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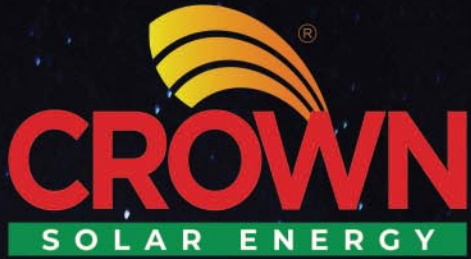
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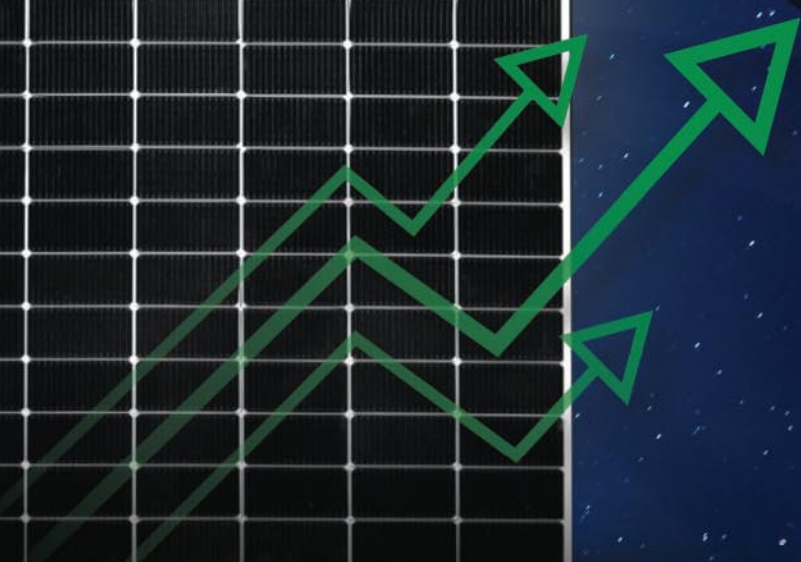
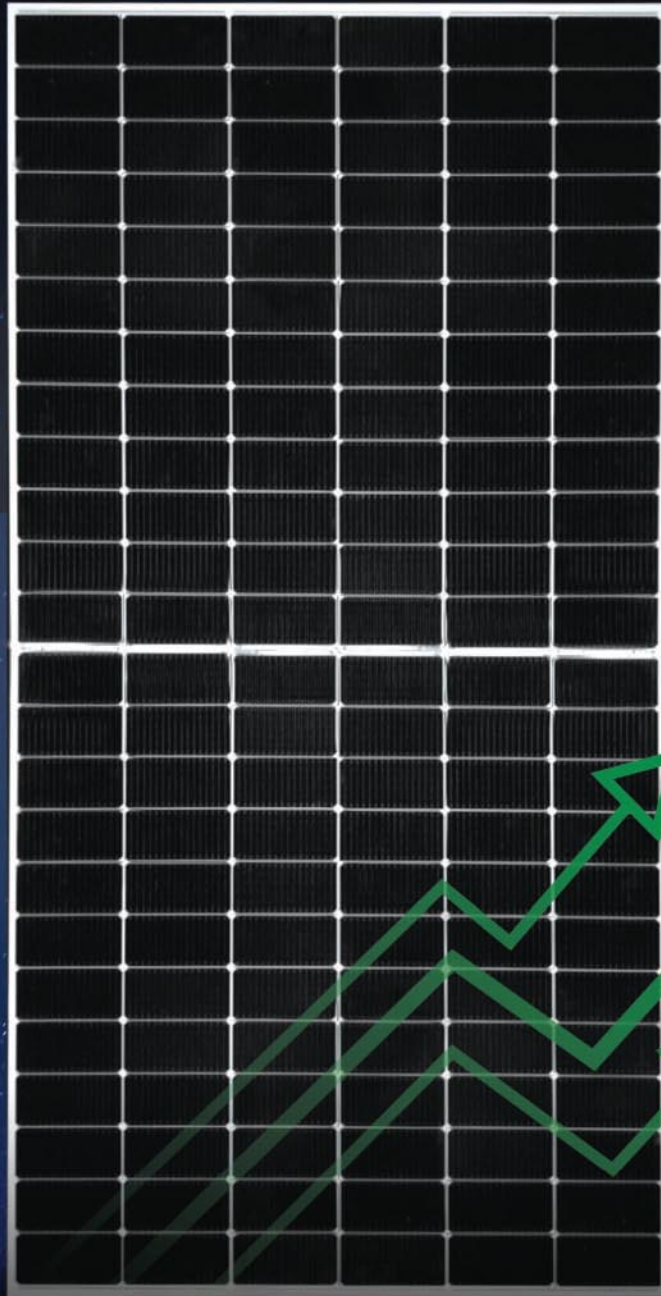


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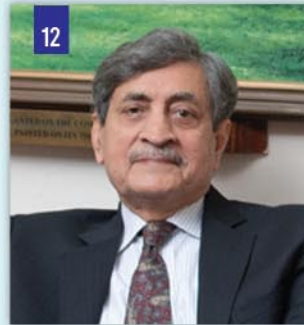
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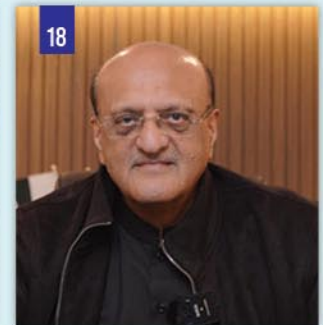
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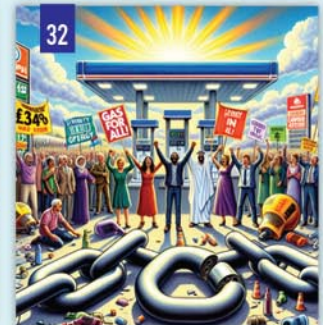
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# FROM THE Editor's desk...

## Karachi hit hard by gas crisis

As per recent media reports, Pakistan Peoples Party (PPP) Chairman Bilawal Bhutto Zardari, speaking at a ceremony honoring businessmen in Karachi, stated that Sindh has been deprived of its proper share of gas and water, announcing that if its constitutional rights are not fulfilled, the provincial government will consider approaching the courts.

Bilawal's this concern is legitimate as whole Sindh, including its capital city, has been hit hard by worst gas crisis. All industries, commercial activities and household needs has been hampered by gas loadshedding and its low pressure, which is not less than the step-motherly attitude.

Karachi, often referred to as the economic engine of Pakistan, is currently facing an acute gas shortage that has disrupted household life and industrial production. Sindh is the largest producer of natural gas in Pakistan, contributing approximately 63% to the country's total gas production, but its capital city is treated like a step mother pertaining to gas share. Under Article 158 of the Constitution of Pakistan, provinces have the first right to use the natural gas they produce, but Sindh, particularly its capital city, continues to face a persistent shortfall in its gas supply.

Karachi, home to over 20 million people and countless industries, faces the brunt of this crisis. Domestic consumers, who should be prioritized, seem to be struggling with insufficient gas supplies for cooking and heating, while industries face operational disruptions, affecting exports and economic growth.

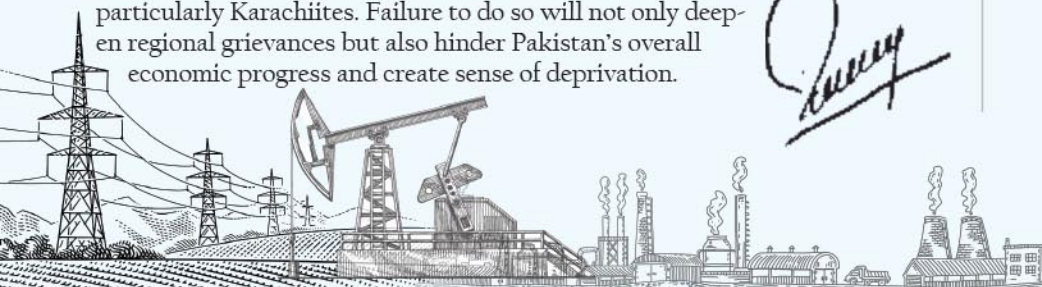
Karachi's gas crisis has reached alarming levels, with load-shedding durations ranging from 8 to 12 hours daily. The more tormenting is low gas pressure which has compelled citizens to purchase gas compressors. Industrial zones, including Korangi, SITE, and Port Qasim, report massive losses due to frequent gas outages, with many small and medium enterprises (SMEs) on the verge of closure. This situation has disturb the city's economic activities and social life.

The federal government's handling of Sindh's gas crisis has been a glaring example of mismanagement and neglect. Despite Sindh's constitutional right to prioritize its gas consumption, the federal authorities have consistently diverted significant portions of the province's gas to Punjab and other areas.

The government's failure to invest in exploration, production, and efficient distribution infrastructure has exacerbated the problem. Aging pipelines, technical losses, and gas theft further strain the system, while the absence of new policies to incentivize exploration has led to stagnation in gas production.

The gas crisis in Karachi underscores the urgent need for a comprehensive overhaul of Pakistan's energy policies. The federal government must ensure Constitutional rights of Sindh in view of gas share.

Gas crisis in Karachi is a symptom of broader governance failures and policy neglect. Addressing this issue requires immediate and decisive action from the federal government to ensure fair distribution, improve infrastructure, and prioritize the needs of Sindh's people, particularly Karachiites. Failure to do so will not only deepen regional grievances but also hinder Pakistan's overall economic progress and create sense of deprivation.



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# Geopolitics of climate change

**Ali Tauqeer Sheikh**

The writer is an Islamabad-based climate change and sustainable development expert

Trump's approach is a contradiction between public rhetoric and strategic planning

**D**espite dismissing climate change as a hoax, the incoming Trump administration's strategic interest in the Panama Canal, Greenland, and Canada suggests an implicit recognition of climate change's geopolitical implications. President-elect Donald Trump has not ruled out the use of military force, if needed, to secure the canal and Greenland, and "economic force" in the case of Canada. This reflects a broader strategy of seizing climate opportunities while denying climate change's existence.

The apparent contradiction is recognised by American foreign policy expert Richard Haass who has highlighted the growing

recognition of climate change's role in shaping global power dynamics, even among climate change sceptics. The US is planning to checkmate Chinese trade and investments, particularly in America's backyard, by reincarnating the Monroe Doctrine that now seeks a US sphere of influence stretching from southern and central America to the outer reaches of the Arctic regions.

Trump has questioned the artificially drawn



border lines — a global gift of colonialism and perpetuated by nationalism since the Napoleonic wars. Apart from plans to rename the Gulf of Mexico, the US has laid claim to the following three strategic assets, all driven by climate change impacts.

**Panama Canal:** The waterway faces significant challenges due to climate change. Severe drought in 2023, for example, has reduced daily vessel transits by 36 per cent. Washington has opposed Chinese investments to develop alternatives including a Nicaragua canal, and a rail system in Colombia or Mexico, to connect the Pacific and Atlantic Oceans. Trump's consideration of military action to 'reclaim' control reflects concerns about both climate vulnerability and China's economic presence enabled by this crucial maritime chokepoint.

Trump's approach is a contradiction between public rhetoric and strategic planning.

**Greenland:** The strategic importance of this territory has increased dramatically as climate change accelerates ice melt, revealing vast deposits of rare earth elements (REE). The US Geological Survey (USGS) believes that Greenland may have the largest untapped REE reserves outside China. This also creates new shipping routes while raising US security concerns about increased accessibility to China. With Greenland's icesheet melting, trans-Arctic shipping routes are significantly shorter than traditional ones such as the Suez Canal. China and Russia are developing the Northern Sea Route (NSR) following the Sino-Russian shipping corridor and the Arctic Express to boost their trade with Asia. The US has deployed Nato's Arctic Strategy that contains Russia, an Arctic country, and refuses to accommodate China's claim of being a 'near-Arctic' country.

**Canada:** The country's vast Arctic territories contain an estimated \$1trillion worth of minerals essential for clean energy technologies. The USGS reports that Canadian rare earth deposits could potentially supply 25pc of global demand. Trump's approach to bilateral ties with Canada focuses on securing unhindered access to these resources while challenging Canadian climate policies.

Trump's electoral promise to cut gas prices by half will hinge on Canada revisiting its climate commitments, particularly cutting carbon tax and cancelling the energy cap, and Quebec's agreement with California on carbon trading. Trump's

'drill, baby, drill' mission has significant implications for North American energy markets.

Geopolitical strategy to counter China: It seems that the emerging US strategy to counter Chinese influence focuses on controlling key maritime routes and resource deposits. The Pentagon's 2024 Indo-Pacific Strategy Review emphasises the critical nature of securing strategic chokepoints and resource-rich territories. Chinese investments in Panama are said to have exceeded \$10 billion over the past decade, while Arctic investments have topped \$90bn according to the Centre for Strategic and International Studies.

Control over maritime routes has become increasingly critical as climate change opens new shipping lanes. The NSR could reduce shipping times between Asia and Europe by up to 40pc. Chinese shipping through Arctic waters is said to have increased by 300pc between 2018 and 2023.

**Climate change paradox:** While Trump has repeatedly called climate change a scam, the Department of Defence has identified it as a threat multiplier. The Pentagon's 2024 Climate Adaptation Plan highlights the strategic importance of assets affected by climate change, including Arctic territories and maritime chokepoints.

Nato's Strategic Concept has, for the first time, recorded China as a "systemic challenge" to Euro-Atlantic security. It addresses the need to balance collective defence with environmental security, and expresses concern at unilateral military actions affecting alliance members' territories. The Chinese response on the other hand, has emphasised economic cooperation and scientific collaboration, while warning against the militarisation of climate-vulnerable regions.

Trump's approach represents a complex interplay between climate denial and the pursuit of climate-affected strategic assets. It is a contradiction between public rhetoric and strategic planning. This approach has implications for the global security architecture, economic ties, and

global cooperation on climate change. The aggressive posture towards securing climate-vulnerable assets will strain traditional alliances and bilateral ties.

**Implications for Pakistan:** Pakistan's maritime interests are limited to its immediate proximity, but it could still be affected by uncertainties surrounding control over global shipping routes. Our maritime trade accounts for 95pc of our international trade volume; it passes through volatile regions and chokepoints in the Indian Ocean. Our position is particularly precarious given the country's climate vulnerability.

Pakistan's position in this evolving geopolitical landscape is complex given its strategic partnership with China. The country's participation in China's Belt and Road Initiative, with investments exceeding \$62bn in CPEC, makes it overly sensitive to the US-China competition.

The Gwadar port, developed under CPEC with a Chinese investment of \$1.1bn, has a crucial role in China's Maritime Silk Road strategy. Any disruption to global shipping patterns or increased US control over strategic waterways could impact Pakistan's maritime trade, valued at around \$100bn annually. Can Pakistan reduce this vulnerability by boosting its transborder trade with India and other neighbours? Regional trade corridors are perhaps the cheapest insurance against the unfolding geostrategic chessboard and changing climate. ■



# PAKISTAN'S OIL INDUSTRY GRAPPLING WITH EXTERNAL, DOMESTIC CHALLENGES

**M ADIL KHATTAK,**  
OCAC Chairman and ARL CEO

Khattak says geopolitical events disrupting vital imports and further devaluing rupee; observes illegal cross-border fuel smuggling not only deprives govt of crucial revenue but also distorts local oil supply chain; suggests cost of electricity per kWh must be significantly lower than price of a liter of petrol for effective EV policy

paced adjustment of OMC margins, and the ineffective enforcement of regulatory measures to curb illegal cross-border fuel smuggling, are crippling the sector.

Adding to these woes, local crude oil production plummeted to a record low of 69,513 barrels per day (bpd) in FY 2022-23, while natural gas output declined to 3,259 million cubic feet per day (MMCFD). Without a long-term vision and sustainable policies, Pakistan's energy sector risks further deterioration, jeopardizing the country's energy security and economic stability.

## M. Naeem Qureshi

**E**nergy Update conducted an interview of M Adil Khattak, the Chairman of the Oil Companies Advisory Council (OCAC) and the Chief Executive Officer of Attock Refinery Limited. The details of his interview are given below:

## Current Scenario:

**Q No. 1: What is your assessment of the current state of Pakistan's oil and gas sector?**

**Ans:** Pakistan, being an energy-deficient country, faces significant challenges in its oil and gas sector due to external geopolitical events and internal policy shortcomings. The lack of adaptive strategies has further exacerbated the crisis. Critical issues, such as the delayed approval of the Brownfield Refinery Policy, the slow-

## Major Challenges:

**Q No. 2: What are the biggest challenges facing the industry today pertaining to refining capacity, pricing, supply chain issues, and geopolitical factors?**

**Ans:** The oil industry in Pakistan is in distress, grappling with challenges that are both external and domestic. Externally, geopolitical events wreak havoc on the nation's fragile energy framework, disrupting vital imports and further

devaluing the Pakistani Rupee. With its heavy reliance on imports (crude and finished products), Pakistan remains at the mercy of global supply chain disruptions, leaving the oil sector vulnerable and exposed.

Domestically, the challenges are equally daunting. Illegal cross-border fuel smuggling not only deprives the government of crucial revenue but also distorts the local oil supply chain, causing significant damage. Refineries, the backbone of the sector, are in dire straits. No new greenfield refinery has been established in years, while existing refineries await long-overdue approvals for upgrades aimed at enhancing capacity, efficiency and reducing furnace oil throughput. In FY2023-24, nearly one million metric tons of furnace oil had to be exported—clear evidence of the urgent need for refinery upgrades, which require government support.

