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ENERGY UPDATE

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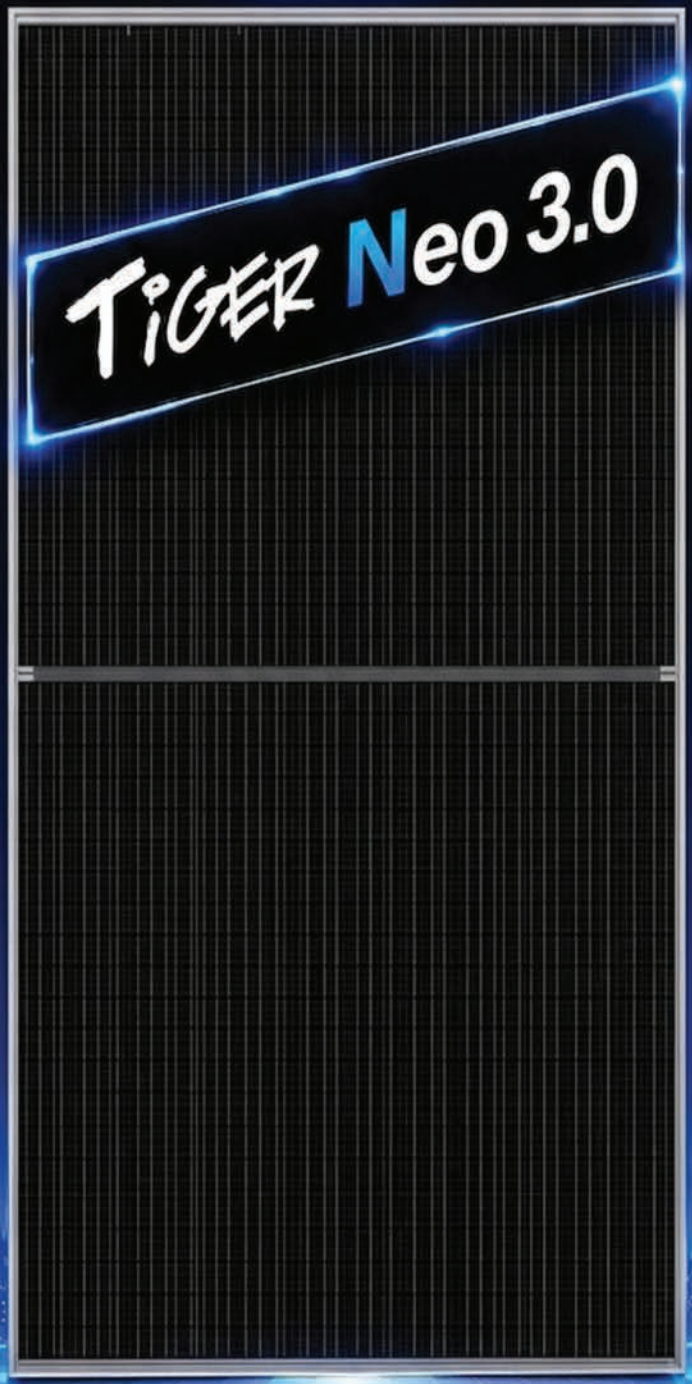

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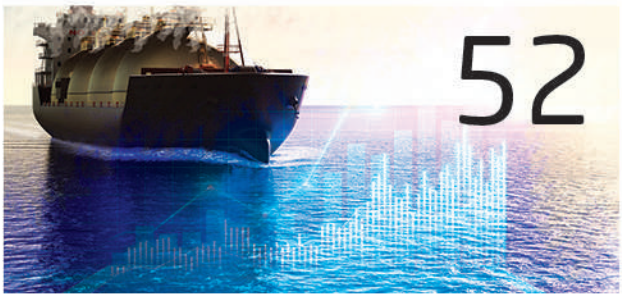

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FROM THE

Editor's desk...

Karachiites Pay Gas Bills but Cannot Cook Meal

Karachi, Pakistan's economic engine and largest city, presently suffers from the worst gas crisis in its history. It is an irony that has become increasingly difficult for its residents to accept. The city that contributes a major share of the country's tax revenue, exports, banking activity, and industrial output is struggling to secure natural gas for cooking meals.

Every winter and increasingly throughout the year, millions of Karachi residents face severe gas shortages and extremely low gas pressure. In many neighborhoods, gas disappears completely during breakfast, lunch, and dinner hours — the main times when households need it most. Families wake up before dawn in the hope of preparing breakfast. Mothers stand helplessly in kitchens waiting for the gas pressure to return. Working parents leave for offices without a proper meal, while children often go to school after eating inadequately prepared food.

The crisis is not merely an inconvenience; it is a failure of governance. The injustice becomes even more striking when one considers Sindh's role in Pakistan's energy sector. Sindh is Pakistan's largest gas-producing province, contributing roughly 60 to 70 percent of the country's natural gas production according to various official and public sources. Recent energy statistics show that Sindh continues to dominate national gas output.

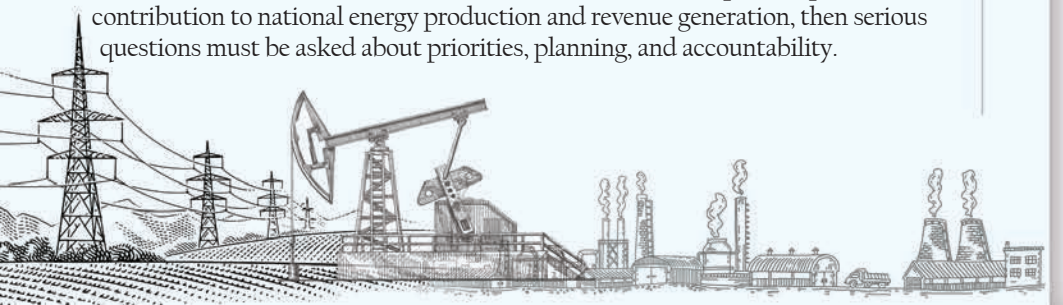
Under Article 158 of Pakistan's Constitution, the province in which a natural gas wellhead is situated is entitled to precedence in meeting its requirements. Yet residents of Karachi and other parts of Sindh regularly complain that they receive insufficient gas despite living in the country's largest gas-producing province.

The federal government's gas distribution policies deserve serious scrutiny. For years, policymakers have blamed declining domestic production, increasing demand, and infrastructure constraints. While these challenges are real, they do not fully explain why households in Karachi repeatedly face severe shortages despite Sindh's contribution to the national energy basket.

The problem appears rooted in decades of poor planning. Successive federal governments failed to invest adequately in transmission infrastructure, storage facilities, and alternative energy solutions. Domestic gas reserves were consumed without a comprehensive long-term strategy for replacement. As indigenous production declined, dependence on imported LNG increased, exposing consumers to international price volatility and supply disruptions.

The most painful aspect of this crisis is its impact on children. When gas pressure vanishes during meal times, parents find themselves unable to prepare breakfast before school or dinner after a long day. For many households living paycheck to paycheck, there is no backup system available. They cannot afford generators, electric cooking appliances, or LPG cylinders. Their only option is to wait and hope the gas returns. The real culprits behind low gas pressure are not ordinary consumers. The roots of the problem lie in inadequate planning, delayed infrastructure investment, inefficient distribution systems, transmission losses, theft, leakages, and the long-standing failure to align energy policy with growing urban demand. These are governance issues that require policy solutions rather than excuses.

The gas crisis in Karachi is ultimately a test of governance. If governments cannot ensure that citizens can cook meals for their children despite the province's vast contribution to national energy production and revenue generation, then serious questions must be asked about priorities, planning, and accountability.



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Pakistan, China reaffirm strategic alliance shaping Asia's future

PM describes Beijing as steadfast friend that has stood by Islamabad like a solid rock through every challenge

EU Report

As Pakistan and China marked the 75th anniversary of diplomatic relations, celebrations held in Islamabad and Karachi transformed the milestone into a powerful reaffirmation of one of the world's most enduring strategic partnerships — a relationship both nations proudly describe as an "iron brotherhood".From the corridors of power in Islamabad to the historic grandeur of Mohatta Palace in Karachi, political leaders, diplomats, military officials, business executives, and civil society representatives celebrated a friendship that has evolved far beyond conventional diplomacy into a multidimensional alliance encompassing economic integration, regional security, infrastructure development, defence cooperation, technological collaboration, and people-to-people connectivity.

At the central ceremony in Islamabad, Prime Minister Shehbaz Sharif paid glowing tribute to China's unwavering support for Pakistan, describing Beijing as a steadfast friend that had stood by Islamabad "like a solid rock" through every challenge. "Earthquakes, floods, peace and difficult times — China has always supported Pakistan in an unwavering fashion unmatched in the annals of history," the prime minister declared while addressing the Diamond Jubilee ceremony commemorating 75 years of diplomatic ties.

Extending felicitations to the Chinese leadership and people, Shehbaz Sharif recalled that Pakistan was the first Muslim country to recognise the People's Republic of China and among the first nations globally to establish diplomatic relations with Beijing in 1951. "Through our mutual efforts, sincerity of purpose, and shared vision, we have built a relationship that is second to none," he said. The prime minister reaffirmed Pakistan's unwavering commitment to the "One China" policy, stating, "Till today and forever, we support the One China policy, without fear or favour."

Highlighting the transformative significance of the China-Pakistan Economic Corridor (CPEC) under Chinese President Xi Jinping's Belt and Road Initiative, Shehbaz described CPEC as a historic manifestation of China's commitment to Pakistan's economic development, employment generation, and prosperity. He also revealed that China had fully supported Pakistan's recent diplomatic efforts aimed at promoting peace in the region, including initiatives relating to dialogue between the United States and Iran. Calling China "second to none" in industrial and technological advancement, the prime minister remarked that "the world cannot move forward without China," while reiterating that the security of Chinese nationals working in Pakistan remained a matter of paramount importance for his government.

"Addressing the same ceremony, President Asif Ali Zardari described friendship with China as the cornerstone of Pakistan's foreign policy, emphasising that the relationship enjoyed "total public, political and institutional support" across generations. "Seventy-five years ago, our two nations began a journey rooted in mutual respect and shared aspirations. Today, this journey has evolved into an all-weather strategic cooperative partnership," President Zardari said. He noted that Pakistan and China had consistently safeguarded each other's core interests and praised Chinese President Xi Jinping's initiatives for opening new avenues of regional stability and shared prosperity.

President Zardari also thanked China for supporting Pakistan's major development initiatives, particularly the development of Gwadar Port, while describing CPEC as a transformative force in Pakistan's socio-economic progress. The Islamabad ceremony was attended by several senior leaders, including Chairman of the Senate Yousaf Raza Gillani, National Assembly Speaker Ayaz Sadiq, and Deputy Prime Minister and Foreign Minister Ishaq Dar.

Representing the Chinese leadership, Vice-Chairman of the Standing Committee of the 14th National People's Congress of China, Cai Dafeng, described Pakistan-China ties as a unique ironclad friendship forged through changing international circumstances. Recalling the establishment of diplomatic relations on May 21, 1951, Dafeng noted that Pakistan became the first Islamic country to establish formal diplomatic ties with China. "For 75 years, we have stayed true to our original aspiration, and that has forged a unique ironclad friendship amid a changing international landscape," he remarked. ■

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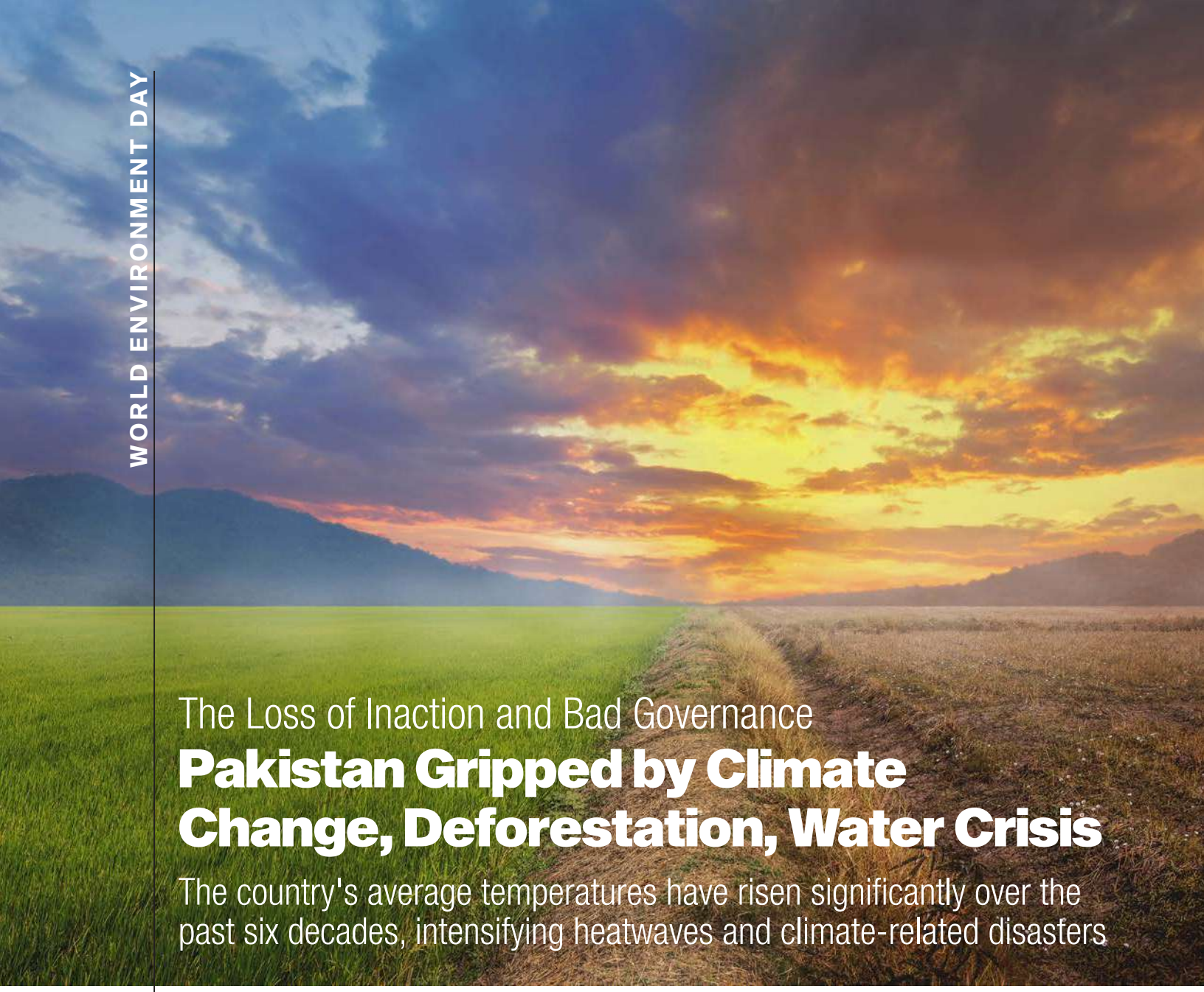

The Loss of Inaction and Bad Governance

Pakistan Gripped by Climate Change, Deforestation, Water Crisis

The country's average temperatures have risen significantly over the past six decades, intensifying heatwaves and climate-related disasters

Special Report by Nawaz Khuhro

Pakistan's average temperatures have risen significantly over the past six decades, intensifying heatwaves and climate-related disasters; rapid deforestation and forest degradation are reducing the country's natural defenses against climate change and flooding; water scarcity is emerging as one of Pakistan's greatest national security and development challenges;

Karachi's rising temperatures and shrinking green spaces are increasing the risks of deadly urban heatwaves; Air pollution continues to threaten public health, contributing to respiratory and cardiovascular diseases across major cities; plastic waste is contaminating rivers, oceans, agricultural lands and food chains, creating long-term environmental hazards

World Environment Day, observed annually on June 5, serves as a reminder that environmental protection is essential for human survival, economic stability, and sustainable development. The world today is facing unprecedented environmental challenges, including climate change, biodiversity loss, water scarcity, deforestation, air pollution, plastic pollution, and extreme weather events. Pakistan, despite contributing less than one percent to global greenhouse gas emissions, remains among the countries most vulnerable to climate change and environmental degradation.

IUCN urges the global community to embrace this year's theme of 'climate action' by listening to our most vital messenger. Nature is speaking, and its warnings are clear: the climate crisis is no longer a distant threat. Record heatwaves, uncontrolled wildfires and melting glaciers are bringing species closer to extinction and degrading the ecosystems we rely on for our survival every day.

Climate threats now affect more than 40% of natural World Heritage Sites, some of the most outstanding places on Earth that support climate regulation and provide cultural and economic benefits to communities around the world. In fact, climate change has now surpassed all other threats to these extraordinary areas, according to IUCN's latest World Heritage Outlook report.

The UN Secretary-General's Message for World En-

vironment Day: "This World Environment Day, warning signals are everywhere. The past eleven years have been the eleven hottest on record. And the damage goes far beyond rising temperatures – from polluted air to degraded land, collapsing ecosystems, and vanishing biodiversity. Harming health, destroying homes and deepening hunger."

"The world is heading for a temporary overshoot above 1.5 degrees. Every fraction of a degree brings greater harm – especially to the most vulnerable. Our task is to make that overshoot as small, as short, and as safe as possible – and rapidly bring temperatures back down."

Accelerating a just transition away from fossil fuels and towards renewables – the only sustainable path to lower costs and to real energy security. Cutting methane – one of the fastest, cheapest ways to limit near-term warming. Protecting forests, land, and seas. Helping communities adapt to the devastating impacts already here. And it means fulfilling climate finance promises to developing countries – to save lives, protect livelihoods, and strengthen economies. This is the moment to act – for our environment and for our future," accordung UN Secretary General.

The World Meteorological Organization (WMO) estimates that long-term global warming currently hovers around 1.3°C to 1.55°C above pre-industrial levels, depending on the tracking metrics and the 20-year averaging period utilized. This climbing temperature pushes the planet dangerously close to the internationally agreed-upon limits set in the Paris Agreement, which aims aims to hold warming to well below 2 degrees centigrade and pursue efforts to limit it to 1.5 degrees centigrade. Every incremental fraction of warming severely heightens the risk of extreme, compounding weather events, such as the intense pre-monsoon heatwaves increasingly affecting South Asia and the Karachi region.

Rising global temperatures are causing more frequent heatwaves, floods, droughts, wildfires, sea-level rise, and biodiversity loss. According to international climate assessments, millions of people are being displaced annually due to climate-related disasters.

