores the importance of developing strategic storage facilities capable of insulating the country from external supply interruptions and sudden spikes in global oil prices.

The proposed bonded storage model offers several economic advantages. Since the Gulf countries would finance the storage infrastructure and maintain ownership of the petroleum products, Pakistan would not have to allocate billions of dollars for building and filling strategic reserves—an important consideration while the country remains under an IMF-supported economic reform programme. Instead, Pakistan would gain emergency access to stored fuel while simultaneously generating economic activity through port operations, storage services and logistics.

However, policymakers must recognize that storage alone cannot guarantee energy security. Pakistan also needs to accelerate domestic oil and gas exploration, modernize ageing refineries, expand pipeline infrastructure and encourage investment in renewable energy. Diversifying energy sources remains essential to reducing dependence on imported petroleum over the long term. The government should simultaneously strengthen regulatory oversight to ensure oil marketing companies consistently maintain mandatory commercial inventories.

The success of the initiative, however, will depend on transparent implementation, efficient customs procedures, modern storage infrastructure and long-term policy continuity. Investors require confidence that regulatory frameworks will remain stable irrespective of political changes

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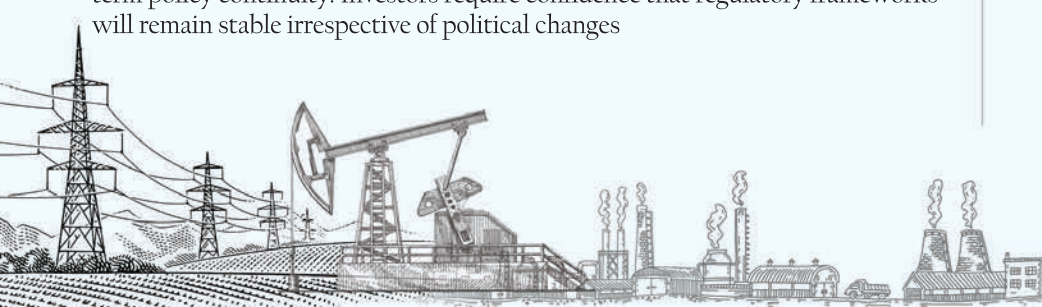
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CTBCM: Pakistan cannot build a market while preventing competition

0.4 percent of available power cannot generate meaningful liquidity, competition, or price discovery; Pakistan requires a real wholesale electricity market and power exchange

**Dr Nadeem ul Haque
Shahid M. Sattar**

Pakistan's electricity sector is once again being presented with a reform that sounds transformative but risks becoming largely cosmetic. The Competitive Trading Bilateral Contract Market (CTBCM) is being promoted as the beginning of a competitive electricity market. Yet the architecture being put in place remains fundamentally incompatible with the operation of a genuine market.

The central problem is simple. Pakistan is attempting to introduce competition while preserving the essential features of the single-buyer model.

The first indication is the decision to limit initial participation to only 200 MW. In a system with roughly 50,000 MW of installed capacity, such a quantity is economically insignificant. It needs to be clarified if this will be a one-time auction of 200 MW of power with long-term contracts or will they be short-term trading of this quantity? For a market to be formed there must be regular trading of power transparently between eligible buyers.

It is fact that 0.4 percent of available power cannot generate meaningful liquidity, competition, or price discovery. No serious electricity market has ever emerged through the administrative rationing of participation. With this system will power be supplied at 2 different prices one for the auction market and another for consumers? If so, will there be a cross subsidy?

The second contradiction is even more important. Most existing generation capacity has already been tied up through long-term contractual arrangements extending years and often decades into the future. Capacity payments continue regardless of dispatch and the overwhelming majority of generation remains linked to centralized procurement structures. CTBCM is therefore being asked to function as a market after most of the available supply has already been allocated elsewhere.

The problem extends to future supply. Through long-term procurement plans, sovereign guarantees, centralized contracting and administrative planning, a substantial portion of future generation additions has effectively been committed well in advance. Pakistan is not merely locking up today's generation. It is also locking up much of tomorrow's generation. The result is a system where both existing and future supply are increasingly pre-determined before market participants are allowed to

compete.

The wheeling framework introduces another layer of complexity. Across successful markets, wheeling charges recover the cost of network services. In Pakistan, they increasingly risk becoming vehicles for recovering historical liabilities, procurement mistakes, cross-subsidies, circular debt consequences and other legacy burdens. If competitive consumers are required to carry the weight of every historical policy failure, competition will be strangled before it begins.

Hybrid consumption is a welcome exception. Allowing consumers to source part of their demand competitively while retaining grid supply reflects commercial reality. Industrial consumers need flexibility, not ideological purity. Yet hybrid consumption cannot compensate for a market design that continues to limit entry, restrict scale and preserve centralized control.

The debate on DISCO privatization exposes a further misconception. Privatization is not competition. A privately-owned monopoly remains a monopoly. If distribution companies retain exclusive retail rights within their territories, ownership changes but market structure does not. In fact, privatization without retail competition may entrench monopoly power and make future reform even harder.

Most importantly, Pakistan requires a real wholesale electricity market and power exchange. Bilateral contracts alone are insufficient. At least half of all electricity generation should progressively be traded through a transparent exchange where buyers and sellers compete openly.

Consumers are already voting with their capital. The policy choice is whether to organize this transition through transparent markets or continue resisting it through administrative controls.

Pakistan's electricity crisis was not created by excessive competition. It emerged from decades of centralized procurement, distorted incentives, weak accountability, risk transfers to consumers and taxpayers, and the insulation of investment decisions from market discipline. The answer cannot be more central planning presented as market reform.

Markets cannot be created while being protected from competitive outcomes. Competition cannot flourish when participation is rationed, supply is pre-assigned, future generation is already committed and retail monopolies remain intact.

Pakistan does not need another reform acronym. It needs a functioning electricity market. ■

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Why Pakistan Oil and Gas Projects Always Fail

Nawaz Khuhro

The writer is a petroleum engineer and an oil and gas management professional

Pakistan has recently made a number of hydrocarbon discoveries, which need rapid and economical development. This led me to study some associated project execution practices currently in vogue and share suggestions which may help.

Although a project always has two major parties – the owner and the contractor – it is my considered belief that a project's success essentially pivots around how its owner takes certain crucial decisions including those associated with unanticipated challenges during execution. This article also revolves around this concept.

Same challenge, two responses

In the first case a project had hardly progressed for more than two years since award. As a result a new project manager (PM) was brought in. Upon studying the records, he realised that the owner having lost all trust in the contractor had started making direct payments to the subcontractors. Similarly, while most of the project's equipment was yet to be delivered, due to flawed payment terms, 70% payment had already been made. As if this was not enough, both the parties were at daggers drawn and heading for litigation.

The new PM was able to draw the attention of the senior management in the corporate head office and explain the urgency of the required corrective measures. Reacting swiftly, they replaced the CEO of the concerned subsidiary with a capable manager. Losing sight of the bigger objectives of the company, the earlier CEO was reluctant to find solutions. The intervention helped the PM implement a remedial plan and the completed project proved to be the mainstay of the company's later growth.

There was also another project in crisis as badly as above when a new PM assumed its charge. Mapping the project's status, he realised that challenges had started with petty disputes between the company and the

contractor. However, undue procrastination on the part of the company had converted them into festering sores, which had virtually brought the project to a complete halt.

Still the PM was able to put the project back on track and it started progressing rapidly. However, within a few months the CEO of the pertaining business unit was replaced with one having no experience of carrying any corporate P&L accountability ever. Such corporate disasters do not happen alone. They, rather, come in a swarm of all sorts of petty prejudices and focus on trivialities; generally, coupled with a campaign of corporate McCarthyism. The project proved just one of the victims of the madness which followed in this case. The contract was terminated and the project got lost in the quagmire of litigation, which ensued after the termination.

Discussion and analysis

The challenge generally starts with shoddy scopes for basic engineering and weak and absurd bids' evaluation criteria, which leads the owner into the miserable arms of an incompetent or a confused engineering consultant. This results into poor scopes for the next phase – project execution. It generally goes hand in hand with a weak contract replete with meaningless, hazy and even contradictory statements, which makes contractors bid high values. This situation can be easily avoided by observing due caution while preparing engineering scopes and also avoiding to patronise weak consultants in the name of cost saving. It does not save anything except creating badly engineered expensive steel jungles in place of required facilities, which could easily have been established in many cases at one third of the cost or even lesser.

Secondly, companies sometimes assign tasks to in-house resources for which they lack capacity. This results in undue disputes and delays. Lack of capacity also begets fear of the unknown, thereby tending the owner to be more and more conservative. This factor probably also has some role in the current widely used payment structure in EPC contracts in Pakistan. As per the same, the contractor becomes entitled to the release of its Advance Payment Guarantee (APG) after the performance test (PT) of a completed facility conducted after the commencement of sales.

The PT is followed by a month-long reliability guarantee test (RGT) and then a year-long defect liability period (DLP). A substantial portion of contractual payments, way larger than even the possible 10% liquidated damages (LD), is released after the DLP. This amount generally also includes the cumulative retention money deducted from all the preceding payments.

Thirdly, a lot of damage is also caused by capacity deficient individuals who just happen to be in the decision tree at the top by virtue of their position.

The decision makers who by exercising considered discretion find wiser solutions to unanticipated challenges succeed in overcoming them as happened in the first example above.

Fourthly, companies should prefer small and agile teams for project management equipped with well rounded engineering and commercial competency.

I am confident that a holistic consideration of the above factors can go a long way in radically improving the associated project economics. ■

Kuwait's KUFPEC eyes expansion in Pakistan's energy sector



EU Report

Kuwait Foreign Petroleum Exploration Company (KUFPEC), a subsidiary of the Kuwait Petroleum Corporation (KPC), is looking to expand its presence in Pakistan's upstream energy sector.

The development came during a meeting between Federal Minister for Petroleum Ali Pervaiz Malik and Tareq Ebrahim, Vice President Operations of KUFPEC, to discuss opportunities for expanding cooperation in Pakistan's petroleum sector, read a statement.

Malik described Kuwait as one of Pakistan's closest friends, highlighting the two countries' more than 50-year partnership in the energy sector. He reaffirmed the government's commitment to further strengthening this long-standing relationship. Tareq Ebrahim thanked the minister for his support in facilitating investment opportunities and said KUFPEC sees strong potential for expanding its presence in Pakistan's upstream energy sector.

The petroleum minister assured KUFPEC of the government's full support and reiterated Pakistan's commitment to providing a conducive environment for international investment in the petroleum sector.

KUFPEC is actively involved in the exploration and production (E&P) sector, particularly in Pakistan.

Mari Energies Posts Record Rs37.5bn Quarterly Profit

Mari Energies Limited posted a record quarterly profit after tax of Rs37.46 billion in Q4 FY2026, up 99% year-on-year, mainly due to an Rs18.34 billion reversal of super tax following a Federal Constitutional Court ruling. Full-year profit rose 34% to Rs87.07 billion. The company's FY2026 hydrocarbon sales reached a record 41.28 million boe, while reserves increased by 157 million boe. The board approved a final dividend of Rs18.70 per share, taking the annual payout to Rs27.



ENERGY UPDATE

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10.8m still live without electricity

Time to
unlock
nation's
energy
wealth

EU Report

Pakistan's energy landscape has undergone a remarkable transformation over the past 20 years. Billions of dollars have been invested in thermal, hydropower, nuclear, coal, wind and solar power projects, substantially increasing the country's installed electricity generation capacity. Despite this unprecedented expansion, millions of Pakistanis—particularly those living in remote and underdeveloped regions—continue to live without reliable access to electricity.

The Energy Progress Report 2026 paints a sobering picture. It estimates that more than 10.8 million people in Pakistan remained without access to electricity in 2024, placing the country among the 20 largest electricity access gaps in the world. While Pakistan has made notable progress in expanding electrification, affordability, reliability and quality of electricity supply remain persistent challenges. The report rightly underscores that electricity is not merely a utility but a fundamental driver of education, healthcare, communications, employment and sustainable economic growth.

This reality raises an important question: How can a country possessing abundant energy resources and significant installed power generation capacity still leave millions in the dark?

Pakistan today possesses an installed electricity generation capacity of approximately 46,000 megawatts (MW), contributed by hydropower, natural gas, imported coal, indigenous coal, furnace oil, nuclear power, wind and solar energy. During favourable weather conditions, the country's grid-connected wind farms generate around 1,800 MW, while utility-scale solar projects contribute well over 1,500 MW, excluding the rapidly expanding rooftop solar installations that are transforming electricity consumption across urban and rural Pakistan alike.

The challenge, therefore, is no longer confined to electricity generation alone. Increasingly, it revolves around effective transmission, distribution, affordability and equitable access. Pakistan is fortunate to possess one of the most diverse energy portfolios in the region. Its indigenous natural gas reserves, world-class Thar coal deposits, immense hydropower potential, vast solar irradiation across Balochistan, Sindh and southern Punjab, and excellent wind corridors along the Sindh coastline collectively provide the foundations for long-term energy security.

Among these resources, Thar coal stands out as one of Pakistan's most strategic indigenous energy assets. The development of large-scale mining and power generation projects in Thar has significantly reduced dependence on imported fuels while strengthening national energy security. These projects demonstrate how responsible utilisation of domestic resources can support industrial growth, employment generation and electricity production simultaneously. At the same time, Pakistan is rapidly emerging as one of South Asia's fastest-growing solar markets. Falling photovoltaic prices, increasing public awareness and supportive government initiatives have accelerated the adoption of rooftop solar systems across residential, commercial and

industrial sectors. However, the next phase of Pakistan's energy transition must focus on expanding access rather than simply increasing installed capacity. The constitutional devolution of powers under the 18th Constitutional Amendment has opened a new chapter in Pakistan's energy governance. Provincial governments are no longer merely consumers of centrally generated electricity. Increasingly, they are becoming planners, investors and regulators capable of shaping their own energy future. Today, provinces are establishing their own power generation companies, transmission and distribution utilities, power regulators and energy development institutions to harness indigenous resources within their respective jurisdictions. This decentralised approach offers enormous opportunities to accelerate electrification, particularly in remote districts that have historically remained underserved by the national grid.

Provincial governments are also demonstrating leadership through ambitious welfare-oriented energy initiatives, especially those centred on solar power. Large-scale distribution of solar home systems, solarisation of schools, healthcare facilities and public buildings, and renewable-energy programmes targeting low-income households have begun to improve energy access while reducing electricity costs. These initiatives deserve to be expanded considerably.

One of Pakistan's greatest opportunities lies in developing large-scale solar parks across provinces where abundant sunshine remains an underutilised natural asset. Properly planned solar parks, supported by battery storage and modern grid infrastructure, can provide affordable electricity to nearby towns, industries and agricultural communities while reducing dependence on imported fossil fuels.

Equally important is the electrification of Pakistan's vast off-grid population.