With regulated fuel prices, oil marketing companies (OMCs) often face delays in margin revisions, leaving them financially strained. Storage limitations and inadequate port infrastructure further exacerbate the industry's difficulties, forcing oil import vessels to wait for days to berth, leading to significant demurrage costs.

The oil and gas sector in Pakistan is not just in crisis; it is struggling to survive. Without immediate and decisive policy intervention, the industry risks collapse, endangering the energy security of an already fragile economy.

## Refinery Policy:

### Q No. 3: Could you share your perspective on the Refineries Upgradation Policy? What is hindering its implementation?

**Ans:** Consultation on the Refineries Upgradation Policy began in December 2019. The first draft was finalized in March 2021 and presented to the Cabinet Committee on Energy (CCOE) in August 2021. However, it took another two years before the policy was approved in August 2023.

After extensive and prolonged consultations involving the government, refineries, and independent financial and legal advisory firms, the policy for the upgradation of brownfield refineries was amended in February 2024. If implemented, the policy is expected to attract an investment of USD 5–6 billion, enabling oil refineries to undertake major upgrades. These upgrades aim to achieve

compliance with Euro-V specifications, increase the production of petrol and diesel by 100% and 50%, respectively, and reduce furnace oil production by 80%. The reduction in furnace oil production is particularly critical, given the steep decline in its demand in recent years, which often leads to storage constraints forcing the refineries to reduce capacity utilization.

Concurrently in February 2024, the federal government also announced the introduction of Customs Bonded Facilitation Rules 2024, aimed at enabling foreign suppliers to import, sell, and re-export petroleum products. This required amendments to the Customs Rules, 2001. However, foreign suppliers expressed reluctance to operate under the existing policies, leading to unreasonable demands, such as the introduction of local operators for bonded warehouses and the inclusion of petrochemicals in the policy. The oil sector is already grappling with significant challenges, including rampant smuggling and petrol adulteration with Light Aliphatic Hydrocarbon Solvent. Granting import licenses under such conditions could risk flooding the market with substandard and harmful products, exacerbating the sector's difficulties.

Unfortunately, the implementation of refinery policy's upgrade remains stalled, primarily due to the exemption of petroleum products from sales tax under the Finance Act 2024. This change has left refineries unable to claim most input-stage sales tax, rendering their upgradation projects unviable and threatening current operations. Despite months of meetings at the Petroleum Division, OGRA, and FBR, the issue remains unresolved, with directives and deadlines from the Prime Minister's Office and SIFC going unheeded. The reasons for these inordinate delays may be attributed to a lack of capacity and coordination among relevant departments and frequent changes in political leadership and bureaucracy.

In contrast, India has successfully pursued its 2025 Vision for the Energy Sector. The country now boasts some of the largest and most modern refining complexes in the world, exporting petroleum products to nations with the most stringent environmental standards. Moreover, India's strategic planning allowed it to capitalize on the availability of discounted Russian crude oil, further strengthening its position in the global energy market.

## Government Performance:

### Q No. 4: How do you evaluate the government's policies and initiatives in supporting the oil and gas sector?

**Ans:** Despite government efforts to encourage exploration and production through incentives for foreign investors, the gas and oil sector in Pakistan continues to face significant challenges. Persistent issues such as delays in policy implementation, overlapping regulatory frameworks, and the unresolved circular debt crisis hinder progress. These challenges highlight systemic weaknesses, including inconsistent governance, lack of political will, and inadequate stakeholder engagement. These regulatory bottlenecks discourage timely investment and complicate the approval processes for projects making them unviable. Addressing these issues requires greater transparency, streamlined regulations, and the adoption of consistent, long-term policies to restore investors' confidence and unlock the sector's full potential.

Pakistan's heavy reliance on imported oil exacerbates its vulnerabilities to global price fluctuations. The government has not invested sufficiently in developing domestic oil reserves, nor has it provided consistent support for alternative energy sources. This reliance strains foreign exchange reserves and increases the cost of energy production, further burdening the economy. Despite awareness of this bottleneck, the government has not prioritized or incentivized private investment in modernizing the sector.

While the sales tax issue remains unresolved despite numerous meetings and directives from the Prime Minister and the Special Investment Facilitation Council (SIFC), addressing the revision of the petroleum products' pricing mechanism at this juncture appears ill-timed. Moreover, the government has failed to engage key stakeholders, including private sector players, in policy formulation and decision-making processes, for e.g. deregulation. This disconnect results in policies that do not adequately address the practical challenges faced by the industry, as witnessed during the formulation and implementation of the Brownfield Refineries Policy over the past five years.

Despite repeated calls by the Prime Minister and Finance Minister to include private sector input, the Petroleum Division seems to prioritize working with

public sector companies, potentially overlooking the value of broader collaboration.

## Development Recommendations:

### Q No. 5: What recommendations would you suggest to address the sector's challenges and enhance its growth and sustainability?

**Ans:** The recommendations are given below. The government starts work on such policies but stops midway and then starts afresh next year leading to nowhere.

- A formula should be developed for automatic revision of OMC margin annually.
- Phased deregulation of MS and HSD by keeping the private sector stakeholders also in loop of such methodology.
- Immediate deregulation of SKO and LDO to reduce the burden of low-consumption products on IFEM.
- Survey of special freight area.
- Pricing of jet fuel.
- Rolling out new Explosives Rules and repeal the outdated Explosives Rules 1937.
- Infrastructure upgradation, i.e. lifting of ban on strategic storage development especially at Keamari and upgradation of ports.
- Expediting strategic projects such as KKL P-II Pipeline Project and Machike-Tarujabba Pipeline Project.
- Promote safety standards in supply chain and logistics.

However, the top 3 recommendations revolve around the Brownfield Refinery Policy implementation, timely revision of OMC margins and curbing illegal cross border movement.

## Role of OCAC:

### Q No. 6: How does OCAC contribute to the development and advocacy of the oil and gas sector?

**Ans:** The Oil Companies Advisory Council (OCAC) plays a pivotal role in addressing the challenges faced by the oil industry and advocating for policy reforms. It facilitates timely coordination between authorities and industry stakeholders to resolve critical issues and emphasize their broader impact.

OCAC has consistently raised concerns about cross-border smuggling and illegal retail outlets with the relevant authorities. As a result of its efforts, the Federal Board of Revenue (FBR) has shut down approximately 1,200 illegal retail outlets dealing in substandard products. Furthermore, OCAC, on the instructions

of FBR and OGRA, has developed a mobile application to raise public awareness, help identify illegal retail outlets, and allow users to file complaints.

Additionally, OCAC continues to address pressing industry concerns, such as product surpluses witnessed during most of the year (except peak seasons), logistical constraints, and demand forecasts based on the country's economic outlook. Through extensive collaboration with the KPT and KMC authorities, OCAC has successfully reconciled account discrepancies for industry members, dating back to 2005.

OCAC actively participates in energy forums, seminars, and conferences to highlight industry challenges, including shrinking fuel demand, pricing anomalies, production and storage capacity constraints, and illicit trade, while presenting key recommendations for their resolution.

On behalf of the Oil Companies Advisory Council (OCAC), we would like to reaffirm our commitment to extending full cooperation in the best interests of the nation and its energy sector.

## EV Transition Threats:

### Q No. 7: In your view, what threats do electric vehicles (EVs) pose to oil marketing companies (OMCs) and the refinery sector, and how should the industry prepare for this transition?

**Ans:** The EV policy was first issued by MEPD in 2019. However, due to the COVID-19 pandemic and economic downturn, the policy was not implemented. Recently, the Government of Pakistan (GoP) introduced a new EV Policy for 2025–2030, which is still in its infancy. The new policy primarily focuses on 2- and 3-wheelers. However, the production targets assigned to 51 manufacturers have not been disclosed, leaving uncertainty

about how demand for electric vehicles will be generated.

Electric vehicles (EVs) face direct competition from petrol as a fuel source. For the EV policy to be effective, the cost of electricity per kWh must be significantly lower than the price of a liter of petrol, or EVs must deliver better mileage in terms of cost efficiency. Without addressing this critical cost disparity, the policy is unlikely to drive widespread adoption.

Key aspects such as infrastructure development, tariffs, and incentives remain unspecified. With multiple interrelated departments involved, it seems unlikely that the policy will be implemented effectively. Although the policy outlines aggressive targets for converting existing retail outlets to EVs, it lacks a clear mechanism for managing the transition.

The shift to EVs will drive demand for specialized lubricants, requiring the industry to undertake significant development efforts to address this emerging need.

To prepare for this transition, the industry should:

- Diversify product offerings, including lubricants and specialized fuels.
- Invest in EV charging infrastructure to remain competitive in the evolving energy landscape.
- Explore opportunities in hydrogen and other alternative fuels.
- Engage in research and development to adapt to changing market dynamics.
- Focus on skill development and technological advancement to build a resilient workforce.
- Fossil fuels continue to evolve, but their complete elimination is still a long way off.

To ensure balanced and sustainable implementation of the New Energy Vehicle (NEV) Policy 2025–2030, feasibility studies, infrastructure development, and demand creation strategies—aligned with tariff considerations—must be thoroughly evaluated. ■

## SOLAR Pakistan 2025: The Premier Solar Industry Event

Scheduled for February 21-23, 2025, SOLAR Pakistan, organized by Fakt Exhibitions, is the region's only dedicated event for the solar industry. The exhibition will feature over 350 companies from 10 countries, bringing together global leaders, manufacturers, suppliers, and governments to showcase the latest innovations in solar and sustainable energy. Focused on fostering public-private partnerships, the event will drive the development of innovative solutions in the sector. As solar power becomes the most cost-effective energy source, commercial and industrial units are increasingly adopting solar-based systems, reinforcing Pakistan's shift towards renewable energy.



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50% of industries already shut down

# Export-Oriented industries on the brink of closure

Gas supply disconnection threatens Pakistan's economic stability; Immediate action is crucial to prevent further economic decline and safeguard the livelihoods of countless workers



## EU Report

In a recent podcast hosted by senior journalist Sohail Iqbal Bhatti, renowned newsman, Syed Khalid Mustafa, shared critical insights into Pakistan's energy sector and its far-reaching implications for the economy. The discussion revealed alarming disclosures regarding the energy crisis facing the country, particularly for export-oriented industries. This summary aims to inform the readers of Energy Update about the pressing issues at hand.

Export-oriented industries in Pakistan are on the verge of closure, with their very survival threatened by the current energy supply status quo. The International Monetary Fund (IMF) has mandated the disconnection of gas supplies to these industries' captive power plants, forcing them to rely solely on the national electricity grid.

Unfortunately, the cost of grid-supplied electricity is exorbitant, soaring to 16 cents per kilowatt-hour. In stark contrast, competing nations such as India, Bangladesh, and Vietnam provide electricity to their industries at significantly lower tariffs, ranging from 5 to 9 cents. This disparity in energy costs will render Pakistani products uncompetitive in the international market, leading to a projected \$6 billion\* decline in exports and substantial workforce layoffs.

The situation is dire, with up to 50% of industries already shut down due to unaffordable electricity and gas tariffs.

Currently, gas is supplied to captive power plants at an exorbitant rate of Rs3,000/mmbtu, contributing to the Rs 400 billion annual revenue of Sui Northern Gas Pipelines Ltd (SNGPL). These captive power plants are among SNGPL's most profitable customers, consuming approximately 250 to 300 MMCFD of natural gas. However, the government is now insisting that these industries immediately transition to grid electricity, which is plagued by instability and frequent interruptions, posing a risk of damaging industrial equipment.

This mandatory shift is not merely a suggestion but a structural benchmark of the \$7 billion IMF loan program imposed on Pakistan. The proposal originated from the Power Division and the Finance Ministry, advocating for increased grid electricity consumption across the industrial sector. Only the IMF's executive board has the authority to amend this condition, and Pakistan cannot afford to jeopardize the loan program at this critical juncture. As an alternative, the government has proposed supplying natural gas to captive power plants at an even higher rate of over Rs 4,300/mmbtu.

In light of these challenges, industrialists have approached the government and the Special Investment Facilitation Council (SIFC), urging it to deregulate the LNG sector. They seek permission to purchase gas directly from LNG import terminals with additional handling capacity through a business-to-business arrangement.

Compounding the crisis is the government's significant delay in noti-

fying a new oil and gas exploration and production policy. This procrastination has resulted in a massive opportunity loss, costing the national exchequer billions of dollars. The government's failure to implement this policy has hindered the collection of windfall levies, production bonuses, and federal excise duties.

Furthermore, foreign exchange reserves have dwindled as the country has been forced to import Liquefied Petroleum Gas (LPG), unable to produce it domestically due to the policy delays. Certain elements within the government and relevant ministries, who appear to favor import lobbies, are primarily responsible for this delay, with their misguided actions proving detrimental to the national economy. The SIFC is urged to investigate these questionable dealings to protect the economy and public interest.

Lastly, the podcast revealed that Dr Musadik Malik, the current Federal Minister for Energy (Petroleum Division), may soon be replaced. Stakeholders in the energy sector, including industry representatives, have expressed dissatisfaction with Dr Malik's uncooperative approach and have lodged numerous complaints with top government authorities. A change in leadership appears imminent, as the government seeks to address these pressing concerns.

As Pakistan navigates this precarious energy landscape, the future of its export-oriented industries hangs in the balance. Immediate action is crucial to prevent further economic decline and safeguard the livelihoods of countless workers. ■





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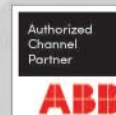
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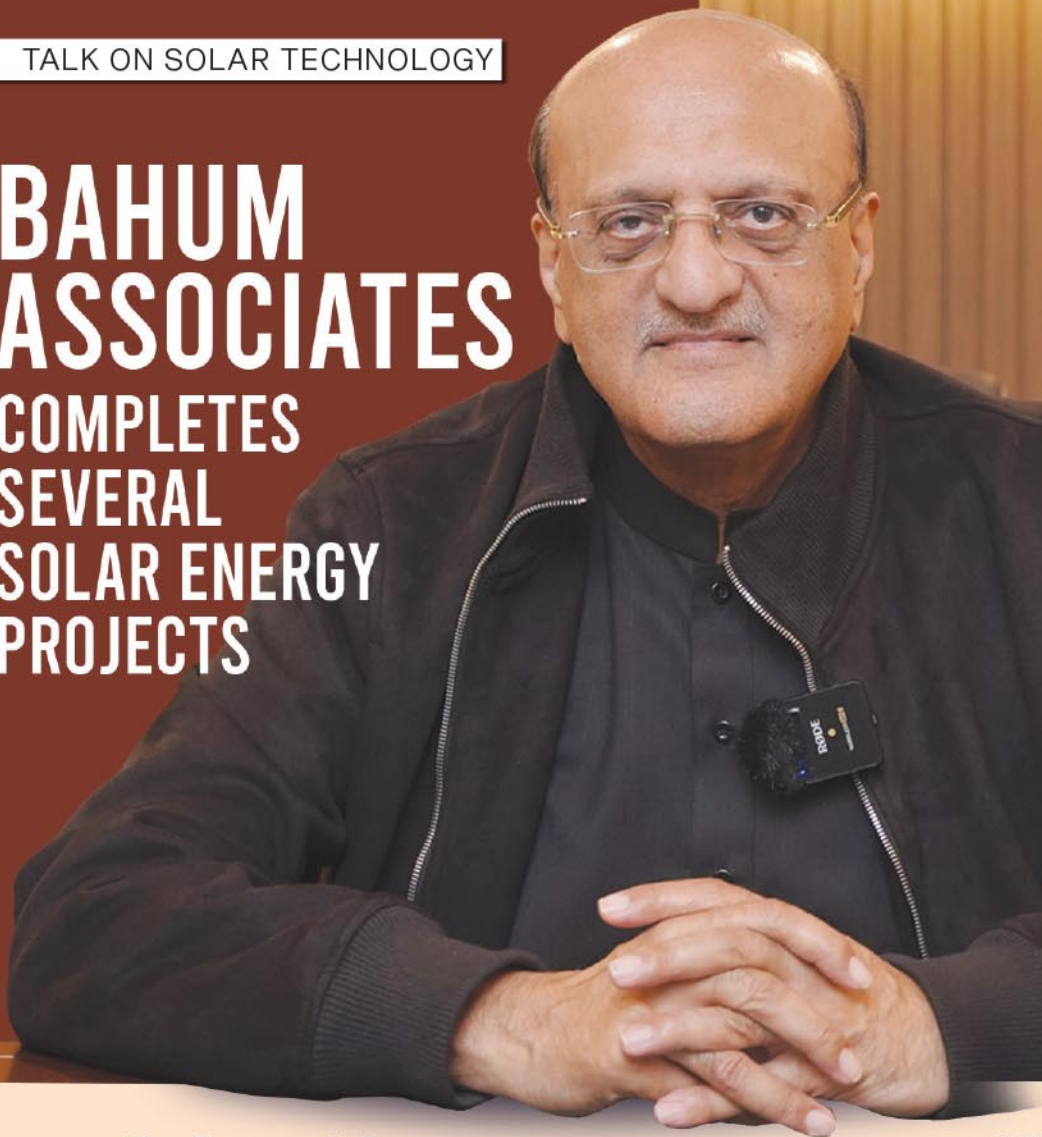


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# BAHUM ASSOCIATES COMPLETES SEVERAL SOLAR ENERGY PROJECTS



**CEO Athar Hayat** says the company is increasingly integrating energy storage solutions like lithium-ion batteries and BESS Solutions with solar projects

**M. Naeem Qureshi**

**E**nergy Update magazine conducted an interview with CEO, Bahum Associates. Following are some excerpts of his interview: Bahum Associates has successfully completed several large-scale solar energy contributing significantly to the renewable energy capacity in various regions. The company has been at the forefront of integrating advanced solar technologies, including the use of high-efficiency solar panels and energy storage solutions.

