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PV+ Journal

NEM Policy, Solar Reforms, Climate Combat - is it all working?

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MOVING TOWARDS SUSTAINA-BILITY

Moving towards sustainable living is not just an ecological obligation; it's a compassionate choice that benefits both us and our planet. Sustainability ensures that we leave a healthier, more harmonious world for future generations. By reducing our environmental footprint through responsible consumption, renewable energy, and mindful resource management, we can mitigate climate change, protect biodiversity, and foster resilient ecosystems.

Sustainable living also brings personal advantages. It promotes a healthier lifestyle, as it encourages fresh, locally sourced foods and active transportation. It fosters community connections and reduces stress, making us happier and more fulfilled. Moreover, it bolsters economic stability, as green industries create jobs and lower our energy bills.

#cleanenergy

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EDITOR'S NOTE

As Pakistan moves through the winter months and edges toward summer, the country's energy landscape once again enters a period of transition and strain. Cooler weather typically brings a brief easing of electricity demand, offering policymakers and utilities a narrow window to address long-standing challenges in the power sector. Yet this seasonal lull is increasingly short-lived. By late spring, rising temperatures, agricultural demand and urban cooling needs push the system back toward its limits.

This year, the contrast is particularly stark. On one hand, Pakistan is experiencing an unprecedented surge in solar adoption, driven largely by households and businesses seeking relief from high tariffs and unreliable supply. Rooftop solar and battery systems are reshaping consumption patterns, reducing grid demand during daylight hours and cutting emissions. On the other, weak transmission infrastructure, financial stress within distribution companies and uncertainty around net-metering policy continue to undermine system stability.

As summer approaches, the challenge will be less about generation capacity and more about integration, affordability and resilience. Managing peak loads, ensuring fair cost recovery and preventing outages will require careful coordination between federal and provincial authorities. The coming months will test whether Pakistan can convert its winter breathing space into meaningful preparation for a hotter, more energy-intensive future — and whether its rapidly evolving energy mix can deliver both reliability and sustainability when demand is at its highest.

Local Scoop.

Here we bring you the latest updates on the green revolution happening in your region. Read about how your community is harnessing the power of renewables to shape a sustainable future and create positive environmental impact, one innovation at a time. We talk about breakthrough technologies, and local initiatives driving the renewable energy movement forward.

Pakistani textile firm invests $4.15mn in 7.5MW wind turbine

Premium Textile Mills Limited has approved a $4.15 million project to install a 7.5MW wind turbine, expanding its renewable energy capacity. The company disclosed the plan in a notice to the Pakistan Stock Exchange on Monday. The initiative reflects its commitment to sustainable energy practices.

The textile firm, which manufactures cotton and polyester yarn, already operates 20MW of solar power. Once the new wind turbine is installed, the total wind power capacity will reach 15MW. The project is expected to be completed by the last quarter of 2026.

Premium Textile Mills said the wind turbine will generate approximately 55.2 GWh annually and prevent 30,000 metric tons of carbon emissions each year. The combined renewable energy will cover nearly 67% of the company's total energy needs, reducing reliance on conventional power.

The development aligns with a growing trend among Pakistani companies to adopt renewable energy, driven by rising power cuts and tariff increases. Firms across sectors are increasingly investing in solar and wind solutions to improve sustainability.

Earlier this year, Dynea Pakistan Limited announced plans for a 1.1MW captive wind project in Balochistan. Premium Textile Mills' investment highlights the country's accelerating shift toward green energy solutions in the industrial sector.

Portugal, Pakistan Explore Cooperation in Energy, Education and Cultural Exchange

Portugal's Ambassador to Pakistan, Frederico Silva, met with Sindh Chief Minister Syed Murad Ali Shah this week to review the current state of Portugal–Sindh relations and explore new avenues for cooperation.

The meeting highlighted a shared desire to turn longstanding goodwill into meaningful collaboration across multiple sectors. Both sides emphasized common priorities in cultural and sports exchange, renewable energy, higher education, digital innovation, and expanded mobility pathways for Pakistani students and professionals interested in opportunities in Portugal.

Officials noted that Portugal's growing academic and technology ecosystem, combined with Sindh's young talent base and vibrant creative community, offers strong potential for mutually beneficial partnerships.