In 2024, the world recorded one of the highest levels of forest loss in modern history. Global Forest Watch reported that tropical primary forest loss reached 6.7 million hectares, largely driven by wildfires and climate change. Forests are disappearing at an alarming rate despite international commitments to halt deforestation by 2030.

Developing countries such as Pakistan are particularly vulnerable because of limited resources for climate adaptation and disaster management. Pakistan is ranked among the countries most vulnerable to climate change despite its negligible contribution to global emissions. The country faces increasing temperatures, erratic rainfall patterns, glacier melt, floods, droughts, and heatwaves.

Scientific studies and climate assessments indicate that Pakistan's average temperature has increased by approximately 0.5°C to 0.8°C during the last six decades, while some regions have experienced even higher warming trends. Climate experts warn that temperatures could rise by another 1.5°C to 2.5°C by mid-century if global emissions continue unabated. The devastating floods of 2022, recurring droughts in Sindh and Balochistan, and increasingly severe heatwaves are clear manifestations of climate change.

Heatwaves have become more frequent and intense across Pakistan. In recent years, temperatures exceeding 50°C have been recorded in parts of Sindh and Balochistan. Major causes include: global climate change and greenhouse gas emissions; deforestation and loss of green cover; rapid urbanization and concrete expansion; air pollution and heat-trapping emissions; declining water bodies and wetlands; and urban heat island effects.

Climate scientists note that human-induced climate change has significantly increased the likelihood and intensity of extreme heat events in South Asia. Karachi and other urban centres are increasingly vulnerable due to population density and shrinking green spaces.

Karachi has witnessed a significant warming trend over the last six decades. Climate studies and meteorological records indicate that average temperatures in Karachi have risen by roughly 4°C since the 1960s, while extreme heat events have become more frequent and prolonged. The city's rapid urbanization, loss of mangroves, reduction of open spaces, vehicular emissions, industrial pollution, and climate change have contributed to this warming trend. Recent heatwaves have repeatedly pushed temperatures above 40°C, creating serious health risks.

Forests play a crucial role in regulating climate, conserving biodiversity, preventing soil erosion, and absorbing carbon dioxide. Pakistan possesses one of the lowest forest cover ratios in the world. Estimates vary among institutions, but officials generally place forest cover 5% of the country's land area.

Khyber Pakhtunkhwa contains the largest share of Pakistan's natural forests, particularly coniferous forests in the northern mountainous regions. Sindh's forest resources largely consist of riverine forests and mangroves along the coast, while Balochistan has sparse forest cover due to its arid climate.

Despite afforestation initiatives, Pakistan continues to lose forest resources due to illegal logging, urban expansion, infrastructure development, fuelwood extraction, forest fires, and agricultural encroachment.

Water scarcity is emerging as one of Pakistan's most serious environmental challenges. Pakistan's per capita water availability has declined dramatically from over 5,000 cubic meters in the 1950s to less than 1,000 cubic meters today, approaching water-scarcity thresholds. The Pakistan Meteorological Department reported significant rainfall deficits in several regions, particularly Sindh, Punjab, and Balochistan, contributing to worsening drought conditions. Karachi faces chronic water shortages due to population growth, inadequate infrastructure, groundwater depletion, and climate-related stress on water resources.

World Environment Day is not merely a symbolic observance; it is a call to action. Pakistan stands at a critical environmental crossroads. Rising temperatures, shrinking forests, water scarcity, pollution, biodiversity loss, and extreme weather events threaten public health, economic growth, and national security. While climate change is a global problem, local environmental degradation has amplified Pakistan's vulnerability.

Protecting forests, conserving water, reducing pollution, investing in renewable energy, and strengthening climate resilience must become national priorities. Through effective policies, community participation, scientific planning, and international cooperation, Pakistan can build a greener, healthier, and more sustainable future for generations to come. ■

Need stressed to regulate Karachi's 7,000 LPG retail outlets

Ali Haider,
Convener, FPCCI Body

Pakistan's LPG market currently stands at approximately two million metric tonnes annually; Serious concerns have emerged regarding the unchecked expansion of thousands of unlicensed LPG retail outlets operating in urban centres, particularly Karachi; imported LPG accounts for approximately 65 to 70 per cent of the LPG consumed in the country; absence of an updated LPG policy creates uncertainty for investors

Naeem Qureshi

The Writer is Managing Editor of Energy Update and Environment Activist

Pakistan's liquefied petroleum gas (LPG) sector has emerged as one of the country's most important alternative energy sources amid shrinking access to pipelined natural gas and rising demand from domestic, commercial, and industrial consumers. However, alongside the sector's rapid growth, serious concerns have emerged regarding the unchecked expansion of thousands of unlicensed LPG retail outlets operating in urban centres, particularly Karachi.

According to Ali Haider, Convener of the FPCCI Central Standing Committee on LPG Industry and Vice-Chairman of the Pakistan LPG Marketers' Association, nearly 7,000 LPG retail shops are operating across Karachi alone, many of them outside the regulatory framework of the Oil and Gas Regulatory Authority (OGRA). He warns that unless these outlets are immediately licensed, regulated, and monitored, they will continue to pose grave safety risks and remain potential sites of deadly accidents. In this exclusive interview with Energy Update, Ali Haider discusses the current state of Pakistan's LPG market, challenges facing the industry, safety concerns, policy gaps, and the urgent need for comprehensive regulatory reforms.

Energy Update: How would you describe the current state of Pakistan's LPG market?

Ali Haider: Pakistan's LPG market currently stands at approximately two million metric tonnes annually, and we expect it to grow to around 2.5 million metric tonnes by 2030. The sector continues to expand because LPG has become an increasingly important alternative fuel for households, commercial users, and industries across the country. The LPG supply chain today extends from Karachi to Gilgit and serves regions where natural gas infrastructure is either unavailable or insufficient. This nationwide presence makes LPG one of Pakistan's most accessible and strategically important energy sources.

EU: How much of Pakistan's LPG demand is met through imports?

Mr Haider: Imported LPG accounts for approximately 65 to 70 per cent of the LPG consumed in Pakistan. At present, imported volumes range between 1.2 million and 1.3 million metric tonnes annually. These imports reach Pakistan through two primary channels. One is through land-border routes, while the second is through vessels arriving at Port Qasim, Karachi. The cost of imported LPG significantly influences domestic LPG prices, making international market conditions a key factor in local pricing.

EU: What contribution does local production make to the LPG market?

Mr Haider: Local production contributes roughly 35 per cent of the country's LPG requirements. This LPG is produced by local oil and gas fields as well as domestic refineries. Unfortunately, this share has remained largely

unchanged for quite some time. Increasing indigenous production should be a national priority because it would reduce dependence on imports and strengthen Pakistan's energy security.

EU: Why is LPG becoming increasingly important for Pakistani consumers?

Mr Haider: The importance of LPG is growing because the traditional natural gas sector is shrinking in terms of new consumer coverage. The country's two major gas utilities have not been able to provide new connections to many prospective consumers.

At the same time, the tariff of imported RLNG is considerably higher than that of locally produced natural gas. In such circumstances, LPG offers a practical and readily available alternative. The LPG sector possesses the infrastructure and capacity to meet growing energy demand in domestic, commercial, and industrial sectors.

EU: Is Pakistan currently facing any LPG shortage?

Mr Haider: No. At present, LPG is sufficiently available in the country. There were temporary bottlenecks due to the closure of certain roads in Balochistan that form part of the land-border import route. Additionally, vessel-based imports had been disrupted following the blockade of the Strait of Hormuz. However, maritime imports have resumed and the overall supply situation remains stable.

EU: What are the major challenges currently facing the LPG sector?

Mr Haider: One of the most serious challenges is the rapid growth of the unregulated segment of the LPG market. Since the introduction of the last LPG policy in 2016, the market has expanded significantly, but regulatory mechanisms have not kept pace with this growth. Today, the number of unregulated stakeholders has exceeded the number of regulated participants in certain segments of the LPG supply chain. This trend has been accelerated by increasing cross-border trade and the proliferation of unlicensed retail operations. As a result, health, safety, and environmental standards have been compromised in many areas.

EU: Why is the absence of a new LPG policy a concern for investors and stakeholders?

Mr Haider: The absence of an updated LPG policy creates uncertainty for investors. New investment in storage, transportation, distribution, and retail infrastructure requires a clear and predictable regulatory framework. Without policy reforms and stronger regulatory oversight, attracting investment into the formal and regulated LPG sector will remain difficult. The government needs to introduce a fresh LPG policy that addresses current market realities and encourages responsible growth.

EU: How serious is the issue of unlicensed LPG retail outlets in Pakistan's major cities?

Mr Haider: The issue is extremely serious. In major urban centres, as much as 80 per cent of LPG sales from retail stores are reportedly taking place through unregulated and unlicensed channels. These operations function outside the legal framework and often lack basic safety measures, trained staff, approved equipment, and emergency preparedness systems. This situation creates significant risks not only for consumers but also for nearby residents, businesses, and public infrastructure.

EU: Karachi has witnessed several LPG-related accidents over the years. What needs to be done?

Mr Haider: Immediate action is required. Karachi alone has approximately 7,000 LPG retail stores operating in almost every neighbourhood and commercial area. Many of these outlets operate without adequate regulatory oversight. They must be brought under a proper licensing and compliance regime supervised by OGRA. Regular inspections, safety audits, staff training, and adherence to technical standards should become mandatory. If these measures are not implemented, such outlets will continue to pose serious threats and remain potential sites of deadly accidents.

EU: What recommendations has the FPCCI Standing Committee on LPG submitted to the government?

Mr Haider: We have prepared and submitted comprehensive draft by-laws and recommendations aimed at improving safety and governance in the LPG sector. Our proposals call for the immediate licensing and regulation of retail LPG outlets. Where compliance is not possible, as such establishments should be closed in accordance with the law. The objective is not to restrict business activity but to ensure that LPG is handled, stored, and sold in a safe and responsible manner.

EU: Some argue that small LPG retail outlets fulfil an important need for low-income consumers. How do you view this issue?

Mr Haider: That is true. Due to declining purchasing power, many households can only afford to purchase two to three kilograms of LPG at a time. Most low-income consumers cannot afford larger cylinders. Therefore, small retail outlets do fulfil a genuine market need. However, meeting consumer demand should not come at the expense of public safety. The solution is regulation, licensing, training, and monitoring—not allowing unsafe operations to continue unchecked.

EU: What is your message to regulators and policymakers?

Mr Haider: My message is simple: The LPG sector is an essential component of Pakistan's energy future. However, sustainable growth is only possible when safety remains the foremost priority.

The government, OGRA, industry stakeholders, and local authorities must work together to bring the entire LPG value chain under an effective regulatory framework. The immediate licensing and regulation of Karachi's approximately 7,000 LPG retail stores should be treated as a public safety priority. Failure to act now will allow the unregulated market to continue expanding, increasing the likelihood of accidents, endangering lives, and undermining confidence in a sector that has enormous potential to contribute to Pakistan's energy security.

Key message:

"The time has come to regulate, license and monitor every LPG retail outlet operating in Karachi and other major cities. Public safety cannot be compromised. If the unregulated LPG market continues to grow unchecked, it will continue to cause accidents and threaten lives."

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War Inflation Pushes Pakistan Into New Fuel Price Spiral

The pump price in Pakistan does not follow the Brent crude point-for-point; Brent is priced in dollars; Pakistan sells petrol and diesel in rupees

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.

One is familiar with different types of charges, surcharges and super surcharges, especially in the energy bills. Successive governments have been using these 'charges' effectively to raise revenue through indirect taxation, albeit with an inflationary impact.

We are once again witnessing a spike in inflation, but not due to a deliberate 'extra surcharge.' Inflation in Pakistan now carries a war charge. The Gulf War has added expensive fuel, expensive shipping, expensive insurance, uncertain supply chains and a larger dollar bill to our inflation calculus.

Pakistan has already felt that change and has secured clearance for two LNG cargoes from Qatar via Hormuz through its diplomatic engagements with Iran, Qatar and the US. This, in itself, is an indicator that securing energy has moved from routine business to crisis management.

The pump price in Pakistan does not follow the Brent crude point-for-point. Brent is priced in dollars. Pakistan sells petrol and diesel in rupees. Between the two lie the exchange rate, freight, insurance, port handling, refinery margins, oil marketing margins, dealer margins, taxes and the petroleum levy.

A global price movement is only one part of the local bill.

This is why a citizen may hear that global oil softened during the week and still pay more at the pump. The Pakistani rupee is relatively stable versus the US dollar. However, many other factors determine the pump price. Freight may have become dearer. Insurance may have risen because ships are entering a risky zone. Old cargoes may have been bought at higher prices. New cargoes may carry a war premium. On top of that, there are petroleum levies (PL).

The PL is neither a shipping nor a war charge. It is money collected by the state from each litre sold. When the government faces a tight budget and an IMF programme, it often protects this revenue. That decision may be fiscally useful, but it still raises the price paid by a motorcyclist, van driver, farmer or shopkeeper.

The latest fuel numbers show the scale of the shock.

Both petrol and high-speed diesel are around Rs 415 a litre as I write. Before disruptions in Hormuz, petrol sold for Rs 266.17 and diesel for Rs 280.86 a litre. Those figures explain why households feel that fuel prices have broken away from normal price movement.

Diesel will carry the sharpest inflationary effect. Petrol hurts the commuter first. Diesel moves the economy. Trucks carry wheat, vegetables, milk, poultry, medicine, cement and factory inputs. Buses carry workers. Tractors and tubewells support farms. Generators keep shops, clinics and small workshops open when utility power fails. A diesel price raise becomes a freight increase. A freight increase becomes a shop price increase.

The shopkeeper does not mention Hormuz while selling onions. The milkman does not discuss tanker insurance. The school van driver does not explain Brent futures. Each one of them changes the price because his own cost has changed. The consumer receives the whole chain in one bill.

Inflation data is already showing pressure.

The State Bank's April 2026 inflation monitor recorded national CPI inflation at 10.9 percent, up from 7.3 percent in March. Wholesale inflation rose to 13.6 percent. The weekly Sensitive Price Indicator rose to 12.6 percent.

External factors also hit the trade account. More expensive fuel means more dollars leave the country for the same level of activity. Power producers, refineries and importers need financing.

Citizens should expect a scattered price wave in the coming weeks.

Petrol pumps will feel the first hit. Food markets will feel the second wave. Perishable items get expensive before any festival like Eid. However, this time they will also get expensive because freight costs to transport them have increased. Vegetables, fruit, milk, eggs and poultry are exposed to fuel costs from farm to wholesale market to retail shop. Stored items may move later, when replacement stock arrives at higher freight and financing costs.

Services will carry the third wave. Restaurants will adjust menus. Delivery platforms will raise charges. Tailors, barbers, clinics, workshops and tuition centres will pass on electricity, generator fuel and transport costs. Small businesses do not have the balance sheets to absorb repeated fuel shocks. Many will raise prices in small steps to avoid losing customers at once.

Government communication should become more transparent. Every fuel price notice should show the imported product cost, exchange rate effect, freight, insurance, margins, taxes and petroleum levy. Citizens should know which part of the price came from war; which part came from the rupee; and which part came from our revenue needs.

Going one step further, the government should be able to explain why the additional revenue was required to ensure the continuous delivery of public services, including relief.

As the budget for the next fiscal year arrives, the wage earners will feel the gap because salaries do not adjust as quickly as diesel, rent, school vans and grocery bills. The government has done an excellent job in brokering a ceasefire—no matter how fragile—between the US and Iran. The next few weeks will not only test the durability of that ceasefire but also the household cash, market discipline and the state's ability to tell citizens exactly what they are paying for. ■

Pakistan's energy transition without markets

Fragmented regulation, shifting incentives, and institutional incoherence are shaping Pakistan's energy transformation—not markets or the philosophy of sustainability

Dr Raania Ahsan

The writer is (PhD), former Executive Director General, Board of Investment, Prime Minister's Office; Public Policy & Corporate Law Expert

Pakistan's energy transition is often portrayed as a shift toward renewables, improved efficiency, and sustainability. Yet, in reality, the country's trajectory is dictated less by market dynamics or environmental philosophy, and more by fragmented state interventions, regulatory reversals, and competing institutional mandates. What emerges is not a coherent transition pathway, but a system where uncertainty, rather than strategy, determines outcomes.

Transition paradox

The result is an increasingly complex energy landscape where policy ambiguity and administrative inertia shape direction, rendering sustainability ideals more aspirational than operational. Renewable energy, in its true sense, is not merely a policy choice—it is a philosophy of protecting planetary and societal well-being. Yet, when filtered through inconsistent governance, even this philosophy loses coherence. The debate around net-billing and distributed solar illustrates this tension. What began as a policy to promote decentralized generation has become a site of regulatory ambiguity. Frequent tariff revisions, inconsistent treatment of consumers, and concerns around grid stability have created uncertainty for investors and households alike. Instead of enabling a predictable transition, policy signals have oscillated—undermining confidence in long-term planning and participation.

Policy without markets

Markets are not leading the transition—policy distortions are. Regulatory bodies, ministries, and distribution companies operate within overlapping and often conflicting mandates. Tariff structures remain misaligned with cost realities, circular debt persists, and incentives are frequently withdrawn without warning. Even well-intentioned initiatives struggle to deliver predictable outcomes, reinforcing a cycle of instability.

Architecture and administrative bottlenecks

The institutional architecture compounds these challenges. WAPDA, the Ministry of Energy, distribution companies, the Alternative Energy Development Board, the Private Power Infrastructure Board, and provincial departments overlap in responsibilities, creating fragmentation rather than coordination. Administrative inefficiencies, high overheads, outdated transmission systems, theft, and preferential access to electricity increase costs while reducing service quality.

Distributed solar: opportunity or policy contradiction?