As global solar panel prices contin-

ue to fall due to advances in manufacturing and economies of scale, Pakistan is likely to see a rise in affordability for solar solutions. Bahum Associates is staying ahead in the rapidly evolving solar market by continuously adopting innovative technologies, enhancing operational efficiency, focusing on sustainability, and exploring new market opportunities.

**Q 1. Can you share some of Bahum Associates' key achievements in the solar energy sector and how they reflect your company's growth?**

**Ans:** Bahum Associates has made

significant strides in the solar energy sector, demonstrating a commitment to sustainability and innovation. Here are some key achievements that reflect the company's growth:

**Large-Scale Solar Projects:** Bahum Associates has successfully completed several large-scale solar energy contributing significantly to the renewable energy capacity in various regions. These projects have not only expanded the company's portfolio but also showcased its ability to handle complex, high-budget projects with efficiency and precision.

**Technological Innovation:** The company has been at the forefront of integrating advanced solar technologies, including the use of high-efficiency solar panels and energy storage solutions. By adopting cutting-edge technology, Bahum Associates has been able to deliver more reliable and cost-effective solutions to its clients, enhancing its reputation in the industry.

**Partnerships with Global Leaders:** Through strategic partnerships with leading solar manufacturers and energy developers, Bahum Associates has been able to broaden its reach and solidify its standing as a key player in the renewable energy sector. These collaborations have also led to exclusive contracts and high-value opportunities.

**Sustainability Initiatives:** The company has been dedicated to minimizing its carbon footprint in its projects. Bahum Associates has implemented energy-efficient practices, reducing emissions and promoting sustainable business practices.

**Q 2. What do you foresee as the major trends shaping the solar industry in Pakistan over the next few years?**

**Ans:** Over the next few years, several key trends are likely to shape the solar industry in Pakistan, driven by both local market dynamics and global energy shifts. Here are the major trends that could define the sector:

**Declining Costs of Solar Technology:** As global solar panel prices continue to fall due to advances in manufacturing and economies of scale, Pakistan is

likely to see a rise in affordability for solar solutions. This price reduction will make solar energy more accessible to both residential and commercial users, expanding its market reach and adoption.

**Energy Storage and Hybrid Systems:** With the increasing integration of solar energy, energy storage solutions like batteries are expected to grow in popularity. Hybrid systems that combine solar with other energy sources (such as wind or diesel) are likely to become more common, offering greater reliability and energy security.

**Focus on Solar Water Pumps for Agriculture:** Solar-powered water pumps are expected to play a significant role in Pakistan's agriculture sector, which is heavily reliant on irrigation. By reducing reliance on grid electricity or fuel-based generators, solar pumps will provide more sustainable and cost-efficient water management solutions, helping farmers and reducing environmental impact.

**Q 3. What steps is Bahum Associates taking to innovate and stay ahead in the rapidly evolving solar energy market?**

**Ans:** Bahum Associates recognizes that the solar energy market is evolving rapidly, driven by technological advancements, regulatory changes, and market demand for more efficient, cost-effective solutions. To stay ahead of the curve, the company is taking several strategic steps to foster innovation and maintain its competitive edge:

**Integration of Energy Storage Solutions:** To address the intermittency of solar power and improve grid reliability, Bahum Associates is increasingly integrating energy storage solutions like lithium-ion batteries & BESS Solutions with solar projects. This combination allows clients to store excess energy generated during the day for use at night or during peak demand, enhancing system reliability and overall energy efficiency. The incorporation of energy storage positions Bahum Associates as a leader in providing comprehensive, reliable energy solutions.

In summary, Bahum Associates is staying ahead in the rapidly evolving solar market by continuously adopting innovative technologies, enhancing operational efficiency, focusing on sustainability, and exploring new market opportunities. ■

# Over 40 countries have plans to raise nuclear power

## EU Report

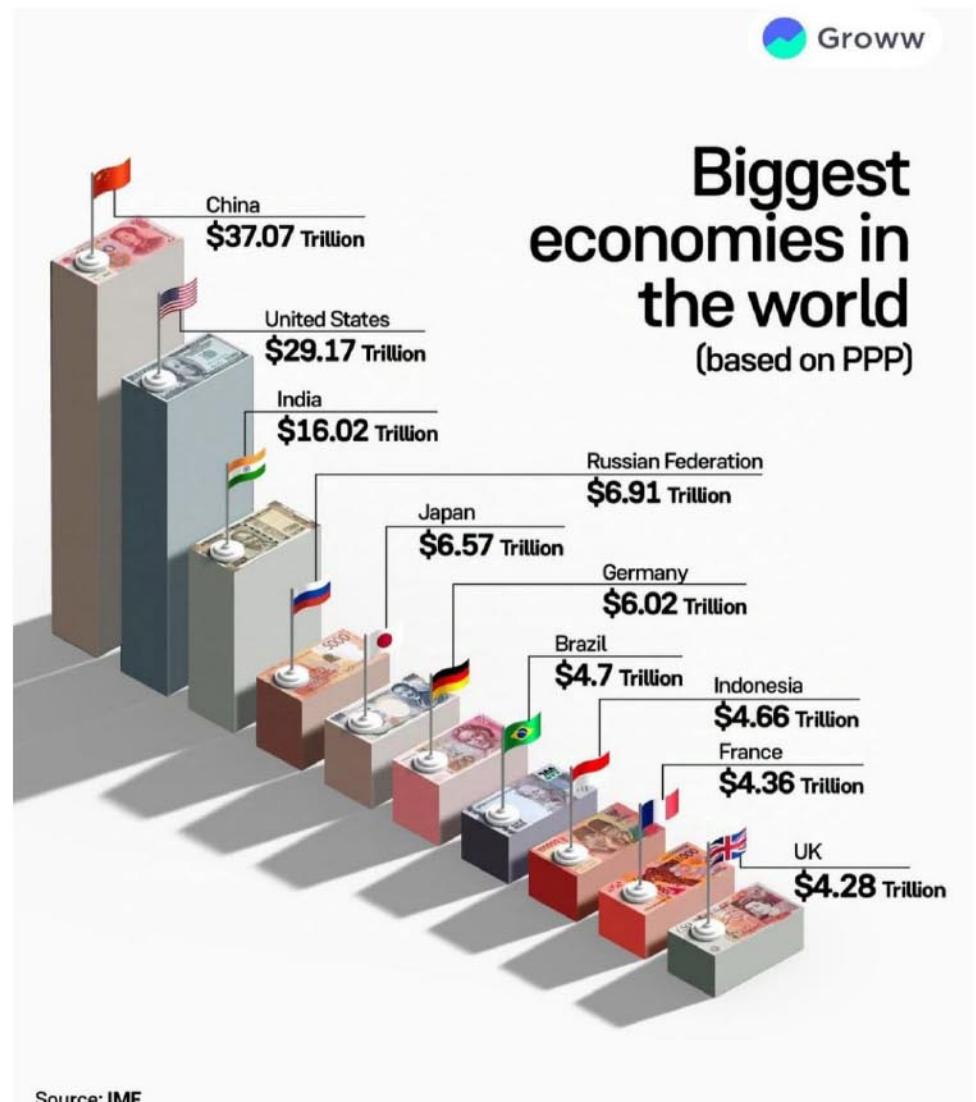
Power generation from nuclear is set to reach a record high in 2025 as Japan restarts production, maintenance works are completed in France, and new reactors begin commercial operations in various markets, including China, Europe, India and Korea.

There is more than 70 gigawatts (GW) of new nuclear power capacity under construction – one of the highest levels in the past 30 years. Interest in nuclear energy is now at its highest level since the oil crises in the 1970s. Over 40 countries around the world have plans for expanding the use of nuclear power.

Innovation is quickly changing the technology landscape, with the first small

modular reactors (SMRs) set to start commercial operations around 2030. With the right combination of policy support from governments and project delivery by industry, we project that over 1,000 SMRs could start operating by mid-century.

Still, the new report – which provides a comprehensive assessment of the current situation, identifying the major challenges that need to be addressed to build on the current momentum and enable a new era to take hold – notes that governments and industry must still overcome some significant hurdles. That starts with delivering new projects on time and on budget. It also includes developing new approaches to financing and working towards the diversification of supply chains. ■



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## Sineng Electric becomes a global leader in power electronics



The company has established four R&D centers in China, along with manufacturing facilities in Bangalore, India: Report

### EU Report

**S**ineng Electric is a global leader in power electronics, specializing in the development and production of advanced photovoltaic (PV) inverters, energy storage inverters, and power quality control products. Committed to delivering world-class, all-scenario solar-

plus-storage solutions, Sineng is at the forefront of driving innovation within the clean energy sector.

To foster technological advancements, Sineng Electric has established four R&D centers located in Shenzhen, Wuxi, Suzhou, and Chengdu, China, along with three manufacturing facilities in Wuxi and Wuzhong, China, and Bangalore,

India. Its national CNAS-certified laboratory, in-house academician workstation, and post-doctoral research workstation are pivotal in accelerating technological progress, ensuring product excellence, and reinforcing its market leadership.

Leveraging top-notch resources, Sineng Electric diversifies its product offerings tailored for utility-scale, commercial, and residential applications. These solutions enable access to cost-effective, reliable, and sustainable energy, addressing the evolving needs of the PV industry. Known for its engineering excellence, consistent quality, and brand influence, Sineng has earned recognition as a BloombergNEF tier 1 PV inverter manufacturer and ranked No.4 globally in PV inverter shipments for 2023.

In the dynamic field of energy stor-

age, Sineng offers hybrid inverters, string PCS, central PCS, and battery energy storage system (BESS) solutions for both behind-the-meter and front-of-the-meter installations, effectively supporting the ongoing global energy transition with cutting-edge products.

Additionally, Sineng Electric provides a comprehensive range of power quality control products, including smart power quality controller, active power filter, static var generator, and intelligent power quality correction device. These products are deployed

across various industries - such as communications, healthcare, rail transport, petroleum and petrochemicals, metallurgy, photovoltaics, and semiconductors - to enhance grid stability and reliability. ■

## Rs1.1 trillion saved through parleys with IPPs: Awais Leghari

# 4th International Hydropower Conference seeks hike in hydroelectricity

Sherry Rehman says it's time for us to switch to renewable energy sources like wind and solar; Shah Jehan says of the total identified 64,000 MW hydropower potential in Pakistan, only 11,000 MW is currently being utilised



Parliamentarians busy in discussion to promote renewable energy, challenges and opportunities along with MD PPIB Shah Jehan Mirza, MNA Dr. Farooq Sattar, MNA Dr. Amjad, Dr. Nafisa Shah, Senator Sadia Abbasi & Dr. Hasnat share valuable suggestions

### M. Naeem Qureshi

The 4th International Hydropower Conference 2025, hosted by Energy Update in collaboration with the Private Power Infrastructure Board (PPIB) and the International Hydropower Association, brought together industry leaders, policymakers, and global experts to discuss hydropower's transformative role in shaping a sustainable energy future

for Pakistan.

Federal Minister for Power Division Sardar Awais Ahmed Khan Leghari, while speaking at the concluding session of the 4th International Hydropower Conference 2025, said that the government has saved Rs. 1 trillion through negotiations with Independent Power Producers (IPPs).

The Federal Minister said that the government and IPPs mutually renewed the contracts in the interest of Pakistan. He said that people could no longer afford to pay the high electricity bills, and the government would revamp the entire power sector.

'We are also restructuring the National Transmission and Dispatch Company (NTDC),' he added. Elaborating on the government reforms in the power sector, he said that there had been a significant reduction in distribution companies' losses. From July to November 2023, those losses amounted to Rs223 billion, which decreased to Rs170 billion during the same period in 2024.

He said out of a total of the Board of Directors of 10 Power Distribution Companies (DISCOs), eight had been completely revamped, and not a single induction was made



A Group photo has taken of DG Hydro Dr. Munawwar Iqbal, Mr. Wang CEO China Energy Corp, Halima Khan, Engr. Nadeem Ashraf and others.



**Federal Minister Energy Power Division Awais Laghari, Senator Sherry Rehman, Shah Jehan Mirza, MD PPIB, Mr. Wang CEO China Energy Corp, High Commissioner Malaysia, Mujahid Jaffery GM TNB, M. Naeem Qureshi Managing Editor Energy Update, Irfan Yousuf, Halima Khan, AVM Ejaz Malik, Zafar Iqbal Watto Addressing at 4th International Hydropower Conference 2025.**



on a political basis. He told the audience that the government was reviewing

various taxes included in electricity bills to provide maximum relief to the consumers. The Federal Minister said an additional 10,000 to 12,000 MW is likely to be added to the system under the net metering system in the country.

Laghari said that he had introduced the net metering in 2017 in the country. He, however, maintained that the mainly elite class in the country was availing of the net metering service. The high cost of electricity has brought a solar ener-

gy revolution in the country, he added. The K-Electric has sought Rs10 per unit increase in the tariff from the power regulator, but according to the government calculation, the increase should be only Rs1 per unit, he concluded.

Speakers at the conference termed sustainable energy critical for the development of any country and also stressed the need for harnessing the untapped hydropower potential to meet Pakistan's future growing energy demands.

Speaking at the conference, PPP's Senator Sherry Rehman stated that sustainable, affordable energy is vital for the country's development. "Pakistan has immense hydropower potential," she said.

Rehman stressed that every household and business activity depends on affordable and sustainable energy. She pointed out that global conflicts often disrupt energy supply chains and added, "Pakistan has been heavily dependent on imported fossil fuels, but it's time for us to switch to renewable energy sources like wind and solar. This shift will not only help reduce carbon emissions, the primary cause of global warming, but also ensure energy security."

Rehman also noted that although Pakistan contributes less than one per cent to global carbon emissions, it is committed to generating 50 to 60 per cent of its power through renewable energy and hydropower.

She further stated, "The world is transitioning to renewable energy to meet its energy requirements. Pakistan's two major dams are insufficient to provide a stable power supply. We should not rely solely on large dams due to their high costs and extended completion timelines. Investment in small hydropower projects is crucial."

Managing Director of PPIB, Shah Jahan Mirza, revealed that of the total identified 64,000 MW hydropower potential in Pakistan, only 11,000 MW is currently being utilised. He explained that while hydropower projects have significant benefits, they typically take seven to eight years to complete, and lenders are



**A Group Photo of professionals, experts, Malaysian High Commissioner, CEO TNB and others seen in the picture.**



A Group Photo of participants with MNA Dr. Nafisa Shah.



A Group Photo of Senator Sherry Rehman with organizers.

often reluctant to finance such large-scale initiatives.

He, however, noted the government's success in attracting substantial investment in the power sector, citing the Karot and Sukki Kinari hydropower projects as examples. Mirza added the government had also planned to phase out old thermal plants with a combined capacity of 7,000 MW.

Malaysian High Commissioner Dato' Mohammad Azhar Mazlan commended the conference organisers and emphasised that energy is the backbone of a country's economy. He remarked that, like Pakistan, Malaysia is blessed with abundant natural resources and generates electricity through hydropower, gas, and other sources. Mazlan stressed the need to develop Indigenous technology for hydropower generation and praised Pakistan's 'Uraan Pakistan' programme under the leadership of Prime Minister Shehbaz Sharif.

General Manager of WAPDA, Tan-

veer Mujahid, underscored the importance of clean and green energy for the country's development. "WAPDA is committed to a strategic vision of tapping Pakistan's hydropower potential," he said.

He shared that around 10,000 MW of clean energy will be added to the national grid through projects like Diamer Basha Dam (4,500 MW), Mohmand Dam (800 MW), Dasu Stage 1 (2,150 MW), and Tarbela 5th Extension Project (1,510 MW).

CEO of TNB REMACO, Hafiz Isahak, highlighted his organisation's expertise in providing maintenance, repair, diagnostic, and project management services for the power sector in Malaysia and other countries, including Kuwait and Saudi Arabia. He shared examples of their partnerships in Pakistan, such as the Balloki Combined Cycle Power Plant (1,223 MW) and the New Bong Escape Hydropower Plant (84 MW).

Dr Muzammil Zia, the focal person for the China-Pakistan Economic Corridor (CPEC), described CPEC as a game-changer for Pakistan's power sector. He noted that 17 power projects with a combined capacity of 9,000 MW were established under CPEC's early harvest plan, including the 720 MW Karot and 840 MW Sukki Kinari hydropower projects.

Earlier, M Naeem Qureshi, Managing Editor of Energy Update, welcomed participants to the conference and described it as a milestone in promoting the hydropower sector in the country.

Other speakers, including GM China International Group Company Wang Huihua and Dr Jehanzeb Nasir, Dr Irfan Yousaf CEO MKAI Climate Consulting, AVM Ijaz Malik-Disaster Management Specialist, Zafar Iqbal Wattoo RHC addressed the prospects and challenges facing hydropower projects in Pakistan. ■



A Glimpse of Audience



Engr. Nadeem Ashraf, Chief Marketing Officer of Energy Update, presented a copy of the magazine to Federal Minister for Power Division, Awais Leghari, Mohammad Naeem Qureshi, Managing Editor of Energy Update, was also present on this occasion

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# Govt mulls changing buyback tariff for solar rooftops

**Khalid Mustafa**

National grid will buy electricity from rooftop solar consumers at Rs8-9 per unit

**T**he government is planning to change the buyback tariff of solar rooftop consumers as the existing net metering system has put a colossal burden of Rs103 billion on the system which has been passed to consumers having grid electricity only.

Under the new policy, the national grid will buy electricity from rooftop solar consumers at Rs8-9 per unit instead of the current rate of Rs21 per unit. More importantly, the gross-metering mechanism may replace the existing net-metering system.