Pakistan has already demonstrated that it possesses the natural resources, engineering expertise and institutional capacity to expand electricity generation. The next national priority must be ensuring that every Pakistani, regardless of geography or income, enjoys access to reliable, affordable and sustainable electricity. With stronger provincial leadership, expanded public-private partnerships, accelerated village electrification programmes, modern smart-grid technologies and greater utilisation of the country's abundant indigenous and renewable energy resources, Pakistan can finally bridge its electricity access gap and build an energy future that is not only more sustainable but also more inclusive for generations to come. ■

Net-metering regime: Solar generation surges in FY26

The expansion was driven by rising electricity tariffs, sharp currency depreciation, and declining global solar panel prices

EU Report

Pakistan's rapid expansion in solar net-metering capacity — growing nearly 37-fold in six years to around 7,000 MW by June 2026 — has triggered a major policy shift from net-metering to net-billing, as authorities grapple with mounting technical and financial pressures in the power sector. At a SAARC webinar, Energy Advisor to the Power Division, Engr Syed Faizan Ali, gave a detailed presentation, highlighting that solar generation under the net-metering regime surged from just 190 MW in FY2020 to approximately 6,978 MW by FY2026.

The expansion was driven by rising electricity tariffs, sharp currency depreciation, and declining global solar panel prices. The surge was shaped less by policy design and more by macroeconomic factors, including around 75 percent depreciation of the rupee, nearly 140 percent increase in electricity tariffs, and approximately 60 percent decline in solar panel import prices between FY2021 and FY2025.

The one-to-one retail crediting mechanism also created a measurable fiscal impact, with an estimated revenue effect of Rs 101 billion in FY2024 alone — prompting policymakers to transition toward a net-billing framework. The move to net-billing under the Prosumer Regulations 2026, notified on February 8, 2026, mirrors similar transitions in markets such as California, effectively trading faster payback periods for prosumers against improved cost recovery for utilities.

Going forward, the core policy challenge lies in balancing three competing priorities: protecting early adopters who invested under existing rules, maintaining economic viability for future solar consumers, and shielding non-solar consumers from cross-subsidy burdens.

The report notes that Pakistan's net-metering framework, introduced by NEPRA in 2015, allowed consumers to offset electricity imports with solar exports on a one-to-one basis, making rooftop solar a highly attractive investment. However, this regime has now been replaced for new consumers by net-billing. Under the new system, exported electricity is compensated at a lower reference price instead of the retail tariff, while imported electricity continues to be charged at full rates. Existing consumers under the 2015 framework will retain their contracts until expiry.

Pakistan's Battery Revolution: How Energy Storage Is Rewriting the Nation's Power Future

Syed Faizan Ali Shah

The Writer is Advisor of Minister Power GOP

For years, Pakistan's energy debate focused on generating enough electricity to meet rising demand. Today, a more critical question is emerging: how can the country store the electricity it already produces? Battery Energy Storage Systems (BESS) are rapidly providing the answer and could fundamentally reshape Pakistan's power sector.

A groundbreaking independent study by electrical engineer and power-sector expert Engr. Syed Faizan Ali Shah, based on 30 months of Pakistan Customs data from January 2024 to June 2026, reveals an unprecedented expansion in battery storage. Pakistan imported approximately 6,004 GWh of lithium-ion batteries, with a declared customs value exceeding Rs126 billion (around \$455 million). Monthly imports rose from just 42 MWh in January 2024 to a record 652.2 MWh in April 2026—a growth of more than 1,600 per cent. Remarkably, this expansion has occurred without dedicated government subsidies. Falling battery prices, rising electricity costs, rapid solar adoption and the need for reliable backup power have instead driven consumer and business demand.

Why BESS Matters

Battery storage addresses one of renewable energy's biggest challenges: timing. Solar panels produce electricity during daylight hours, while demand typically peaks after sunset. BESS allows surplus daytime solar power to be stored and discharged when it is most needed. Beyond energy shifting, batteries can provide frequency regulation, voltage support, emergency backup, peak shaving and grid stabilisation. These capabilities are becoming increasingly important as Pakistan's electricity system incorporates larger volumes of renewable energy. Pakistan's rooftop solar market has expanded dramatically, with net-metered capacity increasing from around 190 MW in 2020 to more than 7,000 MW by 2026. This has intensified the "duck curve"—surplus daytime

generation followed by evening demand spikes. Batteries can respond within milliseconds, making them particularly suitable for managing these fluctuations.

From Homes to Industry

Pakistan's battery market initially centred on residential solar-backup systems, but commercial and industrial applications are now expanding rapidly. Businesses are deploying storage to reduce electricity costs, improve power quality and maintain uninterrupted operations.

The study identifies 19 utility-scale installations exceeding 1 MWh, with combined capacity of approximately 252 MWh. Textile mills, cement manufacturers, government renewable-energy projects and other major industrial users are increasingly viewing battery storage as a commercially viable investment. Meanwhile, local companies have begun importing lithium iron phosphate (LFP) cells for battery-pack assembly, signalling the early development of a domestic manufacturing ecosystem. With appropriate policies, standards and investment, Pakistan could gradually build local battery-assembly capabilities, creating jobs and supporting technology transfer.

The Regulatory Challenge

Despite rapid market growth, Pakistan lacks comprehensive national safety standards, grid-connection regulations and a national battery installation registry. The study recommends internationally recognised safety standards, time-of-use electricity pricing, concessional financing, rationalised import duties, registration mechanisms and incentives for local manufacturing. Looking towards 2036, favourable policies could enable Pakistan to substantially expand storage capacity and potentially emerge as a regional battery-assembly hub.

Pakistan's battery revolution is therefore more than an import story. It represents a fundamental shift towards decentralised, flexible and smarter energy systems. The market has already demonstrated its demand for storage; the challenge now is to establish the regulatory and industrial framework needed to turn this momentum into a secure, resilient and sustainable national energy future. ■





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Electric vehicle paradox in Pakistan

Naveed R Khan

Global EV market of 2026 is very different from the one envisioned when Pakistan's policy was introduced in 2019. Electric vehicles (EVs) are often presented as a straightforward climate solution. Replace petrol and diesel vehicles with battery-powered alternatives, reduce emissions, cut fuel imports, and create a greener future. Yet the reality is far more complex.

The electric vehicle transition presents a paradox: EVs can strengthen energy security, reduce urban pollution, and create new industries, but only if governments simultaneously address electricity infrastructure, financing, supply chain resilience, and consumer affordability. Without these supporting pillars, EV adoption risks becoming an expensive policy aspiration rather than an economic transformation.

Pakistan stands at precisely this crossroads.

The country already possesses a policy foundation. Pakistan's National Electric Vehicle Policy recognises that transportation is responsible for approximately 43% of airborne emissions and identifies EVs as a mechanism to reduce oil imports, strengthen industrial development and utilise idle electricity generation capacity. The policy envisioned substantial EV penetration targets for cars, motorcycles, buses and trucks while highlighting the potential economic savings from reduced fuel consumption and lower emissions.

Albeit, the global EV market of 2026 is very different from the one envisioned when Pakistan's policy was introduced in 2019.

China now dominates global EV production and battery manufacturing. The EU is embedding EVs within broader industrial and climate strategies. Singapore is integrating EV deployment with smart urban infrastructure and digital mobility planning. Meanwhile, global supply chains have become increasingly vulnerable to geopolitical

tensions, critical mineral dependencies and trade restrictions. EV success is not about subsidising vehicles alone.

Recent evidence from China demonstrates that simple purchase subsidies are becoming less effective as markets mature. Instead, policies that combine charging infrastructure, preferential road access, charging incentives and industrial support generate stronger long-term adoption. The Chinese experience also highlights that poorly coordinated incentives can create policy crowding-out effects, where multiple subsidies reduce overall effectiveness rather than enhance it. This finding is particularly relevant for Pakistan.

The biggest barrier facing Pakistani consumers is not environmental awareness; it is affordability and confidence. Potential buyers worry about purchase prices, charging availability, battery replacement costs, resale value and electricity reliability. Addressing these concerns requires a coordinated policy mix rather than isolated incentives.

First, Pakistan should shift from broad purchase subsidies toward targeted financing mechanisms. The SBP can establish a Green Mobility Financing Facility offering low-interest EV loans through commercial banks. Rather than subsidising every vehicle purchase, government resources should reduce financing costs for middle-income households, ride-hailing drivers, logistics operators and public transport providers.

Second, charging infrastructure must become a national priority. Pakistan should establish a public-private charging network focused initially on Karachi, Lahore, Islamabad, Rawalpindi, Faisalabad, and the national motorway system. Existing petrol stations should receive incentives to become hybrid energy stations offering both fuel and fast charging services.

Third, policymakers must recognise the electricity paradox. An EV is only as clean as the electricity powering it. If charging demand is concentrated during peak hours, EVs may increase pressure on an already constrained grid. Conversely, if charging is directed toward off-peak periods, EVs can help absorb surplus generation capacity and

improve overall grid utilisation. Pakistan's EV policy already identifies this opportunity. The next step is introducing time-of-use electricity tariffs that encourage nighttime charging while reducing pressure on peak demand periods.

Fourth, industrial policy must become central to EV strategy. China's dominance did not emerge because consumers received subsidies. It emerged because policymakers invested across the entire value chain—manufacturing, batteries, components, research and infrastructure. Pakistan cannot realistically compete with China in battery manufacturing immediately, but it can position itself as a regional hub for electric motorcycles, three-wheelers, charging equipment, battery assembly and EV components.

This opportunity is particularly significant because Pakistan already possesses a large motorcycle and auto-parts manufacturing ecosystem. Converting existing capabilities into EV production may create greater economic value than importing finished vehicles.

The EV paradox is that success depends less on the vehicles themselves and more on the policies, infrastructure, financing mechanisms and industrial capabilities surrounding them. Countries like Singapore and Malaysia understand this distinction and are building entire mobility ecosystems, creating broader economic opportunity.

For Pakistan, 2026-27 offers a narrow but important window to get this transition right. The future of mobility will be determined by policy.

Humaira Zia Mufti Appointed Chairperson of Pakistan Engineering Company

The federal government has appointed Humaira Zia Mufti, Additional Secretary (AS-I) at the Ministry of Industries and Production, as Ex-Officio Director and Chairperson of Pakistan Engineering Company Limited (PECO) with immediate effect.

The appointment was announced by PECO in a notice submitted to the Pakistan Stock Exchange (PSX) on Monday.

According to an official notification issued by the Ministry of Industries and Production, the Secretary of the ministry has nominated Humaira Zia Mufti to represent the Government of Pakistan on the PECO Board as its Ex-Officio Director and Chairperson.

The notification stated that the appointment takes effect immediately.

Pakistan Engineering Company Limited is a publicly listed enterprise engaged primarily in the manufacturing and sale of engineering products.

The company was established in 1950 as Batala Engineering Company (BECO) and was renamed Pakistan Engineering Company (PECO) in 1972 after being taken over by the government under the nationalisation policy.

PECO's manufacturing operations, originally based in Badami Bagh, Lahore, were shifted to the Kot Lakhpat Industrial Estate in 2002, while several unprofitable business segments were closed as part of the company's restructuring efforts.



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Solar transition needs governance, not just growth

More important question now is not whether solar will continue to grow

Abis Husein

Pakistan's solar story is often told as a simple one. Electricity became expensive, supply remained unreliable, solar equipment got cheaper, and consumers responded rationally. Homes, businesses, farms and institutions moved toward solar because the economics made sense. That part is true. But it is no longer the whole story.

The more important question now is not whether solar will continue to grow. It almost certainly will. The real question is whether Pakistan can govern that growth well enough to make it visible, credible and durable.

For years, solar was treated mainly as a consumer response to high tariffs and unreliable service. But once a technology spreads at scale, it stops being only a private choice. It becomes a market transition. And market transitions need governance.

That does not mean slowing solar down. The larger the market becomes; the more important governance becomes if growth is to remain healthy rather than chaotic.

One reason this matters is that the visible solar market appears smaller than the real one. Publicly visible net-metered solar tells only part of the story. Reporting around the Competition Commission-backed study has pointed to a wider solar economy, with formally visible capacity far below the scale suggested by imports and distributed adoption. That gap matters because policy can only govern what it can see. If the state is looking mainly at the formal slice while the broader transition is happening through multiple channels, rules will lag reality. When rules lag reality, frictions multiply.

Those frictions are familiar: uneven standards, variable installer quality, weak consumer protection, substandard equipment, narrow financing, poor data and

policy uncertainty. A sector that should be maturing starts looking fragmented instead.

This is why the solar discussion cannot remain trapped in tariff language alone. Prices, payback and billing treatment matter. But a serious solar market also needs quality assurance, better visibility, and credible rules.

The Competition Commission study is useful because it approaches solar not just as an energy story, but also as a market-structure story. It flags weak quality control, financing barriers, data problems and policy uncertainty as constraints on healthy sector development. That is an important shift. Solar is not only about adding panels. It is also about what kind of market is being built around them. A badly governed market can still grow quickly. But it does not necessarily grow well. It can reward weak compliance, encourage short-term behaviour, and leave consumers with uneven quality and weak recourse. That may look like success in volume terms, but it is not the same as building a durable transition.

There is also a fairness question. If solar expansion depends mainly on self-financing, the benefits flow first to those with savings, credit access or stronger balance sheets. Others remain more exposed to the old system. Over time, solar can shift from a broad transition opportunity into a more uneven one. Inclusion, therefore, is part of market design, not only a social concern.

The same applies to industrial depth. Pakistan's solar growth has been rapid, but largely import-driven. That is not unusual in an early-stage market, but it cannot be the end of the conversation. The issue is not whether Pakistan can suddenly manufacture everything. It is whether it can build realistic layers of capability: testing, standards infrastructure, integration skills, selected components, after-sales strength, and deeper manufacturing where scale justifies it. Pakistan does not need less solar. It needs better-governed solar. ■



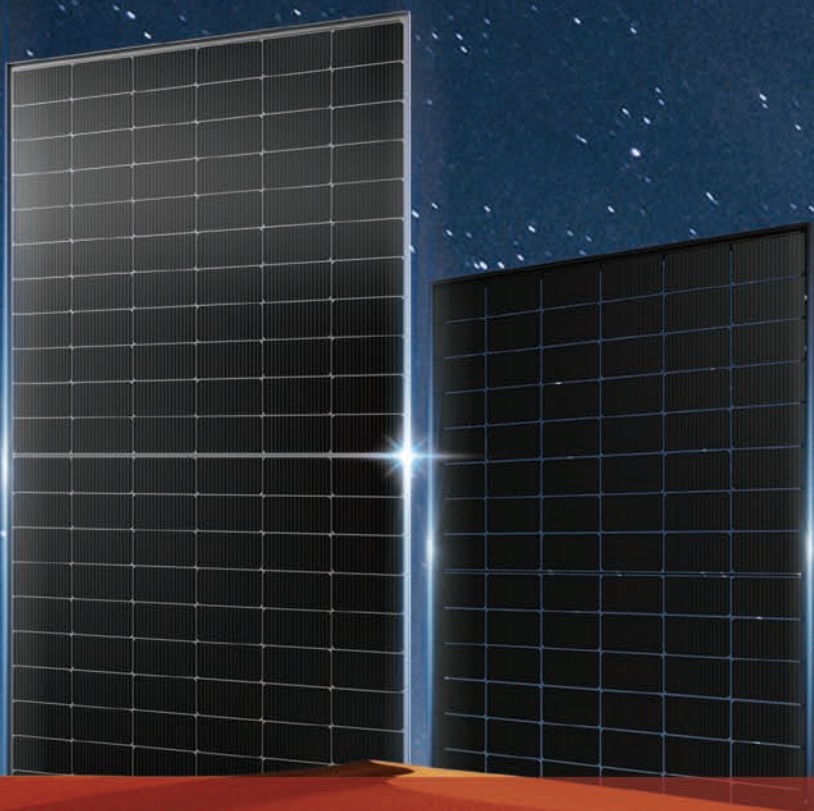


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A Silent Exodus from Indus Delta

Declining freshwater flows are driving a growing environmental and humanitarian crisis; thousands of families are losing their homes, livelihoods and centuries-old way of life; nearly 2.2 million acres of fertile agricultural land have become unproductive because of seawater intrusion

Shujauddin Qureshi

The writer is a development communication professional based in Karachi

The Indus delta, once among the world's richest and home to thriving farming and fishing communities, is disappearing gradually. Thousands of families are losing their homes, livelihoods and centuries-old way of life. They are forced to migrate to urban centres like Karachi, Sujawal and Thatta.