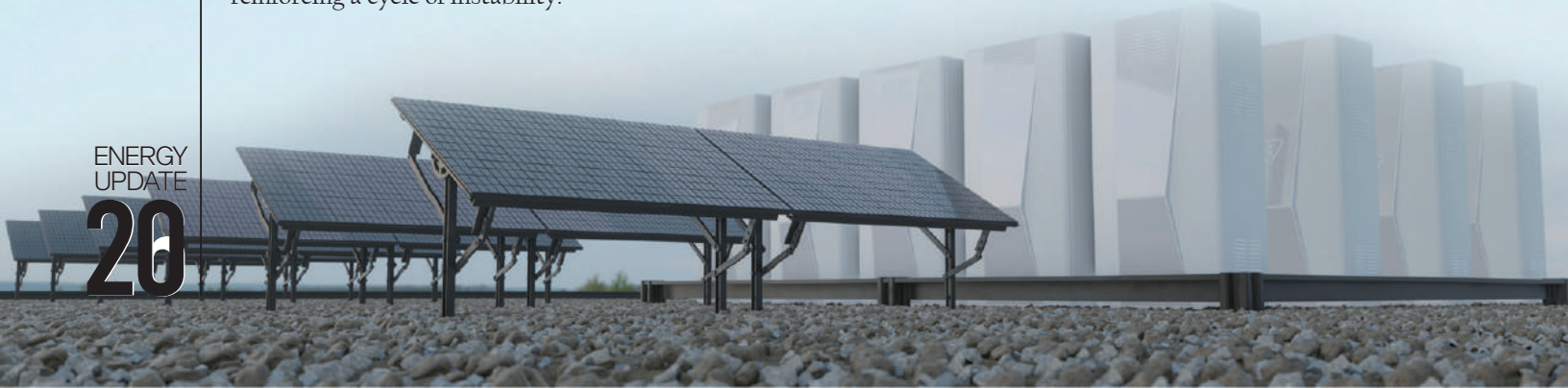
The shift from net metering to net billing aimed to correct cross-subsidization and grid burden. Yet, the underlying question remains unresolved: is the state proactively managing the transition, or merely reacting to emerging pressures? Continued policy oscillation creates uncertainty for consumers and investors, slowing renewable adoption.

Market-oriented reforms: the CTBCM

Pakistan's transition from a single-buyer model to a competitive framework through the Competitive Trading Bilateral Contract Market (CTBCM) represents a significant structural reform. Designed to introduce competition, reduce monopolies, and address circular debt, CTBCM allows bulk consumers to choose suppliers, theoretically improving efficiency and transparency.

Intended outcomes included open access to transmission through an Independent System & Market Operator (ISMO), reduced reliance on public distribution companies, and competitive pricing through direct contracting. Policy frameworks such as the Alternative and Renewable Energy Policy 2019 and the National Electricity Plan 2023–2027 further reinforced this direction.

Early realities, however, present a more cautious picture. Adoption remains limited, infrastructure constraints restrict market functionality, and smaller consumers see little tangible benefit. The reform, while conceptually sound, highlights a familiar gap between policy intent and implementation capacity—raising questions about what the country has substantively gained so far.



Consequences for consumers and businesses

The system designed to serve citizens increasingly imposes costs across all segments—though in different ways.

For households, the issue is affordability and reliability. For businesses and SMEs, it is operational disruption and rising costs. For commercial and elite segments, the concern shifts toward quality and continuity of supply. Yet across all categories, inefficiency remains the common denominator.

Small manufacturers lose hours of production due to voltage instability. Machinery fails, refrigeration units spoil, and offices endure repeated outages. Households pay more for less reliable service. Meanwhile, consumption patterns—such as extensive daytime cooling in high-rises and offices—reflect infrastructure and planning misaligned with actual needs.

The broader economic consequences are far more serious:

* Rising cost of doing business
* Loss of industrial competitiveness
* Weakening of the external sector
* Missed trade opportunities and exclusion from global value chains

Off-grid solutions are no longer innovation—they are survival mechanisms. Internet disruptions, ad hoc power allocation, and uneven service delivery reinforce systemic inefficiencies.

Closing: governance as the core challenge

Pakistan's energy transformation is not merely a technical or resource issue—it is fundamentally a governance challenge. Without regulatory coherence, institutional coordination, credible policy signals, and alignment with market imperatives, even well-intentioned reforms risk fragmentation and diminished impact.

The question is not whether the state or the market should lead, but whether interventions are structured, evidence-based, and oriented toward citizen welfare and economic efficiency. Until that distinction is internalized, Pakistan's energy transition will remain uncertain—defined more by policy reversals than by measurable progress—and the philosophy of renewables will remain an aspiration rather than an achieved reality. ■

Power shortages, rising tariffs and policy gaps deepen electricity crisis

Atif Mehmood

The writer holds an MBA, an MSc in IT from the University of Glasgow, and legal education from the King's Inns, focusing on social issues and public policy

If you were to ask people across the country what they are frustrated with most, the answer is quite easy and, most importantly, unanimous: electricity. Not only are they frustrated with the load-shedding they are going through these days, but they are also frustrated with the bills. It is a strange sort of unfairness, but one must understand that this is not how it is supposed to be.

There are a number of statistics that explain why people are frustrated with the situation. For instance, Pakistan has crossed 42,000 megawatts installed electric generation capacity; however, we are not able to meet even half of this due to fuel, circular debt and transmission losses. The circular debt has crossed 2.6 trillion rupees; it continues to increase every day.

And then, of course, there are the prices, which have risen many times over in recent months, and have led to an increase of over 30 per cent in the average cost of electricity being sent to people across the country in the last year or so. This, for a middle-income family, essentially translates into a choice between keeping their house cool during the scorching summer or not being able to buy food and other essentials.

Some of the government policies are also geared towards electricity conservation; while some of these policies make sense, others are simply a joke. For instance, the early closure of markets and office hours is geared towards electricity conservation; so is the electricity conservation drive we are witnessing these days. But when the temperature crosses 45 degrees or so in Sindh and south Punjab, it is simply a joke to ask people to conserve electricity to the extent they are already doing so.

Then there is the issue of the drive towards solar power, which is becoming impossible to ignore. For instance, if you walk through neighbourhoods in Islamabad or Faisalabad, you will see rooftops covered in solar panels. It is estimated that Pakistan imported over 10 gigawatts of solar panels in 2025 alone. The cost of a small installation for a household can be anywhere between 700,000 to 1.5 million rupees. That's clearly not something everyone can afford, yet people are opting for solar panels simply because they are tired of the uncertainty of the situation.

Of course, solar power is not the complete solution to the situation. For instance, the national grid is still unstable and net-metering policies are starting to change, yet this is not giving people pause for thought before opting for solar power. Those who cannot afford solar power are then forced to bear the burden of increasing tariffs; and the divide between the rich and the poor is visible for all to see.

However, there are solutions to the situation, and none of them is easy or quick fixes. This can start from reduction of transmission and distribution losses, which still remain at 17 to 18 per cent, and would go a long way in solving the situation without the need to build new power plants.

Second, ensuring that the policies regarding solar power remain stable. People would invest if they knew the rules of the game are not likely to change overnight. Then there is the solution of targeted subsidies rather than across-the-board subsidies to ensure the poor get the subsidies they need. And perhaps just as importantly, there needs to be a more honest conversation. People know the system is strained. People want reassurance that the plan is solid and progress is evident. The main challenge, however, is unpredictability: lights may be on one day and off the next, with no discernible rhythm or reason. ■

A growing environmental, public health crisis around Hattar Industrial Estate

Villages and rural settlements in District Haripur have lived under shadow of unchecked industrial pollution

Mustafa Tahir

For years, the villages and rural settlements surrounding the Hattar Industrial Estate (HIE) in District Haripur have lived under the shadow of unchecked industrial pollution, with mounting fears that toxic contamination of air, water, and soil is steadily pushing the region towards an unprecedented public health catastrophe.

What was once largely viewed as an environmental concern has now emerged as a deeply alarming human crisis, particularly for children whose health, growth, and future are reportedly being threatened by prolonged exposure to hazardous pollutants allegedly released from industrial units operating in the estate.

The gravity of the situation has recently been reinforced by a survey report prepared by UNICEF with the support of the Ministry of Health, which has exposed deeply disturbing findings regarding the health condition of children living in the vicinity of the Hattar Industrial Estate. According to the findings highlighted in the report, dangerously high levels of lead were detected in up to 88 per cent of blood samples collected from children aged between one and three years residing near the industrial zone. Medical experts warn that excessive exposure to lead can severely affect neurological development, damage vital organs, impair learning abilities, and trigger irreversible physical and mental health complications, particularly among infants and young children.

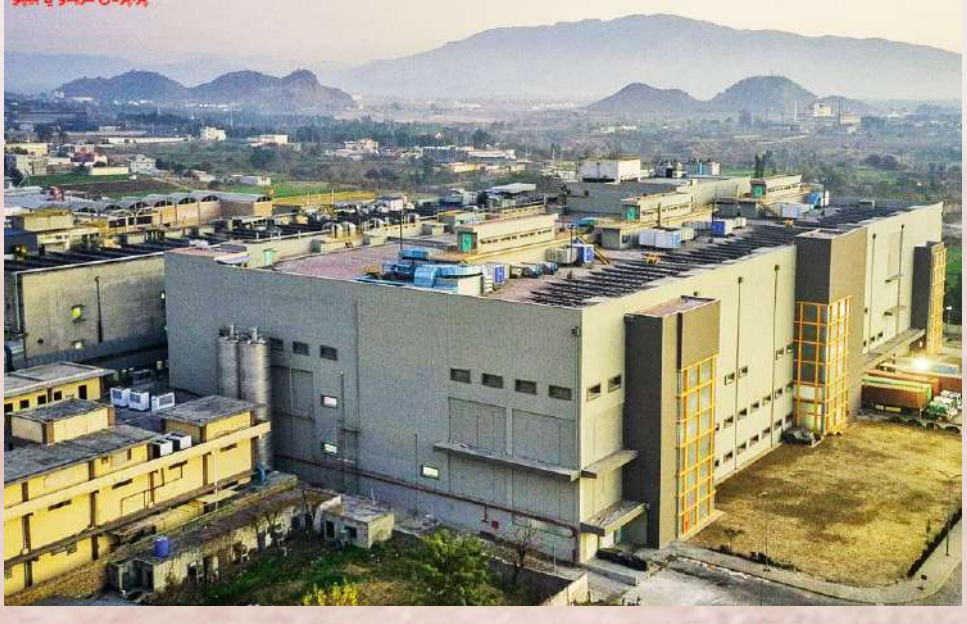
The alarming revelations have intensified long-standing concerns among local residents, health professionals, and environmental activists who have repeatedly warned that the unchecked discharge of untreated industrial waste and hazardous emissions from factories in HIE has been poisoning natural resources and endangering human life for years.

Residents of affected rural areas allege that streams, canals, and water channels used for irrigation and livestock rearing have increasingly become contaminated due to the disposal of untreated industrial effluents. Farmers fear that polluted water is gradually destroying agricultural land and contaminating food chains, while livestock owners complain about growing health complications among animals dependent on polluted water sources.

Environmental experts also warn that the contamination is no longer limited to surface water alone. Toxic industrial wastewater is believed to have seeped into underground water reserves that serve as a major source of drinking water for local communities. This silent infiltration of pollutants into subsoil water has raised fears of a long-term humanitarian and environmental disaster affecting entire populations across vulnerable rural settlements.

The human cost of this environmental degradation is reportedly becoming more visible with every passing year. Doctors and healthcare workers in the affected areas have increasingly reported patients suffering from bone deformities, chronic skin diseases, stomach disorders, eye complications, respiratory illnesses, and kidney-related ailments. Medical professionals suspect that many of these health problems may be associated with prolonged exposure to contaminated water, toxic gases, and industrial pollutants.

Expressing grave concern over the worsening crisis, the President of National Forum for Environment & Health, Muhammad Naeem Qureshi, has called upon the concerned provincial authorities to immediately launch comprehensive monitoring, corrective, and mitigation measures to safeguard the health and lives of people residing around the Hattar Industrial Estate.



Referring to the recent UNICEF-backed survey, Qureshi warned that the findings should serve as a wake-up call for the authorities to act before the situation spirals into a full-scale public health disaster. He demanded that all polluting industrial units operating in the HIE should be identified, strictly monitored, penalised, and held accountable for environmental violations. ■

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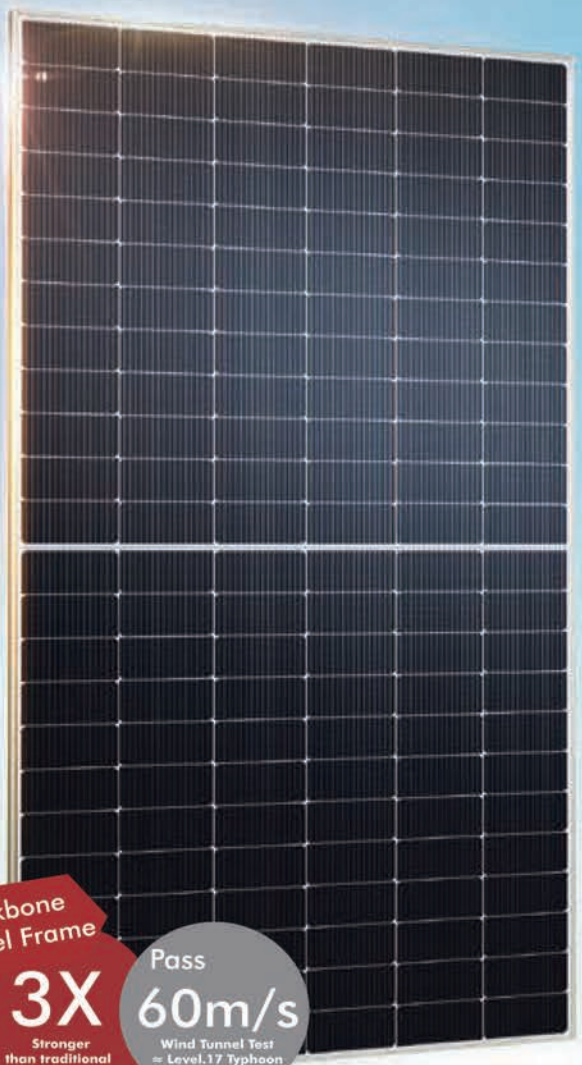

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Pakistan's gas market cannot survive the delay in reforms

Pakistan's gas sector is no longer facing a temporary imbalance. It has entered a structural decline

Dr Nadeem ul Haque / Shahid Sattar

has served as Member Energy of the Planning Commission of Pakistan & has also been an advisor at: Ministry of Finance Ministry of Petroleum Ministry of Water & Power

The continued failure to reform SNGPL and SSGC is damaging industrial competitiveness, discouraging exploration investment, increasing LNG dependence and weakening Pakistan's long-term energy security. For years, policymakers treated the gas crisis as a supply shortage problem. It is not. The deeper problem is that the structure of the gas market itself which no longer works.

SNGPL and SSGC continue functioning simultaneously as monopoly buyers, monopoly sellers, transporters, distributors, subsidy vehicles and warehouses for circular debt. This structure was built for a different era — one in which domestic production was rising, indigenous gas was cheap and industrial demand was continuously expanding. Pakistan now faces declining indigenous production, expensive RLNG imports, shrinking industrial throughput and severe financial stress across the energy chain. Yet the institutional structure has barely changed. The most dangerous consequence is declining throughput.

Industrial consumers are steadily reducing dependence on pipeline gas because tariffs have become unaffordable and unpredictable. Businesses are shifting toward solar, coal, biomass, furnace oil and self-generation because pipeline gas is no longer viewed as commercially reliable.

This destruction of demand has been accelerated by misguided policy. The wrongly calculated and irrational levy imposed on captive power plants effectively priced many industrial users out of the gas system. Instead of preserving industrial throughput and export competitiveness, policy moved aggressively to force industry away from gas consumption. The result was predictable: industrial consumers reduced off-take, switched fuels or invested in alternatives altogether. This has inflicted severe damage on the economics of the pipeline system.`

Pakistan's gas infrastructure carries enormous fixed costs. Pipelines, compressor stations, maintenance, debt servicing and staffing costs do not disappear simply because fewer molecules move through the network. Instead, these costs are spread over smaller and smaller gas volumes.

The result is a classic utility death spiral: lower throughput leads to higher

tariffs, higher tariffs reduce demand further and declining demand pushes tariffs even higher. The data increasingly reflects this deterioration. SSGC's average gas throughput reportedly declined from roughly 841 MMCFD to around 789 MMCFD within a year — a decline of more than 6 percent. Captive power demand has also weakened materially, with captive power's share of demand reportedly falling from roughly 21 percent to 19 percent.

SNGPL's tariff petitions similarly show a shrinking sales base despite rising revenue requirements. Recent projections indicated sales volumes of roughly 301,157 BBTU even as the utility sought sharply higher revenue recovery. This is the core problem: the fixed costs of the system are being recovered from a shrinking and increasingly stressed customer base. As throughput falls, the Sui companies continue attempting to recover infrastructure costs, UFG losses, financing costs, RLNG obligations and historical shortfalls through a shrinking customer base.

Consumers increasingly face the absurd situation where service quality weakens, industrial competitiveness deteriorates and supply reliability becomes uncertain, yet tariffs continue rising.The diversion of imported LNG away from industry toward the domestic sector has further worsened the crisis.Pakistan originally imported LNG primarily to support industrial growth, efficient power generation and economic expansion. Instead, increasingly large volumes are being diverted toward low-paying and heavily subsidised domestic consumption. The financial consequences are enormous.

Imported LNG is dollar-linked and significantly more expensive than legacy domestic gas. Diverting LNG into heavily subsidised sectors creates massive unrecovered costs that eventually flow back into circular debt, tariff pressure and utility shortfalls. The yearly economic burden of this diversion likely runs into hundreds of billions of rupees once subsidy gaps, financing costs, system losses and unrecovered receivables are considered. At the same time, local gas fields are increasingly being curtailed because the system cannot absorb available domestic production efficiently while LNG obligations continue. SNGPL and SSGC largely operate under a cost-plus return-on-assets model. In practice, the utilities recover costs and earn regulated returns on their asset base regardless of whether throughput rises or falls.

Pakistan has discussed reforming the Sui companies for more than a decade. Multiple studies and restructuring proposals were prepared by international consultants and organisations including PwC and multilateral institutions.

In 2020, proposals were seriously examined for creation of a National Gas Transmission Company operating as a common carrier while allowing competitive supply through open access.

Reforms repeatedly failed because of political patronage as new domestic connections equal votes, monopoly control was preserved, circular debt remained unresolved, political pricing continued and institutional incentives were never fundamentally changed.Pakistan repeatedly attempted tariff reform without structural reform. Reality is that no amount of administrative tariff adjustment can repair a fundamentally broken market structure. Perhaps the greatest long-term damage from delayed reform is occurring upstream. Pakistan's exploration sector is steadily losing investment appetite because the downstream market structure no longer guarantees commercially reliable payments.