As per the existing tariff, those who have installed solar systems on their roof under the net-metering system, are selling their units to the grid at Rs21 per unit, but during the night-time or rainy days, they get electricity from the grid at the rate of Rs42 per unit. This means those who are connected to the grid under a net metering system are getting back their whole investment on their solar panels in 18-24 months' time.

"The relevant authorities want the introduction of the new policy under which solar consumers will get back their investment on rooftop solar panels in 4-5 years, not in two years," one of the top officials of the Energy Ministry told The News.

The gross metering differs from the net

metering in terms of the working strategy. In gross metering, the electricity that is produced by the solar system, one cannot use it directly. Two electric meters operate in this regard. The first one allows the export of all the generative electricity to the grid station, while the other calculates the units of imported electricity. The tariff prices of both electric meters are different from each other. The prices of the units that import are higher as compared to the units that export. Therefore, one cannot get a zero electricity bill. One has to pay at least a little, but not a zero.

The net metering first fulfills the system's desire and provides the required load, and then it is fed back to the grid station if the system generates an excessive amount of electricity. It takes a little electricity from the grid station only when solar does not produce electricity. The gross metering exports all the generated electricity to the grid at very low rates, and one will purchase these units at an official price. The profit margin in this system is very, very low. Therefore, it is not suitable for solar systems.

The official document about the impact of net metering on the system available with The News reveals that the high-income strata of society followed by the upper middle class took advantage of the policy and managed to install solar systems on their roofs and are now enjoying the cheaper electricity with a payback period of 18-24 months



of their total investment. However, this system has caused a burden of Rs103 billion on the system owing to which the system has passed this burden in the form of Rs1.03 per unit in the tariff on to those who are not using net-metering system, as they are unable to install rooftop solar panels. "This is how the high-income groups are benefiting from the policy and underprivileged consumers are paying more in the tariffs."

Officials said they are going to finalise the new solar policy, maybe, in the month of February under which the gross metering system may be introduced and the buyback tariffs would be decreased to Rs8-9 per unit as the solar prices have come down and the new solar power plants are now being installed at Rs8-9 per unit per the bids for the solar power plant which K Electric has received. "So the government has decided that those who will have solar panels systems on their roofs will sell units to the grid at Rs8-9 per unit under the gross-metering system."

According to the government report, the high-income consumers have transferred the burden of Rs103 billion to the underprivileged consumers just because of the government's inability to come up with policy intervention on time.

The official documents reveal that the high-income strata of society, living in posh areas in 8 big cities of the country, has taken advantage of the decreasing prices of solar technology and not only managed to scale down their electricity cost by 35 percent per month, but they caused the transfer of the burden of the Rs103 billion to consumers who have not installed rooftop solarisation systems.

The top mandarins of the Power Division feared if the new policy is not introduced on time, then in the next 10 years, the burden on the system because of the existing rooftop solar policy would escalate to Rs503 billion, which would be passed on to poor consumers. "We have pinpointed the flaws of the existing policy to top decision-makers, but the government because of the political compulsions is showing hesitance from bringing the required changes in the existing policy." ■

Courtesy: The News

## Govt acquires 450MW gas power plant

**Khalid Mustafa**

**T**he federal government has acquired 450 MW gas-fired Roush Pakistan Power Limited (RPPL) owned by Razzak Dawood, former commerce minister, at US \$1. The plant was built under Build Operate, Own and Transfer (BOOT) basis.

According to a The News Report, National Power Parks Management Company Limited (NPPMCL) as a designated entity on behalf of the federal government will take over RPPL on the recommendations of the task force on power. As RPPL was built under a Build Operate, Own and Transfer (BOOT) basis, therefore, it was also agreed that the complex and site of RPPL shall be



transferred to the federal government or its "designated entity" at the consideration of USD. According to the Power Division's summary, the federal cabinet has been requested to approve an amount of Rs1.096 billion (exclusive of taxes) to meet the accrued and future expenses to be incurred by the NPPMCL for the transfer of site and keeping the complex of RPPL in dry-preservation mode for six months from January 1, 2025, to June 30, 2025. ■

## China smashed through its 2030 wind and solar target in 2024

Rapid renewables acceleration caused the 10-year target to be reached in 3½ years



Sources: Ember, China Electricity Council

@gavinmooney

# Global warming exceeds 1.5°C danger level first time

Severe colds turn unbearable across the country including Karachi where weather remained normal in winter some years back; 2024 year recorded hottest in the country with temperatures crossing 50°C; raising forests upto international standard gradually becomes mandatory; solarizing industries, offices and houses need of the hour; huge investment needed in clean energy to reduce greenhouse gases

## Muhammad Naeem Qureshi

The Writer is Managing Editor of Energy Update and Environment Activist

The average global temperature has exceeded a danger point of 1.5°C above pre-industrial levels for the first time, shocking the environmentalists. This has been confirmed by the Copernicus Climate Change Service, which is implemented on behalf of the European Commission by the European Centre for Medium-Range Weather Forecasts. It says global surface air temperature has increased above the 1850-1900 pre-industrial period.

The global report says: "The 2024 is the first calendar year that has reached more than 1.5°C above the pre-industrial level. Each of the past 10 years (2015-2024) was one of the 10 warmest years on record. The monthly global average temperature exceeded 1.5°C above pre-industrial levels for 11 months of the year. Going back further, all months since July 2023, except for July 2024, have exceeded the 1.5°C level."

Climate change refers to long-term changes in the average weather patterns on Earth. The primary cause of recent climate change is the increase in greenhouse gases, such as carbon dioxide and methane, in the atmosphere resulting from the combustion of fossil fuels. These gases trap heat from the sun, causing the Earth's temperature to rise - a process commonly referred to as global warming.

In Pakistan, climate change is becoming an increasingly harsh reality. Although Pakistan contributes only about 0.88% of the world's greenhouse gas emissions, it is the 5th most vulnerable country to climate change. Pakistan's average temperature is increasing gradually, leading to hotter days and more intense heatwaves. Changes in climate result in more severe and unpredictable weather events in Pakistan, such as storms, floods, and droughts. Higher temperatures cause polar ice to melt, leading to rising sea levels and coastal flooding. Many plants and animals are struggling to survive as their natural habitats

change or disappear.

In the face of global climate challenges, Pakistan emerges as a nation grappling with the disproportionate impact of climate change despite its relatively minor contribution to global greenhouse gas emissions. The average temperature in Pakistan has increased by 1°C since the 1980s and is projected to continue rising. Climate change has significantly affected the Indus River Delta, situated at the confluence of the Indus River and the Arabian Sea. With increased temperatures and rising temperature volatility, Pakistan will see increased climate related severities in the future. The most serious effects of climate change in Pakistan are expected to increase severe drought and volatility in extreme precipitation events, leading to more mudslides and landslides.

The summer of 2024 has been marked by extreme severe heat with thousands of Pakistanis hit by heatstroke. Rapid population growth in Pakistan has contributed to the decline in forest cover. The growth of cities has led to the loss of forest land. Poverty is a factor that contributes to the over-exploitation of forests. Many people are unaware of the benefits of forests.

Pakistan is facing an onslaught of climate disasters. Since record floods in 2022 that affected 33 million residents and caused more than \$15 billion in damages. Pakistan needs to raise forests with immediate effect as it faced record temperature and long duration of summer season.

Pakistan has 4.2 million hectares of forest and planted trees, which equates to 4.8 percent of the total land area. Forty percent of the forest area comprises coniferous and scrub forest in the northern hills and mountains. The balance includes irrigated plantations, riverine forests along major rivers of the Indus plains, mangrove forests of the Indus delta and trees planted on farmlands.

A FAO report says: "With only 0.05 hectares of forest per capita against a world average of 1.0 hectares, Pakistan is comparatively forest-poor. The high population growth rate of 2.61 percent is pushing the figure further down and, at present, it is not possible to expand public forest areas at a high

enough rate to keep up with demand for forest products. However, farmers are encouraged to establish plantations on farmlands and wastelands to help ameliorate the situation.'

Pakistan needs forests to provide energy, food, and other resources, and to protect the environment. However, the country's forests are being degraded and lost due to unsustainable management practices and low investment.

To mitigate rising warming, Pakistan needs to raise forests and meet international forest cover standards through strategic planning, policy implementation, and community engagement. The international standard for forest cover, as suggested by various environmental organizations like the Food and Agriculture Organization (FAO), is about 25-30% of a country's total land area while Pakistan has 4.8 percent of the total land area under forest cover which is too low. The international standard for forest cover is essential to ensure ecological balance and support biodiversity.

Meeting the international forest cover standard is challenging but achievable for Pakistan with dedicated efforts, strong governance, and community participation. These steps will not only improve environmental health but also contribute to sustainable development in the country.

Smog, a harmful mixture of fog and smoke, has become a recurring phenomenon during winter, engulfing the cities in a thick blanket of toxic air. The combination of vehicular emissions, industrial pollution, agricultural burning, and adverse weather conditions primarily causes smog. During the winter, a temperature inversion phenomenon traps pollutants close to the ground, leading to a sharp increase in particulate matter (PM2.5 and PM10) and harmful gases in the air.

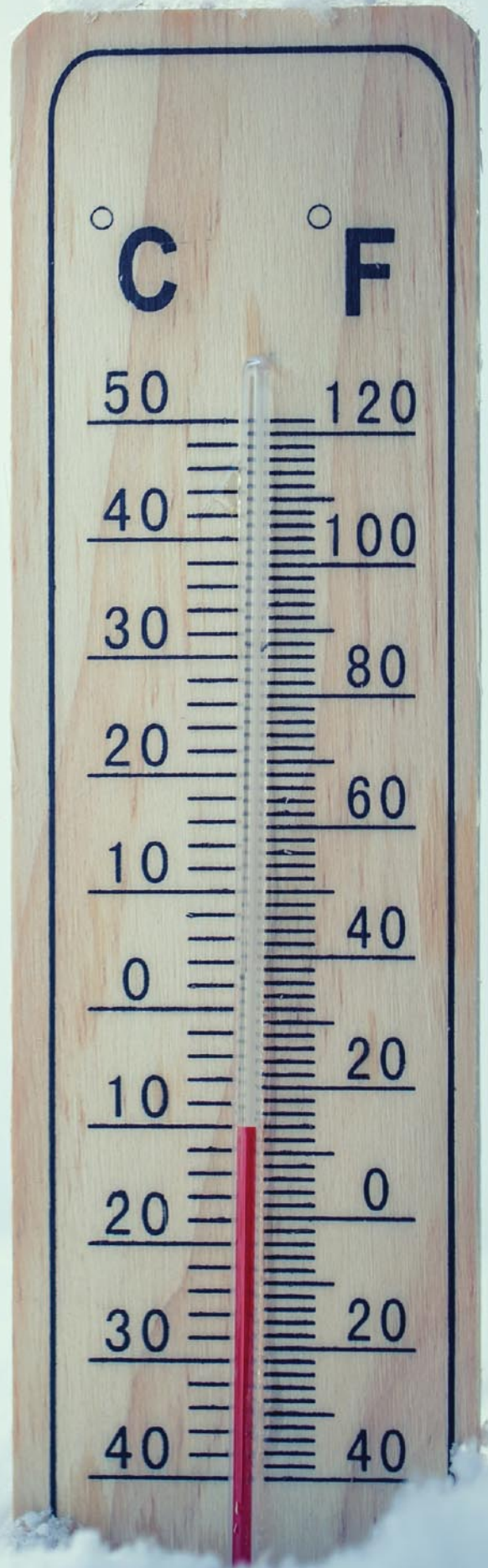
To tackle this issue, Pakistan needs to convert its transport and industries to electricity and clean energy as their fuel source respectively. The country's projected temperature increase is expected to exceed the global average. Temperature increases of 1.4°–3.7°C are projected by the 2060s and increases of 6.0°C by the 2090s. Mean annual precipitation changes are uncertain, with projected monthly rainfall changes ranging from a decrease of 20 percent to an increase of 41 percent by the 2090s. While sig-

nificant uncertainties remain, climate models point to increased rainfall from January to June and a decrease from July to September, along with an increasing trend in rainfall over the Upper Indus Basin and a decreasing trend in the Lower Indus Basin.

It is projected that water availability per capita will decrease to an alarmingly low level by 2025. Yields of major crops such as wheat and rice are expected to decline significantly. Sea levels are forecast to increase by 30–80 cm by 2100. The low-lying coastal regions of Pakistan, including the city of Karachi, are at significant risk from projected sea level rise. As the sea level rises, seawater is causing further intrusion into the Indus Delta, affecting the freshwater sources and overall ecological balance. Higher frequency and intensity of extreme weather and climate events, such as cyclones, floods, and droughts, are expected. Projected decreases in glacier volume and snow cover will lead to alterations in the seasonal flow pattern of the Indus River System and an increase in the formation and outburst of glacial lakes.

To tackle climate change, Pakistan needs to make more investment in renewable energy sources to reduce reliance on fossil fuels; promote the use of energy-efficient appliances, implement carbon trading policy, impose taxes on carbon emissions to discourage pollution, improve insulation and use energy-efficient lighting and appliances, invest in sustainable public transportation systems, plant trees to absorb CO2 from the atmosphere, protect wetlands and oceans, and promote sustainable agriculture.

It is also mandatory to inform the public about the impacts of climate change and the importance of sustainable practices, encourage community-led initiatives to reduce carbon footprints, invest in research and development of technologies that reduce emissions, encourage the use of technologies that optimize energy use and reduce emissions, build infrastructure that can withstand extreme weather events, and develop systems to warn communities of impending climate-related disasters. Implementing these strategies requires global cooperation, investment, and a shift in societal behaviors to ensure a sustainable future. ■



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# A New Era for Pakistan's Energy Sector

## Mustafa Tahir

Writer is Deputy Editor of Energy Update

In a groundbreaking development for Pakistan's energy sector, the government has officially ended the Sui companies' monopoly on gas purchase and sales. This transformative step is poised to open new avenues for private investment, streamline operations, and enhance economic efficiency. With the Petroleum Division's notification of the third-party gas sale framework, endorsed by the Executive Committee of the

National Economic Council (ECNEC), the gas sector is now more liberalized than ever before.

### Key Highlights of the Policy Shift

The new policy, rooted in amendments to the 2012 Exploration and Production (E&P) Policy and approved by the Council of Common Interests (CCI) on January 26, 2024, allows:

E&P companies sell up to 35% of their pipeline-specification gas directly to private parties with OGRA licenses through competitive bidding, bypassing the need for government approval. Annual private-sector gas purchases capped at

100 mmcfd, with provisions for yearly reviews. The application of the framework to existing licenses and leases under E&P Rules from 1998, 2001, 2009, and 2013 for unallocated gas discoveries.

Moreover, provinces hosting natural gas wellheads will receive priority access, in accordance with Article 158 of the Constitution. This ensures equitable distribution while fostering provincial cooperation.

### Economic Implications

The liberalization is expected to alleviate the Rs1,500 billion liquidity crisis faced by E&P companies, caused by delayed payments from Sui gas companies. With



private-sector entities paying promptly, the financial stability of E&P companies will improve significantly, reducing the circular debt burden and stimulating further exploration and production activities.

In a recent meeting with Prime Minister Shehbaz Sharif, E&P sector entrepreneurs pledged \$5 billion in investments, contingent on the policy's implementation. Effective January 9, 2025, this framework has paved the way for realizing this commitment and driving long-term economic growth.

### Ensuring Transparency and Accountability

To promote transparency, all third-party gas sales will be conducted through competitive bidding processes. Gas Sale Purchase Agreements (GSPA) between private buyers and E&P companies must address regulatory, commercial, and technical aspects and align with the framework's principles. The Petroleum Division will review GSPA documents to safeguard provincial and federal interests, including royalties, windfall levies, and production bonuses.

### Opportunities for Private Sector Growth

Private companies can now use existing Sui networks, construct independent pipelines, or adopt virtual pipelines for gas transportation besides accessing competitively priced gas supplies, fostering growth in downstream industries. This increased participation of private entities will not only improve cash flows for E&P companies but also generate additional government revenues through taxes and levies.

### A Step Towards Energy Self-Reliance

By ending the Sui companies' monopoly, Pakistan has taken a decisive step towards energy self-reliance and sustainability. This policy change reflects the government's commitment to modernizing the energy sector, attracting private investment, and addressing the challenges of circular debt and energy inefficiency.

The reforms offer immense potential to reshape the dynamics of Pakistan's oil and gas industry, ensuring a brighter and more sustainable energy future. As these measures take root, the sector's stakeholders from investors to end-users stand to benefit from increased efficiency, transparency, and reliability in the country's gas supply chain. ■

## CORPORATE CORRIDOR

# International Conference on Technology Driven Climate Action Concludes



The NED University of Engineering and Technology organized the 2nd International Conference on Technology Driven Climate Action-2025 (CLIMATECH -2025) on January 16 and 17, 2025. This two-day conference was organized in partnership with Dawlance and REON energy.

During his talk, the Chief Guest, Turkish Council General, Mr Cemal Sangu, emphasized on strengthening collaborative efforts to address the issue of Climate Change. Pro Vice Chancellor, NED University Prof Dr. Muhammad Tufail mentioned that NED University is playing its part by actively promoting the United Nations Sustainable Development Goals (SDGs), with a keen focus on clean energy, sustainable cities, and climate action.

"The NED University integrates sustainability and climate change topics into the curriculum and encourages projects focused on environmental sustainability. The university also engages with the local community to raise awareness about climate change and promote sustainable practices."