At the culmination of a 3,000-kilometre journey, the mighty River Indus meets the Arabian Sea through over a dozen creeks in the Indus delta spread over the southern districts of Sindh — Thatta, Sujawal and Karachi.

Stretching across nearly 600,000 hectares, or about 1.48 million acres, along Sindh's coastline, the Indus delta is the world's fifth-largest. It has been one of Pakistan's most valuable ecological assets, supporting extensive mangrove forests, fertile agricultural lands, fisheries and remarkable biodiversity.

For generations, people living in the coastal districts of Badin, Thatta, Sujawal and Malir have depended almost entirely on the river for farming, fishing and forestry.

Today, however, declining freshwater flows downstream of Kotri Barrage are driving a growing environmental and humanitarian crisis. As river flows have declined steadily, seawater has advanced further inland, destroying fertile farmland, contaminating drinking water

sources and forcing thousands of families to migrate for their livelihood.

The Pakistan Council of Research in Water Resources estimates that nearly 2.2 million acres of fertile agricultural land have become unproductive because of seawater intrusion. Satellite-based studies have revealed that more than 31,600 hectares (around 78,000 acres) were permanently submerged by the sea between 1972 and 2017.

Syed Qaim Ali Shah, the former Sindh chief minister, once told the Sindh Assembly that increasing sea intrusion was linked to the failure to implement the 1991 Water Accord. The accord, he said, required the release of at least 10 million acre-feet (MAF) of freshwater downstream of Kotri Barrage to maintain the ecological health of the Indus delta and slow the advance of seawater.

Asked about the federal government's efforts to save the Indus delta, Federal Minister for Climate Change Dr Musadik Malik, told this scribe that a continuous flow of water throughout the year was essential to preserve the ecology of the Indus delta. In practice, he said, for most of the time during the year, there was no water downstream the Kotri Barrage. During the monsoon period, however, a lot of water flowed to the Arabian Sea.

The 1991 accord mandated the federal government to conduct research to determine the minimum healthy flow of freshwater downstream of Kotri Barrage. No such research has been commissioned.

For centuries, River Indus carried enormous quantities of freshwater and nutrient-rich sediments from the Hima-

layas, crossing the plains of the Punjab and Sindh to the Arabian Sea. The ecological balance began shifting during the latter half of the 20th Century. As the irrigation network and hydropower infrastructure expanded, increasing volumes of river water were diverted upstream for agriculture and electricity generation.

While these projects played a crucial role in supporting national development, environmentalists argue that they also significantly reduced the amount of freshwater reaching the delta. In the absence of sufficient river flows to push back seawater, saltwater gradually penetrated inland, triggering widespread environmental degradation.

Large areas of once-fertile farmland have become saline and unsuitable for cultivation. Many wells and underground freshwater aquifers have turned salty, leaving many villages without reliable sources of drinking water.

The consequences are visible across the coastal landscape. Large areas of once-fertile farmland have become saline and unsuitable for cultivation. Many wells and underground freshwater aquifers have turned salty, leaving many villages without reliable sources of drinking water.

Entire farming communities that once cultivated wheat, rice and vegetables now struggle to secure safe water. As agricultural production collapsed, many families abandoned lands cultivated by their ancestors.

Fishing communities have suffered severe losses, too. For decades, the fisheries sector formed the backbone of the delta's economy. Healthy mangrove forests supported abundant populations of shrimp and fish, providing livelihoods for thousands of fishermen.

Today, rising salinity, declining freshwater inflows and marine pollution have weakened these ecosystems. Fish breeding grounds have deteriorated, biodiversity has declined and daily catches have fallen sharply.

Although the Sindh government and environmental organisations have launched extensive mangrove plantation programmes in recent years, especially after receiving carbon credits worth \$40 million under the Delta Blue Carbon mangrove restoration projects in the Indus delta.

Despite a massive mangrove plantation campaign, climate change has further intensified the crisis.

Several villages have been partially or completely submerged. Families displaced by seawater often relocate repeatedly as the coastline continues to retreat. Scientists warn that unless freshwater flows improve, sea-level rise associated with climate change might accelerate the destruction of the delta during the coming decades.

According to the Pakistan Fisherfolk Forum, more than 100,000 families migrated from the Indus delta between 1970 and 2025 because environmental degradation steadily destroyed their livelihoods.



TDF delegation, led by Sabrina Dawood, Vice Chair, The Dawood Foundation, and Ahsan Zafar Syed, CEO, Engro met with Chief Minister Sindh, Syed Murad Ali Shah, to discuss future collaborations aimed at strengthening Karachi's science, heritage, and public learning landscape. The meeting focused on fostering meaningful partnerships to expand informal learning through TDF MagnifiScience Centre (MSC) while strengthening initiatives that celebrate and preserve Karachi's rich cultural heritage. Together, these efforts aim to inspire curiosity, foster innovation, and create engaging public spaces that contribute to a more vibrant, inclusive, and future-ready Karachi. From right to left: Syed Hassan Naqvi, Commissioner Karachi; Favad Soomro, CEO, TDF; Sabrina Dawood, Vice Chair, TDF; Syed Murad Ali Shah, CM, Sindh; Ahsan Zafar Syed, CEO, Engro; Agha Wasif Abbas, Principal Secretary to the CM, Sindh; Faraz A Jafri, Chief of Staff at Engro; and Christoph S. Sprung, Chief Governance Officer, Dawood Corporation.

EA says substantial emergency oil stocks remain after record release

EU Report

The International Energy Agency's (IEA) member countries still hold substantial emergency oil stocks in reserve despite the largest coordinated release of strategic reserves on record. The agency said that about 290 million barrels of oil have been released by member countries since the release was announced on March 11, and that they collectively hold more than 1 billion barrels of emergency oil stocks in reserve.

The IEA agreed to release a record 400 million barrels of oil from strategic stockpiles after a surge in global crude prices triggered by the U.S.-Israeli war with Iran. Oil prices edged higher on Tuesday as markets weighed reports of mediation efforts against fresh U.S.-Iran attacks, along with threats of a naval blockade of Saudi Arabia by Yemen's Houthis.

"We estimate that Gulf exports are below their late-June highs but are still considerably higher than the levels seen between early March and mid-June," said IEA Executive Director Fatih Birol. On the demand front, top consumer China's June crude imports slumped by 41.3% to their lowest in almost a decade.

From LNG to Thar coal

Rethinking Pakistan's Energy Transition

Pakistan's future energy system will not be judged by whether it invested more in coal or more in renewables; it will be judged by whether it successfully managed three transitions at once: reducing dependence on imported LNG, harnessing the rapid growth of distributed solar, and using domestic resources such as Thar coal without undermining long-term competitiveness.

Dr Rubina Ilyas

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

Pakistan's energy transition is unfolding very differently from what many anticipated. While official policy continues to emphasize renewable energy and climate commitments, the country's latest budget reveals a quieter but far more consequential shift. Alongside investments in grid modernization and clean energy, the government has allocated Rs 2 billion for the Thar Coal Connectivity Project and is advancing the Thar Coal Rail Link to facilitate the movement and commercial use of domestic coal.

At first glance, these decisions appear contradictory. In reality, they reflect a fundamental change in Pakistan's energy priorities. The country's energy transition is no longer being driven by decarbonisation alone. It is increasingly being shaped by energy security, foreign exchange constraints, and the search for greater macroeconomic resilience.

The distinction matters. Reducing dependence on imported fuels does not necessarily mean moving away from fossil fuels. It means finding the most economically sustainable path to meeting Pakistan's growing energy needs while reducing exposure to volatile international

markets.

Pakistan is, in fact, undergoing three simultaneous energy transitions. The first is a gradual shift away from imported LNG. The second is the rapid expansion of distributed rooftop solar, which is fundamentally changing electricity consumption patterns. The third is the growing strategic role of domestic Thar coal as a substitute for imported fuels. Together, these three developments are redefining what energy transition means in Pakistan.

The country's electricity mix illustrates this changing reality. Hydropower remains Pakistan's largest source of electricity, accounting for nearly 30 percent of total generation. Coal now contributes almost one-fifth of electricity generation, considerably exceeding utility-scale solar, which still contributes less than one percent of grid electricity. While rooftop solar is expanding rapidly across households and businesses, much of this generation takes place behind the meter and therefore reduces demand for grid electricity rather than appearing in official generation statistics.

The more revealing story, however, lies not simply in how electricity is generated, but in how existing assets are being used. Pakistan's RLNG-based power plants, which were constructed at a significant financial cost, operated at only around 35 percent of their capacity during the last fiscal year. By contrast, indigenous



coal plants recorded utilization rates approaching two-thirds of their available capacity. These numbers suggest that Pakistan is steadily relying less on imported LNG while continuing to bear the financial obligations associated with long-term LNG contracts and underutilized infrastructure.

This has profound macroeconomic implications. Pakistan continues to import approximately 6.8 million tons of LNG annually under long-term agreements. Every imported cargo requires precious foreign exchange, exposing the economy to global price volatility and geopolitical disruptions. At a time when external account stability remains one of Pakistan's most pressing economic challenges, reducing dependence on imported energy has become a strategic imperative rather than merely an energy-sector objective.

In this sense, Pakistan's energy policy is increasingly becoming an extension of its balance-of-payments strategy. The objective is no longer simply producing cleaner electricity; it is producing electricity with greater economic resilience.

Rooftop solar represents the second pillar of this transformation. Few developments have altered Pakistan's electricity sector as rapidly as the widespread adoption of distributed solar generation. Rising electricity tariffs, falling solar panel prices and persistent concerns over grid reliability have encouraged households and businesses to invest in their own electricity generation. This has reduced pressure on imported fuels during daylight hours and improved energy affordability for many consumers.

Yet the solar revolution has also created new policy challenges. As more consumers generate their own electricity, demand from the national grid declines while the fixed costs of maintaining transmission and distribution infrastructure remain largely unchanged. Unless pricing mechanisms, market structures and distribution companies adapt to this new reality, these costs risk being shifted onto consumers who cannot afford to install solar systems themselves.

The third transition is perhaps the most politically significant: the growing strategic importance of Thar coal.

The latest budget demonstrates that the government increasingly views domestic coal not merely as an energy resource but as an instrument of economic security. Investments in coal connectivity infrastructure, together with the proposed US\$1.12 billion coal-to-urea project by Fauji Fertilizer Company in partnership with China's Hualu Engineering, indicate that domestic coal is now being positioned as a substitute for imported natural gas across multiple sectors of the economy.

The economic rationale is straightforward. Unlike imported LNG, Thar coal does not require foreign exchange; it is insulated from disruptions in international shipping routes, and reduces Pakistan's exposure to global energy market volatility. For a country that has repeatedly faced external financing pressures, these advantages carry considerable weight.

However, import substitution alone cannot constitute a long-term energy strategy. A development pathway built around greater reliance on coal also carries significant risks. International carbon border adjustment mechanisms, tightening environmental standards, growing investor preference for low-carbon supply chains, and declining access to climate finance all have the potential to affect Pakistan's export competitiveness over the coming decades. Heavy investments in carbon-intensive infrastructure today may also increase the risk of stranded assets as global decarbonisation accelerates.

The challenge, therefore, is not to choose between coal and renewables. It is to integrate energy security with environmental sustainability and long-term industrial competitiveness.

That requires a much broader policy agenda than simply financing new power projects. Pakistan will need significant investments in modern transmission infrastructure, grid flexibility, energy storage, demand-side management, competitive electricity markets and regulatory reforms capable of accommodating rapidly expanding distributed generation. Without these complementary reforms, neither domestic coal nor rooftop solar will deliver their full economic potential.

The latest budget should therefore be understood as more than a fiscal document. It reveals the political economy of Pakistan's evolving energy choices. The country's transition is no longer a linear movement from fossil fuels to renewables. Instead, it is becoming a more complex balancing act between energy security, macroeconomic stability and environmental responsibility.

Ultimately, Pakistan's future energy system will not be judged by whether it invested more in coal or more in renewables. It will be judged by whether it successfully managed three transitions at once: reducing dependence on imported LNG, harnessing the rapid growth of distributed solar, and using domestic resources such as Thar coal without undermining long-term competitiveness.

That is the real energy transition now underway. And whether it succeeds will determine not only Pakistan's energy security but also its economic resilience in an increasingly carbon-conscious global economy. ■



Climate governance whiplash

Zainab Naeem

The writer is an environmental scientist and leads the ecological sustainability and circular economy programme at the Sustainable Development Policy Institute (SDPI), Islamabad



Climate governance whiplash is Pakistan's struggle between knowing and doing; Country needs a governance transformation where climate and water become national priorities

Pakistan has entered a phase of climate governance whiplash where extreme heat, intense rainfall, prolonged droughts, glacier instability and water insecurity are no longer isolated environmental challenges but interconnected threats shaping the country's economy, food security, public health and national stability.

Climate governance whiplash is Pakistan's struggle between knowing and doing, where climate risks are repeatedly recognised after every disaster, yet governance systems continue returning to business-as-usual once the immediate crisis passes. It is the gap between climate awareness and climate action, between policies and enforcement, and between recognising vulnerability and building resilience.

The country is witnessing climate extremes that were once considered rare, yet the most concerning aspect of this crisis is not the absence of warnings, but the persistent gap between what we know and how we govern.

After years of floods, heatwaves, droughts and climate-induced losses, Pakistan still finds itself asking the same questions every monsoon season: Why are floodplains still being encroached upon despite repeated evidence that these areas are natural buffers against flooding?

Why are ecologically sensitive zones, national parks, forests and wetlands, the very systems that provide climate protection, still being treated as spaces available for development rather than as critical climate infrastructure?

Why does Pakistan still not treat water security as a core national security priority despite increasing pressure on shared ecological resources, changing river dynamics and growing regional tensions over water?