Exploration is among the highest-risk industries in the economy. Companies invest billions in seismic surveys, drilling campaigns, appraisal wells and infrastructure years before earning revenue. Investors therefore require confidence that discovered gas can be sold at commercially viable prices and paid for on time. Under the present structure, producers remain dependent on financially stressed monopoly buyers suffering from delayed recoveries and circular debt. Pakistan still possesses substantial untapped hydrocarbon potential such as in the Former Block 28 acreage, tight gas, deeper conventional formations, offshore acreage and marginal reserves that could become commercially viable under rational pricing structures.

But no serious investor will continue taking geological risk where payment itself remains uncertain. Pakistan is therefore not merely losing production today. It is losing future production capacity that may take years to rebuild. Under a liberalised framework, producers, LNG suppliers and competitive suppliers would be allowed to sell gas directly to consumers while paying regulated transportation charges to pipeline operators.

Most importantly, legacy circular debt and historical liabilities must be ring-fenced so they do not contaminate new market participants. The Sui companies must evolve from monopoly merchants into neutral infrastructure operators. Without this structural reform, tariffs will continue rising, industrial throughput will continue shrinking, exploration investment will remain weak, LNG dependence will grow and circular debt will continue expanding. This is no longer merely an energy-sector issue. It is becoming a national economic problem affecting exports, employment, investment, foreign exchange and long-term growth potential. The time to act is now. ■

Group Photo of Speakers and Team NFEH with Chief Guest President Karachi Chamber of Commerce and Industry (KCCI) Rehan Hanif.

Glimpse of Panel Discussion.

NFEH-NED University Seminar On World Environment Day

Experts Alarm Green Spaces Under Attack, Seas Turning Toxic

Say unless immediate and decisive measures are taken, major cities such as Karachi, Lahore, and other rapidly expanding urban centres could face irreversible environmental degradation, worsening climate impacts, and a severe decline in public health and quality of life

Mustafa Tahir

A powerful call for urgent environmental action echoed through the halls of the City Campus of the NED University of Engineering & Technology as environmental experts, academics, business leaders, policymakers, journalists, legal practitioners, public representatives and civil society representatives gathered to mark World Environment Day 2026.

The seminar, jointly organised by the National Forum for Environment & Health NFEH, United National Environmental Programme (UNEP) and The NED University at its historical City Campus in downtown Karachi, served as a stark reminder that Pakistan's urban centres are facing an unprecedented ecological crisis driven by unchecked pollution, shrinking green spaces, rapid commercialisation, and weak enforcement of environmental regulations.

The participants warned that unless immediate and decisive measures are taken, major cities such as Karachi, Lahore, and other rapidly expanding urban centres could face irreversible environmental degradation, worsening climate impacts, and a severe decline in public health and quality of life.

A city under environmental stress

Karachi, Pakistan's largest city and economic hub, stood at the centre of discussions during the seminar. Speakers highlighted how decades of unplanned urbanisation, illegal land conversions, environmental negligence, and weak governance have transformed the city into one of the most environmentally stressed metropolitan areas in the region.

The challenges confronting Karachi are immense. Vast stretches of green belts have disappeared under commercial developments. Parks and public open spaces continue to face encroachments. Thousands of trees have been felled to make way for roads, buildings, and infrastructure projects. At the same time, untreated industrial effluents continue to flow into drains and eventually into the Arabian Sea, contaminating marine ecosystems and threatening fisheries and coastal biodiversity.

KCCI pledges support for environmental compliance

Speaking as the Guest of Honour, Karachi Chamber of Commerce and Industry (KCCI) President Muhammad Rehan Hanif delivered a strong message in favour of environmental accountability. He assured the audience that the city's business community would stand firmly behind all efforts aimed at enforcing environmental regulations and curbing industrial pollution.

Hanif stressed that industries and commercial enterprises operating in Karachi must adopt environmentally responsible practices and ensure strict compliance with environmental laws. He categorically stated that the KCCI would not support any industry or business found violating environmental regulations or contributing to ecological degradation. He emphasised that untreated industrial discharges should never be released into the environment and urged industries to invest in modern treatment systems to minimise their environmental footprint.

Green spaces disappearing at an alarming rate

One of the most thought-provoking presentations of the seminar came from Prof Dr Noman Ahmed, Pro Vice-Chancellor of the NED University and one of Pakistan's leading architects and urban planners.

Delivering the keynote address, Dr Ahmed painted a worrying picture of Karachi's environmental future. He warned that unchecked commercialisation and unlawful changes in land-use classifications were steadily eroding the city's remaining green spaces. According to Dr Ahmed, parks, green belts, amenity plots, and public open spaces

that serve as the environmental lungs of urban areas are increasingly coming under pressure from commercial interests.

He observed that encroachments on public land and large-scale tree cutting have significantly contributed to the worsening climate crisis in urban centres. The disappearance of vegetation and green cover has intensified the urban heat island effect, making cities hotter and more vulnerable to deadly heatwaves.

Dr Ahmed cited the recent controversy involving an attempt to carve out residential plots from Karachi's historic Hill Park as a troubling example of the threats facing public green spaces. "If a major park located in the heart of Karachi can face such brazen encroachment, one can easily imagine the risks confronting green spaces situated in the city's outskirts," he remarked.

From L to R President of the Karachi Chamber of Commerce & Industry (KCCI), Muhammad Rehan Hanif, Prof Dr Noman Ahmed, Pro Vice-Chancellor of the NED University, NFEH President Muhammad Naeem Qureshi, Member of the Sindh Assembly Rehan Bandukda, NFEH Secretary-General Ruqiya Naeem, Managing Director of the Sindh Solid Waste Management Board (SSWMB), Tariq Ali Nizamani, Dr. Imran Taj President Fire Protection Industry of Pakistan, SSGC Spokesperson Salman Siddiqui, Moulana Azad Jameel and Samra Sarwar addressing on the occasion.

Concerns over coastal development

Member of the Sindh Assembly Rehan Bandukda raised concerns about ongoing high-rise developments along Karachi's coastline, particularly projects being developed on reclaimed land. He questioned whether adequate environmental planning had been undertaken to ensure that sewage disposal systems, drainage infrastructure, and waste management mechanisms would be capable of preventing pollution from entering the marine environment.

Bandukda stressed the need for year-round environmental accountability and called upon provincial environmental authorities to regularly report on the implementation of environmental commitments and conservation plans.

Addressing the gathering, Managing Director of the Sindh Solid Waste Management Board (SSWMB), Tariq Ali Nizamani, highlighted ongoing efforts to modernise waste management systems across Karachi and other urban centres of Sindh.

He informed participants that the SSWMB has increasingly adopted technology-driven solutions, digital monitoring systems, information technology tools, and international best practices to improve municipal waste collection and disposal services.

NFEH calls for stronger action against deforestation

NFEH President Muhammad Naeem Qureshi, who also serves as Convener of the FPCCI Standing Committee on Sustainable Development Goals (SDGs), reaffirmed the organisation's commitment to environmental conservation and sustainable urban development.

He stressed the importance of launching large-scale tree plantation campaigns and taking effective measures to halt deforestation in major urban centres.

Qureshi called upon the Federation of Pakistan Chambers of Commerce and Industry (FPCCI), KCCI, and chambers of commerce across the country to organise environmental awareness programmes and technical training workshops for industries.

Such initiatives, he said, would help businesses comply with international environmental standards while improving Pakistan's environmental performance and export competitiveness. He also urged authorities to strictly enforce laws against illegal tree cutting, industrial pollution, and marine contamination.

NFEH Secretary-General Ruqiya Naeem, Vice-President Engineer Nadeem Ashraf, senior ecologist Rafiul Haq, environmental journalist Shabina Faraz, SSGC Spokesperson Salman Siddiqui, fire safety expert Dr Muhammad Imran Taj, Dr. Zahid Ansari, Samra Sarwar and other speakers stressed that environmental awareness must begin at an early age. They highlighted the importance of educating young people about environmental stewardship, biodiversity conservation, sustainable lifestyles, and climate resilience. ■

Cake Cutting ceremony of 20th Annual Anniversary of Energy Update Magazine

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CEO SkyElectric

Shoaib Asif Sipra

Says the outlook for Pakistan's solar industry is very promising; the future will be shaped not just by more solar adoption, but by smarter and more integrated energy systems; our focus has always been intelligence in energy; we have evolved from basic solar solutions to a fully integrated ecosystem combining solar generation, storage, smart inverters, and cloud-based energy management

Naeem Qureshi

The Writer is Managing Editor of Energy Update and Environment Activist

Energy Update Magazine conducted an interview of Mr Shoaib Asif Sipra, CEO, SkyElectric, in which he said that when we founded SkyElectric, Pakistan was facing severe energy shortages, unreliable grid supply, and very limited awareness of smart energy solutions. Solar existed, but it was fragmented and not built to scale. One of our most important milestones was launching an integrated smart energy system that set us apart from conventional solar providers. Expanding across Pakistan and building a strong base of thousands of installations validated that vision. Over the years, continuous product innovation, especially in energy storage and intelligent energy management, has been a major achievement. Most importantly, the trust we have built with our customers remains our strongest foundation today. We are giving services to more than 10,000 customers from all market segments.

Q1. Can you briefly share your journey and the vision behind founding SkyElectric, and how it has evolved over the past decade?

Ans: When we founded SkyElectric, Pakistan was facing severe energy shortages, unreliable grid supply, and very

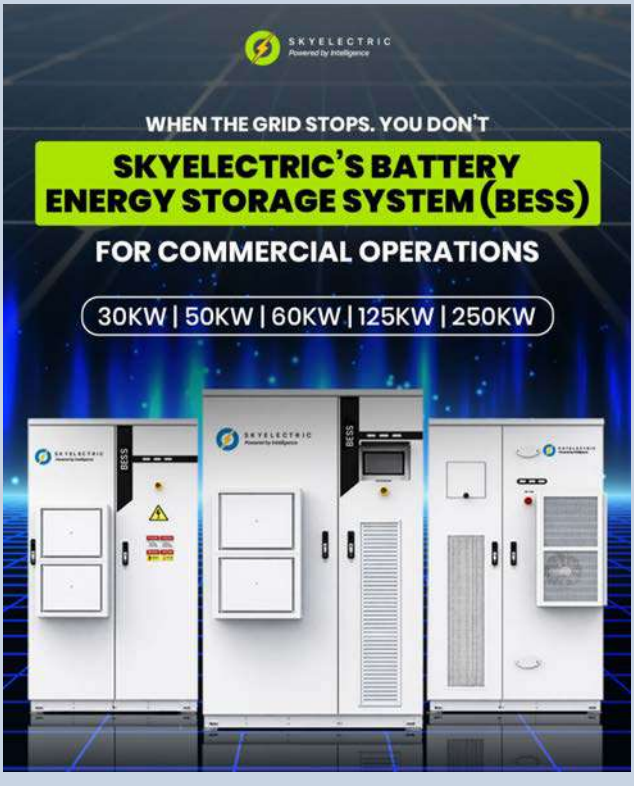
limited awareness of smart energy solutions. Solar existed, but it was fragmented and not built to scale. As the founder of SkyElectric, Ashar Aziz saw this gap early and set out to build more than a solar company. Our vision was to create a complete, technology-led energy solution that gives people reliable power, greater control, and energy independence.

Over the past decade, that vision has evolved into an integrated smart energy ecosystem combining solar generation, battery storage, intelligent inverters, and cloud-based energy management. Beyond technology, one of our proudest contributions has been helping shift the market's mindset from seeing solar as a backup option to recognizing it as a reliable and sustainable primary energy source.

What makes us most proud is the impact we have created for our customers, providing reliable energy where it was once uncertain. In a challenging market like Pakistan, building a technology-driven energy platform, creating awareness early on, and earning long-term trust through resilience and innovation have defined our journey.

Q2. As SkyElectric celebrates 10 years, what have been your most significant achievements and milestones in Pakistan's renewable energy sector?

Ans: One of our most important milestones was launching an integrated smart energy system that set us apart from conventional solar providers. Expanding across Pakistan and building a strong base of thousands of installations validated that vision. Over the years, continuous product innovation, especially in energy storage and intelligent energy management, has been a major achievement. Most importantly, the trust we have built with our customers remains our strongest foundation today. We are giving services to more than 10,000 customers from all market segments.



Q3. How do you see the role of solar integrated with battery energy storage systems (BESS) shaping the future of reliable and affordable energy in Pakistan?

Ans: In Pakistan, solar integrated with battery energy storage systems will play a major role in building a more reliable and affordable energy future. Solar can generate clean power, while battery storage ensures that energy remains available when the grid is unstable or demand is high. Together, they give consumers greater energy independence, better control over costs, and a more dependable power supply.

Q.4. With ongoing changes in net metering and the shift toward net billing, what is your perspective on these policies, and how should regulators like the National Electric Power Regulatory Authority Support sustainable industry growth?

Ans: With the shift from net metering to net billing in Pakistan, the policy should create long-term clarity and balance the interests of consumers, the industry, and the wider power system. Stable and predictable regulations give people the confidence to invest. Organizations like NEPRA can support sustainable growth by encouraging policies that promote smart energy adoption, storage integration, and long-term investment in reliable clean energy infrastructure.

Q 5. Looking ahead, what is your outlook for Pakistan's solar industry, and what role will companies like SkyElectric play in driving the country toward energy independence?

Ans: The outlook for Pakistan's solar industry is very promising. The future will be shaped not just by more solar adoption, but by smarter and more integrated energy systems. At SkyElectric, our focus has always been intelligence in energy. We have evolved from basic solar solutions to a fully integrated ecosystem combining solar generation, storage, smart inverters, and cloud-based energy management. These systems help optimize energy in real time, manage outages seamlessly, and improve efficiency across residential, commercial, and industrial users, bringing the country closer to true energy independence. ■

Karachi continues to suffer due to K-Electric's persistent failures

Engr. Nadeem Ashraf

Karachi, the economic nerve centre of Pakistan, continues to endure an electricity crisis that is no longer episodic but systemic. At the heart of this crisis lies K-Electric, a privatised power utility that has repeatedly fallen short of its most fundamental responsibility: ensuring a reliable, safe, and affordable supply of electricity to millions of residents. What makes this failure particularly alarming is not merely its persistence, but the fact that it continues despite extensive financial, structural, and policy support from both federal and provincial governments.

The widening gap between support received and service delivered raises an unavoidable question—how long can a utility operate without meaningful accountability? K-Electric's operational framework is unlike that of a typical private power utility. It is deeply intertwined with state support mechanisms, particularly through the national grid operated by the NTDC. On average, the utility dSraws between 900 to 1,000 megawatts of electricity from NTDC, with available capacity exceeding 1,600 megawatts and expandable beyond 2,000 megawatts. This substantial allocation represents a critical lifeline for Karachi's energy needs and is, in essence, backed by national infrastructure and policy support. Complementing this is the Sindh government's initiative to develop its own transmission network through the STDC, which currently contributes around 100 megawatts to the system and is expected to expand through projects based on Thar coal and renewable energy. In addition, the federal government continues to cushion consumers through tariff differential subsidies designed to keep electricity prices within manageable limits.

Yet, despite this multi-layered support structure, Karachi remains trapped in a cycle of prolonged outages, erratic supply, and deteriorating infrastructure. In many parts of the city, particularly in suburban and low-income neighbourhoods, electricity has become an uncertain commodity rather than a guaranteed service. Hours-long load-shedding is routine, often unannounced, and disproportionately affects those least able to cope with its consequences. Even consumers who pay their electricity bills on time suffer equally. This stark disparity in service delivery has not gone unnoticed. Syed Murad Ali Shah recently voiced serious concern over the prolonged outages faced by underprivileged communities, especially as rising temperatures intensify the hardship. His directive to explore targeted subsidies and ensure affordable electricity for vulnerable households in Karachi underscores the urgency of the crisis, but it also highlights a deeper issue: the absence of enforceable accountability.

The fragility of Karachi's electricity infrastructure becomes most evident during the monsoon season. Even moderate rainfall has the potential to trigger widespread feeder trips, plunging entire localities into darkness. These recurring breakdowns are not merely technical inconveniences; they are symptomatic of deeper structural neglect. Transmission and distribution systems that should have been modernised and weather-proofed years ago continue to operate in a precarious state. The consequences are not only economic but tragically human. Incidents of electrocution during rains have become disturbingly frequent, turning seasonal showers into life-threatening events. Exposed wiring, poorly maintained transformers, and inadequate safety protocols reflect a systemic failure that cannot be dismissed as incidental.

Compounding these operational deficiencies is the growing public outcry over inflated electricity bills. Consumers across Karachi have repeatedly reported unexplained surges in billing, fuelling perceptions of opacity and eroding trust in the utility's financial practices. This issue becomes even

more contentious when viewed alongside K-Electric's mounting financial obligations. Recent figures indicate that its payables to the federal government have surged to approximately Rs365 billion, with a sharp increase recorded within a matter of months. Such a financial trajectory, coupled with substandard service delivery, raises legitimate concerns about governance, transparency, and regulatory oversight.

The roots of this crisis can be traced back to the promises made at the time of K-Electric's privatisation. The transition to private ownership was justified on the grounds that it would bring efficiency, investment, and improved service standards. Over time, however, these promises have only been partially realised. While there have been improvements in certain areas, the overall performance of the utility continues to fall short of expectations, particularly in terms of infrastructure resilience and equitable service delivery. The failure to adequately upgrade distribution networks in residential and commercial areas has left the system vulnerable to even minor environmental stresses, resulting in frequent breakdowns and prolonged recovery times.

The recent engagement between the Sindh government and K-Electric, including the formation of a committee to explore targeted subsidies and affordable electricity for low-income areas and industrial zones, offers a potential pathway forward. Proposals to supply cheaper electricity through locally generated sources, particularly from Thar coal, could help reduce costs and improve access. However, such initiatives will only yield meaningful results if they are accompanied by stringent regulatory enforcement and a clear framework for accountability. In this regard, the role of NEPRA is pivotal. As the sector's regulator, it must move beyond procedural oversight and actively enforce performance standards. This includes ensuring transparency in billing, mandating timely investment in infrastructure, and imposing penalties for service failures that compromise public welfare. Regulatory authority must translate into regulatory action, particularly when the stakes involve the well-being of millions.