Conference Chair, Prof Dr Muhammad Imran Aslam, mentioned that CLIMATECH 2025 is an initiative that aims to bring together experts, policymakers,

stakeholders, researchers, and students to address the climate issues.

Conference Co-Chair, Dr. Irfan Ahmed, expressed that CLIMATECH-2025 comes at a critical juncture as we face the increasingly urgent challenge of climate change, which poses significant risks to our ecosystems, economies, and societies.

Conference Secretary, Dr Hira Mariam, mentioned that the conference is our initiative to elaborate on how pivotal is the role of our engineering fraternity in addressing the climate related challenges through technological advancements, innovative solutions, and sustainable practices.

The conference featured multiple keynote speeches from leading researchers and industrial experts, knowledge session on 'advancing the circular economy in Pakistan', panel discussion on 'stakeholder engagement for climate change, technical session on 'Agriculture and Water Management', 'Green Economy and Sustainability', and 'Emerging Solutions for Climate Action'. In addition, a sustainability hackathon was arranged by Dawlance during the conference.

Conference speakers presented innovative solutions to tackle the climate problems. ■

# Air Pollution on The Rise in Karachi as Authorities Slumbering

**Special Report by Mansoor**

The time to act is now, as continued inaction will only exacerbate the problem

Air pollution in Karachi is on the rise, causing disturbance and diseases among people. Recently, the city has reached the 13th spot on the list with an AQI of 164, falling under the 'Unhealthy' category. The smoke and dust particles are seen hovering across the city. It seems that environment and city planning authorities are slumbering and as if they feel no responsibility in this regard.

Karachi is the largest city in Pakistan and 12th largest in the world, with a population of over 20 million. As the city has grown rapidly over the past few decades, the city's air quality has deteriorated with this pace, leaving citizens to bear the brunt of it. Air pollution has emerged as one of the most pressing environmental issues in the metropolis, posing serious threats to the health of its residents and the environment.

Worst example of dust pollution is dusty roads and streets, particularly the under-construction University Road, are raising air pollution levels in the megacity, causing lung and heart diseases among citizens. A researcher by Aga Khan Hospital has found out that the average PM2.5 levels in Karachi are among the highest compared to other cities in both developed and developing countries and its concentration exceeded guideline values set by the World Health Organization (WHO).

Thousands of students travelling on the University of Karachi, NED University of Engineering and Technology, and other educational institutions situated on the University Road are badly hit.

Inordinate delay in construction of Bus Rapid Transit (BRT) Red Line project haunts commuters. The service roads and nearby streets of the University Road are also in dilapidated condition. There are also many dilapidated roads and streets in other parts of the megacity, which causes dust and smoke clouds in the air.

The causes of air pollution in Karachi

are multifaceted, with a combination of industrial emissions, transport emission, garbage burning, construction activities, road repairs, stove fire, and other factors contributing to the city's air quality crisis.

Vehicular emissions are one of the most significant contributors to air pollution in Karachi. The city has witnessed a rapid increase in the number of vehicles over the past few decades, driven by the growing population and urbanization.

According to the Pakistan Bureau of Statistics, the number of vehicles in Karachi has increased by over 50% in the last ten years. The high volume of vehicles, combined with the lack of proper emission controls, results in the release of harmful pollutants such as carbon monoxide, nitrogen oxides, and particulate matter.

The overuse of old and poorly maintained vehicles further exacerbates the situation. Older cars and buses, especially those running on diesel, emit significantly higher levels of pollutants compared to newer, more fuel-efficient vehicles. Over 70% of the vehicles on the road are outdated and contribute disproportionately to the city's pollution levels.

Karachi is Pakistan's industrial hub, housing a wide range of industries, including textiles, chemicals, cement, and steel. The unregulated emission of pollutants from factories is a major source of air pollution. Industrial plants often release a variety of harmful gases, including sulfur dioxide, carbon dioxide, and volatile organic compounds, which contribute to the formation of smog and poor air quality.

A lack of stringent environmental regulations and monitoring mechanisms allows industries to discharge pollutants without accountability. Furthermore, many industries lack the necessary technology to reduce their emissions, making them a significant source of air pollution.

A report by the Sindh Environmental Protection Agency (SEPA) highlighted that the majority of industrial zones in Karachi operate without proper pollution control measures, exacerbating the city's air quality issues.

Karachi's rapid urbanization has resulted in an unprecedented boom in construction activities, particularly in the form of residential and commercial projects. Dust from construction sites is a major source of particulate matter (PM10 and PM2.5), which are fine particles that can penetrate deep into the lungs and cause respiratory problems. Construction-related pollution also includes the

release of pollutants from machinery and the burning of construction materials like plastic and wood.

The absence of proper dust control measures and the unregulated dumping of construction waste further contribute to the city's air pollution problem. As Karachi continues to expand, it is likely that construction-related pollution will remain a significant concern for the foreseeable future.

The improper disposal of solid waste is another key contributor to air pollution in Karachi. The city produces thousands of tons of solid waste daily, much of which is burned in open areas. The burning of waste, especially plastic, generates toxic gases like dioxins, furans, and particulate matter, which are harmful to both human health and the environment.

The practice of burning waste is particularly common in low-income neighborhoods where waste management services are inadequate. The lack of an effective waste disposal system and public awareness about the harmful effects of burning waste perpetuates this issue.

Karachi's geographical location also plays a role in the persistence of air pollution. The city lies near the coast of the Arabian Sea, which means that it is often affected by high humidity levels. The humid conditions can trap pollutants in the air, preventing them from dispersing and leading to higher concentrations of pollutants.

Additionally, Karachi's weather patterns, particularly during the winter months, exacerbate the pollution problem. The phenomenon of temperature inversion, where cooler air traps pollutants close to the ground, is common during winter, leading to smog and haze in the city.

The health consequences of air pollution in Karachi are dire. Prolonged exposure to high levels of air pollutants can lead to chronic respiratory diseases, heart conditions, and even premature death. According to the Global Burden of Disease (GBD) study, air pollution was responsible for over 150,000 deaths in Pakistan in 2019, with Karachi accounting for a significant portion of these fatalities.

Children, the elderly, and individuals with pre-existing health conditions are particularly vulnerable to the adverse effects of air pollution. Respiratory diseases like asthma and chronic obstructive pulmonary disease are becoming increasingly common among Karachi's residents. Furthermore, air pollution has been linked

to an increase in cardiovascular diseases, with studies showing a rise in heart attacks and strokes in areas with poor air quality.

To address the growing air pollution problem in Karachi, several steps can be taken at the governmental, industrial, and individual levels. First of all, the government must prioritize the development of a robust and eco-friendly public transportation system to reduce the number of vehicles on the road. Public transport systems like buses, trains, and metro services should be expanded, and electric or hybrid vehicles should be encouraged. Moreover, stricter emission standards should be enforced to ensure that vehicles are regularly maintained and adhere to environmental guidelines.

The government must impose and enforce stricter environmental regulations on industries, particularly in terms of controlling emissions. This could include mandatory installation of pollution control devices, regular monitoring, and penalties for non-compliance. Industries should be incentivized to adopt cleaner technologies that reduce emissions and improve energy efficiency.

Construction companies should be required to implement dust control measures, such as water spraying and the installation of barriers around construction sites. The use of cleaner construction materials and the reduction of open burning of waste should also be promoted.

Public awareness campaigns about the harmful effects of burning waste and improper waste disposal should be launched. Additionally, an efficient and sustainable waste management system must be developed, including the establishment of waste segregation programs and proper disposal facilities.

The development of green spaces and the promotion of urban forestry could help improve air quality. Trees and plants act as natural air purifiers by absorbing pollutants and releasing oxygen. Karachi local government should invest in creating more parks and green belts across the city to mitigate the effects of air pollution.

By implementing a combination of policies focused on emission control, cleaner technologies, better waste management, and public awareness, Karachi can improve its air quality and create a healthier environment for its residents. The time to act is now, as continued inaction will only exacerbate the problem, leading to further environmental degradation and loss of life. ■



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# Tariq Electric Hosts Grand Event Showcasing ABB's Latest Innovations

**T**ariq Electric (Pvt) Ltd, a licensed panel builder and official channel partner of ABB, hosted a prestigious event in Lahore, unveiling ABB's latest product line and cutting-edge electrical solutions. The gathering brought together senior industry professionals, renowned consultants, and key stakeholders from the energy and electrical sectors.

A keynote address by Mr. Sean Barncle from ABB Italy was the highlight of the event, offering in-depth insights into ABB's state-of-the-art innovations. His presentation focused on groundbreaking technologies such as VD4 Digital (VCB), SENPLUS (Type Tested LV Switchgear), and SF6 / Hysec & Gysec (MV fixed-type solutions)—designed to meet the



high-performance demands of industries like oil & gas and cement.

ABB Pakistan's Country Head, Mr. Farhan Imdad, shared strategies for expanding ABB's market presence, while Tariq Electric's CEO, Muhammad Haris, reiterated the company's commitment to innovation and excellence. As a trusted ABB partner, Tariq Electric continues to deliver high-quality, energy-efficient electrical solutions across Pakistan.

The event featured live product demonstrations, interactive sessions, and networking opportunities, showcasing ABB's expertise in energy management, smart panels, and sustainable electrical technologies. By strengthening its collaboration with ABB, Tariq Electric reinforced its position as a leader in Pakistan's electrical solutions market, ensuring customers benefit from the latest global advancements. ■

# Schneider Electric Pakistan hosts its First Sustainability Show



Schneider Electric Pakistan hosted its first-ever Sustainability Show in Karachi, reaffirming its commitment to a net-zero future. The event brought together valued customers and the sustainability business team to discuss strategies for driving sustainable ini-

tiatives in Pakistan. Attendees actively participated in discussions, exploring how Schneider's innovative solutions can contribute to a greener future. The overwhelming response highlighted a shared dedication to sustainability and collaborative progress. ■



Creation of Independent electricity market

# Big challenges ahead like power shortages, billing inefficiencies, subsidy burdens

## Farhat Ali

The writer is a former President, Overseas Investors Chamber of Commerce and Industry

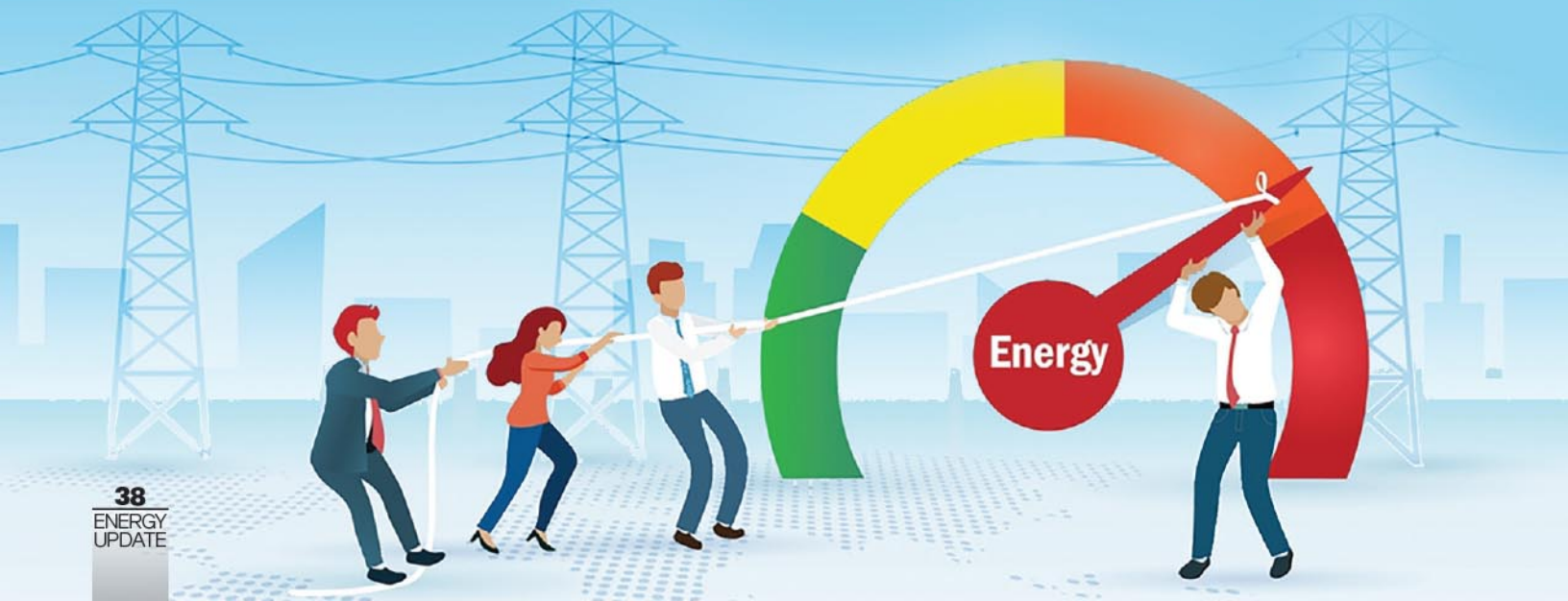
**T**he Federal Minister for Power Awaiz Leghari is reported to have informed the National Assembly this week that the government would stop purchasing electricity after March this year as creation of an 'independent electricity

market' has been approved. He also said that the establishment of an independent electricity market is believed to be one of the significant milestones in the country's transition towards a more competitive and efficient energy market.

It is anticipated to have long-term positive effects on consumers and the economy as a whole, given the country's rising electricity demand and difficulties in controlling costs, according to the minister. The statement of the minister is a welcome step as an independent elec-

tricity market is the right way forward towards a mature electricity market, which strikes a delicate balance between the interests of the supplier and consumer. All leading economies, including India's, are reaping the benefits of it.

However, a question that needs a plausible answer is: Is Pakistan's prevailing electricity regime mature and robust enough to embark on something as complex and ambitious as an independent electricity market? The statement of the minister is silent to explain: (1) How



and in which time-frame the government intends to go about it, considering the fragile state of country's power sector? (2) What are the mechanism and framework under which the independent electricity market would function? (3) How the market has been prepared and the prevailing processes and systems have been adequately aligned to undergo such a dramatic transformation?

The answers to all these prerequisites shall determine at which stage the country stands in relation to an independent electricity market. The need for an independent electricity market arises from issues like inefficiency, high electricity costs, supply disruptions, and a lack of competition. Pakistan electricity regime has all these unresolved flaws.

Undoubtedly, the open market structure can lead to improved service delivery, lower prices, and stimulated economic growth where consumers can choose their electricity suppliers. It requires a comprehensive approach involving regulatory frameworks, market mechanisms, and infrastructural changes. Pakistan's existing electricity sector is weak and complex. It is dominated by public utilities, too many independent power producers, lack of competition, and

regulated prices.

Key issues in the current system are power shortages, billing inefficiencies, subsidy burdens, reliance on fossil fuels and gross mis-governance all along the entire supply chain – from the supplier to the end-consumer. Before the country could embark on the path of an independent electricity market, the following basic criterion has to be met and put on ground for any meaningful result.

Establish a mechanism for a competition amongst producers and provide consumers with choices, leading to better service and pricing. Achieve overall efficiency in the entire electricity supply chain. Establish an independent regulator (like NEPRA) to oversee market operations, set standards, and ensure a fair competition. Establish a legal framework with clear legislation to define market structures, set rules for participation, and protect consumers' rights.

Implement a 'wholesale electricity market' where power producers can sell electricity directly to consumers, providing choices based on prices and services. Establish pricing mechanisms to adjust tariffs to reflect the actual cost of generation, transmission, and distribution. Introduce options like time-of-use pricing, where

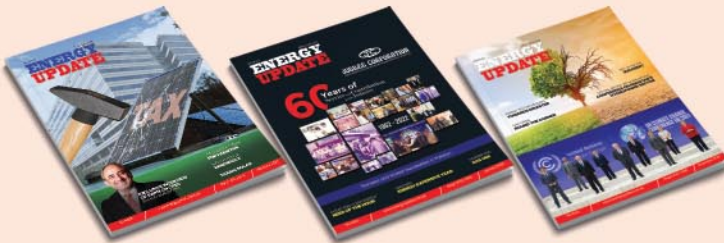
rates vary based on demand and supply conditions. Inject investment into infrastructure development like the transition to smart grids facilitates for real-time data exchange, better demand management, and integration of renewables. Technologies like smart meters allow consumers to track usage and costs dynamically.

Set up a financial mechanism to enable financing options and incentives for both consumers and suppliers to invest in energy-efficient technologies. Trigger government support or loans for infrastructural developments without burdening state finances.

To make all of the said essential criteria functional for meaningful results will require much time, funds, professionalism and will on the part of stakeholders with divergent interests. How far the government is ready with all of this is a question mark. It is advisable for the government to first initiate small-scale pilot projects to test market dynamics and regulatory frameworks by engaging all stakeholders, including fund lenders, government and private sector utilities, consumers, and potential market participants; and then a gradual transition to a competitive market structure in regions, using the lessons learnt from pilot projects. This may work. ■

# ENERGY UPDATE

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Our team, led by **Mr. Athar Hayat**, CEO, and **Danish Ikram**, Director, was honored to be part of this momentous occasion.

**Hassan Mehdi Shah**, Managing Partner of Bahum Energy, delivered a keynote speech, highlighting the significance of this partnership in driving sustainable energy solutions in Pakistan.

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This milestone marks the first time China's leading media outlets, including China Daily, Qingdao TV Media, and Financial Channel Media China, have covered a Pakistan renewable energy market event. We're proud to partner with Haier Energy China, bringing world-class energy storage solutions to Pakistan.