Why are adaptation plans developed without first ensuring that institutions responsible for implementation have the technical capacity, expertise and enforcement mechanisms required to deliver them?

Pakistan's repeated flooding provides the clearest example. Floods are not disasters only because rainfall intensity has increased; floods become disasters because exposure and vulnerability continue to rise. When floodplains are occupied, natural drainage systems are disrupted, wetlands are degraded and development decisions ignore ecological realities, extreme rainfall events become catastrophic.

The same governance failure is visible in Pakistan's

mountain regions, where climate change is interacting with ecological degradation. During last year's monsoon, the events in Buner and Swat demonstrated how fragile mountain ecosystems can amplify the impacts of extreme rainfall, flash floods and landslide-related hazards. Loss of forest cover reduces natural protection mechanisms, increases runoff and weakens the ability of landscapes to absorb climate shocks.

However, deforestation cannot be understood through a single lens as timber mafias and weak enforcement contribute to forest loss, but energy poverty is also a critical factor. The communities without access to reliable clean cooking alternatives continue depending on biomass, placing additional pressure on already fragile ecosystems. So, protecting forests requires more than enforcement against illegal cutting; rather, it requires addressing the social and economic realities that drive communities towards unsustainable practices.

Similarly, Pakistan's early warning systems continue facing a critical challenge as warnings are being issued, but risk behaviour is not changing. Repeated tourist incidents in vulnerable mountain areas demonstrate that communication of risk is still not translating into informed decisions. An early warning system cannot be considered successful merely because an alert was generated. Its success depends on whether communities, tourists and local institutions understand the warning, trust the information and change their actions accordingly.

This is where adaptation must move beyond technology and focus on governance, communication and behavioural change.

Pakistan's water challenge is perhaps the most strategic climate issue facing the country. Yet water security remains fragmented across institutions rather than being addressed through a comprehensive strategic framework. A country whose economy, food system and social stability depend on water cannot afford to treat water as a seasonal management issue.

The agriculture sector further demonstrates why Pakistan needs a shift from response to resilience. Climate impacts are already affecting agricultural productivity through heat stress, water uncertainty and changing rainfall patterns. However, the dominant response continues to focus on compensation through cash transfers after losses rather than preparing farmers before climate shocks occur.

Farmers need more than post-disaster financial assistance. They need climate-resilient crop planning, updated agro-climatic zones, improved water efficiency, stronger extension services and research-based solutions suited to Pakistan's changing climate. The challenge is not only recovering from climate disasters but transforming systems so that future losses are reduced.

Another fundamental weakness in Pakistan's climate governance is the disconnect between global climate discussions and local realities. International science and frameworks are valuable, but climate solutions cannot simply be imported without considering Pakistan's ecosystems, communities and institutional capacities. Policies designed without local scientific understanding and indigenous knowledge often fail because they do not reflect the complexity of the landscapes they aim to protect.

The same contradiction exists in our environmental priorities. Pakistan's waste crisis is reduced to a conversation about plastics, how much it is being consumed or produced, while rivers continue receiving untreated waste and sewage, waste segregation remains limited and open dumping continues. A plastic ban without a functioning waste management system is not a complete environmental solution. It addresses a visible symptom while ignoring the underlying structural governance failure.

Similarly, plantation campaigns cannot become a substitute for ecosystem restoration. Climate action requires scientifically planned restoration, native species selection, ecosystem-based approaches and long-term monitoring. Planting trees without ensuring their survival and ecological suitability is not resilience-building.

The issue is not the absence of policies but the absence of enforcement architecture. Pakistan's adaptation plans, climate policies, and environmental frameworks will remain ineffective if the institutions responsible for their implementation lack the technical expertise to enforce them.

The next three years should therefore not be focused on producing more documents. Pakistan already has many frameworks; the priority should be implementation, enforcement and measurable outcomes.

Every major climate plan must have clearly defined success indicators: how many communities have become flood resilient, how many vulnerable settlements have been protected or relocated, how many hectares of degraded ecosystems have been restored, how many cities have functional heat action plans, how much agricultural land has recovered and how effectively climate finance has reached vulnerable communities.

Most importantly, implementation institutions must be strengthened by including subject-matter experts and technical specialists who understand climate science, ecology, hydrology, agriculture and risk management. Line departments require continuous technical guidance to determine what needs to be prioritised, where interventions should occur and how implementation should be monitored.

Without technical expertise embedded within institutions, policies will remain documents rather than become action.

Climate, water and environmental systems are dynamic. Therefore, strategies cannot remain unchanged for decades. Plans must be periodically reviewed and revised, ideally every three years, based on emerging climate risks, new scientific evidence and implementation experiences. Otherwise, Pakistan will continue developing plans for yesterday's climate while facing tomorrow's risks.

The country does not need another cycle of committees, declarations and emergency responses. It needs a governance transformation where climate and water become national priorities, where scientific expertise guides implementation, where local realities shape solutions and where success is measured through outcomes rather than announcements.

Pakistan will continue to experience climate whiplash. The question is whether its governance systems will continue reacting to every shock or finally evolve to manage the reality that climate science has already predicted. ■



Group Photo of Award Winners with Chief Guest and Team NFEH.

Sindh Emerges as Pakistan's Climate Action Leader with Carbon Market Reforms, Mangrove Restoration and Smart Environmental Governance: Nasir Hussain Shah

Ruqiya Naeem

Sindh Minister for Local Government, Housing & Town Planning Syed Nasir Hussain Shah has said Sindh has emerged as Pakistan's leading province in climate action through carbon credit initiatives, mangrove restoration, environmental reforms and technology-driven governance.

Addressing the 23rd Annual Environment Conference and Awards 2026, organised by the National Forum for Environment & Health (NFEH) under the theme "Reclaiming Pakistan's Liveable Future: From Collateral Damage to Collective Ownership," the minister said Sindh had become the first province to successfully implement a government-led carbon credit project.

He said the province's internationally recognised mangrove restoration programme in the Indus Delta had generated substantial foreign exchange through carbon credits, with a significant share of the benefits accruing to Sindh. The government had also approved 13 carbon credit projects covering mangrove restoration, riverine forests, agroforestry, biogas generation and landfill methane control. Nasir Shah said a dedicated Directorate of Carbon Credits had been established under the Environment Department to facilitate climate finance and accelerate carbon market development. The Sindh Environmental Protection Act was also being amended to improve transparency, efficiency and alignment with international environmental standards.

He highlighted technology-based environmental monitoring, noting that two fully automated air-quality monitoring stations were operational in Karachi, providing real-time AQI data. Plans were underway to install 17 additional automated air-quality analysers across the province. The Sindh Environmental Protection Agency had also automated its environmental monitoring and NOC system to strengthen accountability.

The minister said urban forestry and plantation initiatives were being expanded across Karachi and other parts of Sindh. The provincial government also announced a matching contribution of 10,000 tree saplings for NFEH's monsoon plantation campaign after the organisation mobilised an equal number through private-sector support.

NFEH President Naeem Qureshi said the plantation campaign would be funded entirely through private-sector philanthropy and emphasised the importance of effective local government systems in addressing urban environmental challenges, including wastewater treatment, drainage, flooding and solid waste management.

Delivering the keynote address, Younus Dagha, Chairman of the Policy Research & Advisory Council, highlighted the severe impact of the 2022 floods and continuing vulnerabilities in Sindh, including inadequate drainage infrastructure and risks associated with untreated industrial wastewater. The conference also featured contributions from Zainab Naeem, Environmental Research Fellow at the Sustainable Development Policy Institute AVM (Retd.) Ejaz Malik, Chief Operating Officer of South Air; Irfan Ahmed, energy expert; Ameer Hyder Laghari, Chief Meteorologist of the Pakistan Meteorological Department; and Dr Kaiser Waheed, former Chairman of the Pakistan Pharmaceutical Manufacturers Association. Other speakers included NFEH Secretary-General Ruqiya Naeem, Engineer Nadeem Ashraf, VP NFEH, Hassaan Ahmed, Manager Communications, Climate Action Center Karachi, and Kashif Rasheed, Manager HSE and Digitalization, Mondelez Pakistan.

During the event, Syed Nasir Hussain Shah presented the Annual Environment Excellence Awards 2026 to 68 organisations and recognition awards to 14 companies for their tree plantation initiatives. He said the achievements of the award recipients would encourage greater participation from the corporate, banking and industrial sectors in environmental protection and sustainable development.



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Group Photo of Sponsors with Chief Guest Federal Minister for Board of Investment Kaiser Ahmed Shaikh, Guest of Honor Secretary Energy Department Sindh Shahab Qamar Ansari and Team Energy Update.

EVENT REPORT

2nd Sindh Energy Diversity Conference Huge Investment, Facilities Sought to Further Boost Thar Coal, Solar Power Production

Kaiser Sheikh presents a compelling case for placing energy at the heart of Pakistan's economic revival; conference provides private sector with an opportunity to present its recommendations for accelerating Pakistan's renewable-energy transition

Mustafa Tahir

The 2nd Sindh Energy Diversity Conference 2026, organised by Energy Update magazine with the theme "From Resources to Resilience: Sindh's Next Energy Chapter", brought together policymakers, investors, industrialists, energy experts and business leaders, who deliberated on one of Pakistan's most pressing national priorities - developing a diversified, secure and sustainable energy future. Held in Karachi, the conference reinforced the growing recognition that Sindh, endowed with abundant reserves of conventional and renewable energy resources, occupies a pivotal position in determining Pakistan's long-term economic trajectory.

The inaugural session was addressed by Federal Minister for Investment Kaiser Ahmed Sheikh, who



Panel discussion on Electric Vehicles and Clean Mobility Moderated by Yasir Hussain, Founder, Climate Action Plan with Panelists includes Abubakar Ismail - Head of Supply – KE, • Muhammad Umar, Director Power and Energy, EV, NEECA, Bashir Hussain - Deputy Director Bus Operations - SMTA, Rashid Azeem, Head of Sustainability, ESG and Climate Risk- Pakistan & GCC • UBL - United Bank Limited and Khalique Jafrani, Chairman, SOGO Group.

presented a compelling case for placing energy at the heart of Pakistan's economic revival. Speaking from the



From Left to Right Syed Nehal Hashmi, Governor, Sindh, Qaiser Ahmed Shaikh, Federal Minister, Board of Investment, Government of Pakistan, Shahab Qamar Ansari, Secretary, Energy Department Sindh, Aslam Soomro, Special Secretary, Energy Department Sindh, Asif Haider Mirza, Financial Consultant, Thar Coal Energy Project, M. Naeem Qureshi, Chairman, Sindh Energy Diversity Conference and Managing Editor Energy Update, M. Zakir Ali, CEO, Inverex Solar Energy, Kumail, National Sales Manager C&I, IteI Energy, Mutahir ul Islam, Director Operations - QuantexIQ, Ruqiya Naem, Director Admin and Finance EU, Ahmed Sadiq, Section Manager, Fauji Fertilizer Company, Khaliq Jafarani, Chairman, SOGO Group, Owais Mir, Malk Khuda Buksh, Anis Younus, MD, EMBA Corporation and others spoke on this occasion.

perspective of an industrialist as well as a policymaker, he observed that one of the most significant challenges confronting the country's manufacturing sector is the inconsistent availability and high cost of electricity. Without affordable and uninterrupted energy, he argued, industries are struggling to compete in international markets, limiting exports and widening the country's trade deficit.

The minister maintained that improving energy affordability would substantially enhance industrial efficiency and allow Pakistani manufacturers to compete more effectively with regional and global competitors. He described reliable energy not simply as a utility but

as a strategic production input capable of determining the success or failure of industries. According to him, reducing energy costs would directly contribute to higher exports, increased industrial output and greater investor confidence.

Mr Sheikh also highlighted Sindh's exceptional position within Pakistan's energy landscape. Rich in conventional resources such as natural gas and the vast Thar coal deposits, while simultaneously possessing immense wind and solar potential, the province offers an energy mix unmatched elsewhere in the country. He noted that the effective utilisation of these indigenous resources could significantly reduce Pakistan's depen-



Ruqiya Naeem presenting memento to Kaiser Ahmed Shaikh.

dence on imported fuels, improve energy security and strengthen the national economy.

Sindh Governor Syed Muhammad Nehal Hashmi described the province's diversified energy resources as one of Pakistan's greatest strategic assets and stressed that their effective utilisation would play a decisive role in ensuring national energy security and sustainable economic development. The governor emphasised that renewable energy, particularly solar and wind power, offers Pakistan the most sustainable solution to its future electricity requirements.

However, he argued that the country's clean-energy ambitions should extend beyond merely importing technology. Pakistan, he suggested, must gradually establish domestic manufacturing capabilities for solar panels, wind turbines, battery storage systems and other renewable-energy equipment. Such an approach would not only reduce dependence on imports but would also stimulate industrial growth, generate employment and encourage technological innovation.

Governor Hashmi observed that greater public and private investment in environmentally friendly energy projects would strengthen the national economy while supporting Pakistan's commitments to climate resilience. Recognising the importance of knowledge sharing, the governor also commended Energy Update for consistently providing a credible platform where government, industry and academia can exchange ideas and contribute towards evidence-based policymaking.

Sindh Energy Secretary Shahab Qamar Ansari outlined the remarkable progress achieved in harnessing indigenous resources while acknowledging that several challenges still require attention. He noted that although Sindh possesses enormous renewable-energy potential, relatively modest electricity demand has slowed the development of additional large-scale renewable projects. Nevertheless, he reaffirmed the provincial government's commitment to accelerating investment in both conventional and clean-energy resources.

Mr Ansari described the development of the Thar coalfields under the public-private partnership framework as one of Sindh's landmark achievements. The establishment of mine-mouth power plants, together with the continued expansion of mining operations, has demonstrated the province's determination to reduce Pakistan's dependence on imported fuel. He in-

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formed participants that the Sindh government is also supporting the construction of a dedicated railway network to transport indigenous coal efficiently from Thar to power plants located in other parts of the country, thereby reducing transportation costs and improving energy logistics.

The conference also provided the private sector with an opportunity to present its recommendations for accelerating Pakistan's renewable-energy transition.

Zakir Ali, Chief Executive Officer of Inverex Solar Energy, emphasised that although public interest in rooftop solar systems had increased dramatically, affordability remained a significant barrier for many households. He urged both federal and provincial governments to introduce accessible financing mechanisms that would enable low- and middle-income families to install solar systems through affordable bank loans and other innovative financing arrangements.

In his welcome address, Muhammad Naeem Qureshi, Chairman of the Sindh Energy Diversity Conference, explained that the annual event was conceived to showcase Sindh's vast yet underutilised energy resources while creating a meaningful platform for dialogue among policymakers, investors, regulators and industry leaders. He observed that Pakistan possesses abundant indigenous resources capable of significantly reducing reliance on imported fossil fuels, provided they are developed through consistent policies, investor-friendly regulations and long-term planning.