Ultimately, the issue at hand is not merely about electricity supply; it is about governance, equity, and the social contract between a service provider and the public it serves. K-Electric cannot continue to operate as though it is insulated from scrutiny. It benefits from public resources, relies on state-backed infrastructure, and serves a city that drives the national economy. With these privileges come responsibilities that cannot be deferred or diluted. Karachi's residents are entitled to a power system that is reliable, affordable, and safe. They should not have to endure prolonged outages, fear electrocution during rains, or struggle with unexplained billing practices. The time for incremental adjustments has passed. What is needed now is decisive action—by the government, the regulator, and the utility itself. If K-Electric is to retain its mandate, it must demonstrate a clear commitment to reform, transparency, and investment. Otherwise, the call for accountability will only grow louder. A city that powers the nation cannot remain perpetually in crisis, and a utility that serves it cannot remain beyond the reach of the law. ■

Solar and national security

Since 2020, Pakistan has avoided over $12 billion in oil and gas imports through solar substitution; Pakistan's fossil-fuel imports had fallen by roughly 40pc between 2022 and 2024

Mujtaba Raza

The writer is an advocate of renewable energy and the CEO of Solar Citizen

Earlier this year, when the Iran conflict disrupted oil flows across the Strait of Hormuz, every fuel-importing economy in the region had to recalculate its energy security. The cost of an LNG cargo into Karachi rose. The risk premium on Middle Eastern crude widened. Insurance rates for Gulf shipping spiked. Pakistan, predictably, did the same defensive arithmetic it has done in every previous regional shock: how much foreign exchange will this cost, how long can it be sustained, and what happens if it gets worse?

What was different this time, and what most of Pakistan has not fully absorbed, is that we did the arithmetic from a structurally different starting point. The country was already generating more than 25 per cent of its electricity from solar.

Pakistan's fossil-fuel imports had fallen by roughly 40pc between 2022 and 2024, and surprisingly, this did not happen by policy design. It happened through the cumulative effect of a decade of household-level capital deployment that no government planned, and no International Monetary Fund (IMF) programme prescribed.

The household-financed energy transition has brought about a kind of strategic autonomy that no government policy in the same period has produced

This is the most important fact about Pakistan's solar boom, and it is also the one we have been least willing to discuss honestly. The transition to solar is no longer primarily about climate. It is, in effect, about sovereignty.

The numbers we have not internalised

Since 2020, Pakistan has avoided over $12 billion in oil and gas imports through solar substitution, according to a joint analysis by Renewables First and the Centre for Research on Energy and Clean Air. The country is projected to save another $6.3bn in 2026 alone at current fuel prices. These are not climate-policy numbers. They are balance-of-payments numbers, foreign-exchange-reserve numbers, and current-account numbers.

Pakistan's energy import bill in FY22 hit a record $23.32bn, accounting for nearly 29pc of total imports. Without the solar substitution of the last five years, that number would now be materially higher. The solar boom happened because individual Pakistani households and businesses decided that an unreliable, unaffordable grid was no longer their only option, and they deployed their own capital, roughly $8–10bn of it cumulatively, to do

something about it. That decentralised, household-financed energy transition has brought Pakistan a kind of strategic autonomy that no government policy in the same period has produced.

Earlier this year, the early stages of that pattern began to unfold. However, the magnitude of the shock was contained in a way it would not have been even five years ago. Pakistan was importing less fuel to generate the same electricity. Rooftop solar was offsetting daytime demand that would otherwise have required imported LNG. The country was, for the first time in its modern history, partially insulated from a Gulf disruption.

Why this framing matters

The current policy conversation around solar, whether on net billing, Disco cross-subsidy, or import duties, has been conducted almost entirely as a climate-and-cost conversation. These are legitimate questions, but they are not, in my view, the most important ones.

The most important question is this: in a region where energy supply is structurally vulnerable to geopolitical disruption, whether through Iran, the Strait of Hormuz, the Red Sea, Russian gas or Qatari LNG, what fraction of Pakistan's electricity demand can be served from domestic capital, on Pakistani rooftops, using Pakistani sunshine? The current answer is roughly 25pc. The achievable answer, with reasonable policy support over the next decade, is 40 to 45pc.

What this reorientation requires

Treating solar as a national-security policy rather than a climate policy fundamentally changes what the government should be doing. The federal budget should treat solar substitution as a strategic priority on par with food security and water security. The State Bank of Pakistan's renewable energy financing scheme, currently dormant, should be restarted and dramatically expanded.

The National Electric Power Regulatory Authority's regulatory posture should also be reframed: the current Prosumer Regulations treat rooftop solar primarily as a Disco cross-subsidy problem; a national-security framing would treat it as a strategic asset whose deployment should be optimised, not constrained. Most importantly, the government should own the framing publicly. Treating solar as a national-security asset rather than a green-policy nicety would change how it is featured in the country's strategic doctrine. ■

Hazardous waste found on shores of Rawal Lake: Pak-EPA

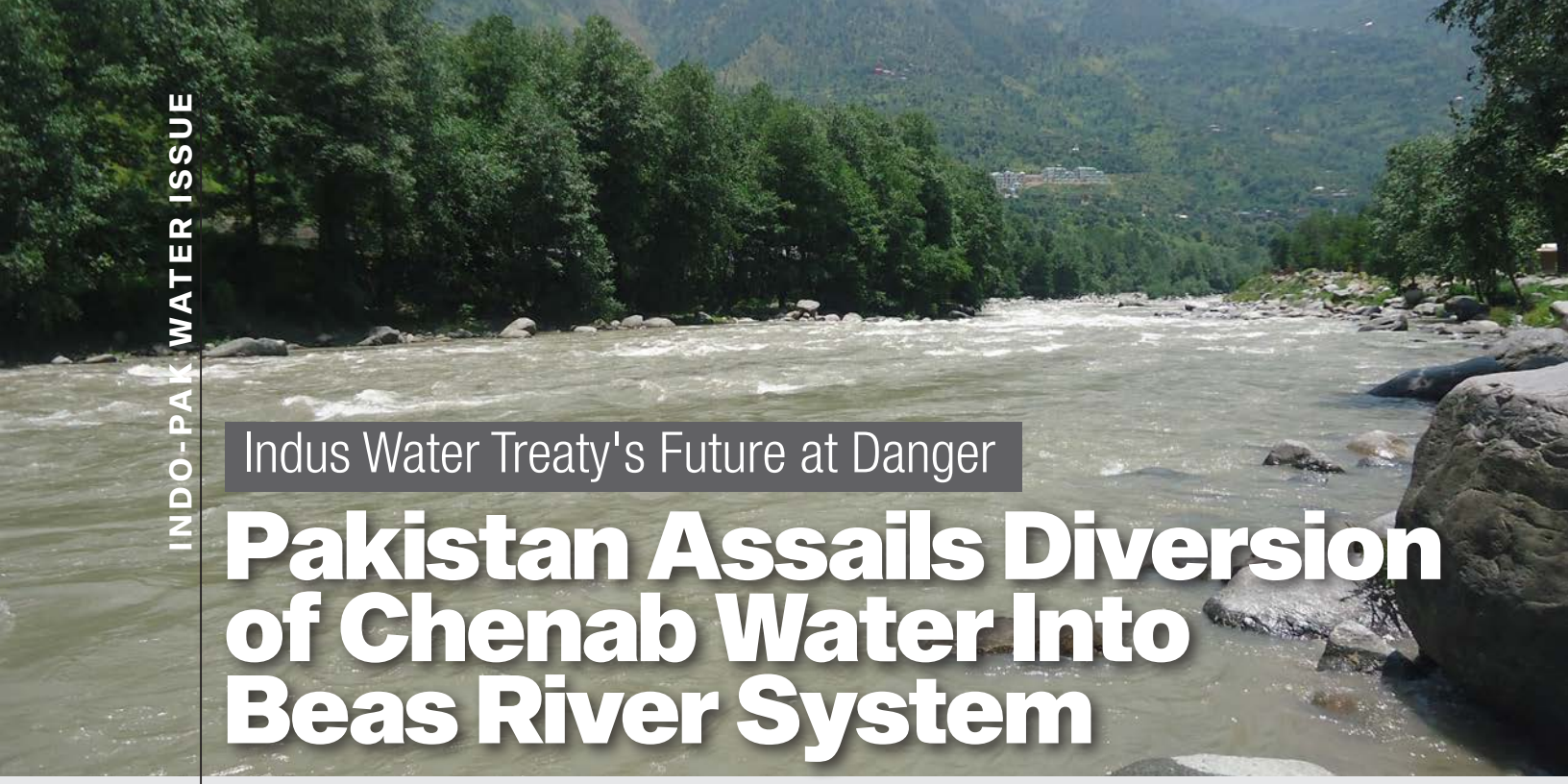
The Pakistan Environment Protection Agency during a clean-up drive on the shores of Rawal Lake on Thursday found hazardous material such as discarded syringes, hospital waste and numerous plastic items in large quantities, highlighting the severe pollution threatening the lake's ecosystem. The clean up drive was organised in connection with the global celebrations of World Environment Day by Pak-EPA in collaboration with Nestle Pakistan.

The initiative, hosted by the Small Dams Department, government of Punjab, marked a flagship activity of Environment Week, aligning with this year's global theme: "Inspired by Nature, for Climate, for our future." The clean-up campaign mobilised volunteers, schools and university students, civil society organisations, and the local community to systematically collect waste from the surrounding areas and the shore of Rawal Lake.

The campaign focused not just on cleaning the shoreline but also on raising urgent awareness about the dangers of improper medical waste disposal, the persistence of plastic pollution in freshwater bodies, and the preservation of natural habitats. Pak-EPA said that Rawal Lake, a critical water reservoir and recreational site in the capital, faced frequent littering and contamination, making this intervention critical for public health and environmental safety.

Leading the event, Director General Pak-EPA Syed Abrar Hussain, stated: "This drive is about more than collecting waste, it is about reshaping our relationship with nature. The presence of hospital waste and plastics in Rawal Lake is a stark warning. I strongly encourage our youth and all citizens to ensure that such activities are done continuously. We must move beyond one-day events to build lasting habits that protect our climate, inspired by nature itself."

Meanwhile, on World Environment Day, Senator Sherry Rehman warned that Pakistan's environmental crisis was no longer a distant threat but an unfolding reality affecting economic stability, food systems, water security, public health, and national resilience. She said Pakistan remained among the world's most climate-vulnerable countries, with the cost of inaction rising sharply. "Climate change is no longer a future concern. It is already disrupting lives and livelihoods across the country," she noted.



Indus Water Treaty's Future at Danger

Pakistan Assails Diversion of Chenab Water Into Beas River System

Pakistan says it retains all options necessary to safeguard the treaty rights; World Bank states it helped broker the treaty and remains a signatory, but its role is limited to facilitating dispute-resolution processes outlined in the agreement; the bank further says it can assist in appointing neutral experts or facilitating arbitration when requested under treaty provisions

M. Nawaz Khuhro

Pakistan has categorically affirmed that it retains all options necessary to safeguard its rights and entitlements under the Indus Waters Treaty (IWT) and protect its vital national interests, says Foreign Office Spokesperson, Tahir Andrabi, while responding to the queries regarding the invitation of bids by the Indian government for a project to transfer water from Chenab to Beas at his weekly media briefing in Islamabad today.

The spokesperson said such an inter-basin diversion of water of Chenab into the Beas River system constitutes a grave violation of not just the Indus water treaty, but also of the laws of treaty, particularly the Vienna Convention on the Laws of Treaty, as well as the broader framework of international water law, including the principles reflected in the 1997 UN Convention on Water Courses.

He also described the proposed silt flushing of the Salal Dam reservoir in Reasi district of Indian Illegally Occupied Jammu and Kashmir as a deeply concerning development. He noted it would provide water control capability that is not permissible either under the Indus Water Treaty or the 1978 Salal agreement.

The spokesperson said India has neither officially communicated nor shared any notice of these projects nor it has sought consultations in this regard. He said these projects confirm that India seeks to weaponize water. This carries dangerous implications, not only for Pakistan's economy, but also for regional stability and international peace and security.

Recent developments in the Indus Waters Treaty (IWT) dispute between India and Pakistan have intensified concerns over alleged violations and compliance issues. Since India placed the treaty "in abeyance" in April 2025, Pakistan has repeatedly accused New Delhi of unilateral actions affecting the western rivers, particularly the Chenab and Jhelum systems, which are allocated to Pakistan under the 1960 agreement. Reports indicate that India has undertaken off-season reservoir flushing and operational changes at hydroelectric projects such as Baglihar and Salal without prior notification, which Pakistan considers inconsistent with treaty obligations.

Pakistan has termed these steps a form of "weaponisation of water," arguing that such measures threaten its agriculture-dependent economy and water security, especially during periods of low river flow. Pakistani officials have also raised the issue at international forums, including the United Nations, warning that repeated deviations from treaty procedures undermine regional stability.

On the other hand, India maintains that its actions are linked to security concerns and asserts greater flexibility in managing its hydroelectric infrastructure following the suspension decision. Meanwhile, arbitration and neutral expert proceedings continue under international oversight, further complicating the dispute.

The Indus Waters Treaty (IWT), signed in 1960 between India and Pakistan with the mediation of the World Bank, is widely regarded as one of the most successful water-sharing agreements in the world. Despite multiple wars and prolonged political tensions, the treaty

survived for more than six decades. However, recent developments have placed the agreement under unprecedented strain, leading Pakistan to accuse India of violating both the spirit and the provisions of the treaty.

According to treaty allocations, Pakistan receives approximately 80 percent of the waters of the Indus Basin system, while India receives about 20 percent. The arrangement was designed to protect Pakistan, a lower-riparian state heavily dependent on river flows originating upstream in India.

Pakistan has repeatedly reported that India has violated the treaty through the construction and operation of hydroelectric projects on western rivers allocated primarily to Pakistan. Pakistan argues that the Kishanganga project on the Jhelum River system diverts water in a manner inconsistent with treaty provisions. Islamabad maintains that the project affects downstream flows and undermines Pakistan's water security. Pakistan has also objected to the design features of the Ratle Hydroelectric Project on the Chenab River, claiming that the dam's structure could allow India greater control over water flows than permitted under the treaty.

Pakistan has periodically raised concerns regarding delays in the exchange of hydrological information, inspection visits, and dispute-resolution mechanisms established under the treaty. Such actions, according to Pakistan, weaken transparency and mutual trust. The most serious development occurred in April 2025 when India announced that it was placing the Indus Waters Treaty "in abeyance" following a deadly attack in Indian-administered Kashmir that New Delhi attributed to Pakistan. Pakistan rejected the allegations and described India's move as illegal and contrary to international law, according to international media report.

Pakistan argues that no provision within the treaty permits unilateral suspension and that India's decision constitutes a violation of a binding international agreement. India rejects Pakistan's allegations and maintains that all its hydroelectric projects comply with treaty provisions.

New Delhi argues that: The treaty allows India to construct run-of-the-river hydropower projects on western rivers subject to specific design requirements. Pakistan has frequently used dispute-resolution mechanisms to delay legitimate Indian infrastructure projects.

Changing circumstances, including population growth, energy needs, and security concerns, require reconsideration of aspects of the treaty. The suspension announced in 2025 was linked to India's claim that Pakistan failed to uphold the spirit of goodwill underlying the agreement due to alleged cross-border terrorism. India has further challenged the jurisdiction of certain arbitration proceedings concerning treaty disputes and has described some arbitration bodies as improperly constituted.

Pakistan views the Indus Waters Treaty as a legally binding international agreement that cannot be altered or suspended unilaterally. Islamabad's position includes: Any attempt to restrict or manipulate water flows to Pakistan would threaten millions of livelihoods. Agriculture contributes significantly to Pakistan's economy, and Indus Basin waters support the vast majority of the country's irrigated agriculture. Water is a matter of national security. Any unilateral action affecting Pakistan's allocated waters would violate international law and established treaty obligations. Pakistani officials have repeatedly called upon international institutions and friendly countries to ensure the continued implementation of the treaty and adherence to international water law principles.

According to the World Bank, it helped broker the treaty and remains a signatory. Its role is limited to facilitating dispute-resolution processes outlined in the agreement. It does not determine the merits of disputes. It can assist in appointing neutral experts or facilitating arbitration when requested under treaty provisions. Importantly, World Bank President Ajay Banga stated in 2025 that the treaty contains no provision allowing either country to suspend or terminate it unilaterally. He emphasized that modification or termination would require mutual agreement between India and Pakistan.

The United Nations has not formally become a party to the dispute, but international legal principles governing transboundary watercourses emphasize cooperation, equitable utilization, and the prevention of significant harm to downstream states. The treaty itself is recognized internationally and has often been cited as a model for peaceful water-sharing. Discussions in international forums have generally emphasized dialogue, treaty compliance, and peaceful dispute resolution. Pakistan has sought greater international attention to the issue through diplomatic channels and multilateral institutions. ([Encyclopedia Britannica][8])

The broader UN approach to international water disputes favors negotiated settlements, respect for treaty obligations, and avoidance of actions that could endanger regional peace and security. The United States historically supported the treaty and welcomed its role in reducing tensions between the two nuclear-armed neighbors. Former U.S. President Dwight Eisenhower described the treaty as a rare success in international diplomacy. In recent years, Washington has generally encouraged India and Pakistan to resolve disputes through established mechanisms and maintain regional stability. While the United States has not publicly taken Pakistan's or India's side regarding specific technical disputes, it has consistently supported peaceful dialogue and adherence to international agreements. The U.S. position largely reflects concern over regional security, economic stability, and the prevention of conflict escalation.

The Indus Waters Treaty remains one of the world's most significant water-sharing agreements. Pakistan argues that India's hydroelectric projects and its 2025 decision to place the treaty in abeyance constitute serious violations of both the letter and spirit of the agreement. India, on the other hand, insists that its projects are treaty-compliant and that Pakistan has obstructed legitimate development initiatives.

The World Bank's position is particularly important because it has clarified that the treaty contains no mechanism for unilateral suspension or termination. The United Nations and the United States continue to favor dialogue, treaty compliance, and peaceful dispute resolution.

As climate change, population growth, and water scarcity intensify across South Asia, the future of the Indus Waters Treaty will have profound implications not only for India and Pakistan but also for regional stability, food security, and international water governance. The treaty's survival may ultimately depend on whether both countries choose cooperation over confrontation in managing one of the region's most vital shared resources.

itel Energy's Power Series is Redefining Accessible Energy

The brand launched the Power Up Pakistan initiative to provide diverse, ready-to-use energy products

EU Report

As a true one-stop energy solution provider, itel Energy has taken a massive step toward empowering the national green energy transition. Recently appearing as the Diamond Sponsor at the Lahore Solar Expo, the brand launched the "Power Up Pakistan" initiative to provide diverse, ready-to-use energy products. The mission is clear: making energy easier to access so that everyone can enjoy genuine energy independence. At the heart of these commitments is the newly launched Power Series. Deeply attuned to Pakistan's unique energy landscape, this lineup is purpose-built to answer the local demand for genuine energy independence, delivering affordable, uninterrupted, clean energy backed by highly reliable technology.