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# Energy crisis, industrial collapse turn big issues in Pakistan

Current policies are accelerating deindustrialization, decimating well-established sectors of the economy; energy accounting for up to 54% of conversion costs across the textile value chain; policymakers must act decisively to create a level playing field for local industries, rationalize energy costs

**Shahid Sattar | Syed Absar Ali**

Pakistan's industry is teetering on the brink of collapse, with policies that are actively dismantling it. Chief among the culprits is the prohibitive cost of energy, driven by a deeply dysfunctional energy sector.

Without urgent reforms to rationalize and reduce energy costs to globally competitive levels, Pakistan will remain trapped in a cycle of stagnation, incapable of exploiting its industrial potential to stimulate exports and generate sustainable income growth and development.

Instead of enabling growth, current policies are accelerating deindustrialization, decimating well-established sectors of the economy.

The textile value chain, particularly the spinning and weaving sectors, are glaring examples. These sectors are integral not only for export earnings but also for sustaining employment and supporting ecosystems of livelihoods. Yet, they are now in existential peril due to energy costs that are nearly double those of competitor countries, coupled with counterproductive fiscal policies.

With grid tariffs in Pakistan between 13-16 cents/kWh compared to 5-9 cents in competing countries and energy accounting for up to 54% of conversion costs across the textile value chain, another major blow came with the withdrawal of the zero-rating and sales tax exemption on local supplies for export manufacturing.

This policy subjected domestic inputs to an 18% sales tax while imports of the same goods remain duty- and tax-free under the Export Facilitation Scheme (EFS). Such a policy defies economic logic and international trade norms, including those under the WTO framework, which emphasize creating a level playing field between local industries and imports.

Countries worldwide often tilt the playing field to protect their domestic industries. Pakistan, conversely, has done the opposite—effectively subsidizing foreign manufacturers while taxing its own. The result has been devastating for local production, creating distortions that undermine the competitiveness of

Pakistani products in both domestic and global markets.

However, even if this fiscal imbalance were rectified, Pakistan's textile sectors would still face insurmountable challenges. Energy costs remain the principal bottleneck. Yarn and cloth produced domestically are uncompetitive against imports even after paying customs duties, regulatory duties, and sales tax on imports. Energy is the primary driver of this disparity, eroding the global competitiveness of Pakistan's exports and dismantling energy-intensive upstream segments of the textile value chain.

Pakistan is uniquely positioned as one of only three countries in the world with a complete textile and apparel value chain—from cotton growing, spinning, and weaving to apparel manufacturing. This integrated ecosystem is a key advantage in an era where global buyers prioritize supply chain resilience.

Geopolitical tensions and increasing risks in global value chains (GVCs) have made it imperative for brands to diversify sourcing towards destinations with full value chain capabilities. Pakistan could be a viable alternative to countries like China, but its potential is severely undermined by domestic policies that systematically dismantle its textile value chain.

Some argue that Pakistan's recent uptick in textile exports suggests resilience. This claim is misguided. The uptick merely reflects partial recovery following the disruption of Bangladesh's textile industry, which diverted temporary orders to Pakistan. With Bangladesh's operations now restored, this artificial boost is unlikely to be sustained.

Moreover, textile exports peaked at \$19.3 billion in FY22, and the country is still struggling to reach that level. Even if growth resumes, the potential for export expansion is capped at approximately \$25 billion due to limited production capacity—an unachievable target under the prevailing energy prices and punitive business environment.

Industrial policy is also about more than export earnings; it is equally about employment generation and sustaining economic ecosystems. The textile industry in Pakistan drives job creation across the value chain, from farming communities in the cotton economy to

skilled and semi-skilled workers in textile production hubs. Policies that drive deindustrialization have devastating consequences for millions of livelihoods, increasing unemployment and exacerbating social inequality.

With negligible investment in productive sectors, these displaced jobs are not being replaced, compounding the country's economic woes.

Furthermore, the reliance on imports to replace domestic inputs undermines net foreign exchange earnings. While a few large exporters may sustain themselves by adding value to increasingly imported inputs, this model results in lower overall domestic value addition.

Import dependence erodes the broader industrial ecosystem and does not add enough to, if not taking away from, foreign exchange reserves, leaving the country even more vulnerable.

A comprehensive and urgent overhaul of energy and fiscal policies is essential to halt the ongoing deindustrialization and ensure that the country's economic potential remains unhampered.

Restoring the zero-rating and sales tax exemption for export-oriented local supplies is a necessary first step to level the playing field for domestic industries.

However, fiscal adjustments alone will not suffice. The energy sector demands radical reform to enable globally competitive costs for industrial consumers.

Most importantly, grid power tariffs must be reduced to a competitive 9 cents/kWh for industrial users. Second, the Competitive Trading Bilateral Contract Market (CTBCM) must be operationalized. This would enable industrial consumers to procure clean electricity at competitive prices through B2B contracts while also meeting net-zero requirements and preparing for the EU's Carbon Border Adjustment Mechanism.

To make it successful, however, the use of system/wheeling charge must be set at a financially viable 1-1.5 cents/kWh, excluding cross subsidies and stranded costs, as opposed to proposed charge of -10 cents/kWh by the CPPA-G that is unsustainable, negates the benefits of competitive electricity procurement, and is more than the full cost of electricity in competing countries.

In the gas sector, the government must refrain from shutting off gas supply to captive power plants only to force their users to the grid. Power availability and grid infrastructure is not equipped to absorb the additional load from captive users, as acknowledged by the Secretary

Power Division before the Senate Standing Committee on Energy.

In Karachi, for instance, there is not enough physical space to install grid stations to service current captive users, while the grid infrastructure under HESCO is too old and outdated to support large industrial loads. Many industrial users across the country lack grid connections or sufficient sanctioned load and face prohibitive costs and delays of up to three years for new connections and load enhancement.

Until the necessary grid infrastructure is in place and power tariffs are reduced to a competitive 9 cents/kWh that automatically incentivize a transition to the grid, policies that restrict gas supply to captive generators and force an unnatural switch to the grid will only exacerbate the challenges faced by industry.

Grid reliability is another critical issue. Export-quality textile production cannot tolerate frequent power outages, fluctuations, or blips, which cause costly disruptions and damage sophisticated machinery.

Many industries have also invested in high-efficiency combined heat and power (CHP) plants that not only generate electricity but also produce the steam and hot water required for industrial processes. Forcing these industries to rely solely on grid electricity would require additional investment in inefficient gas-fired boilers, raising operational costs and wasting valuable gas resources.

In any case, "captive" gas tariffs are just a misnomer invented to justify

discriminatory pricing for different industrial uses. In-house power generation, as also declared by the Supreme Court, is in fact an industrial process just like other industrial applications as long as the power generated is used to add value within the same industrial facility.

Gas supply to captive users must thus continue to such units at ring-fenced RLNG prices with rationalized UFG and no gross subsidies in the immediate term.

Simultaneously, the gas sector must be liberalized to reduce inefficiencies and encourage competitive procurement. Industrial users should have the option to import RLNG directly and access 35 percent of new domestic gas discoveries under the direct access policy approved by the CCI (Council of Common Interests). It is of utmost importance to open up the energy markets and allow industries to choose whichever energy source makes them competitive, be it grid electricity or gas-fired captive generation.

Pakistan's economic crisis cannot be resolved without addressing these systemic issues crippling industrial sectors. A vibrant, competitive industrial base is the foundation of sustainable economic growth, employment, and export earnings.

Current policies are dismantling this foundation, with energy costs and fiscal distortions driving deindustrialization. Policymakers must act decisively to create a level playing field for local industries, rationalize energy costs, and foster an environment conducive to exports, investment and economic growth. ■

## Solar Citizen Hosts Event to Promote Sustainability and Renewable Energy

Solar Citizen, a prominent solar solutions provider, organized the Solar Circle event at Bagh Ibne Qasim, Clifton, uniting community leaders, environmentalists, and families in a mission to advance renewable energy and sustainability.

As part of their ambitious 'A Tree for Every Kilowatt' initiative, Solar Citizen aims to plant one tree for every kilowatt of solar energy installed across Pakistan, targeting a total of one million trees. The event marked a milestone in this campaign with the planting of 5,000 trees.

A highlight of the event was a panel discussion titled 'Re-Plant Pakistan: The Role of Renewable Energy in Environmental Restoration', which explored the critical intersection of clean energy and ecological preservation. Attendees also enjoyed interactive activities, including children's art sessions, fostering awareness about environmental stewardship among younger generations.

Solar Citizen also unveiled a new AI-powered tracking app, enabling customers to monitor the environmental impact of their solar installations. The app reflects the company's dedication to empowering individuals and businesses in contributing to a sustainable future. ■

# Environmental degradation: a big threat to humanity

Pakistan have shown little action toward addressing these risks

## Tahir Kamran

The writer is a professor in the Faculty of Liberal Arts at the Beaconhouse National University, Lahore

**T**he environmental degradation of our planet is the most pressing existential threat to humanity today. The causes of this degradation—overconsumption, reckless exploitation of natural resources, deforestation, pollution and unchecked industrialisation—are deeply intertwined with the very frameworks of modern progress.

As the earth continues to succumb to these pressures, it is becoming increasingly clear that the paradigms of growth and development that have guided human societies for centuries are incompatible with the survival of the natural world. The urgency to rethink our relationship with nature has never been more crucial.

Scholars like Sumit Guha, Dipesh Chakrabarty and Amitav Ghosh have

made significant contributions to understanding the profound consequences of human interaction with the environment. Their work also signals a broad intellectual shift in the search for alternative forms of progress—ones that do not destroy the delicate ecological balance upon which life depends.

Historically, existential threats to humanity were often framed in terms of military conflict or geopolitical competition. The 20th Century, particularly the Cold War era, was marked by the division of the world into adversarial blocs, with the looming threat of nuclear annihilation casting a long shadow over human existence. The fear of obliteration through war—such as the Cuban missile crisis—highlighted the vulnerability of global civilisation to human conflict. Since the mid-20th Century, a new threat has emerged. It is far more insidious and no less dire. It is environmental destruction.

The Los Angeles wildfires, for instance, are not isolated incidents but part of a pattern of ecological crises exacer-

bated by climate change. The frequency and intensity of wildfires, storms, floods and heatwaves have increased in tandem with global warming, pointing to the catastrophic consequences of unchecked industrial growth, fossil fuel consumption and environmental mismanagement. These disasters illustrate the scale of the threat to humanity's very survival and the deep vulnerability of both developed and developing nations to environmental ruin.

This environmental crisis is not confined to any one region but is a global phenomenon. While the United States, China and other powerful nations have the resources to mitigate some of the damage, countries in the Global South—such as Pakistan—face even graver risks.

Pakistan, situated in a region vulnerable to climate-induced disasters like floods, droughts and extreme heatwaves, remains shockingly indifferent to the impending environmental threat. Despite being at the frontline of environmental catastrophe, Pakistan's state apparatus and government have shown little concern



or action toward addressing these risks. There is little acknowledgment of the dire need for systemic change at any level of governance, and the absence of effective environmental policies exacerbates the nation's vulnerability.

According to the US Environmental Protection Agency, an air quality index (AQI) of 300 to 500 is hazardous; at levels that high, people should stay indoors to protect their lungs. The AQI measures fine particulate matter in the air — the grit that makes the air go grey, even black. Rafay-Alam, environmental activist and lawyer, has highlighted the severe impact of climate change on Pakistan, with annual flooding since 2010, industrial pollution, poor sanitation and agricultural pollutants. He cited a World Bank estimate that Pakistan loses around Rs 1 billion rupees due to environmental issues. He also pointed out the toll on public health, with thousands dying from air pollution and nearly 50 percent of hospital patients suffering from waterborne diseases due to contaminated water.

Scholars like Leo Tolstoy, whose critique of materialism and advocacy for simplicity and spiritual connection to nature inspired many, provide a crucial starting point for rethinking progress. Tolstoy's reflections on how modern life's obsession with wealth, technology and power distances individuals from their essential human nature and from the natural world offer valuable insights into our current environmental predicament. His philosophy of "simple living and high thinking" encourages an ethical framework rooted in sustainability, humility and respect for nature—values that are essential for re-imagining a more harmonious relationship between humanity and the environment.

While Tolstoy's ideas are timeless, contemporary thinkers are also providing compelling alternatives to the dominant paradigms of progress. Vandana Shiva, a scholar, environmental activist, food sovereignty advocate, eco-feminist and anti-globalisation author, has critiqued the corporate-controlled model of development. She advocates for an eco-feminist perspective on environmental justice, emphasising the importance of local, sustainable economies and the revalorisation of traditional ecological knowledge. Shiva's work offers a vision of progress that is not predicated on globalised industrial growth, but rather on nurturing biodiversity, respecting indigenous knowledge and fostering resilience in the face of environmental challenges.

Another contemporary thinker, Ja-

son W Moore, an environmental historian and historical geographer at Binghamton University, where he coordinates the World-Ecology Research Collective merits mention here. He has argued in his work on the capitalocene that the modern capitalist system itself is responsible for the ecological crisis.

The work of Arundhati Roy, who has critiqued both economic globalisation and the environmental degradation it fuels, also presents a vital alternative discourse of progress. Roy advocates for the protection of the commons, the Earth's shared resources and the need to develop an

ethical understanding of humanity's place within the natural world. In her writing, she emphasises the need for a return to a more just and sustainable way of living—one that prioritises the wellbeing of all people and the planet, rather than the unchecked growth of powerful elites.

The time has come to recognise that the biggest existential threat to humanity is no longer geopolitical conflict or military confrontation. Through collective effort, grounded in ethical considerations and new ideas of progress, we can hope to secure a liveable future for generations to come. ■

## Second largest solar energy project in Sindh soon



### EU Report

A delegation from Germany met with Sindh Minister for Energy, Development, and Planning, Syed Nasir Hussain Shah, to discuss various investment opportunities in the energy sector. The minister provided a detailed briefing on Sindh's energy projects, emphasizing the province's vast resources in solar and wind energy.

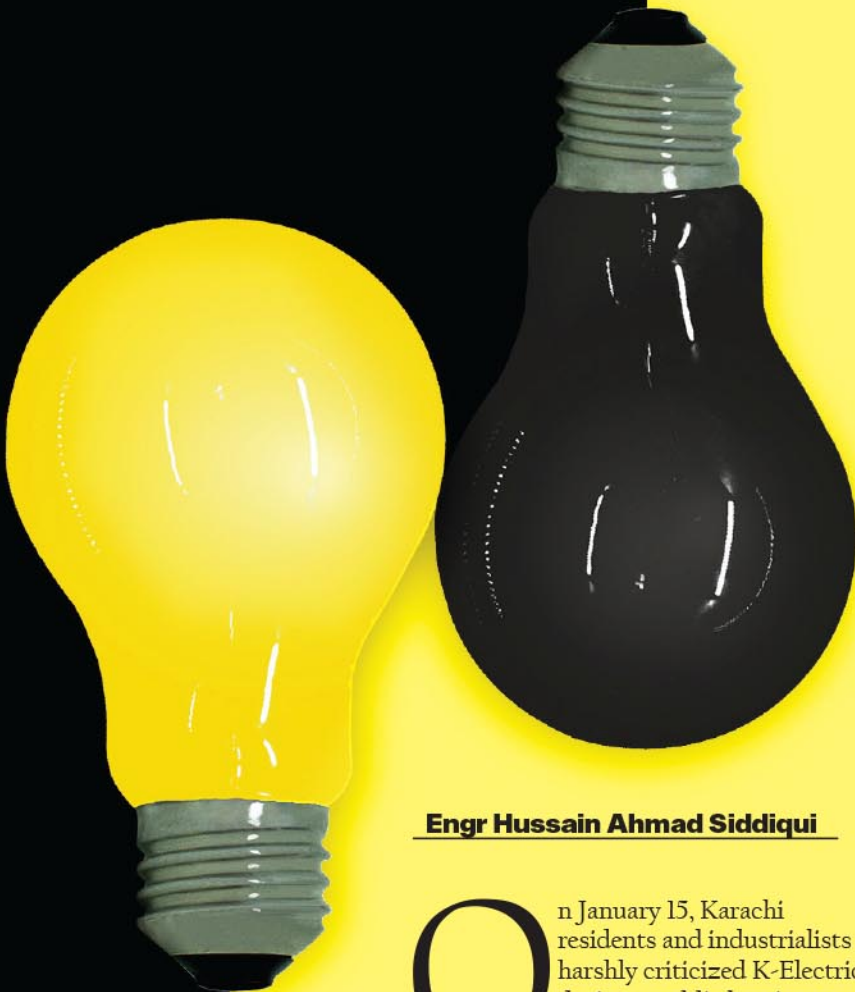
He highlighted that the Sindh government is actively supporting investors, leading to a record increase in both local and foreign investments in the energy sector. He further stated that Sindh's investor-friendly policies have strengthened confidence among investors. The minister informed the delegation that the Sindh government's 350 MW solar hybrid project would be the second-largest project of its kind in the world.

The German delegation included Diemar Siers Dorfer, CEO of Siemens Energy Middle East & Americas, Mrs. Daniela Schoeppner, CFO of Siemens Energy Middle East & Americas, and Muhammad Rafi, CFO of Siemens Energy Pakistan.

Minister Nasir Hussain Shah also highlighted the potential of Thar coal gasification, which has been deemed highly suitable and of high quality by global experts. He emphasized that Thar coal offers lucrative investment opportunities. The German delegation expressed keen interest in investing in both the Thar coal projects and the 350 MW solar-wind hybrid project.

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# KE: load-shedding challenge



## **Engr Hussain Ahmad Siddiqui**

**O**n January 15, Karachi residents and industrialists harshly criticized K-Electric during a public hearing at the National Electric Power Regulatory Authority (NEPRA), accusing the utility company of failing to provide reliable and uninterrupted electricity to domestic consumers and industrial areas, including export processing zones. NEPRA directed K-Electric to submit a report on load-shedding.