Representing the Sindh Mass Transit Authority, Bashir Hussain informed participants that Sindh had become the first province in Pakistan to introduce electric bus services. He revealed that the provincial government intends to expand the fleet further through public-private partnerships while establishing additional charging infrastructure at strategic locations across Karachi. He also highlighted an innovative initiative under which electric scooters are being provided to working women and female students after appropriate training and licensing.

Joining the discussion through a live video link from Islamabad, a representative of the National Energy Efficiency and Conservation Authority (NEECA) disclosed that 222 electric vehicle charging stations have already been registered across major cities and along Pakistan's motorway network. They noted that numerous additional applications are currently under review and pointed to the government's decision to reduce electricity tariffs for charging stations as a significant incentive for private investment in the sector.

The need for supportive infrastructure was further reinforced by Malik Khuda Baksh, a prominent businessman, who urged electricity distribution companies to expedite the provision of new power connections for entrepreneurs seeking to establish EV charging facilities. He praised NEECA for simplifying licensing procedures and suggested that distribution companies should adopt a similarly efficient approach to facilitate the rapid expansion of the country's electric mobility network. Supporting this view, Abu Bakar Ismail of K-Electric assured investors that Karachi's existing electricity infrastructure is well-positioned to accommodate future growth in EV charging facilities.

Rashid Azeem, Head of Sustainability, ESG and



Memento Presentation to Governor Sindh Syed Nehal Hashmi

Climate Risk at United Bank Limited (UBL), said the bank's financial services would play a pivotal role in enabling the widespread adoption of electric vehicles across Pakistan. He told the audience that the bank had been offering affordable financing facilities to middle-income families to enable them to purchase electric vehicles, helping reduce their daily commuting costs.

He said UBL was fully prepared to partner with the federal and provincial governments in implementing loan and subsidy schemes aimed at accelerating the adoption of electric cars and electric motorcycles across Pakistan.

Khalique Jafrani, Chairman of the SOGO Group, said Pakistan offered enormous growth potential for electric two-wheelers, describing them as a cost-effective alternative to conventional motorcycles. He urged the government to introduce a comprehensive package of incentives to encourage local manufacturers to indigenously produce key electric vehicle components, thereby strengthening the domestic EV industry and reducing reliance on imports. He urged the authorities to ensure seamless facilitation for Chinese experts and prospective investors visiting Karachi to establish partnerships with local industries and promote investment and technology transfer.

Syed Kumail Raza, National Sales Manager at itel-Energy, said solar power offered the quickest, most cost-effective, and environmentally sustainable solution to bridge Sindh's electricity shortfall of around 1,044 megawatts. He said advanced battery energy storage systems could ensure the uninterrupted availability of solar-generated electricity, enabling a round-the-clock power supply to homes and businesses. He added that itel-Energy offered a comprehensive range of solar products and energy storage solutions for residential, com-



Stall Visits by Governor Sindh Syed Nehal Hashmi

mercial, industrial and off-grid consumers, particularly in remote rural areas lacking access to the national grid. He reaffirmed the company's support for the Sindh government's drive to expand solar energy use, improve energy access for underprivileged communities, and address the province's electricity deficit.

Mutahir ul Islam, Director of Operations at QuantexIQ, highlighted the startup's digital solutions for monitoring and managing the entire LPG supply chain, from producers to end-users. He said the company's IT-enabled dashboards and smartphone applications provided real-time tracking of LPG distribution, helping prevent leakages, improve operational safety, and minimise financial losses. He added that one of the key challenges addressed by the system was the monetary loss caused by residual gas left in cylinders returned by consumers, enabling LPG companies to improve operational efficiency and revenue recovery. ■

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A just transition or just a transition?

To date, rooftop capacity installed under a net metering policy (excluding off-grid) has surpassed 7 GW

Iftikhar Ahmad

The writer is the founder of the Centre for Labour Research

In early 2025, Pakistan became one of the fewer than 20 nations that generated at least 25 percent of their electric energy from solar. In 2020, solar energy had accounted for less than 3 percent of total utility electricity generation. Pakistan imported over 30 GW of solar modules in 2024 and 2025. Its more than 33 GW of distributed solar capacity is equivalent to two-thirds of Pakistan's total installed generation capacity of 49 GW.

To date, rooftop capacity installed under a net metering policy (excluding off-grid) has surpassed 7 GW. The off-grid capacity is estimated at twice that amount. The energy transition in Pakistan is no longer a promise in a policy document like NDC 3.0 or a hypothetical question; it is a structural shift already under way, driven largely by consumers rather than the governments.

The relevant policy question is, therefore, no longer whether Pakistan will transition, but how the costs and benefits of that transition will be distributed: who pays, who gains and who is protected during the adjustment. The current institutional evidence shows that the distribution is skewed. Adjustment costs are borne by consumers and workers and the frameworks that could protect them are absent from energy planning.

Consider the labour market into which this transformation is landing. The Labour Force Survey 2024-25 records a workforce of 85.6 million, of whom 80.8 percent, roughly 69 million people, work

informally - without written contracts, minimum wages, access to social protection or legal recourse when employment ends. Female labour force participation stands at 24.4 percent, among the lowest in South Asia. Of the country's 33.6 million wage and salaried employees, only 5.8 percent (fewer than two million workers) belong to a trade union or association. This is the institutional base from which workers are expected to negotiate the largest economic restructuring in a generation.

The Indicative Generation Capacity Expansion Plan 2025-35 determines which power plants are to be developed and which are to be closed or retired over the next decade. Its consultation list names the Power Division, the regulator (NEPRA), market operators (DISCOS), the Special Investment Facilitation Council and a university institute. It includes no trade union and no workers' body; not even the Ministry of Overseas Pakistanis and Human Resource Development, nominally responsible for labour issues. The plan schedules 2,577 MW of thermal retirements but contains no employment impact assessment or worker transition framework.

The legal framework exacerbates the governance gap. In January 2025, the federal government invoked the Essential Services (Maintenance) Act, 1952, to ban trade union activity across the electricity sector by declaring it an essential service. The ILO's supervisory bodies have long held this law incompatible with Conventions 87 and 98, which Pakistan ratified in the 1950s. The National Industrial Relations Commission suspended the order in March 2025, holding that it potentially violated fundamental constitutional rights. Still, the statute remains in force and can be applied in future. The de jure right to organise exists, but the de facto right to organize can be suspended at administrative discretion precisely when contested reforms, such as DISCO privatisation are pursued.

By global standards, Pakistan is not a major coal employer, but coal matters deeply in the few places where coal jobs and supply chains are concentrated. Five Thar coal IPPs supply 3,300 MW and Shanghai Electric alone reports directly employing around 7,000 Paki-



stani workers in its Thar operations. Other than Thar's mechanised open-pit mines, coal mining in Balochistan, Punjab's Salt Range and Sindh remains labour-intensive, employing workers with few alternative livelihoods in coal towns like Duki. Even the modest thermal retirements already scheduled will have significant localised effects on power sector workers, contractors and the surrounding service economy. Pakistan currently has no dedicated transition instrument to manage these effects: no wage insurance, no structured redeployment mechanism and no regional diversification compact.

The same issue exists on a larger scale in the distribution companies. In the 2026 FES report on Just Energy Transition, trade union interviewees report that roughly 80 percent of the workforce across energy sector workplaces is now engaged through third-party contractors. These workers service the grid but have no formal employment relationship with the entities being restructured and will not appear on any severance list when a DISCO is privatised. A transition that converts formal, unionised, pensionable employment into informal, contracted, unprotected work does not meet the ILO's definition of a just transition.

The most ambitious policy scenario

The rooftop solar boom is already generating demand for electricians, installers, inverter technicians, battery vendors and after-sales workers well beyond what official data captures.

The quality of newly created employment opportunities in the renewable sector is a policy concern. Around three-quarters of the projected jobs are semi-skilled or unskilled. One in five renewable-energy workers is part-time. Small rooftop firms retain only sales staff while assembling temporary or "floating" technical teams on a project-by-project basis. More than 80 percent of renewable energy companies provide in-house training to address gaps in the public TVET system. The training capacity is concentrated in the Punjab, leaving other regions less equipped to supply the necessary workforce. The Pakistan Bureau of Statistics does not yet classify green jobs, so this entire workforce remains statistically invisible to policy and social protection systems.

First, legislate a statutory National Just Transition Commission. Germany managed its coal phase-out through a Coal Commission, in which relevant stakeholders such as the government, employers, unions, scientists and affected regions negotiated both the phase-out timetable and the compensation package for the region and workers. Spain wrote just transition into its 2021 climate law and mandated five-year territorial agreements between the state, regions, unions and municipalities, administered by a dedicated Just Transition Institute with its own budget and staff.

Building on the Parliamentary Forum on Energy and Economy and the Federal and Provincial Tripartite Consultative Committees (established under ILO Convention 144), Pakistan should create a statutory National Just Transition Commission to review transition decisions. The parliament and provincial legislatures should legislate just-transition guarantees rather than leave them to administrative discretion. Punjab Labour Code 2026 expands the scope of tripartite consultation to include issues of employment and unemployment in the province and

provides a statutory basis for the consultative committee.

Second, make a labour impact assessment a legal pre-condition for every major energy sector decision. No plant retirement, DISCO privatisation, IPP renegotiation or procurement round above a defined threshold should proceed without a published assessment of direct, indirect and induced employment effects, disaggregated by gender, contract status and district, together with a mitigation plan approved before the decision is finalised. Vietnam has developed a workable labour force projection methodology as part of its energy transition programme. Pakistan can do the same.

Third, establish and finance a National Just Transition Fund. Financed through employer levies on fossil-fuel-intensive employers, a modest transition charge on electricity use and grant-based international climate finance, the Fund should cover income support, retraining, relocation assistance, early retirement aligned with the National Electricity Policy's employee-protection clause and economic diversification in coal- and thermal-dependent districts. Tripartite governance, with workers, employers and provinces represented, is necessary to ensure resources reach displaced workers.

Fourth, attach labour conditionalities to public and international support. If Pakistan could guarantee returns for independent power producers for three decades, it can also make decent work a condition for the support now being given to the renewable energy sector. Tariff guarantees and public procurement should be conditional on written contracts, social security and EOBI registration, safety standards, freedom of association and apprenticeship and gender-based hiring targets. The same logic applies to international finance. Public money should not be used to promote labour market informality.

Fifth, count the workers. PBS should introduce a green-jobs classification into the Labour Force Survey. The NEPRA, the Power Division and Energy Departments should be required to publish plain-language transition briefs, sex-disaggregated labour data in the energy sector and plant-level restructuring notices. Workers cannot bargain over decisions that are kept hidden and policy-makers cannot plan for a workforce they do not measure.

Finally, the unions must organise the new workforce. The rooftop solar installer on a temporary team, the EV mechanic in a workshop and the battery vendor in a local market operate outside traditional organising channels. Trade unions need to map where green work actually happens; organise sectorally rather than workplace-by-workplace; recruit through services such as legal aid, accident-claim support and certification assistance; and build participation models that women can use safely. The Punjab Labour Code 2026, extending the right to organise to informal and self-employed workers, has opened a legal avenue that the labour movement has yet to use.

Article 9A of the constitution recognises every citizen's right to a clean and healthy environment; read together with the rights to association, equality and dignified working conditions, it establishes that environmental and labour objectives carry equal constitutional weight. Pakistan can make the energy transition a virtuous cycle: cheaper and cleaner energy; better jobs; stronger social protection; women's inclusion; safer workplaces; and a more resilient economy. Or it can create a "green" version of the old exploitative and informal economy. ■

UAE's Exit from OPEC Set to Reshape Global Oil Markets and Energy Politics

Opec produce about 35 per cent of the world's total crude oil; its exports account for around 50 per cent of global oil trade



Dr Ahsan Abbas

The writer is a director of the Centre of Aerospace and Security Studies (CASS) Lahore, Pakistan.

There are many interesting terminologies in the discipline of economics, but few are as explanatory as 'cartel'. The logic of cartels is nothing more than smoke-filled rooms, with an organised suppression of competition for private gain; this is market logic taken into private hands.

In classical economic theory, formal agreement among competing firms or sovereign states is required to coordinate production, fix prices and divide markets in ways that benefit the members at the expense of consumers. The producers in a cartel agree to collectively restrict output and increase prices, while each member captures a slice of what economists call the 'monopoly rent' – the premium that accrues when supply is artificially constrained.

Interestingly, cartels are fundamentally unstable when the incentive to cheat is easy: supplying more than the agreed quantity and reaping benefits from lowering prices to enhance market share. Still, economics does not provide a solution to the Prisoner's Dilemma, where defection is rational. The Organization of the Petroleum Exporting Countries (Opec) is a classic example of such an organisation, with a long history of such incidents.

Opec was established in 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela in response to the dominance of Western oil corporations, namely the 'Seven Sisters', that controlled production and prices during the post-World War II period. Opec allowed oil-producing nations to assert control over their resources and to secure and boost their proceeds. In 2016, Opec expanded to Opec+, adding 10 other member producers, including Russia, to the wider alliance. Now, this bloc includes 23 countries.

Opec member countries produce about 35 per cent of the world's total crude oil, while their exports account for around 50 per cent of all the oil traded internationally. With the inclusion of Opec+, the bloc controls more than 50 per cent of global crude oil production. This dominant market share gives Opec substantial leverage, allowing its actions to have a significant impact on global oil prices.

The positions of Opec member economies and their corresponding shares in oil exports reveal that Saudi Arabia is the top oil exporter, with exports of 6.43 million barrels per day, followed by Iraq, Iran, the UAE and Kuwait. The current situation of Opec and non-Opec in global crude oil production highlights the role of member countries in influencing the market and the possibility of a non-Opec crude oil alliance that includes the US and other major producers. Indeed, the geostrategic and political-economic aspects are the key determinants in the global oil market and energy outlook. ■

Pakistan's 30MWh-15MW Battery Energy Storage System

Engr Faiz Bhutta

Pakistan's energy sector continues to evolve as industries seek reliable and cost-effective solutions to address grid instability and rising electricity costs. A notable example is the 30MWh/15MW Battery Energy Storage System (BESS) installed at Liberty Mills Limited, located in the Nooriabad Industrial Hub near Karachi. The project demonstrates how advanced energy storage technologies can support industrial operations while enhancing overall power system resilience.

The BESS utilizes Sungrow's liquid-cooled technology, comprising six containerized units with a combined capacity of 30MWh and a total Power Conversion System (PCS) rating of 15MW. The PCS architecture incorporates built-in redundancy and supports advanced grid-forming capabilities and ancillary services, including frequency regulation, voltage support, spinning reserve, black start functionality, and renew-

able energy smoothing.

Operational performance has been highly encouraging. The installation has demonstrated excellent reliability, with no reported load trips, minimal harmonic distortion, and uninterrupted power delivery since commissioning. Additionally, the EMS has achieved an effective blended energy cost of approximately PKR 13.6/kWh, illustrating the economic benefits of integrating renewable generation with battery energy storage.

The successful implementation of the project was made possible through the collaboration between Liberty Mills Limited, Pragmatic Engineering Solutions, and Sungrow, showcasing the growing maturity of Pakistan's commercial and industrial energy storage market. As industries increasingly prioritize resilience, sustainability, and cost optimization, projects such as this provide a valuable reference for the future deployment of battery energy storage systems across the country.