The Core Advantage: 100% Grade A LiFe-PO4 Cells

The Standout Feature of the entire Power Series is its uncompromising build quality. Every device within this ecosystem is powered by 100 Grade A LiFe PO4 cells and T1-level industrial-grade batteries. To maximize this premium hardware, each unit features an intelligent Battery Management System (BMS)that actively regulates performance and protects against thermal or electrical fluctuations. Backed by rigorous overall testing and comprehensive safety certifications, this dedication to top-tier components guarantees a highly stable 10-year design life, ensuring absolute peace of mind and long-lasting efficiency for everyday users.

Award-Winning Design: Simple Aesthetics + Smart Technology.

The Power Series doesn't just perform efficiently; it is visually striking. Backed by the 2026 German Design Award, the series redefines the look of portable power. Featuring a unique cube shape paired with a leather handle, the devices perfectly balance rugged functionality with a soft, modern aesthetic. A4-Tiered Product Matrix for Every Scenario. To ensure full-scenario coverage, the Power Series has been intelligently structured into exactly four distinct products, creating a comprehensive matrix that caters to any energy need:

PowerGo: Built specifically for daily mobility and light-to-medium power use. Weighing just 3.5kg, this compact unit packs an impressive 100,000mAh (320Wh) and delivers 3,000 battery cycles. It features 65W fast charging and highly versatile Dual-mode charging (PV and Grid). GoPro: Taking Everyday Portability a step further. Compared to the entry-level Power Go, the GoPro upgrades your experience with AC/DCdual-mode compatibility. This essential addition unlocks true, full-scenario power freedom, allowing you to plug in standard electronics on the fly.

PowerRover: The ultimate versatile companion. Boasting a massive 1000W capacity and T1-level commercial cells (yielding 6,000 lifecycles), the Rover features an AC/DC dual-mode "Plug and Play" design capable of powering high-load devices like 50L mini-refrigerators. It supports dual fast-charging (mains + solar) to reach a full battery in just 2.5 hours. Built for the real world, it operates safely in heat up to 55 C , runs at a whisper-quiet 43dB, features an intelligent BMS, and includes 3-level LED lighting with an SOS mode. It even offers an optional trendy backpack for effortless transport.

PowerTank: Designed for the heaviest lifting, serving as the ultimate UPS upgrade solution for comprehensive home backup and demanding outdoor use.The PowerTank comes equipped with a 500W inverter, a massive 1000Wh capacity, and built-in 400W PV MPPT controller for maximum solar harvesting efficiency. Ultimately, this diverse and reliable four-part lineup brings our mission full circle.

The Power Series is built on the belief that genuine energy independence isn't a privilege reserved only for big businesses or well-equipped urban households; it must also champion the modest needs of small families, rural communities, and everyday individuals. Standing as a testament to itel Energy's enduring promise, this series proves we are a genuine one-stop solution provider, steadfastly dedicated to lighting up every corner of Pakistan. ■

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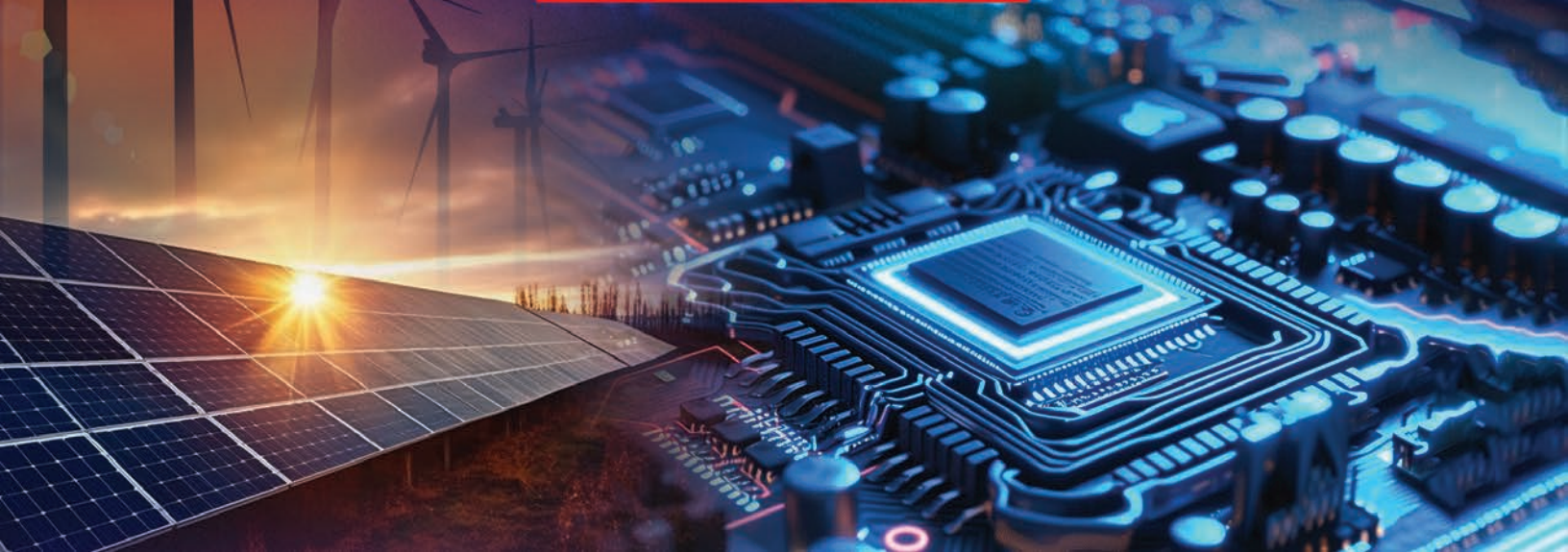


Pakistan's Glaciers on the Brink as Climate Alarm Intensifies

Reducing black carbon emissions should become a strategic national priority; Hindu Kush-Karakoram-Himalaya region is warming at rates significantly above the global average; temperatures in parts of the Hindu Kush are projected to increase by as much as 5.4 C by the end of the century

Zainab Naeem & Nelam Pari

Zainab Naeem is an environmental scientist and leads the program on ecological sustainability and circular economy at SDPI.

Nelam Pari is an adaptation expert and works at SDPI as a research associate.

The collapse of Pakistan's cryosphere is no longer simply about melting ice in remote mountains. It is rapidly becoming a structural threat to water security, food production, energy systems, economic stability and disaster resilience across the country.

The Hindu Kush, Karakoram and Himalayan mountain ranges, often referred to as the Water Tower of Asia, are now undergoing accelerated ecological transformation under the combined pressure of rising temperatures, black carbon pollution and changing precipitation systems.

Pakistan hosts approximately 13,032 glaciers, one of the largest concentrations of ice outside the polar regions. These glacier systems contribute nearly 60 to 70 per cent of the total annual flow of the Indus River system, directly or indirectly supporting over 215 million people through agriculture, drinking water supplies and hydropower generation. Yet the country's governance response remains fragmented and dangerously disconnected from the scale of the crisis emerging in the north.

Scientific projections indicate that the Hindu Kush-Karakoram-Himalaya region is warming at rates significantly above the global average. Under the high-emission scenario, temperatures in parts of the Hindu Kush are projected to increase by as much as 5.4 C by the end of the century. Scientists now warn that Pakistan could lose between 30 and 50 per cent of its glacier volume by 2100 under lower warming pathways, while a trajectory towards a 3°C or 4°C world could trigger glacier losses of 75-80 per cent.

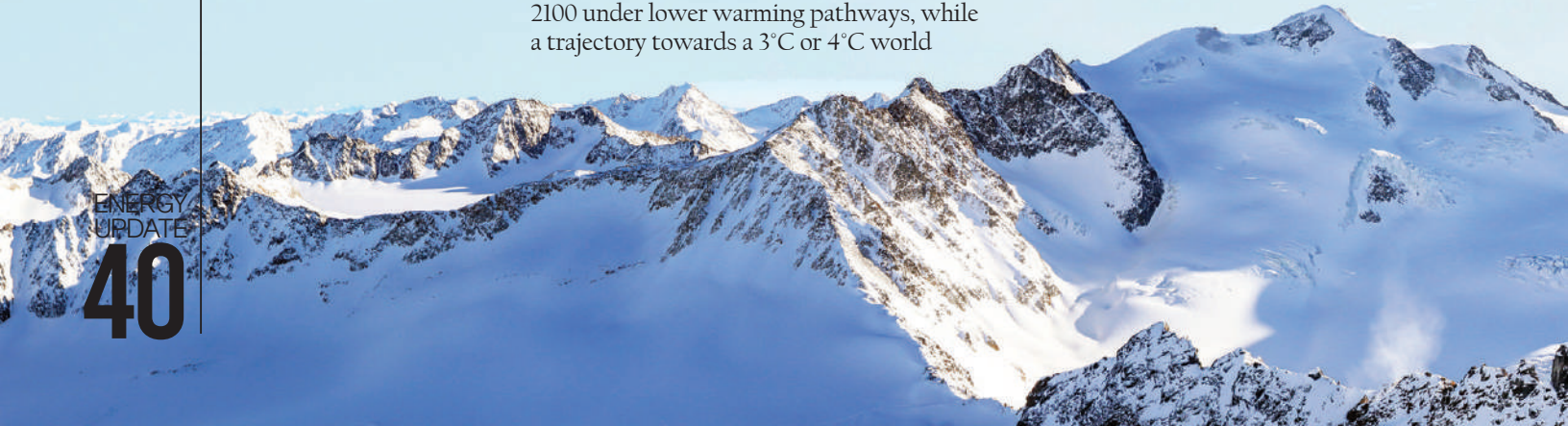
The implications extend far beyond glacier retreat. Pakistan's entire hydrological system depends on the timing and stability of snow and glacier melt. Rising temperatures initially produce excessive flows, flash floods and glacial lake outburst floods, but over time they also reduce long-term freshwater availability as glacier mass declines. In practical terms, Pakistan is simultaneously moving towards more destructive flooding and deeper water scarcity.

As glaciers retreat and precipitation patterns shift, river flow variability is expected to intensify over the coming decades. When ecological instability intersects with geopolitical distrust, the risks multiply significantly. Water security can no longer be viewed solely through the lens of irrigation management or climate adaptation. It must increasingly be understood as a strategic national security issue linked to regional stability, diplomacy and conflict prevention.

One of the most alarming yet poorly discussed dimensions of this crisis is black carbon pollution. Black carbon, generated from diesel fuel, brick kilns, biomass burning and industrial emissions, acts as a major accelerant of glacier melt. When deposited on snow and ice, it reduces surface reflectivity and increases heat absorption, causing glaciers to melt faster. Scientific evidence indicates that nearly 87 per cent of airborne black carbon reaching high-altitude glacier systems originates from South Asian emissions. Industry and residential solid fuel burning together account for 45-66 per cent of anthropogenic black carbon deposition in the region.

Pakistan's glaciers are not only melting because of global warming; they are also darkening due to fossil fuel dependence, inefficient brick kilns, biomass burning and cross-border pollution flows.

The danger is particularly acute because Pakistan's northern regions are



now experiencing rapid growth in glacial lakes, many of which pose a severe risk of Glacial Lake Outburst Floods (GLOFs). According to recent inventories, there are approximately 2,722 glacial lakes located across 142 glaciers in Pakistan. The Hunza Basin alone contains over 1,036 glacial lakes, while the Shigar Basin hosts 856 lakes across 10 glaciers. Many of these lakes are situated on gently sloping glaciers between elevations of 3,600 to 4,300 meters, conditions that significantly increase GLOF susceptibility. Pakistan has already witnessed deadly glacier-related disasters in Gilgit-Baltistan and Khyber Pakhtunkhwa, yet many vulnerable valleys still lack robust early warning systems, evacuation infrastructure and localised resilience planning.

At the same time, Pakistan's broader water crisis is deepening. Per capita water availability has fallen from approximately 5,800 cubic meters in 1950 to less than 1,000 cubic meters today, pushing the country into the category of water-stressed nations.

The agricultural consequences could be severe. Pakistan's food system remains heavily dependent on the Indus Basin irrigation network, which itself depends on glacier-fed flows. Irregular water release patterns could trigger early-season flooding, crop destruction, reduced groundwater recharge and late-season droughts simultaneously. The result is a future in which food security, rural livelihoods and inflation are directly linked to cryosphere instability in northern Pakistan.

Changes in glacier systems are also expected to intensify transboundary water pressures as climate-induced variability alters downstream river flows. Part of the problem lies in institutional fragmentation. Glacier-related governance in Pakistan remains divided among climate agencies, disaster management institutions, water authorities and provincial departments, which often operate without integrated coordination systems. Existing policies acknowledge climate risks broadly but still lack a dedicated glacier adaptation architecture capable of integrating cryosphere science into development planning.

Pakistan urgently requires a national glacier adaptation framework built around scientific monitoring, black carbon reduction, basin-wide water planning and localised resilience systems. Glacier adaptation cannot remain limited to post-disaster response after floods occur. It must be embedded in development planning, fiscal planning, agricultural policy, hydropower planning and regional climate diplomacy.

Reducing black carbon emissions should become a strategic national priority. Cleaner brick kiln technologies, regulation of diesel emissions, controlling tourist activities and providing alternatives to biomass burning by expanding clean cooking access and improving household energy systems are not simply air pollution measures anymore; they are glacier protection measures. Similarly, glacier monitoring systems, remote sensing infrastructure and localised early warning systems require major investment if Pakistan is to reduce future disaster losses.

Most importantly, glacier governance must move beyond short-term optics. Tree-plantation campaigns alone will not stabilise Pakistan's cryosphere while black carbon emissions continue to rise and water governance remains fragmented. The country cannot continue responding to glacier disasters only after valleys collapse, lakes burst or rivers overflow. By then, adaptation becomes an emergency response rather than resilience.

The science is increasingly clear that Pakistan's glaciers are entering a phase of accelerating instability that will define the country's future water security, agricultural productivity and climate resilience for decades to come. The question is whether the country will finally treat the cryosphere as the strategic national asset it truly represents before ecological destabilisation begins to outpace institutional response entirely. ■

Denmark explores sustainable water resource management partnership with Pakistan.
At a two-day dialogue in Islamabad, Ambassador Maja Derrous Mortensen of Denmark to Pakistan emphasized the importance of "listening, learning, and building equal, locally driven partnerships" in advancing groundwater management and sustainable water solutions.
A step forward toward innovation, knowledge exchange, and climate-resilient water governance.

Sindh Chief Minister Syed Murad Ali Shah, Governor Sindh Syed Muhammad Nehal Hashmi, Italian Consul Mr. Fabrizio Bielli, and Director General, Ministry of Foreign Affairs, Irfan Soomro, pose for a photograph during a reception hosted by the Consulate of Italy to mark the National Day of the Italian Republic at a local hotel.

Economics of energy arbitrage

Dr Khalid Waleed

The writer holds a doctorate in energy economics and serves as a research fellow at the Sustainable Development Policy Institute (SDPI) in Islamabad.

Arbitrage is a simple economic idea with powerful consequences. It means buying something when it is cheap and using or selling it when it is expensive. A trader who buys wheat in a surplus market and sells it in a deficit market is doing arbitrage. A shopkeeper who buys stock before prices rise and sells later is also doing arbitrage.

The profit comes from the price difference, but the wider economic value comes from correcting the imbalance. Arbitrage moves goods from abundance to scarcity, from low-value use to high-value use and from idle supply to productive demand.

At its core, arbitrage is built on the economics of supply and demand. When supply is high and demand is low, prices fall. When demand is high and supply is tight, prices rise. The arbitrageur responds to this difference. In doing so, he does not merely earn a margin; he improves allocation. In a functioning market, it is the reward for moving value from the wrong place to the right place or from the wrong time to the right time.

Energy arbitrage applies the same principle to electricity, but with a more complicated twist. Electricity is not like potatoes, wheat or cotton. It is difficult to store and is normally produced and consumed simultaneously. This makes time extremely important. A kilowatt-hour at noon is not economically equal to a kilowatt-hour at 8pm. At noon, solar power may be abundant, demand moderate, and the marginal cost of supply low. In the evening, solar disappears, household demand rises, commercial load remains active, and expensive generation may enter the system. The same unit of electricity, therefore, carries a different economic value in different hours.

First, energy arbitrage starts with recognising that electricity has a time value. Pakistan's public debate usually focuses on average tariffs, but the power system does not operate on averages. It operates hour by hour. Some hours are cheap because demand is low, renewable energy is available or low-cost plants are setting the margin. Other hours are expensive because demand rises, solar generation fades, imported fuel plants enter dispatch or grid constraints force inefficient generation. When tariffs hide these differences, consumers receive weak signals. They are not encouraged to consume in cheap hours, nor are they adequately rewarded for reducing load in expensive hours. The result is tariff blindness.

Second, arbitrage converts cheap-energy windows into economic opportunities. The analysis shows that the solar window between 11am and 3pm had an average marginal cost of Rs14.50 per kWh, compared with Rs 19.28 per kWh during the evening peak and Rs21.94 per kWh in the late evening. This difference should not be treated

as a technical footnote.

Third, arbitrage is essential for managing solarisation. Solar power lowers daytime marginal cost because sunlight has no fuel cost. But solar also creates a timing problem. It produces abundantly during the day and disappears in the evening, just when demand often remains high. Without storage or flexible demand, the system faces a steep evening ramp. The analysis shows this clearly.

Pakistan should stop treating electricity as a uniform commodity and start treating it as a time-sensitive service. Cheap hours should invite demand. Expensive hours should encourage conservation, storage, discharge and demand response.

Fourth, batteries are the most obvious technology for energy arbitrage, but they are not the only one. A battery charges when energy is cheap and discharges when energy is expensive. However, demand response can do the same without a battery.

Fifth, arbitrage must be understood separately from the final consumer tariff. Marginal cost is the cost of serving one additional unit of electricity in a given hour. The consumer tariff, however, includes many other components: capacity payments, transmission costs, distribution margins, market operator fees, fuel adjustments, quarterly adjustments, taxes and surcharges. This is why low marginal cost in some hours does not automatically translate into lower electricity bills.

Sixth, the high-cost tail is where reform should begin. The top 5.0 per cent of hours averaged Rs32.71 per kWh, while the top 1 per cent averaged Rs34.90 per kWh. These are the hours where demand response and battery discharge provide the highest economic value. A unit saved during a Rs35 per kWh hour is far more valuable than a unit saved during a Rs5 per kWh hour. Yet Pakistan's conservation messaging often treats all units as equal. That is economically lazy. A smarter policy would reward consumers and industries for reducing demand during the most expensive hours and encourage productive consumption during cheap hours.