Earlier, on December 4, 2024, K-Electric had announced it would not reduce the duration of load-shedding in parts of Karachi, even during winter. The

Special Committee of the Sindh Assembly was informed that various parts of the city were experiencing 18-hour-long electricity outages, alongside daily power interruptions that also caused water shortages.

Protests against prolonged power outages in Karachi have become a recurring phenomenon. Demonstrations held in September and November caused severe traffic jams on major roads, disrupting movement for hours. In some instances, violence was narrowly avoided.

A political party earlier staged a sit-in at K-Electric's headquarters, demanding an end to extended outages and warning of public backlash if the situation persisted. Electricity load-shedding in the city now spans seven to ten hours daily, with some areas facing outages for an entire day or even two consecutive days. In October, the National Assembly Standing Committee on Power criticized K-Electric for extended load-shedding despite overcapacity in the system, but no tangible action was taken.

When the state-owned Karachi Electric Supply Company (KESC) was privatized in November 2005, it was hailed as a transformative step in the power sector. However, the anticipated benefits of privatization have not materialized.

NEPRA's "State of Industry Report 2023" highlights that neither the government nor consumers have benefited from privatization. The private sector, which acquired 73% of KESC's shares and management control, was expected to improve services through professional management, fresh investments, and modern technology. Yet, nearly two decades later, millions of consumers continue to face deteriorating conditions.

Frequent load-shedding and unscheduled outages have severely disrupted daily life in Karachi, affecting water

supply, industrial production, trade, and the economy. On September 23, the Sindh Provincial Assembly was informed that 81 industrial units—including 10 textile mills, 5 sugar mills, and a cement plant—had shut down in the past five years due to the electricity crisis in Karachi and Sindh. Industrial consumers have resorted to alternative solutions such as captive power plants, diesel generators, and solar installations to sustain operations. K-Electric also supplies electricity to regions beyond Karachi, including Dhabeji and Gharo in Sindh, as well as Uthal, Vinder, and Bela in Balochistan.

Despite submitting ambitious plans to meet Karachi's growing electricity demand, K-Electric has made only marginal improvements to its installed capacity since 2009. Over the past five years, it has added just 589 MW to its system, representing a mere 20% increase since 2019. Promised upgrades to power transmission, distribution, and customer service systems have largely remained unfulfilled.

K-Electric operates several thermal power plants, including Bin Qasim I, II, and III, the Korangi Combined Cycle Power Plant, Korangi Town Gas Power Station, and the SITE Gas Turbine Power Station, with a combined capacity of 1,875 MW.

These plants rely heavily on expensive re-gasified liquefied natural gas (RLNG), significantly increasing production costs. The continued use of inefficient facilities like the Bin Qasim Thermal Power Station I has further burdened consumers with inflated electricity bills.

According to NEPRA, K-Electric system has an installed capacity of 3,523 MW and a dependable generation capacity of 3,121 MW. Additionally, it receives 1,100 MW from the National Transmission & Despatch Company (NTDC) through the national grid.

However, consumer demand, estimated at 3,600 MW to 4,100 MW, results in a shortfall of approximately 500 MW. Instead of focusing on enhancing its own generation capacity, K-Electric has increasingly relied on NTDC for power supply. This dependence is concerning, given that surplus power capacity in the national grid is only temporary. K-Electric's plans for significant investments in grid expansion by 2030 remain uncertain, as it has yet to renew its power purchase agreement with NTDC, which expired in January 2015.

At least 30% of K-Electric's network—categorized as high-loss feeders—experiences daily load-shedding. In May 2024, the company claimed that 10-hour outages were necessary to combat theft and losses. However, this assertion is misleading. ■

## TAXATION FEARS

# Is Pakistan taxing itself to death?

Pakistanis paid Rs9.4 trillion in taxes last year with govt expenditure increasing from Rs2.7tr to Rs25tr

**Farrukh Saleem**

Of all the countries in the world Comoros at 50 per cent has the highest corporate tax rate in the world. Lo and behold, Pakistan's goes up till 49 per cent. Comoros has taxed itself to death. Other examples of countries that have taxed themselves to death include Cote d'Ivoire, Senegal, Zimbabwe, Nigeria, Haiti, Yemen, Mauritania, Uganda, Cameroon and Namibia.

**Fact 1:** Frequent changes in tax laws and the introduction of harsh penalties in Cote d'Ivoire, Senegal, Zimbabwe, Nigeria, Haiti, Yemen, Mauritania, Uganda, Cameroon and Namibia created an unpredictable and unstable tax environment.

**Impact:** Businesses and individuals require a stable and predictable tax regime to make long-term investment decisions. Unpredictable tax policies in Cote d'Ivoire, Senegal, Zimbabwe, Nigeria, Haiti, Yemen, Mauritania, Uganda, Cameroon and Namibia created uncertainty and discouraged investment, as businesses and individuals feared that their investments could be subject to unforeseen tax liabilities.

**Fact 2:** Cote d'Ivoire, Senegal, Zimbabwe, Nigeria, Haiti, Yemen, Mauritania, Uganda, Cameroon and Namibia implemented an excessively burdensome and a harsh tax environment for businesses and individuals.

**Impact:** An excessively burdensome tax environment reduced profitability, stifled innovation and discouraged new businesses from setting up shops in Cote d'Ivoire, Senegal, Zimbabwe, Nigeria, Haiti, Yemen, Mauritania, Uganda, Cameroon and Namibia. This led to capital flight as businesses and investors began seeking more favorable tax jurisdictions.

**Fact 3:** Cote d'Ivoire, Senegal, Zimbabwe, Nigeria, Haiti, Yemen, Mauritania, Uganda, Cameroon, and Namibia have exhibited increased powers to tax officers and arbitrary enforcement of tax laws.

**Impact:** The arbitrary enforcement of tax laws fostered a climate of fear and uncertainty among investors, undermining their confidence. This deterred both domestic and foreign investment, as investors grew increasingly cautious about potential legal risks and unpredictable enforcement practices.

Is Pakistan taxing itself to death? Fifteen years ago, Pakistanis paid Rs1.7 trillion in taxes. Imagine, last year, Pakistanis paid Rs9.4 trillion in taxes. During the same period, government expenditure skyrocketed from Rs2.7 trillion to Rs25 trillion. The government has suffered massive losses: Rs2.8 trillion in buying and selling electricity, Rs1.3 trillion in managing commodities, Rs825 billion from PIA liabilities, and Rs224 billion from Pakistan Steel. This year alone, grants amounted to Rs1.7 trillion, while subsidies reached Rs1.4 trillion.

The real issue is not about taxes – it is about runaway government losses. High taxes are merely a symptom; excessive government expenditure is the underlying disease. The real challenge lies not in how much Pakistanis pay in taxes but in curbing the government's wasteful spending. Taxes provide fuel, but government spending determines the direction.

Focusing on taxes while ignoring the root cause is like addressing the symptoms without treating the disease. Raising taxes without addressing systemic inefficiencies is akin to treating a fever without curing the infection. Chasing higher taxes without tackling the underlying issues is like patching a leaking roof without fixing the cracks. Prioritizing tax collection over structural reform is like filling a bucket with a hole at the bottom.

If Pakistan continues down this path, it risks becoming another cautionary tale of nations that taxed themselves into economic ruin. True progress lies not in squeezing more from taxpayers but in addressing the systemic inefficiencies and reckless expenditures that are bleeding Pakistan dry. ■

# Sindh govt to fully assist launching of EVs: Nasir Shah

## EU Report

**S**indh Energy and Planning and Development Minister, Syed Nasir Hussain Shah, has said the provincial government would extend maximum assistance to the private sector willing to invest in the country to introduce electric vehicles and EV charging stations to curtail the fossil fuel consumption in the transport sector.

This he said while talking to the media persons after he held a meeting with Yasir Bhambani, CEO of ADM Group, who have plans to launch electric vehicles and EV charging stations in Sindh and other parts of the country.

Shah told the journalists that the transport sector should transition away from fossil fuels to the maximum possible extent to curtail Pakistan's oil import bill and safeguard the environment.

He said the Sindh government would utilize its successful public-private partnership mode of development to provide suitable sites and other facilities to set up EV charging stations in cities and main highways. He said that provincial authorities had the fullest realization that EV charging facilities were not only available in all parts of Karachi but also on main highways and motorways to facilitate inter-city travel.

He said the promotion of EVs, electric bikes, electric taxis, and buses and their charging facilities in Sindh were fully in line with the directives by Pakistan Peoples Party Chairman Bilawal Bhutto



Zardari to effectively tackle the climate change issue.

He said the Karachi Metropolitan Corporation and the Sindh Local Government Department could fully assist prospective private sector investors willing to set up EV charging facilities at suitable sites in the main urban centers.

Earlier, the CEO of ADM Group told the Sindh Energy Minister about the plan to set up over 600 EV charging stations in Sindh. He said the proposed charging stations would also recharge the electric buses operational in Karachi under the Peoples Bus Service.

He also informed the Energy Minister of the plans to set up assembly plants to produce EVs in Pakistan with complete transfer of technology. He said that his business



group would launch its brand of EVs in Pakistan as soon as a network of 1,000 EV charging stations started working across the country.

Bhambani said that his business group was fully willing to work with local investors who were keen to set up EV charging facilities in urban centres.

Malik Khuda Baksh, Chairman Malik Group, offered 10 free charging stations to the Sindh government to facilitate owners of electric vehicles

Arif Habib, A Sami Khan, Khalid Tawab, Zubair Tufail Ishtiaq Baig, and Naeem Qureshi, Managing Editor, Energy Update, were also present. ■





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# Power Relief Package needs to be extended as economy grows

**Special Report By Mansoor**

Scope of package be extended for one-year instead of three months as the government's income is getting boost from rising economic growth; subsidies on essential utilities on gas and electricity should be provided to low-income households; concerns of business community should be taken on board and address amicably

The National Electric Power Regulatory Authority has approved the power winter pack of Rs 26.07 per unit for three months from December 2024 to February 2025 to provide financial relief to all industrial, commercial, general service consumers, and domestic users exceeding 200 units. The package goal is to stimulate economic activity, reduce reliance on gas for heating, and optimize electricity use during the low-demand winter season, and raise the use of available generation capacity while reducing gas demand.

Despite these benefits, the winter package has faced criticism. One major point of contention is its limited scope in addressing the energy crisis comprehensively. Critics argue that the package falls short in terms of the scale needed to meet the national energy demand. Three months relief is meagre as there will be no significant benefit to the consumers. The domestic consumers using less than 200 units of electricity will get no relief which is injustice. This shows a bias with the poor segment of the society, which is crippled with economic crisis.

There are also concerns about the efficiency and fairness in the distribution of benefits. Certain regions, including rural

areas where the majority of consumers use less than 200 units, are getting no benefit. Many rural areas face electricity load shedding of more than 18 hours on daily basis. Hence, they can not raise use of electricity as the government wants. This imbalance could lead to dissatisfaction among those who feel left out. The cost of current electricity generation is approximately Rs26.07 per unit, while the government charges Rs52 per unit by adding unjustified and dictatorial taxes, which is a great injustice. Consumers need immediate subsidy in their power bills for at least one year.

In the past, the relief packages in Pakistan did not reach the most vulnerable populations due to bureaucratic inefficiencies, hurdles, lack of awareness, and corruption. There is need to ensure the transparency of this package. The package goal is to lure consumers towards greater electricity usage while cutting reliance on gas and utilizing surplus grid capacity. This is the bid of the government to generate more money through bills along with providing relief to consumers. It means, the government wants to balance the relief with more use of electricity. It means, it is just eye wash in shape of very short-term relief of three months.

Transmission losses, outdated infrastructure, and poor enforcement of efficiency standards weigh heavily on system costs. Boosting winter demand, while useful, will not resolve these systemic flaws. The



sector's financial strain is structural, not seasonal. All stakeholders need to be aware and demand long-term relief.

Experts suggest that the government should expand its focus on renewable energy sources to reduce dependence on gas and other conventional energy forms. Implementing robust monitoring systems can ensure a more equitable distribution of resources. Additionally, long-term strategies need to be developed to permanently address the energy shortfall, reducing the need for seasonal interventions.

As winter grips Pakistan, the government has rolled out its much-anticipated winter package aimed at alleviating the seasonal challenges faced by its citizens. This package, targeting various sectors including energy, agriculture, and public welfare, is designed to cushion the impact of the cold months on the country's socio-economic fabric. While the initiative brings some relief, it is not without its share of criticisms and challenges.

The winter package's primary objective is to mitigate the harsh impacts of winter, particularly in the energy sector. A significant feature of this package is ensuring an uninterrupted gas supply during the cold months, a perennial challenge in Pakistan. By prioritizing households and key industries, the government hopes to prevent the annual energy shortfall that often leaves many shivering in the cold. In the agricultural sector, the package offers support to farmers to protect their crops from frost, ensuring food security and stability in rural economies.

The package is aimed at increasing the use of available generation capacity while reducing gas demand, which is a double standard of the government which is based on the bias. The Ministry of Energy confirmed that the tariff of Rs26.07 per unit would apply only to the additional consumption beyond the baseline. While the winter package provides much-needed relief to many, its long-term success depends on addressing its limitations. Balancing immediate needs



with sustainable development will be crucial for Pakistan as it navigates the complexities of winter hardships and economic challenges.

The country's total installed electricity capacity stands at 42,131 MW. The percentage shares of hydel, nuclear, renewable, and thermal are 25.4 percent, 8.4 percent, 6.8 percent, and 59.4 percent, respectively. The share of thermal power as a dominant source of electricity supply has declined over the past few years, showing an increased reliance on indigenous sources. Out of total electricity generation of 92,091GWh, the share of hydel, nuclear, and renewable stands at 54.1 percent, which can be taken as a good sign for the economy as the sources of electricity generation shift from thermal to cleaner sources.

In winter, the computed peak demand is around 12,000 MW whereas in summer, computed demand is 30,000 MWs. As the low demand will give low money to the government, so it wants to raise the demand through the winter package and wants to fill its gap of low earnings from the electricity bills.

To improve the success of Pakistan's winter package, the government should provide subsidies on essential utilities like gas and electricity specifically for low-income households to ensure they can afford heating during the winter, improve the distribution mechanisms to ensure that resources like gas and electricity are supplied efficiently and without interruption during peak winter months, launch campaigns to educate the public on energy conservation and the optimal use of available resources, reduce unnecessary consumption, establish a transparent monitoring system to track the effectiveness of the winter package and prevent misuse or misallocation of resources, invest in upgrading the energy infrastructure to reduce losses and improve the supply chain during high-demand periods, regularly review the program's impact and gather feedback from beneficiaries to make timely adjustments and improvements, and promote the use of renewable energy sources.

There is a dire need to extend power package relief to one year at the rate of economic growth percentage. ■

## Ahmed Hayat Lak Reappointed as MD & CEO of OGDCL for 3-year Term



The Oil and Gas Development Company Limited (OGDCL), Pakistan's largest exploration and production (E&P) firm, has reappointed Ahmed Hayat Lak as Managing Director and Chief Executive Officer (MD & CEO) for a three-year term.

The announcement was shared via a notice to the Pakistan Stock Exchange (PSX) on Thursday. "This is to inform that the Board of Directors of the company has appointed Ahmed Hayat Lak as the Managing Director/CEO of the company for a term of three years, effective from January 9, 2025," the notice stated.

Previously, in February 2023, Lak was appointed as MD and CEO of OGDCL. He has also served as Company Secretary and Head of Legal Services at OGDCL. Additionally, Lak is a director on the boards of Mari Petroleum Company Limited (MARI), Reko Diq Mining Company Limited (RDMC), Pakistan Minerals Private Limited (PMPL), and Pakistan International Oil Limited (PIOL).

Before his tenure at OGDCL, Lak held key roles, including Head of Corporate and Legal Services at Pakistan Oil Fields Limited (POL) and a position in the National Accountability Bureau (NAB).

Lak holds a postgraduate law degree from the University of Wolverhampton, UK, and a Bachelor of Law (Hons.) degree from the University of London. ■

# Scrapping a coal power avenue

Nasir Jamal

Future of the long-stalled project appears more uncertain than ever

**W**ith energy minister Awaiz Khan Leghari listing the planned 300MW Gwadar coal power plant amongst projects considered unaffordable for the consumers and hinting at scrapping it — along with several other proposed generation schemes of 10,000MW — the future of the long-stalled project appears more uncertain than ever.

The ‘warning’ comes at a time when the imported coal-based plant’s Chinese developer, according to the media reports, has already approached the Private Power and Infrastructure Board (PPIB) to seek its support for negotiating an upward revision in the project cost and tariff with the National Electric Power Regulatory Authority (Nepra).

Announcing a series of actions the government proposes to take to bring down electricity prices, the minister said only the projects with 40 per cent to 50pc physical progress and those that have already achieved financial close would be implemented.

“All future energy contracts would prioritise least-cost electricity, where demand would dictate the technology and power supply lines would dictate the space in which the next plant should be accepted for the power system. Competitive bidding will decide the final selection, with private investors taking on associated risks,” he said.

Fate of the Gwadar power plant is under question as consistent delays and high costs have rendered it unaffordable. The Gwadar project has failed to make any headway since Nepra first determined its tariff in 2018. This is despite it being listed as a “fast track project” under the China-Pakistan Economic Corridor (CPEC) initiative and a



strategic or committed project in the National Transmission & Dispatch Company's long-term Indicative Generation Capacity Expansion Plan (IGCEP) on account of several reasons.