Dhabeji Hybrid Project Achieves Major Regulatory Milestone

EU Report

JCM Power's 240 MW Dhabeji Hybrid Renewable Energy Project has secured its generation licence and tariff approval, bringing Pakistan's first utility-scale hybrid wind and solar project closer to construction. The project, awarded through the country's first competitive renewable energy bidding process, achieved Pakistan's lowest approved renewable energy tariff of PKR 8.9189 per kWh. JCM Power said the project will help reduce reliance on imported fuels, support circular debt reduction, and strengthen energy security. The company credited the Government of Pakistan, NEPRA, the Power Division, and K-Electric for supporting the landmark competitive procurement initiative.

DHA City Karachi Gets Private Power Distribution Licence

EU Report

NEPRA has granted DHA Energy Supply Company (DESCO) 21-year Electricity Distribution and Supplier of Last Resort (SoLR) licences, making DHA City Karachi

the first private housing project in Pakistan to operate a licensed electricity distribution network. Issued under the Competitive Trading Bilateral Contract Market (CTBCM) framework, the licences allow DESCO to distribute power within DHA City Karachi. The company will initially procure 6MW of electricity from Lucky Cement Limited. Despite objections from CPPA, GEPCO and K-Electric, NEPRA approved the licences, describing the move as a milestone in liberalizing Pakistan's electricity market and encouraging private-sector participation.



Gunvor Eyes New Investment Opportunities in Pakistan's Energy Sector



Global commodities trading company Gunvor Group has welcomed Pakistan's petroleum sector deregulation and expressed interest in exploring new investment opportunities in the country's energy market. A Gunvor delegation, comprising Global Director Investment Portfolio Shahb Richyal and Corporate Affairs Director Seth Thomas Pietras, met Petroleum Minister Ali Pervaiz Malik and appreciated government efforts to open the downstream market, saying deregulation would promote competition and attract international investment. The delegation expressed particular interest in Pakistan's Refinery Policy and upcoming Bonded Storage Policy. The minister highlighted opportunities in the LPG sector and reaffirmed Pakistan's commitment to a competitive, transparent and investor-friendly energy market.

Full price, half Life

Adulteration shifts from illicit trade to accepted norm

Mansoor Ahmad

In Pakistan, adulteration has quietly shifted from an illicit trade into an accepted norm. While public outrage rightfully centres on compromised food items and agricultural inputs, a parallel crisis unfurls on our roads and industrial corridors.

The systemic adulteration of petroleum, diesel and motor oils is just as contaminated food acts as a slow poison to the human body, substandard lubricants and diluted fuels inflict a quiet, costly decay on vehicle engines.

When a motorist buys engine oil or fills up at a pump, they pay 100 per cent of the market price expecting full performance. Instead, they often receive a diluted product operating at 70-80 per cent efficiency. This value gap translates into a crushing financial burden for ordinary citizens already battling record inflation. For daily wage earners, ride-hailing drivers, and commercial fleet operators, unexpected mechanical breakdowns mean lost livelihoods and skyrocketing repair bills that swallow monthly savings.

Under proper maintenance with genuine lubricants, a well-engineered vehicle can run smoothly past 200,000 kilometres before needing a major overhaul. Substandard or recycled base oils destroy that longevity -- often causing engines to blow thick smoke, lose compression, and require major rebuilds in as little as 75,000 kilometres. Blending kerosene, light diesel or cheap recycled solvents into petrol damages sensitive fuel injectors, causes severe engine knocking, and drastically drops fuel mileage.

Modern auto engines and lubricants are finely engineered ecosystems. Today's fuel and lubricant specifications are built for precise thermal limits, friction management, and strict emissions control. Tampering with these formulas triggers a rapid chain reaction of mechanical failures. Adulterated oils break down rapidly under high operational temperatures, losing viscosity and exposing critical metal components to friction, metal-on-metal grinding, and catastrophic overheating.

Impure fuel alters combustion characteristics, leading to misfires, stubborn carbon build-

up, clogged filters, and heightened fire hazards. Beyond internal damage, toxic exhaust from incomplete combustion suffocates urban air quality and rapidly destroys expensive catalytic converters designed to filter dangerous emissions.

The crisis is no longer confined to small-scale roadside vendors operating out of rusty drums. It has evolved into an organised, grey-market industry featuring sophisticated bottling plants that counterfeit trusted international brand packaging with alarming precision. Combined with systemic governance failures, from reports of stolen furnace oil diverted to public power plants to unmonitored blending units operating with impunity, public assets are drained while everyday consumers absorb the structural loss.

On a national level, this malpractice forces Pakistan to import foreign spare parts and replacement engines prematurely, bleeding precious foreign exchange reserves. Accepting fuel and lubricant adulteration as an inevitable reality is a disastrous mistake. Protecting our automotive infrastructure, public health and national economy requires strict regulatory oversight from petroleum authorities, unannounced fuel testing at supply depots, and uncompromising penalties for counterfeit blenders. Short of that, Pakistani consumers will continue paying full price for products that quietly sabotage their hardest-earned investments. ■



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Huawei

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Huawei Digital Power has showcased a new generation of digital energy and smart infrastructure solutions in Pakistan, reaffirming its commitment to supporting the country's digital transformation and sustainable energy transition.

The company hosted the Huawei Digital Power Pakistan Ecosystem Partner Summit & Innovative Product Launch 2026 in Lahore, bringing together customers, partners and industry stakeholders to present its latest technologies in smart energy, digital infrastructure and electric mobility.

Speaking at the event, Alex Xing, President of Huawei Digital Power Middle East & Central Asia, highlighted the importance of ecosystem collaboration in accelerating Pakistan's energy and digital infrastructure development. Managing Director of Huawei Digital Power Pakistan, Johnson Jiang, outlined the company's local market strategy, emphasizing Huawei's commitment to building a resilient, intelligent and sustainable energy ecosystem in collaboration with its partners.

"Pakistan's growing demand for reliable and sustainable energy presents significant opportunities for innovation. Together with our partners, we are committed to delivering intelligent energy solutions that support the country's long-term economic growth," he said.

During the summit, Huawei introduced a range of new products and solutions, including the One-Fits-All Solution 2.0, the LUNA2000-5015kWh Battery Energy Storage System (BESS), the SUN2000-506KTL Smart String Inverter, FusionCol600-L450MA, FusionD-C1000A-40Ft and the DS720-720LEUA2.

The event also featured technical sessions focusing on Huawei's Smart PV, Energy Storage Systems (ESS) and Data Center Facility solutions.

Participants also heard customer success stories highlighting the adoption of Huawei's technologies across sectors including banking, healthcare, agriculture, telecommunications and enterprise digitalization.

The summit concluded with Huawei reaffirming its commitment to strengthening its partner ecosystem, promoting technological innovation and supporting Pakistan's transition to a low-carbon, intelligent and digitally connected future.



Solar & Storage Pakistan 2026: Driving Pakistan's Clean Energy Revolution



Rana Abbas Presenting Memento to M. Naeem Qureshi, Nadeem Ashraf also seen

Engr. Nadeem Ashraf

Solar & Storage Pakistan 2026, held from July 10 to 12 at the Expo Centre Lahore, emerged as a major platform for advancing Pakistan's renewable energy transition. Organised by the Pakistan Solar Association, the three-day exhibition and conference brought together policymakers, investors, manufacturers, technology providers, researchers and energy professionals from across Pakistan and abroad.

The event attracted an unprecedented 67,432 visitors, with 120 exhibiting companies across three exhibition halls, showcasing advanced photovoltaic modules, inverters, battery energy storage systems (BESS), smart energy solutions and other clean-energy technologies. The exhibition highlighted Pakistan's rapidly expanding renewable energy market while providing opportunities for business networking, investment, technology transfer and strategic partnerships. The accompanying technical conference addressed critical issues facing Pakistan's energy sector, including policy and regulatory reforms, local manufacturing, financing mechanisms, grid modernisation and the growing importance of battery storage. Experts emphasised that BESS will be essential for integrating increasing volumes of renewable energy while improving grid stability, reliability and energy security.

Senior representatives from the Ministry of Industries and Production, Parliamentary Forum on Energy and Economy, National Grid Company, LESCO, ISMO, LUMS, Huawei Digital Power Pakistan and other institu-



M. Naeem Qureshi presenting EU Magazine to Minister CC Musaddiq Malik

tions participated in the discussions.

The event also featured prominent dignitaries, including Federal Minister for Climate Change Musadik Masood Malik, Punjab Governor Sardar Saleem Haider Khan, FPCCI Regional Chairman Zaki Aijaz and United Business Group Patron-in-Chief S. M. Tanveer. Their participation reflected growing public- and private-sector support for renewable energy development.

Strategic partnerships with FPCCI, LCCI, REAP and PAEA further strengthened institutional cooperation and opened avenues for investment and technology adoption. An extensive promotional campaign involving outdoor advertising, digital media, social platforms and industry roadshows significantly enhanced the event's reach.

With strong attendance, international participation and active industry engagement, Solar & Storage Pakistan 2026 demonstrated the increasing maturity of Pakistan's clean-energy ecosystem. Preparations are already underway for Solar & Storage Pakistan 2027, which is expected to feature greater international participation, expanded technology showcases and enhanced business matchmaking opportunities. ■

The petrol bomb is dead

Usama Qureshi

The Writer is Corporate Leader and Vice Chairman
Cynergyico

There's a peculiar ritual that used to play out every week in Pakistan. A notification would drop late on Friday night, television screens would be awash in a single phrase: 'petrol bomb'.

Anchors would shout it, tickers would flash it and for a news cycle or two, the entire national conversation would collapse into outrage over a number nobody had time to actually understand.

That ritual is now over. And instead of asking why it took this long to kill it, a chorus of analysts has decided to spend its energy criticising the funeral. What actually changed: For years, fuel prices were set monthly, then fortnightly, then every week, announced late Friday night, based on a five-day Platts average. The mechanics of that system guaranteed volatility: a week of accumulated global price movement, compressed into a single adjustment, dropped on consumers all at once, right before the weekend news cycle. When oil markets moved sharply as they tend to during any war and the result wasn't a price change. It used to be a shock.

The new mechanism replaces this with daily pricing based on a seven-day Platts average. That's not a cosmetic tweak; it's a fundamentally different way of absorbing volatility. Instead of one larger jump every Friday, the market now sees small, incremental movements at a time, spread across every single day. The averaging window is actually wider than before, which means the daily number is smoother, even though it's now recalculated far more often. In other words: the same total price movement now happens gradually, invisibly, in the background – instead of violently, once a week, on

Friday-night primetime.

The real story nobody's telling: Critics have focused almost entirely on the inconvenience of daily pricing that businesses can't plan for, the friction pump owners face, and the need to upgrade IT systems. Fair points and worth solving. But this framing misses what the policy is actually designed to fix and it's not just headline management. It kills the hoarding incentive.

Under the old system, everyone knew when a big price increase was coming. Pump owners would order more than usual from OMCs, who would pull more product from refineries, not because demand had increased, but because everyone wanted to buy low and sell high a few later. When a decrease was expected, the exact opposite happened: orders dried up and everyone ran their inventory down to avoid a loss.

This is textbook hoarding behaviour and it was baked into the fortnightly/weekly system by design, not by any individual's bad faith. Daily pricing removes the arbitrage window entirely. There's no '1-2 weeks of certainty' to exploit, because tomorrow's price is barely different from today's. The incentive to stockpile ahead of a hike, or starve the market ahead of a cut, simply disappears. It ends the inventory-gain-loss circus.

Every price cycle used to produce its own sub-genre of news: OMCs 'profiteering' off inventory gains, or crying foul over inventory losses, depending on which way the fortnightly number moved. That entire storyline was a



byproduct of the lag between purchase price and sale price under infrequent adjustments. Shrink that lag to a day and the storyline shrinks with it. It solves supply interruptions.

This is the part that deserves more attention than it's getting. Supply disruptions at the pump, those long queues that periodically paralyse traffic in metropolitan cities due to anticipated price movements. Daily pricing removes the anticipation. If there's no advantage to be gained by delaying or accelerating supply, there's no reason for supply to be delayed or accelerated. This isn't a minor efficiency gain; it's the elimination of a recurring, entirely artificial supply crisis.

In a deregulated environment, if a private OMC tries to price above the government-owned benchmark, it simply loses customers to the OMC selling at the government rate.

Fuel is close to a textbook price-sensitive commodity; the product is functionally identical at nearly every station, so there's little to differentiate on besides price. That dynamic makes sustained cartelisation extremely difficult because any coordinated overpricing is immediately undercut by the state's own retail footprint.

Ogra's role in this new phase isn't to vanish; it's to shift to its actual role instead of fixing prices. It enforces licensing compliance, ensuring that anyone entering this more competitive market meets the standards required to operate.

The criticism that's missing the point: None of this means implementation has been flawless. Some OMCs and dealers' concerns about consultation, system upgrades and cash-flow adjustment are legitimate operational issues that deserve a real transition plan, not dismissal. Businesses genuinely relying on stable input costs to price their products have a fair complaint about short-term volatility. ■

OGDC discovers high-grade geothermal lithium in Sindh

EU Report

Pakistan has taken a significant step towards entering the global critical minerals landscape after the Oil and Gas Development Company Limited (OGDC) confirmed the presence of lithium in 'formation water' in Sindh, at concentrations comparable to some of the world's leading lithium-bearing geothermal brines.

The discovery was made during advanced geochemical analysis of 'produced' formation water from a successfully tested high-temperature geothermal well under OGDC's pilot geothermal programme in Sindh, marking what the company describes as a first for Pakistan, top OGDC officials told The News.

Formation water is salty underground water that's been trapped in rocks for millions of years alongside oil, gas, or trace minerals, including lithium. Produced water is that same formation water brought to the surface during oil and gas production. Companies now extract lithium from produced water, using it as a brine source for batteries.

The presence of lithium has placed Pakistan on the map of countries exploring geothermal brines as a potential source of the critical mineral, which has become indispensable to the global clean energy transition. Lithium is a key component in electric vehicle batteries, grid-scale energy storage systems and a wide range of next-generation technologies, with demand expected to grow rapidly over the coming decade as countries accelerate their shift towards low-carbon energy solutions.

It has emerged as one of the world's most strategic minerals, driven by soaring demand for rechargeable batteries that power the global transition to clean energy. Around 80 per cent of global lithium consumption is linked to electric vehicle (EV) batteries, making it a critical component for cars, buses, trucks and two-wheelers produced by leading automakers. The mineral is also increasingly used in large-scale energy storage systems that help store electricity generated from solar and wind



power, supporting grid stability and accelerating the shift towards renewable energy.