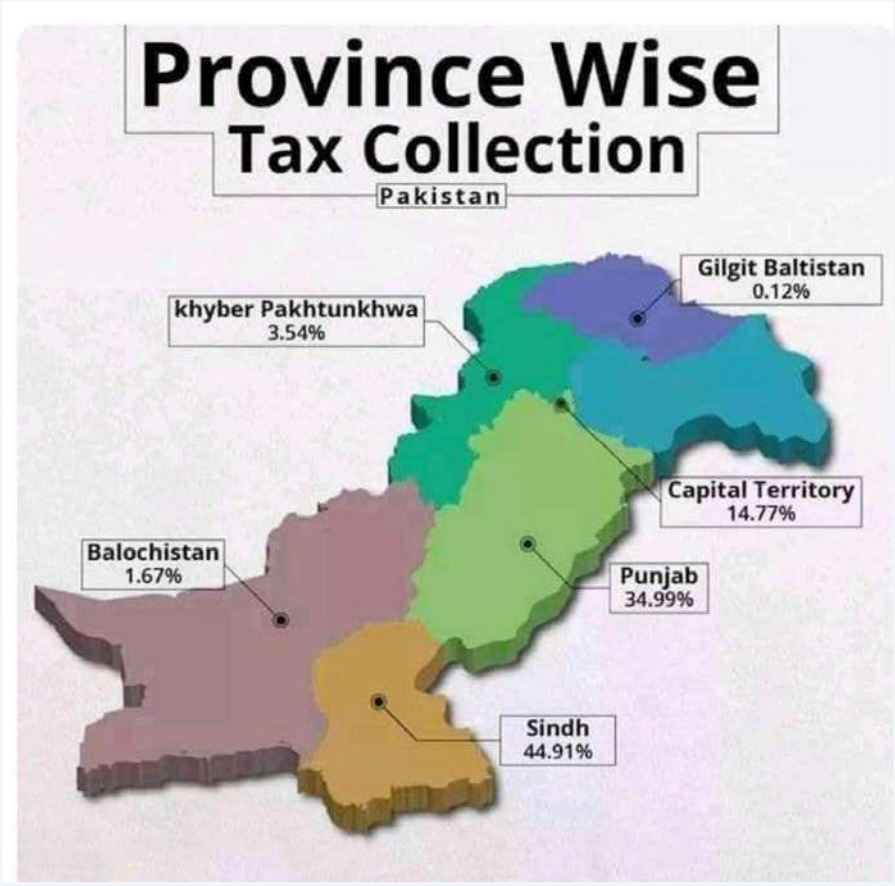
Seventh, arbitrage can improve the political economy of rooftop solar and batteries. If policymakers treat prosumers only as a threat to distribution company revenues, more consumers will invest in batteries to escape the grid. That would deepen the utility death spiral. But if prosumers are treated as flexibility providers, their batteries can become grid assets.

Eighth, the regulatory system must catch up with the economics.

Energy arbitrage requires smart meters, transparent hourly price signals, stable time-of-use tariffs, aggregator rules, ancillary service markets, distribution-level hosting capacity data and credible settlement systems. It also requires trust. No investor will finance batteries, storage-backed solar or industrial flexibility if pricing rules are changed abruptly. Arbitrage runs on price spreads, but investment runs on confidence. Without regulatory credibility, even the best battery becomes an expensive UPS.

The policy conclusion is straightforward. Pakistan should stop treating electricity as a uniform commodity and start treating it as a time-sensitive service. Cheap hours should invite demand. Expensive hours should encourage conservation, storage, discharge and demand response. Batteries should be recognised not only as backup devices but as economic instruments. Pakistan's electricity reform must move from selling units to valuing time, flexibility and system efficiency.

The cheapest power may not come from a new plant, but from using, storing and shifting electricity at the right hour. ■



Some political and business circles claim Karachi contributes "over 70% taxes," but economists usually say the more realistic verified range is approximately 55%–65% directly, while higher figures may include port-clearing revenues collected in Karachi for goods consumed nationwide.
So, in simple terms:

Metric	Approximate Share by Karachi
Federal tax collection	**55%–70%**
Customs/import duties	**70%+**
National GDP contribution	**20%–25%**
Banking sector deposits	**50%+**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Waqar Gillani

The writer is a staff reporter

Islamabad: deadly air, furious climate

Once celebrated as Pakistan's serene capital, nestled against the Margalla Hills, Islamabad is rapidly losing its natural environment with the expansion of housing schemes

Once celebrated as Pakistan's serene capital nestled against the Margalla Hills, Islamabad is rapidly losing its natural environment with expanding housing schemes, unchecked urbanisation and shrinking green spaces altering the city's climate. In recent years, parts of Margalla foothills have been increasingly converted into residential sectors and commercial housing projects, raising concerns among residents and environmental experts who say the city is becoming hotter, more polluted and increasingly vulnerable to climate-related disasters.

This trend is not limited to Islamabad alone.

Across Pakistan's major urban centres, including Karachi, Lahore, Faisalabad and Multan, agricultural farms and green belts are rapidly giving way to concrete structures and expanding neighbourhoods, significantly affecting local climates and ecological balance. "This is not the city that we used to live in, enjoying its green and pleasant environment," says Ahmad Saleem, a resident of Islamabad. "Increasing urbanisation, amid population mismanagement and limited development, in rural areas has landed the city in a mess. It is adding to climate change, urban flooding and erosion of greenery."

Residents blame the city administrations for poor planning, weak enforcement of land use laws and failure to protect green spaces despite repeated warnings from experts. A comparison of Pakistan's major cities with their condition two decades ago shows how rapid and largely unplanned urbanisation has transformed urban environments. Experts say cities are not only becoming warmer, they are also witnessing an alarming reduction in vegetation cover.

A recent study by the International Growth Centre warned that Pakistan's cities are facing escalating climate-change threats ranging from extreme heatwaves to urban flooding, posing risks to economic stability and public health. The study stressed that targeted climate adaptation measures, green infrastructure and data-driven planning were urgently needed to build resilient urban centres.

The study also highlighted worsening air pollution in Pakistani cities, describing it as a major health and economic crisis. According to the findings, poor air quality contributes to over 200,000 deaths annually and costs Pakistan up to 6.5 percent of its GDP due to healthcare expenses and productivity losses. For many residents living in urban centres, rapid urbanisation has become deeply concerning. It is closely linked to population pressure, environmental degradation and intensifying climate change impacts.

According to Pakistan Bureau of Statistics, nearly 40 percent of the country's population now lives in urban areas. Projections suggest that this figure could rise to 59 percent by 2050, further intensifying pressure on already overstretched cities. Citizens are urging governments to adopt comprehensive urban development policies that incorporate environmental sustainability and climate adaptation strategies.

"If housing societies and urbanisation are considered necessary, there must be laws making it mandatory for these societies to plant a large number of trees," says Saira Ali, a university student in Lahore. "Authorities can link issuance of no objection certificates for housing societies with plantation requirements." She also stresses the need for strict land use regulations to preserve green areas and agricultural land while promoting green infrastructure.

Environmental experts believe that urban development is closely related to economic growth and ecological sustainability, making cities major battlegrounds in the fight against climate change.

"Islamabad was planned as a green and breathable capital. Over the last 10-15 years, we have allowed it to move closer to the pattern visible in other Pakistani cities: more concrete, more vehicles, more construction dust, more commercial pressure and fewer natural buffers," says Dr Abid Qaiyum Suleri, the Sustainable Development Policy Institute executive director. Dr Suleri, a resident of Islamabad himself, says trees, green belts, natural streams and the Margalla ecosystem were not merely decorative but part of essential public health infrastructure that helped keep the city cool, absorb pollutants, reduce flooding and improve quality of life.

"The city has not entirely lost its green identity but that identity has been weakened," he adds.

"Once natural infrastructure is replaced by asphalt, plazas, housing schemes and parking lots, the cost appears in hotter streets, poorer air quality, more respiratory stress, more cardiac risk and rising pressure on families and hospitals."

He says Islamabad's worsening environmental situation should not be viewed through the lens of global climate change alone; local planning failures, he says, have significantly contributed to the crisis. According to him, road expansion, unchecked construction, waste burning, diesel emissions, tree cutting and weak enforcement mechanisms are amplifying the effects of global warming on ordinary citizens.

"Older residents of Islamabad remember cooler evenings, cleaner air, clearer views of the Margallas and more shaded roads," he says. "Today, many sectors face heavier traffic, higher temperatures, dust from construction sites, pressure on green belts and rapid expansion into areas that were never meant to carry the density."

He notes that children suffering from asthma, elderly people with heart and lung diseases, outdoor workers, traffic police officials and schoolchildren are among those most affected by worsening environmental conditions. "Pakistani authorities appear to treat trees as beautification. That is a serious mistake," Dr Suleri says. "In a warming country, a mature tree is a heat shield, an air filter and a water management asset. A plantation drive cannot compensate for the careless removal of mature trees. We need tree protection, not only tree plantation." While Lahore faces a severe smog crisis every year, he says, Islamabad still has time before environmental degradation becomes irreversible.

The International Growth Centre study also recommends the use of data-driven planning, Geographic Information Systems and real-time monitoring systems to help authorities predict risks, improve urban planning and strengthen disaster management capacities. Nature-based solutions including urban forests, green roofs and restoration of wetlands are increasingly being viewed as effective and cost-efficient strategies for reducing urban heat, managing storm water and improving air quality. "The solution is not to stop development. The solution is to discipline development," Dr Suleri says. He calls for a public tree census; legal protection of mature trees; strict control of dust and emissions; preservation of green belts; and climate-sensitive urban zoning.

"Without this," he warns, "we will keep paying for poor planning through hospital bills, lost productivity and declining quality of life." ■

Courtesy: The News

A productive meeting was held at Inverex Head Office between CEO Mr. M. Zakir Ali, Managing Editor EU Mr. M. Naeem Qureshi, and Marketing & Promotions Manager Mr. Mustafa Tahir. The discussion included congratulations on Mr. Zakir Ali's blessed Hajj journey along with insights on upcoming Energy Update events and Inverex's new products and future projects.

Federal Minister for Power Division Sardar Awais Ahmed Khan Leghari and Tajikistan's Minister for Energy and Water Resources Juma Daler Shofaqir co-chairs the 8th Joint Commission meeting between both countries in Dushanbe on June 04, 2026

Climate-proofing CPEC 2.0 in Pakistan

Climate resilience standards must be embedded in every CPEC 2.0 project.

Ali Tauqeer Sheikh

The writer is a climate expert. This article is based on his presentation delivered at the Pakistan-China Industrialisation Dialogue organised by China-Pakistan Institute, Islamabad

AS Prime Minister Shehbaz Sharif travels to Beijing this week to mark 75 years of Pakistan-China relations, the centrepiece of his agenda will be CPEC 2.0. The 14th Joint Cooperation Committee (JCC) meeting in September 2025 formally launched phase II, anchored in five corridors: growth, livelihood, innovation, green development, and regional connectivity. The direction, at last, is set.

Translating that direction into a durable design is the defining task ahead. CPEC 1.0 was a government-to-government enterprise: state-driven and infrastructure-focused. CPEC 2.0 is explicitly conceived as business-to-business (B2B) with industrialisation, technology transfer, and private investment at its core. This transformation demands a coherent implementation vision that Pakistan has still to develop. The experience of phase I's special economic zones (SEZ) is instructive — despite significant infrastructure investment, industrial activity and employment generation have remained well below expectations, with several zones struggling to attract manufacturers rather than property developers.

The B2B phase cannot afford similar drift. As the details are being finalised, there is a timely opportunity to ensure one critical thread runs through every corridor, project and financing agreement, ie, climate resilience. Getting this right would elevate the corridor into a model for climate-smart development across the Global South.

Phase 1 legacy: CPEC 1.0 delivered genuinely transformative outputs including Gwadar's seaport and airport, over 8,000 megawatts of new power capacity, and nearly 1,000 kilometres of roads. The $62 billion corridor addressed urgent infrastructure deficits. The energy legacy is complicated. It has raised coal's share of Pakistan's power mix from three to nearly 20 per cent in seven years, leaving the country exposed to imported coal dependency and stranded asset risk as global coal economics deteriorate. CPEC 2.0 can address this; the green corridor offers the right instrument to do so.

Climate resilience standards must be embedded in every CPEC 2.0 project.

New directions: CPEC 2.0's declared roadmap — industrialisation, SEZs, agriculture, maritime development, mining, digital technology, ML-1, the Karakoram Highway (KKH) and Gwadar — represents a maturing from infrastructure-first to economy-wide integration. As implementation takes shape, one strategic opportunity deserves early attention: energy is the single largest domain of Chinese investment in Pakistan, and central to the latter's commitment to 60pc clean power by 2030. It sits within the green corridor, one of five declared pillars. Realising that potential requires three early decisions — which projects qualify, by what climate standards, and through what financing mechanisms. These are not technical details to defer as this is the architecture that determines

whether the green corridor transforms or merely inspires. That conversation is best initiated now, while the design is still open.

Climate exposure: Pakistan's vulnerability to climate change is not contested, yet we must not inadvertently fund our own destruction. International research has determined that global heating made the 2022 floods up to 50pc worse. Over 33 million people were displaced and economic losses exceeded $30bn — roughly half of all CPEC investments accumulated over a decade, destroyed in weeks. This shock is the new normal, and CPEC infrastructure sits directly in its path.

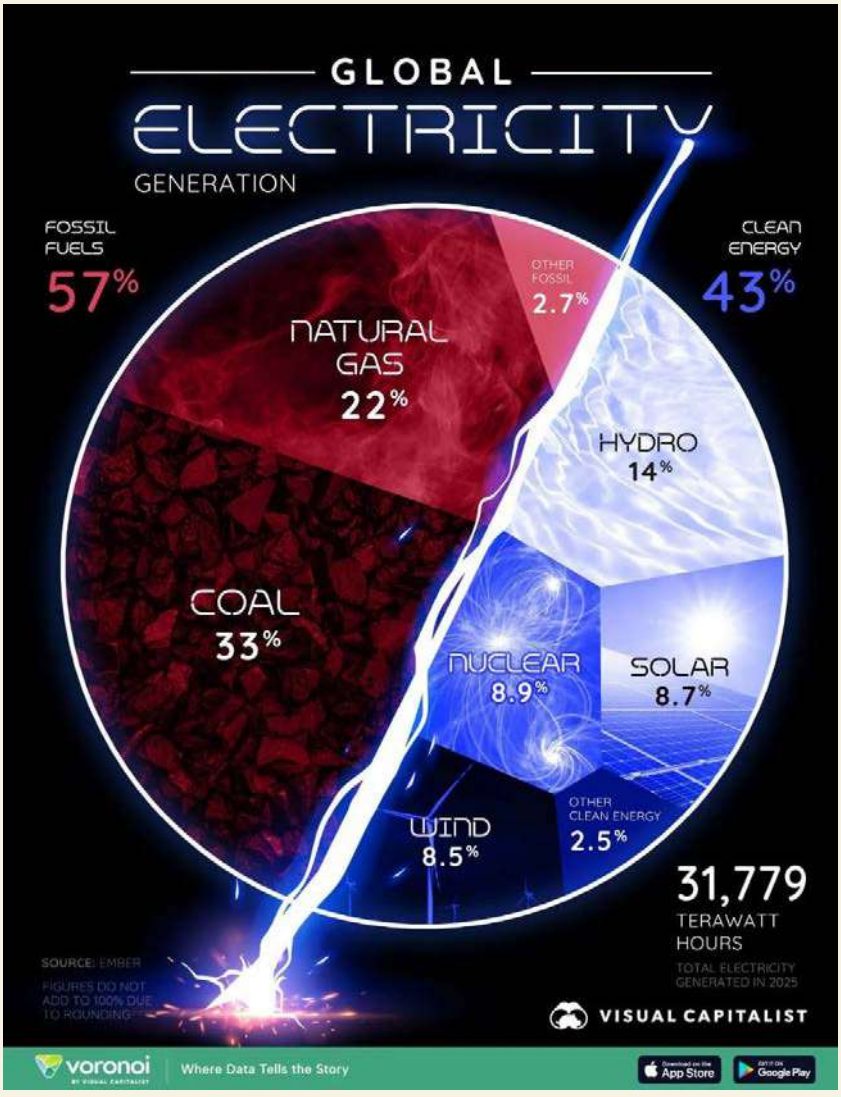
The Dhabeji SEZ in Sindh sits in one of the districts most severely affected by the 2022 floods; Rashakai in KP lies in a river-adjacent zone of documented flood risk. No B2B transaction will maintain long-term investment in a SEZ that floods every three years. The KKH, the physical spine of CPEC, is already being realigned due to a hydropower dam, and climate-driven glacial lake outburst floods, permafrost melt and intensifying monsoons will continue reshaping the corridor's terrain. Engineering these projects without climate projections embedded in their design is not cost-saving, but cost-deferral.

Green contradiction: By mid-2025, Pakistan had imported approximately 36 gigawatts of Chinese solar panels, roughly three-quarters of the country's entire installed power generation capacity, with affordable lithium batteries rapidly following. Pakistan's electric vehicle market grew by 191pc in 2025 alone, driven overwhelmingly by Chinese brands, with government targets calling for 30pc of EVs by 2030. The corridor that built coal plants by design is watching a solar revolution and a mobility transformation occur by default. Households and commuters are embracing Chinese clean technology faster than policy can keep up. Both transitions are happening outside formal CPEC frameworks.

CPEC 2.0 has the opportunity to own both. As I argued at the Pakistan-China Industrialisation Dialogue convened by the Pakistan-China Institute, climate-proofing the green corridor requires a structured framework, one that redirects investments towards renewables and clean mobility, establishes carbon standards for SEZs and connectivity projects, and places the managed retirement of existing coal plants on the formal bilateral agenda. Getting this right is what gives the green corridor its substance.

The Nationally Determined Contributions link: Pakistan's NDC 3.0 commits to reducing projected 2035 emissions by 50pc — 17pc unconditionally, and 33pc conditional on international finance and technology transfer. The strategic opportunity lies in the history: Pakistan's 2016 NDC calculated its emissions baseline using 9pc GDP growth projections reflecting CPEC's expected industrial expansion, formally embedding the corridor's growth as a source of future emissions. That can now be reversed. The conditional 33pc target is precisely what a well-designed green corridor could deliver, if technology transfer in clean manufacturing becomes an explicit JCC commitment, giving Pakistan a credible mechanism with which to unlock international climate finance. CPEC 2.0 and NDC 3.0 should be read together. At present, they are being written in separate ministries and there's no connecting logic.