Those reasons include — but are not limited to — the Covid pandemic, Pakistan's dollar liquidity crunch, the overall slowdown in work on the CPEC-related schemes, and, more importantly, Islamabad's desire to shift the power plant to Thar coal or replace it with a solar plant of equal capacity due to fuel price considerations, as well as on environmental and social grounds.

The government eventually surrendered to the company's demand to adhere to the original plan of running the plant on imported coal in early 2023 as the project sponsor demurred, rejecting the proposal to amend the agreement to shift it to Thar lignite or LNG or replace it with solar power.

Reports suggest that Islamabad agreed to the project sponsor's argument to adhere to the original project plan of running the plant on imported coal as the Joint Cooperation Committee on CPEC, whose consent is essential for making a change in the original plans, didn't approve of the local lignite suggestions.

Neptra has revised the project cost and tariff twice since the first determination. In its latest tariff review published in May last year, the power sector regulator allowed the Chinese investor a more than 51pc increase in the project cost to \$444.49 million compared to its original determination of \$292.77m.

The new project cost is also 24pc greater than the \$358.3m determined in 2023's review but is 27pc less than the \$607.14m demanded by the developer. The increase is primarily driven by a significant spike in engineering, procurement and construction prices, a surge in the Sinosure fee, and a rise in the interest rate costs.

An important aspect of the latest tariff determination is that the exchange rate reference of Rs105 a dollar and subsequent indexation has also been reset at Rs278.5 a dollar. Furthermore, Neptra has nearly quadrupled the 30-year levelised tariff for the project from Rs6.96 per kWh for the project from Rs6.96 per kWh originally granted to Rs25.99 (9.3

cents), consisting of an energy purchase price of Rs15.84 and a capacity purchase price of Rs10.04, which also includes a guaranteed return of Rs1.63 and debt servicing charges of Rs5.73 for the first 13 years.

In a recent letter to the PPIB, the project sponsor, CHIC Pak Power Company, complains that the new tariff lacks investment viability as "Neptra has technically reduced the internal rate of return and O&M [operation and maintenance] costs".

Although the approved capacity tariff is similar to that of the currently operational 1,320MW large-scale imported coal-fired power project, the letter argued, the unit investment and operating costs for smaller coal-fired power projects are significantly higher.

The energy sector experts argue that including the Gwadar power plant based on imported coal among the strategic projects defeats two major objectives of power price reforms: the least-cost principle and the movement to renewable energy sources. IGCEP-2022 envisions a progressive shift from an energy mix heavily reliant on imported fossil fuels like coal, furnace oil, and RLNG to indigenous energy sources, including hydel, Thar coal, wind, and solar. According to the plan, "There will be no further induction of power plants based on imported fossil fuels."

According to energy and climate change expert Dr Khalid Waleed, when the license of the plant was being finalised in 2018, Balochistan's Energy Department had termed the establishment of a coal-fired plant as a deviation from the Paris Agreement for Climate Change, which demands the reduction in the carbon emissions from its member states. It said Gwadar is a new port city which requires sustainable, modern, clean energy resources to meet its energy needs.

Suppose it is to develop Gwadar and commercialise its port as a recent report suggests. In that case, the government will have to decide sooner rather than later on what kind of technology it wants to use for the supply of electricity to the region that is dependent upon power imported from Iran. Without a sustainable, cheaper power supply, the region will remain cut off from the national economy. ■

*Courtesy Dawn*

## NJ hydropower plant closure multiplies power woes

Shutdown is draining hundreds of millions of rupees from national exchequer: experts

### EU Report

The continued shutdown of Pakistan's 969-MW Neelum-Jhelum hydropower plant is intensifying the financial burden on electricity consumers, as the country struggles to tap into cheaper energy. The plant has been offline since May 2024 due to a severe rock burst fault, depriving the national grid of much-needed low-cost electricity.

A government official informed the National Electric Power Regulatory Authority (NEPRA) during a public hearing had the Neelum-Jhelum plant been operational, the reimbursement rate for electricity consumers could have been higher, potentially rising from the current Rs1.03 per unit for December 2024. The ongoing closure is exacerbating the already significant energy challenges facing the country.

Experts revealed that the extended shutdown is draining hundreds of millions of rupees from the national exchequer while failing to provide consumers with affordable electricity typically supplied by the facility. The absence of Neelum-Jhelum Hydropower Plant has worsened the country's hydroelectric power shortfall, further burdening an already strained electricity supply.

The hearing addressed the petition filed by the Central Power Purchasing Agency (CPPA), representing state-owned distribution companies (Discos), which sought approval for a reduction of Rs1.03 per unit in electricity prices under the Fuel Charges Adjustment (FCA) for December. If approved, this adjustment could offer some financial relief to consumers in February 2024. However, the reduction would not apply to lifeline consumers, electric vehicle charging stations, or K-Electric customers.

Another issue raised during the hearing was the non-operation of Guddu Power Plant (747 MW), which is also contributing to rising electricity costs. NEPRA questioned the CPPA on the reasons behind the plant's shutdown, but the agency failed to provide a clear explanation. ■

# Solar boom in Pakistan

## 22 GW of solar panels imported in 18 months

### EU Report

**P**akistan has emerged as a leader in solar adoption across South Asia, Sherry tells conference; says failure to integrate solar into national energy planning could undermine energy security

Pakistan is witnessing an unprecedented solar revolution as communities and businesses take charge of their energy needs, outpacing government policies and traditional infrastructure. With a staggering 22 GW of solar panels imported in just 18 months, the country is undergoing a massive shift towards decentralized solar solutions. However, sustaining this momentum requires urgent policy reforms, infrastructure upgrades, and market mechanisms. At the Great Solar Rush Conference 2025, held at a local hotel in Islamabad, Senator Sherry Rehman, highlighted the urgency of aligning policies with this people-driven transformation.

"Pakistan has emerged as a leader in solar adoption across South Asia. We should be enabling this revolution, not disabling it," she stressed, warning that failure to integrate solar into national energy planning could undermine energy security and economic stability.

Zeeshan Ashfaq, CEO of Renewables First, emphasized the economic realities fueling this transition. "Millions are turning to solar not because of climate change



but because it makes perfect financial sense," he said, urging policymakers to embrace distributed generation instead of resisting it. Muhammad Mustafa Amjad, Director of Programs at Renewables First, shed light on the scale of the shift. "With 16 GW of solar imports in a single fiscal year—23 times our installed utility-scale solar capacity—we are witnessing an irreversible energy transition." He pointed out that grid electricity consumption has dropped by 10%, decoupling from GDP growth for the first time, signaling a fundamental change in demand patterns.

Ali Majid, GM of Longi, highlighted that Pakistan's high electricity costs and lack of local solar manufacturing are making production uncompetitive. He

proposed mandating 'Made in Pakistan' solar panels for public projects to attract investment in local assembly plants.

Waqas Moosa, Chairman of the Pakistan Solar Association, warned that poorly communicated policy changes could destabilize the solar market, urging transparent, industry-friendly reforms.

Syed Faizan Ali Shah, Member of the PM's Solarization Committee, noted that daytime grid electricity demand has fallen by 10 TWh annually due to solar adoption, creating new challenges for grid operators. He emphasized the need for smart metering and distributed energy controls to manage power fluctuations effectively. ■

## Shocking Truth: Pakistan's Electric Vehicle Goals May Be Unrealistic"

Renowned automobile expert Sunil Sarfraz Munj, co-founder of PakWheels, has expressed skepticism about Pakistan's ability to achieve its target of electric vehicles (EVs) making up 30% of the total vehicle market.

In a recent podcast, Munj cited the lingering electricity crisis in many parts of the country as a major obstacle. He emphasized that EVs are not a viable option for long-haul travel globally, due to the lack of charging facilities.

Munj noted that while EVs are suitable for urban areas with accessible charging stations, their adoption in Pakistan is hindered by:

- Widespread electricity shortages, particularly in small cities, towns, and villages
- Limited public charging facilities (less than 10 in Karachi, Lahore, and Islamabad)
- High costs, with the cheapest electric car in Pakistan being one-and-a-half times more expensive than the new Suzuki Alto

However, Munj identified two-wheelers and three-wheelers as a promising market for EV adoption in Pakistan, with affordable electric bikes available in the price range of Rs 200,000 to Rs 350,000. He suggested that retrofitting conventional motorcycles to electric bikes could be a cost-effective solution to

reduce fuel import costs and protect the environment.

### Other key points from the podcast include:

- The global trend of EV adoption is slowing down due to limitations in charging infrastructure
- Even in developed countries like Singapore and Canada, EV adoption is hindered by charging facility constraints

Munj's insights highlight the challenges Pakistan faces in achieving its EV targets and emphasize the need for a more realistic approach to promoting sustainable transportation in the country.

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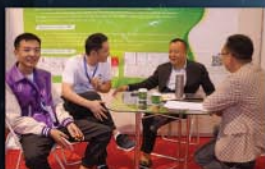
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# Is climate finance in jeopardy?

## US decision to withdraw from Paris Agreement highlights troubling shift towards unilateralism

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When a country as influential as the United States of America withdraws from the Paris Agreement, the implications extend beyond its borders, especially for the Global South, where climate action depends heavily on international financial and technological support. This philosophy resonates globally when addressing shared challenges such as climate change.

Recently elected US President Donald Trump's decision to withdraw the US from the Paris Agreement highlights a troubling shift towards unilateralism in an era demanding collective solutions. This move not only undermines the global climate finance framework but also jeopardises the climate resilience efforts of vulnerable countries of the Global South including Pakistan, sending ripples of uncertainty through global mitigation and adaptation strategies.

The Paris Agreement relies on the principle of "common but differentiated responsibilities" (CBDR), wherein developed countries are expected to bear a larger burden of climate finance. A key element is the commitment to mobilise \$100 billion annually for developing countries, a figure revised to \$300 billion under New Collective Quantified Goal (NCQG) by 2035 at COP29 in Baku last year to address increasing challenges.

The US, as one of the largest economies and also one of the top historical emitters, plays a critical role in fulfilling this financial commitment. Trump's decision to withdraw undermines this mechanism, creating a funding gap that other developed nations may struggle to fill. The move diminishes trust in the reliability of international climate finance and

signals to other countries that fulfilling such obligations is optional.

Due to Trump's withdrawal from Paris Accord, reduced financial support could delay critical projects aimed at mitigating these impacts, such as renewable energy initiatives and urban flood-resilience infrastructure.

The repercussions of Trump's decision extend well beyond funding gaps. It represents a breach of trust and a destabilisation of the global consensus on climate action. The developing and vulnerable countries have long relied on leadership from developed countries to guide and support their climate strategies. However, the absence of US leadership weakens this support, potentially eroding the resolve of other countries to commit to ambitious climate goals.

The US's withdrawal also creates a leadership vacuum in global climate governance. While the European Union and China have stepped up their commitments, the absence of the US – a key architect of the Paris Agreement – dampens the momentum needed to achieve its objectives. The decision could also encourage other developed

countries to scale back their commitments, further jeopardising global climate efforts.

This vacuum has tangible implications for the Global South because if developed countries fail to meet their climate finance commitments, developing nations' ability to implement mitigation and adaptation strategies will falter. For Pakistan, this could mean delayed renewable energy projects, increased reliance on fossil fuels, and diminished capacity to cope with escalating climate impacts.

For countries like Pakistan, this shortfall has direct and dire consequences. Pakistan's climate vulnerabilities illustrate the importance of international support. The country's geography makes it particularly susceptible to climate-induced disasters, including glacial melting, erratic monsoons, and intensifying heatwaves.

Despite its minimal contribution to global emissions, Pakistan faces disproportionate risks, highlighting the inequities in global climate impacts. The country's climate goals are ambitious but heavily reliant on international financing. Key areas such as renewable energy, urban flood resilience, and sustainable agriculture require significant investment, much of which comes from climate finance mechanisms.

Without sufficient funding, these initiatives risk being delayed, leaving Pakistan ill-equipped to face the challenges of climate change. The country is actively preparing its NDCs 3.0, which will set new targets aligned with its evolving climate priorities, including ambitious goals for emission reductions and climate resilience. However, a reduced pool of available funds threatens to stall these efforts, leaving Pakistan more vulnerable to climate-induced disasters such as the devastating 2022 floods, which displaced millions and caused economic losses ex-





ceeding \$15 billion. For Pakistan and other developing countries, this signals an uphill battle to achieve their climate goals without sufficient external support.

Considering these challenges, Pakistan needs to prioritise mobilising local climate finance and strengthening regional climate diplomacy efforts. Leveraging domestic financial resources, such as public-private partnerships and innovative mechanisms like upscaling green entrepreneurship, implementing climate risk insurance mechanism by engaging financial institutions and insurance companies, also working on green skills programmes for youth can provide a more sustainable foundation for strengthening climate action. Local financial institutions including banks, microfinance institutions, and corporate investments must be aligned with national climate goals to bridge funding gaps.

Strengthening regional collaboration through multi-crisis diplomacy can also help Pakistan address shared climate challenges. Regional climate diplomacy offers opportunities for joint projects, technology transfer, and shared financing mechanisms, fostering resilience across borders. Additionally, there is a need to diversify its climate finance sources and explore innovative mechanisms such as blended finance and carbon markets. Also, Pakistan must integrate climate considerations into its national development plans and enhance regional cooperation to tackle shared challenges. While Trump's withdrawal is a setback, it also presents an opportunity for other global actors to strengthen their roles in climate governance. The other developed countries must not only honour but exceed their financial commitments to compensate for the US's absence. Multilateral development banks and private-sector investors can also play pivotal roles in bridging the funding gap.

Although, Rousseau's assertion of interconnectedness holds true in today's global climate context as the US's withdrawal from the Paris Agreement is not merely a national decision; it has far-reaching implications for global climate efforts and disproportionately affects vulnerable countries like Pakistan.

Yet, history demonstrates that collective action can endure despite setbacks. By rallying global actors to fill the leadership and financial void left by the US, the international community can sustain the momentum needed to tackle the climate crisis. For Pakistan and the Global South, climate resilience, innovation and effective advocacy backed by data and action will be key to navigating this challenge and ensuring a sustainable future. ■

# Pakistan's Blue Economy in The Red

## Report says despite immense potential, Pakistan has not been able to exploit its real potential

### EU Report

**P**akistanis often hear a lot about the geo-strategic importance of their country. We have a large coastline, share borders with the second-largest, and soon-to-be largest economy in the world and lie at the crossroads of several important trade and resource routes.

All of this should, in theory, net the country considerable gains. Official analysis and reports often point in this direction too. Sadly, reality has been quite different, often to the point that one becomes tired of hearing about all this great 'potential' that seems like it will never be realised. Why is this the case? A new task force report presented to the prime minister this week might provide some clues.

It reportedly claims that Pakistan faces an annual loss of almost Rs5 trillion in the country's maritime sector because of under-utilised ports, tax evasion, malpractices, fake billing, misuse of the Afghan Transit Trade and a lack of value addition. The report lamented that despite immense potential and geo-strategic advantages, Pakistan has not been able to exploit its real potential. Of all the factors listed by the report to explain Pakistan's maritime underperformance, under-utilised ports and tax evasion in the maritime sector appear to play the biggest role, costing the country Rs3.19 trillion and Rs1.12 trillion respectively. Taken together, they account for well over 80 per cent of the annual loss in the maritime sector.

Although demand for port services in Pakistan has risen by 3.3 per cent per annum over the last ten years, the Karachi Port Trust (KPT), the country's busiest port, is only utilising 47 per cent of its total capacity. As such, none of the country's ports figure among the top 60 ports of the world, with KPT ranked at 61 while the Port Qasim Authority

(PQA) is 146th. Only 50 per cent of the total capacity of the latter is being utilised. The Gwadar Port Authority's (GPA) current capacity is 2.5 million tons and is expected to increase up to 400 million tons by the year 2045. However, one can clearly see that fully realising the potential gains from this expansion would require that the port avoids the chronic underutilisation that has befallen KPT and PQA.

It would also require an end to the massive tax evasion currently plaguing the maritime sector, a particularly outrageous problem given how ordinary people in the country have been buried under taxes and tariffs over the past two years. If those getting the most out of Pakistan's current infrastructure fail to pay the state their fair share and do their part to carry the economic burden, upgrading and expanding infrastructure will remain a challenge and any hopes of turning Pakistan into an attractive destination for investment will remain unfulfilled.

The task force report also highlighted some opportunities that the nation is currently missing out on. The Red Sea Crisis presents a unique chance for Pakistan to exploit its geo-strategic advantage, with several large shipping and logistics firms offering investments to secure their financial interests while channelling trade through Pakistan.

Why the government has not already jumped on this opportunity, given the ample underutilised space in our major ports, is unclear. Our coastlines could become a major pillar of our economy, and will indeed have to if Pakistan is to ever become a trade and investment powerhouse, but only if we have the foresight to complement our geo-strategic assets with policy wisdom. At the very least, we could ensure that we at least benefit from what we already have by stopping tax evasion and making sure that what space our ports currently do have is being used to the fullest. ■

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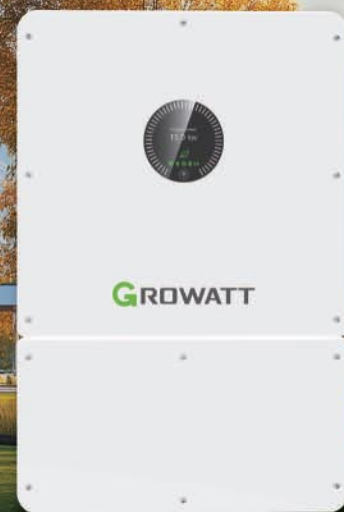
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