Beyond the energy sector, lithium plays a vital role in consumer electronics, aerospace, defence, healthcare and manufacturing. It is found in smartphones, laptops and wearable devices, while its lightweight properties make it valuable for aircraft, satellites and military equipment. Lithium compounds are also used in glass and ceramics, industrial lubricants, aluminium alloys, specialised chemicals, and medicines for bipolar disorder. As governments and industries invest heavily in electrification and clean technologies, global demand for lithium is expected to rise sharply, reinforcing its position as one of the world's most important critical minerals. According to OGDC officials, the lithium concentrations recorded during testing are comparable to higher-tier lithium-bearing geothermal brines reported internationally, including projects currently under commercial development in Europe and North America. Around the world, geothermal brines are increasingly being viewed as one of the most sustainable sources of lithium because they offer the possibility of extracting the critical mineral while simultaneously generating geothermal energy, thereby reducing the environmental footprint associated with conventional mining. While the discovery represents a promising breakthrough, the officials emphasised that further technical work will be undertaken to determine the scale and commercial viability of the resource. The company has planned an expanded evaluation programme that will include detailed brine chemistry profiling, resource confirmation studies, and assessments aligned with international standards. They will help establish the regional extent, continuity and economic potential of the lithium-bearing formation. ■

DIPLOMATIC ENCLAVE



A proud moment as Consul General of Germany in Karachi, Thomas Schultze inaugurated the second phase of the School Eye Clinic Project. Over the next year, this initiative will bring life-changing vision care to 120,000 schoolchildren, helping them see, learn, and thrive.



German Ambassador H.E. Inna Lepel is at the 1st EU-Pakistan Business Forum with her team to strengthen the business relations between Pakistan and Germany.



French Ambassador to Pakistan, Nicolas Gale, hosted a memorable French National Day reception at the French Residence, bringing together distinguished guests to celebrate the enduring friendship between France and Pakistan.



First Lady of Pakistan Ms Aseefa Bhutto Zardari inspects an array of premium mango varieties at the Mango Diplomacy Festival 2026 organised by the Foreign Affairs Liaison Office (FALO), Karachi, at a local hotel. Sindh Chief Minister Syed Murad Ali Shah and MPA Imdad Ali Pitafi are also present on the



Ambassador of the Netherlands to Pakistan, Robert-Jan Sievert, visited to LUMS. The visit highlighted the university's impactful work and celebrated the strong academic ties between Pakistan and the Netherlands through faculty and alumni.



Sweden Ambassador Alexandra Berg von Linde met with Federal Minister for National Food Security and Research, Rana Tanveer Hussain, to discuss expanding Sweden-Pakistan cooperation in health security and in particular the global work on preventing and mitigating antimicrobial resistance (AMR)



Sindh Chief Minister Syed Murad Ali Shah meets American investors at CM House to discuss investment opportunities across key sectors in the province.



Energy Update's advisor M. Asif presenting magazine copy to Honorable Governor Punjab Sardar Saleem Haider Khan

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Karachi Nightmare: A killing quotient

Govt began Rangers operation in Sept 2013; a peer reviewed spatial study of killings in Karachi recorded a 12 percent decline in 2014, followed by declines of 50 percent in 2015 and 42 percent in 2016; the number of locations reporting killings also contracted; World Bank says between 55 and 80 percent of women in Karachi experienced sexual harassment on public transport

Dr Abid Qaiyum Suleri

The writer heads the Sustainable Development Policy Institute and is a member of the Asian Development Bank Institute's Advisory Board

Karachi led Dhaka by 25 points on infrastructure, 12 on healthcare and eight on education in the Economist Intelligence Unit's Global Liveability Index 2026. These advantages added 8.2 points to Karachi's overall score. Dhaka was 25 points ahead of Karachi on stability and 5 points ahead on culture and environment. After weighted aggregates, Karachi finished only 0.7 points ahead of Dhaka: 43 against 42. It ranked 170th among 173 cities, one place above Dhaka.

Karachi received the same stability score when organised violence was rising in 2011, when it fell sharply in 2014 and more recently in 2020 and 2026. Its overall score rose from 40.9 in 2011 and 2014 to 43 this year. The larger sample makes rank comparisons less reliable. EIU assessed 140 cities in 2011 and 2014 and 173 in 2026.

The security conditions behind those scores changed substantially. Political groups, gangs, sectarian organisations and militant networks once used

violence to control territory, collect extortion, enforce shutdowns and attack opponents. A study counted 2,006 violent deaths in 2013. These included 1,628 target killings and 165 deaths from terrorism.

The Federal and Sindh governments began the Rangers operation in September 2013. A peer reviewed spatial study of killings in Karachi recorded a 12 percent decline in 2014, followed by declines of 50 percent in 2015 and 42 percent in 2016. The number of locations reporting killings also contracted. The study measured timing and geography rather than the operation's causal effect. Political agreements, intelligence work, arrests and changes within armed groups may also have contributed. The figures still establish a large fall after 2013.

EIU places five risks under stability: petty crime, violent crime, terrorism, military conflict and civil unrest. It rates each one as acceptable, tolerable, uncomfortable, undesirable or intolerable. Its analysts and contributors in each city assign the qualitative ratings. EIU then converts and weighs them to produce the stability score. The public report provides the category total. It withholds the five ratings and the evidence used for each judgement.

This method limits what can be

inferred from Karachi's near-static stability ranking, which stands at 20, over the years. A fall in terrorism may have been offset by street crime or civil unrest. An improvement may also have remained within the same rating band. A city can record fewer killings without moving from "undesirable" to "uncomfortable." Different combinations of the five ratings can produce the same category total. A reader cannot identify which explanation applies to Karachi.

The index measures conditions during its survey period. It gives no separate credit for improvement from an earlier baseline. Karachi must, therefore, be assessed against conditions in 2026 rather than against its own violent peak. The decline in target killings provides historical context. It cannot by itself secure a higher current rating.

Terrorism would still have affected the recent assessments. A bombing near Karachi airport killed two Chinese nationals in October 2024. EIU also includes military conflict, yet the public report does not say how regional military tensions affected Karachi's rating.

Street crime provides a more persistent explanation. Karachi Police recorded 71,105 street crime cases in 2024 and 64,323 in 2025. The 9.5 percent fall left an average of 176 recorded incidents each day. More than 46,000 residents lost cars or motorcycles in 2025. More than 17,000 lost mobile phones while over 70 people died during street crime incidents. The CPLC recorded another 24,195 incidents during the first five months of 2026, including 4,671 in May.

These totals provide a floor. They exclude offences that victims never report or police never record. They also say little about recovery, prosecution or conviction. A lower annual total will produce limited reassurance if residents expect police to refuse an FIR, fail to recover stolen property or lose the case before trial.

The state can disrupt an armed network through a concentrated operation. Street robbery requires dozens of mundane routine decisions across several institutions. Police must answer calls, register FIRs, obtain camera footage and other evidences, trace stolen phones and vehicles, identify suspects and make lawful arrests. Prosecutors must prepare cases that survive trial. Courts must decide before witnesses withdraw or evidence disappears.

Failure at any stage returns offenders to the street and discourages victims from reporting the next offence.

The risks also fall unevenly.

The World Bank cites estimates that between 55 and 80 percent of women in Karachi have experienced sexual harassment on public transport. Unsafe journeys restrict the hours and locations in which women can work or study. Armed robbery adds another threat to the same trip, making city living undesirable.

Karachi lacks a comparable annual survey of residents' perceptions from 2013 to 2026. Available evidence cannot show whether residents feel safer than they did during the peak of target killings or for that matter any other reference year. It shows that exposure has spread across different places and routines. Political and gang violence concentrated heavily in contested neighbourhoods and among identifiable groups. Street robbery affects all and sundry. EIU's contributors may capture this wider exposure, although the published data cannot confirm it.

Civil unrest adds another source of disruption. Sit-ins in December 2024 blocked major roads for four days and disrupted traffic across all seven districts. EIU may count such events under civil unrest.

Dhaka exposes the same information gap. EIU gave Dhaka 55 for stability in 2020 and 45 in 2026. Karachi remained at 20. The ten-point fall suggests that EIU registered some deterioration (most likely the recent political violence) in Dhaka.

EIU designed the index partly for companies deciding where to post staff and how much hardship allowance to pay. Karachi's score, therefore, affects the cost and perceived risk of doing business in the city. As we want to attract foreign firms and expatriate professionals, the authorities should treat such rankings as evidence for action.

Before EIU's May 2027 survey, Pakistan should launch its own Karachi Liveability Index. This index should contain scores for the five GLI categories; use surveys of residents and expatriates; identify the agency responsible for each deficit; and set annual targets for improvement. Sindh's chief minister and Karachi's mayor should publish the first assessment by March 2027 and require corrective plans from agencies that miss their targets.



itel Energy Showcases Practical Storage Solutions for Pakistan's Energy Transition

itel Energy highlighted energy storage as the key to Pakistan's reliable power future at the 2nd Sindh Energy Diversity Conference 2026.

As Pakistan expands its power generation capacity, the next challenge is ensuring reliable, affordable electricity when businesses and households need it most. Designed for Pakistan's real operating conditions, itel Energy's integrated portfolio—from on-grid and hybrid inverters to C&I energy storage and portable power solutions—helps strengthen energy resilience across homes, businesses, and industries.



Confidence, Not Another Spec Sheet

Delivering the keynote, Kumail, National Sales Manager C&I, said Pakistan's energy challenge has shifted beyond generation to ensuring that businesses can maintain operations during grid disruptions. "Businesses do not need another specification sheet, they need confidence that production will continue when the grid fails," he said. "We are not simply bringing global products to Pakistan; we are developing solutions around the country's real operating conditions."

The panel discussion that followed highlighted itel Energy's comprehensive C&I portfolio for Pakistan's evolving energy needs. Solutions include IP66 on-grid inverters from 30 to 350kW, delivering up to 99% efficiency and stable full-power output in temperatures up to 45°C; advanced hybrid inverters from 15 to 125kW for coordinated management of PV, grid, diesel generators, batteries, and loads; and scalable battery systems built with 100% Grade A LiFePO₄ cells, supporting connections in both series and parallel and capacities of up to 768kWh.

The portfolio is anchored by its peer brand DYQUE 125kW/241kWh all-in-one ESS cabinet, featuring 0ms switching to protect sensitive equipment, intelligent thermal and zoned battery management, and more than 200 protection functions to help businesses maintain reliable, efficient, and scalable operations.

Supporting Reliable Energy for Homes, Businesses, and Beyond

A leading textile manufacturer serving brands reflects the growing shift toward smarter, more reliable energy solutions in Pakistan's industrial sector. Facing persistent loadshedding, the company turned to itel Energy's 50kW Hybrid Inverter to build a more resilient power setup. "With increasing power interruptions affecting our operations, we needed a reliable energy solution that could support our production needs. The itel

Energy hybrid system has helped us maintain smoother operations, and we plan to expand as our requirements grow," CEO, Textile Mills.

Beyond industrial solutions, itel Energy also addresses everyday power needs. At the conference, it showcased its Power Series — a lineup of portable energy products for households and small businesses navigating daily power uncertainties. From home backup to outdoor mobility, the entire lineup shares the same engineering philosophy: dependable performance built on 100% Grade A battery cells.

Pakistan's Chinese CPEC Imported Coal Plants: A Costly Policy Failure

EU Report

Pakistan's Chinese CPEC imported coal plants have become a costly policy failure. Built as base-load assets, the fleet operated at only about 22.9% utilization in FY 2024-25, while consumers continued to bear massive capacity payments, dollar-indexed returns, and imported-fuel exposure. China Power Hub operated at just 6.1%, Port Qasim at 25.3%, and Lucky Electric at 19.2%.

These plants are technically available and contractually protected, yet remain poorly dispatched because of high fuel costs, surplus capacity, weak demand, transmission constraints, and competition from cheaper Thar coal and distributed solar.

Pakistan is therefore paying for expensive capacity that it cannot efficiently use. The priority must shift to forensic cost review, contract restructuring, Thar-coal conversion where feasible, transmission upgrades, and productive demand growth.

While the rest of the world pays more for electricity every year, Australia just made three hours of it free every day

From July 1, 2026, energy retailers in New South Wales, South Australia, and southeastern Queensland are required by law to offer households at least three hours of completely free electricity every day. The scheme is called the Solar Sharer Offer, and it exists for one simple reason: Australia has built so much solar capacity that it genuinely has more power than it knows what to do with.

More than one in three Australian homes now has rooftop solar panels installed, giving the country over 4.3 million individual installations across the grid. On a clear day around midday, all of those systems push so much electricity into the network simultaneously that the market cannot absorb it at normal prices. Wholesale electricity rates go negative during these windows, meaning the grid is essentially being flooded with power that nobody is charging for. Until now, households on standard tariffs never saw any of that benefit. The Solar Sharer Offer changes that.

The free electricity window runs from 11am to 2pm in New South Wales and Queensland, and from 12pm to 3pm in South Australia, timed to coincide with peak solar output. Households don't need to own their home or have solar panels on their roof to qualify. Renters can access it. Apartment dwellers can access it. The only requirements are a smart meter and opting in through your retailer.

During the free window, households can run anything they like up to a cap of 24 kilowatt-hours per day, which is roughly the total daily electricity consumption of an average five-person household. Washing machines, dryers, dishwashers, air conditioning, hot water systems, and EV chargers can all run freely during those three hours without adding a cent to the bill.

Chris Bowen, Australia's Minister for Climate Change and Energy, announced the policy in November 2025. "Now we're at the level where we can share more of that power with more Australians," he said. The Solar Sharer Offer is designed to ensure that the benefits of Australia's solar boom reach everyone, not just households wealthy enough to install their own panels.

The scheme also serves a practical grid management purpose. By incentivizing households to run heavy appliances during the midday solar peak rather than in the evening, the policy shifts electricity demand away from the hours when coal and gas plants are still needed to meet load. It reduces pressure on the grid during evening peaks, lowers the need for expensive grid-scale batteries, and makes the overall energy system more efficient.

Australia's rooftop solar capacity reached 26.8 gigawatts in the first half of 2025, with peak output hitting 15 gigawatts during optimal conditions. Those numbers continue to rise. Solar installations in Australia cost around \$840 per kilowatt of capacity before rebates, roughly a third of what American households pay, which explains the extraordinarily high uptake rate.



In a period when energy costs have risen sharply across most of the developed world, Australia has reached a point where the question is no longer how to produce enough electricity but what to do with the surplus. The answer, for now, is to give it away. ■

OICCI Members Invest Over \$23bn in Pakistan

EU Report

Companies belonging to the Overseas Investors Chamber of Commerce and Industry (OICCI) invested over *\$23 billion in Pakistan during the past decade*, exceeding the country's cumulative net FDI inflows of \$21 billion, according to its 2025 report.

In FY25, OICCI members generated *Rs13.1 trillion in revenue*, held assets worth Rs42 trillion, invested Rs615 billion in capital expenditure and contributed Rs3.2 trillion in government levies. The oil, gas and energy sector accounted for 36% of total levies, while telecom contributed 33% of capital expenditure. OICCI Secretary General M Abdul Aleem urged policy consistency to attract further investment



Operational Thar Coal Blocks Save Pakistan \$3.2 Billion in Fuel Imports: Sindh CM

Engr. Nadeem Ashraf

Sindh Chief Minister Syed Murad Ali Shah has said that the development of two operational coal mining blocks in Thar has enabled Pakistan to save approximately US\$3.2 billion in fuel imports, highlighting the economic value of developing indigenous energy resources.