Three asks: Three commitments would translate climate-proofing from rhetoric into architecture. First, climate resilience standards must be embedded in every CPEC 2.0 project — ML-1, KKH, and Gwadar engineered to updated flood, glacial melt and heat projections, with a mandatory climate risk screening protocol in the updated Long-Term Plan. Second, the green corridor must become operational: a defined pipeline of solar, wind, and storage projects with financing and technology transfer commitments agreed at JCC level within 2026. Third, building upon Panda bonds, a CPEC green finance window should be negotiated with a dedicated mechanism co-structured with multilateral institutions to attract concessional climate capital that bilateral loans cannot access. ■



Can solar save textile industry?

Policy tweaks, particularly shift to net billing, impeding further solar adoption

Naeem Ahmad

The writer is a freelance journalist

Pakistan imported over 50 Gigawatt (GW) of solar panels at an estimated cost of almost $18 billion in the past five years, a volume equivalent to the country's entire grid capacity, a study has said. The boom in renewable energy has protected seven million households and many big businesses against energy price shocks and geopolitical risk, it added.

However, as per the study, the development has continued to surge the price of power for those households and small and medium-sized enterprises (SME) that continue to drive electricity from the grid due to lack of finances and/or space to install solar equipment on rooftops in the country.

Speaking at the launch of the study titled 'Mapping Pakistan's Distributed Energy Finance', at Karachi School of Business and Leadership (KSBL), on Friday, Ahtasam Ahmad, Energy Finance & Climate Tech Lead, Renewables First, said the government and the power plants integrated in the national grid were having some three to five years to make the power affordable from the national grid.

"The upcoming cheaper battery storage systems are going to make the national grid almost completely irrelevant for hundreds of thousands of households and businesses running on solar power and multiplying the power crisis for the grid dependents," he said. The price of power from the national grid has continued to rise, as drop in demand for electricity from the system has kept

surging capacity payment (fixed cost of maintaining ideal power plants) and circular debt.

Ahmad said the demand for the grid power goes significantly down during the broader daylight everyday when consumers use solar power. "They mostly continued to depend on grid power during morning and night timings." However, people are now installing battery storage systems to avoid the expensive grid power during morning and night timing as well, according to Ahmad.

A participant from the audience, who introduced himself as an engineer, said, "the cost of the latest sodium-based battery storage stand almost half compared to lithium batteries in use at present". "The cut in cost is expected to further reduce consumers' reliance on grid power going forward," he said. Renewables First officials said the study showed out of the over 50 GW imported solar panels, a total of 38 GW worth $13.6 billion was found in use in the country as of 2025. The breakdown suggests 16.6 GW (almost 44% of the total solar installed capacity) was installed in the residential areas, showing households were leading the solar consumption among all.

Another 9.9 GW (26%) of the solar system was installed in the industrial sector, some 8.1 GW (21.3%) in the commercial sector and 3.3 GW (8.7%) worth of solar panels were found in use in the agriculture sector in Pakistan. The remaining 10-12 GW out of the total imported solar panels were believed to be in godowns of solar dealers and/or installed in far flung areas, a climate expert added.

Despite the boom in solar consumption, the transition to clean energy has been deeply unequal. Access has been almost entirely concentrated among high-income households and large businesses – those who can absorb high upfront capital costs without financing support. Low-to-middle-income households and SMEs (which contribute nearly 40% in Pakistan's economic growth) have been largely left behind.

Naveen Ahmed, Green Finance Lead, Renewables First, said for millions of households and SMEs, clean energy remained financially out of reach not because demand was absent, but because of limited access to financing. She said banks in Pakistan were managing deposits worth $140 billion. "However, the formal financial sector has extended merely around $300 million in financing for solar systems." According to her, the gap in financing is not a result of insufficient capital in the system, but structural weaknesses in credit intermediation.

The two officials argued the solar loan remained a major hurdle for most customers due to lack of collateral with them. Solar consumers, they added, could repay loans from monthly savings to be earned through utilisation of cheaper solar power and generating the electricity in surplus to be inducted into the system.

Mutaher Khan, Head of Insight Lab, KSBL, said banks should adopt a separate reporting system for solar and other clean energy financings unlike they report the financings in general to industries, commercial and agriculture sectors. The separate reporting would help better understand the lending landscape in the energy sector, he added. Bankers, academics, and energy experts from the audience argued the national power grid system would remain intact despite continuous cut in reliance on the system due to rising power tariff from the grid. ■

Blue economy: a strategic necessity

The real risk is not that Pakistan is dreaming too big about the blue economy; it is that the country continues to think too small

Dr Waseem Ali Tipu

The writer is an independent consultant specialising in sustainable public-private partnership projects

Recently, the Planning Commission of Pakistan emphasised Pakistan's blue economy. The narrative has attracted attention of several critics who have described the commission's narrative as "unrealistic" and "detached from economic realities." While this discussion is intellectually engaging, it fails to acknowledge an important point: nations become maritime powers through their institutions and infrastructure based on strategic thinking rather than waiting for favourable conditions.

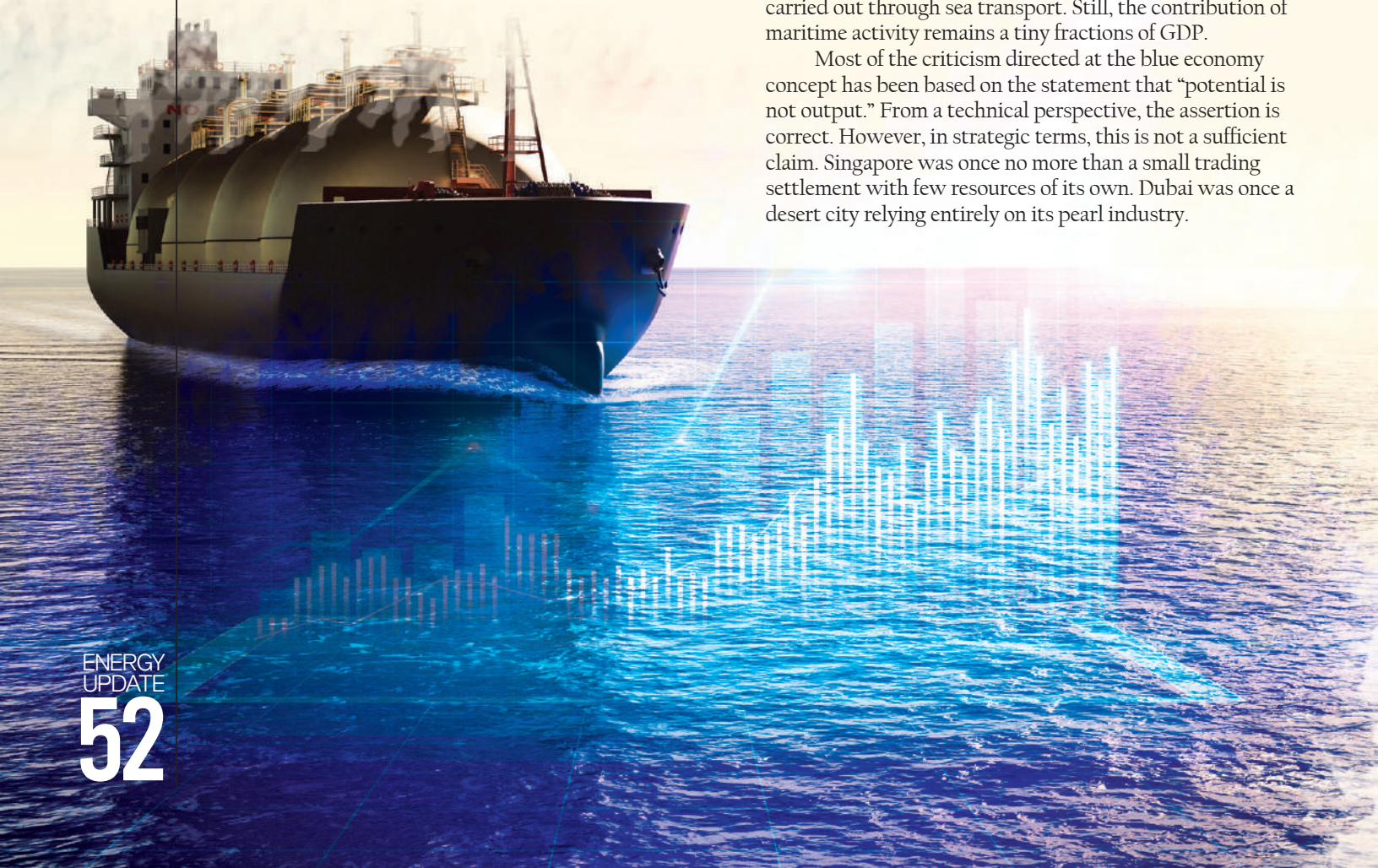
In this context, Pakistan's blue economy concept should be seen not as an attempt to announce prosperity but as a roadmap to explore a new economic frontier. The maritime economy in Pakistan has remained neglected despite its geography and strategic importance.

The blue economy approach presented by the Planning Commission cannot be considered an attempt to achieve rapid prosperity. Rather, it is a national strategy for tapping into an underexplored economic sphere. The maritime industry of Pakistan has been lagging behind for decades despite significant geographic and strategic advantage. Continuing to overlook this untapped area of growth would amount to criminal neglect.

The OECD estimates that the ocean economy will reach $3 trillion globally by 2030. This includes various segments of fisheries, offshore renewable energy, shipping, maritime biotechnology, maritime logistics and tourism. Countries in Asia, Africa and the Gulf region are realigning their national priorities to take advantage of this shift.

In this evolving global scenario, Pakistan cannot afford maritime isolation. Pakistan has over 1,000 kilometers of coastline and an Exclusive Economic Zone abundant in fisheries, mineral deposits and strategically located shipping lanes. Almost 95 percent of Pakistan's foreign trade is carried out through sea transport. Still, the contribution of maritime activity remains a tiny fractions of GDP.

Most of the criticism directed at the blue economy concept has been based on the statement that "potential is not output." From a technical perspective, the assertion is correct. However, in strategic terms, this is not a sufficient claim. Singapore was once no more than a small trading settlement with few resources of its own. Dubai was once a desert city relying entirely on its pearl industry.



The Planning Commission has not suggested that development will derive automatically from the country's geography. However it has recognised and acknowledged an opportunity.

Another aspect criticised with regard to the framework is related to the issue of data availability and projections. Undoubtedly, there is room for better collection of maritime data in Pakistan. However, if nations had to wait till they received complete information about their infrastructure investment, many success stories would never materialise.

It is important to note that the Gwadar project has been criticised unfairly. Ports take decades to achieve their full potential. Rotterdam, Shanghai and Jebel Ali took many years to become the success that they are today.

Gwadar thus should not be measured in terms of immediate commercial benefits alone. Its strategic importance arises from Pakistan's ability to be a part of newly emerging economic corridors linking Central Asia, the Middle East, South Asia and Western China. Infrastructure investments are key to creating future possibilities.

The blue economy framework needs to be seen not as a panacea of instant transformation, but as a doctrinal guide for maritime development. It must be stressed that in geopolitical terms Pakistan's maritime future is not optional.

The blue economy approach will establish coordination between the relevant actors in the government, including ministries, port authorities, fisheries departments, environment protection organisations, navies, private investors and provincial governments. Reforms and vision are not mutually exclusive. Rather reform is often the mechanism through which a vision becomes reality.

The environmental factors need to be weighed in a balanced manner. In the context of the current blue economy model that focuses on integrating environmental sustainability into economic growth plans, sustainable fisheries, marine biodiversity protection, climate adaptation, mangrove planting and renewable offshore energy production have become vital components of any blue economy strategy adopted across the world.

Pakistan, one of the countries most affected by climate change, cannot isolate its efforts towards environmental protection from economic development planning. Coast degradation, rising sea levels and fish stock depletion pose direct threats to the livelihoods of its citizens. There is an opportunity now to incorporate environmental management into national development planning through the blue economy. Economic discourse cannot be reduced to simplistic dichotomies such as "mirage vs reality." The success or failure of Pakistan's maritime endeavours is not inevitable. Rather, it requires political dedication, institutional reforms, environmental conservation and strategic patience. The real risk is not that Pakistan is dreaming too big about blue economy; it is that it continues thinking too small. ■

Call to Boost Pak-Canada Ties

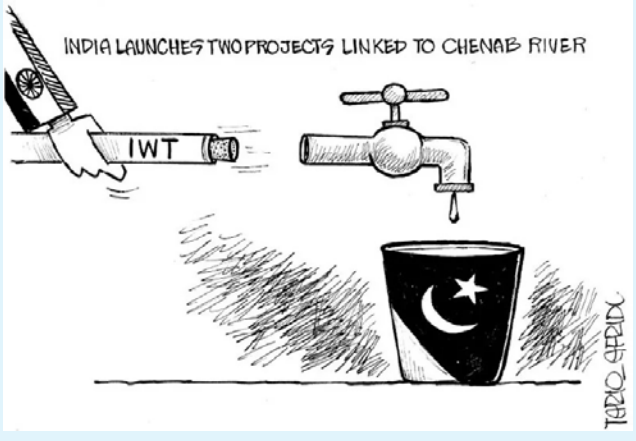
EU Report

The first meeting of the Pakistan-Canada Business Council of the Federation of Pakistan Chambers of Commerce and Industry (FPCCI) was held at Federation House, bringing together the Board of Directors and Executive Members to discuss strategies for enhancing bilateral trade and economic cooperation between Pakistan and Canada.

The meeting focused on promoting exports and strengthening trade relations across a wide range of sectors, including textiles, leather, food products, fisheries, sports goods, construction materials, surgical instruments, energy, chemicals, and other industries. Participants emphasized the importance of exploring new business opportunities and fostering stronger commercial partnerships between the two countries.

Chairman of the Pakistan-Canada Business Council FPCCI, Dr Zahid Hasan Ansari, delivered the welcome address and outlined the Council's vision, scope, and future roadmap. He highlighted the significant potential for increasing trade volumes and investment cooperation between Pakistan and Canada and encouraged members to take proactive initiatives to strengthen business-to-business linkages and facilitate greater market access for Pakistani exporters.

Senior Vice President FPCCI, Saquib Fayyaz Magoon, also addressed the gathering and shared his views on enhancing trade diplomacy and creating new avenues for bilateral economic engagement. Additional Secretary General FPCCI, Ahmed Zaman, provided valuable insights on trade promotion and institutional collaboration. ■



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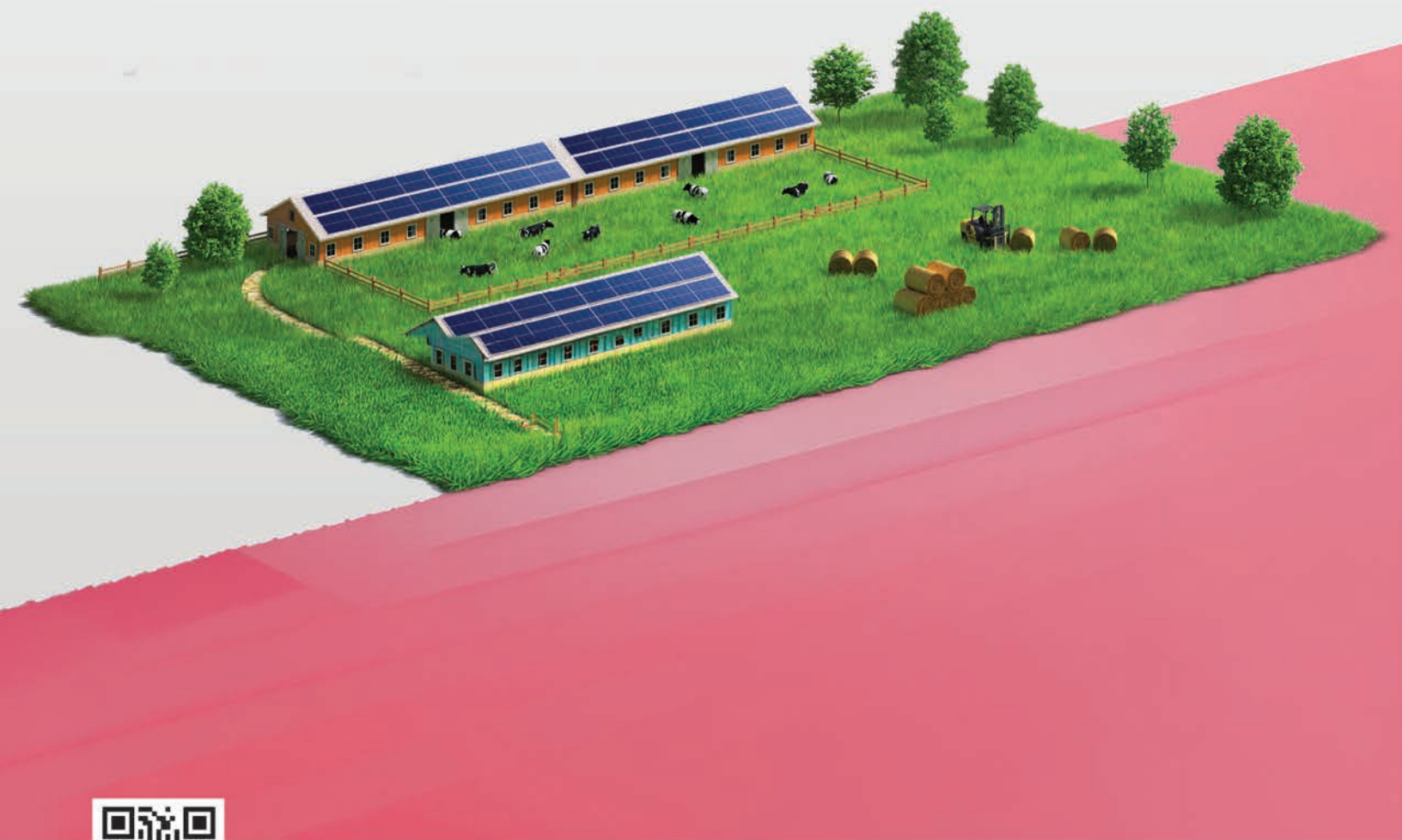

Scan the QR code to enter the official website