Addressing the Mining Technical Conference 2026, organised by the Sindh Engro Coal Mining Company (SECMC) under the theme “Driving Pakistan’s Mining Sector through Collaboration, Innovation & Technology,” the Chief Minister said Sindh had established a comprehensive legal and policy framework to facilitate the development of Thar’s vast coal reserves.

Murad Ali Shah said Pakistan possessed enormous untapped mineral wealth that could become a major contributor to economic growth if supported by investment, modern technology and skilled human resources. He described the conference as an important platform connecting industry, academia and technology providers—the three key pillars shaping the future of Pakistan’s mining sector.

The Chief Minister stressed that investment in modern mining equipment must be accompanied by investment in people. He urged companies to focus on developing human capital capable of operating advanced technologies and leading the mining industry over the long term.

He noted that two mining blocks in Thar are currently operational, including one developed by SECMC, and that the utilisation of indigenous coal had already helped Pakistan avoid approximately US\$3.2 billion in imported fuel costs. Murad Ali Shah said Pakistan’s mineral resources could become a powerful engine for employment generation, industrialisation and economic growth through responsible investment, technological innovation and workforce development. He reaffirmed the Sindh government’s commitment



to facilitating responsible investment and strategic partnerships that deliver long-term benefits for local communities and the national economy.

Collaboration Essential for Growth

Speaking at the conference, SECMC Chief Executive Officer Amir Iqbal said Pakistan’s substantial untapped mineral resources were attracting increasing interest from international investors. He said the conference aimed to establish a collaborative platform bringing together mining companies, universities, technology providers and government institutions to address sectoral challenges and accelerate development. Amir Iqbal emphasised that no single organisation could transform Pakistan’s mining industry independently. Mining companies provide operational expertise, universities contribute research and innovation, technology firms offer advanced solutions, while government institutions provide policy support. Connecting these capabilities, he said, was essential for meaningful progress.

He added that SECMC plans to make the Mining Technical Conference a recurring platform for knowledge sharing, research collaboration, workforce development and technology adoption.

Skills and Technology in Focus

Participants agreed that technological advancement must go hand in hand with human-resource development. As mining becomes increasingly automated, digital and data-driven, demand is growing for skilled mining engineers, geologists, equipment operators, data specialists and technical professionals. The conference brought together representatives from Reko Diq Mining Company, PPL, SSRL, NRL, HUBCO, Fauji Group, FFC, Lucky Cement, Komatsu, DMT Germany, EACON Mining Technology and Tonly Heavy Industries, demonstrating broad industry support for advancing Pakistan’s mining sector through technology, collaboration and skilled human capital. ■



CM Sindh Syed Murad Ali Shah addressing the conference

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Study shows grid power to cut Thar coal mining costs

Tanveer Malik

Thar Coal Rail Connectivity Project is expected to become operational by late 2026, helping address the cost and transport constraints; Pakistan's coal consumption rises to 21.4 million tonnes during the first nine months of FY26, compared with 16.2 million tonnes in the corresponding period

The cost of local coal production is expected to fall by around \$0.7 per tonne as mining operations transition from diesel to grid electricity, according to a new study on coal mining and trading.

Meanwhile, the Thar Coal Rail Connectivity Project is expected to become operational by late 2026, helping address the cost and transport constraints that have largely confined Thar lignite to mine-mouth power generation.

Pakistan's coal consumption rose to 21.4 million tonnes during the first nine months of FY26, compared with 16.2 million tonnes in the corresponding period of FY25, driven by higher demand from the power sector, cement and other industries, and brick kilns. The power sector remained the largest consumer, accounting for 12.8 million tonnes, according to the study by the Pakistan Credit Rating Agency (Pacra).

Local coal production increased to 14.3 million tonnes during the period under review, while imports also rose to around 7.1 million tonnes from

approximately 4.5 million tonnes a year earlier. This indicates that although domestic supply improved, rising demand still required additional imported coal, the study said.

The study noted that the Ministry of Energy has received a detailed feasibility report confirming that Jamshoro Unit-1 can be converted from imported coal to 100 per cent Thar lignite, generating estimated savings of \$3.2 billion over 26 years. As a brownfield modification that adds no new generation capacity, the project would shift existing demand from imported to locally produced coal, supporting domestic offtake while reducing import volumes.

Thar Block-II is expected to expand its mining capacity to 11.2 million tonnes per annum by the second half of 2026 to supply the 660MW Lucky Power Plant. Meanwhile, blending trials are under way at three imported coal-fired independent power producers (IPPs) with a combined capacity of 3,960MW. If mandatory blending is introduced, it would structurally reduce demand for imported coal.

Imported coal prices increased to \$110 per tonne (FOB) in March 2026, around 22 per cent higher than

in 2025, reversing the price decline that had supported a 60 per cent increase in import volumes during the first nine months of FY26. Import volumes are expected to moderate as the cost advantage of locally produced coal widens.

The study also noted that distributed solar is estimated to have contributed 28 per cent of Pakistan's total electricity generation in FY25, up from 10 per cent two years earlier. This has eroded grid electricity demand, even as capacity payments for coal-fired power plants remain fixed.

The study projects that demand for local coal will remain stable, supported by the power sector and industrial consumption, while rising output from Thar is expected to gradually reduce reliance on imported coal. Pakistan intends to prioritise indigenous coal to strengthen energy security and reduce its exposure to imported fuel price volatility. However, progress has remained slow, and achieving these objectives will require significant investment and technical expertise. ■

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Why is diesel so expensive in Pakistan?

Govt-owned oil marketing company holds monopoly on diesel imports

Dr Farrukh Saleem

Petrol powers cars. Diesel powers Pakistan -- trucks, buses, coaches, minibuses, railway locomotives, ships, cargo vessels, tractors, tube-wells, threshers, combined harvesters, water pumps, generators, construction equipment, cranes, mining machinery, fishing boats and trawlers.

Diesel goes into the tractor that grows the wheat. Into the thresher that harvests it. Into the truck that carries it to the mill. Into the van that delivers the flour to the kiriyana store. At every step — Rs354 per litre.

Pakistan's diesel costs Rs354 per litre today. India's diesel costs the equivalent of Rs314 per litre. Bangladesh's costs the equivalent of Rs292 per litre. Pakistan is paying Rs40 more per litre than India and Rs62 more than Bangladesh for the same fuel -- imported from the same Gulf, priced against the same benchmark, shipped across the same sea.

The trucker. The bus driver. The farmer. The tube-well operator. The fisherman. The factory owner with his generator. The small trader with his delivery van. Every one of them runs on diesel. Every one of them pays Rs354 per litre.

The reality: Pakistan produces approximately 60 per cent of its diesel domestically at costs far below the international benchmark.

Cold fact: If Pakistan priced its diesel at what Bangladesh charges its consumers, Pakistanis would save Rs589 billion a year. That is Rs 20,000 per Pakistani family. Every year. For the same fuel. From the same Gulf.

Why is diesel expensive in Pakistan? Three answers.

First: a government-owned oil marketing company holds a monopoly on diesel imports -- granted by

the same government that regulates the price.

No competition. No check. No audit. On July 21, 2026, the federal cabinet made it permanent -- formalising the OMC as the sole diesel importer for the entire fiscal year.

Second: 60 per cent of Pakistan's diesel is produced domestically at costs well below the international benchmark. The windfall goes to the refineries (in April 2026, the government capped the crack spread).

Third: The refinery which is 60 per cent owned by the government controls 44 percent of Pakistan's refining market. The government owns the formula, the importer, the refineries and the levy. The consumer owns the bill.

Expensive diesel does not stay at the pump. It travels. Into the freight rate of every truck on every motorway. Into the bus fare of every commuter in every city. Into the cost of every kilo of wheat, every bag of flour, every tray of eggs that reaches your kitchen. Into the electricity bill of every factory running a generator through load-shedding. Into the cost of every vegetable grown with a diesel tube-well, harvested with a diesel thresher, transported in a diesel van.

Red alert: Diesel inflation is not one price. It is every price. When diesel costs Rs62 more than Bangladesh, everything that diesel touches costs more than it should. And diesel touches everything.

Can it be fixed? Yes. Five steps. One: Break the state-owned OMC's diesel import monopoly. Two: A cost-plus formula for domestic refinery output. Three: Mandate independent audit of the OMC's declared import costs. Four: Cap the petroleum levy. Five: Publish the daily Platts price on Ogra's website every morning. The government read the problem. It fixed the clock. It did not fix the formula.

Pakistan Can Turn Its Strategic Geography Into Billions?

Dr Farrukh Saleem

Look at Pakistan's geography. To the west lies the Gulf, where nearly one-third of the world's oil is produced. To the north lies Central Asia, a landlocked region that consumes nearly 757,000 barrels of oil a day. To the northeast lies China, the world's second-largest oil consumer, burning more than 16 million barrels a day and importing around 11 million barrels a day. To the east lies India, the world's third-largest oil consumer, using nearly 5.6 million barrels a day.

Look at Pakistan's geography once again. Pakistan is close to production. Pakistan is close to demand. Pakistan is close to chokepoints. Pakistan is close to opportunity. Pakistan's geography is real.

Look at Pakistan's geography one more time. Pakistan sits just outside the Strait of Hormuz. Every regional crisis reminds the world of one hard fact: energy security is no longer only about production. It is also about storage, routing and redundancy.

Look at Gwadar, Hub and Port Qasim. Gwadar, Hub and Port Qasim can provide storage, re-export, emergency supply and regional distribution options. For Gulf producers, storing some fuel outside the Gulf reduces choke-point risk. For Pakistan, storage increases energy security.

Saudi Arabia, Iran, UAE, Iraq, Kuwait, Qatar, Oman and Bahrain need Gwadar, Hub and Port Qasim. China needs Gwadar, Hub and Port Qasim. Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan and Tajikistan need Gwadar, Hub and Port Qasim.

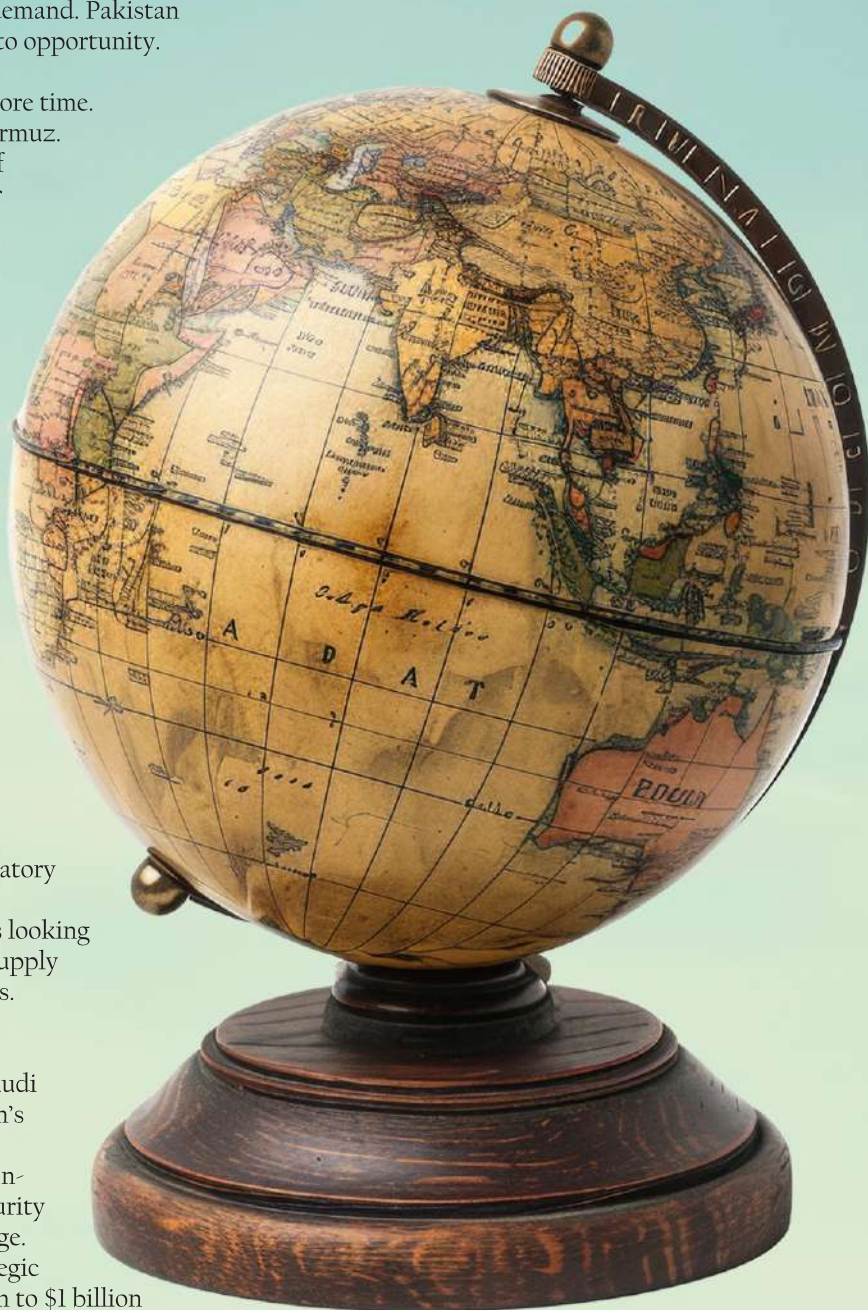
Three steps stand between Pakistan and Pakistan's 'Energy City': a legal framework, bankable contracts and regulatory predictability. That's it.

Look at the intersection: The Gulf is looking for strategic depth. China is looking for supply security. Central Asia is looking for access. Pakistan is looking for dollars. This is the opening. This is the intersection. That is Energy City. Yes, the oil may belong to Saudi Arabia, Kuwait or global traders. Pakistan's benefit is the oil rent. Storage rent. Port charges. Pipeline tariffs. Blending fees. Bunkering margins. Insurance. Logistics. Security services. Jobs. Taxes. And foreign exchange.

Start with 17 million barrels of strategic storage. That alone can bring \$500 million to \$1 billion

in investment. Storage rent can bring \$50 million to \$120 million a year. Scale that to 50 million barrels and Pakistan begins to look at \$500 million to \$1.2 billion a year. Build a mature hub – storage, bunkering, blending, pipelines, insurance, testing, trucking, re-export – and the number can cross \$1 billion a year.

That is the business model. Not ownership of oil. Ownership of location. Ownership of storage. Ownership of movement. Pakistan has a choice: remain a country that imports energy insecurity or become a country that exports energy security. The mother of all questions is whether Pakistan's governance can convert geography into cash flow. ■



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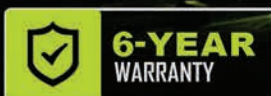
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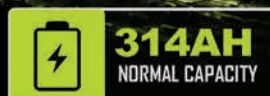
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