A major part of the discussion focused on emerging sectors that could deliver long-term, sustainable impact. Clean energy and water management were identified as key areas for cooperation, given Sindh's climate-related challenges and Portugal's expertise in green technologies and environmental solutions.

(Read More: Portugal Ambassador to Pakistan Frederico Silva Tours Karachi, Key Sites)

The leadership also examined opportunities in technology transfer, skills development, and joint research—especially in fields connected to digital transformation and the creative economy.

Ambassador Silva reaffirmed Portugal's commitment to deepening engagement with Pakistan at both provincial and national levels. He noted that Lisbon sees Sindh as an important partner for advancing people-focused initiatives that support innovation, education, and cultural understanding.

"Portugal remains committed to supporting initiatives that benefit both our societies," he said, stressing that bilateral cooperation must translate into real improvements in quality of life and economic opportunity.

Chief Minister Shah welcomed Portugal's interest in strengthening ties with Sindh and expressed his government's readiness to support partnerships that promote sustainable growth, academic collaboration, and cultural links. He added that Sindh's growing focus on digital skills, renewable energy, and creative entrepreneurship aligns closely with Portugal's strengths.

The meeting concluded with both sides expressing optimism about the future of Portugal–Sindh cooperation and agreeing to pursue more structured frameworks for engagement.

Pakistan Says Rooftop Solar Output Will Surpass Grid Demand in Key Regions Next Year

Rooftop solar generation in Pakistan is expected to exceed daytime electricity demand on parts of the national grid for the first time next year, particularly in major industrial hubs, a senior government official told Reuters.

The projection follows an unprecedented boom in solar installations that has helped cut emissions and lower bills for many consumers but has also weakened the financial position of heavily indebted power utilities as grid-based demand continues to fall.

"Pakistan will see negative grid-linked demand during certain daytime hours as behind-the-meter solar completely offsets power drawn from the grid," said Aisha Moriani, Secretary of the Ministry of Climate Change, speaking on the sidelines of the COP30 climate summit in Brazil.

Although regions in Europe and Australia occasionally experience negative electricity prices due to excess solar supply, Pakistan would be among the first major emerging markets where rooftop solar could surpass grid demand across major areas for extended periods. Negative demand is most likely in Lahore—where solar adoption is highest—followed by Faisalabad and Sialkot, she added.

Frequent power outages and rising tariffs have accelerated solar uptake among Pakistan's 250 million people, making the country the world's third-largest importer of solar panels. Solar's contribution to national power generation has now overtaken that of neighbouring China.

Moriani said negative-demand periods will become more common during bright summer afternoons, industrial off-days, and moderate weather conditions that boost solar output. "The challenge is not renewable growth—it's how quickly the grid, regulatory framework, and market design can adapt," she noted.

Pakistan plans to introduce revised tariffs for large solar consumers and restructure fees to ensure businesses with rooftop systems contribute fairly to grid maintenance costs.

Grid-based electricity demand is expected to rise 3–4% this year, slower than long-term trends. Demand could grow faster next year, though higher solar adoption may again curb consumption, she said.

The surge in solar has also influenced Pakistan's LNG strategy, prompting the country to seek renegotiations with top supplier Qatar and cancel shipments from Italy's Eni. Pakistan is now aiming for lower prices, more flexible delivery schedules, and potentially fewer cargoes.

While no formal talks were held with Qatar at COP30, Moriani said the conference created "diplomatic space for engagement with energy ministers and commercial representatives."

"The goal is to align Pakistan's gas import strategy with fiscal constraints, demand forecasts, and seasonal needs," she said. "Pakistan wants affordability and stability—not deeper dependence on LNG."

PAKISTAN AND ADB CONCLUDE $730M FINANCING AGREEMENTS FOR ENERGY AND SOE REFORMS

Pakistan and the Asian Development Bank (ADB) have signed two key agreements worth a combined $730 million to bolster the country's energy infrastructure and enhance the performance of state-owned enterprises. The agreements cover the Second Power Transmission Strengthening Project, valued at $330 million, and the Accelerating State-Owned Enterprise (SOE) Transformation Programme, amounting to $400 million.

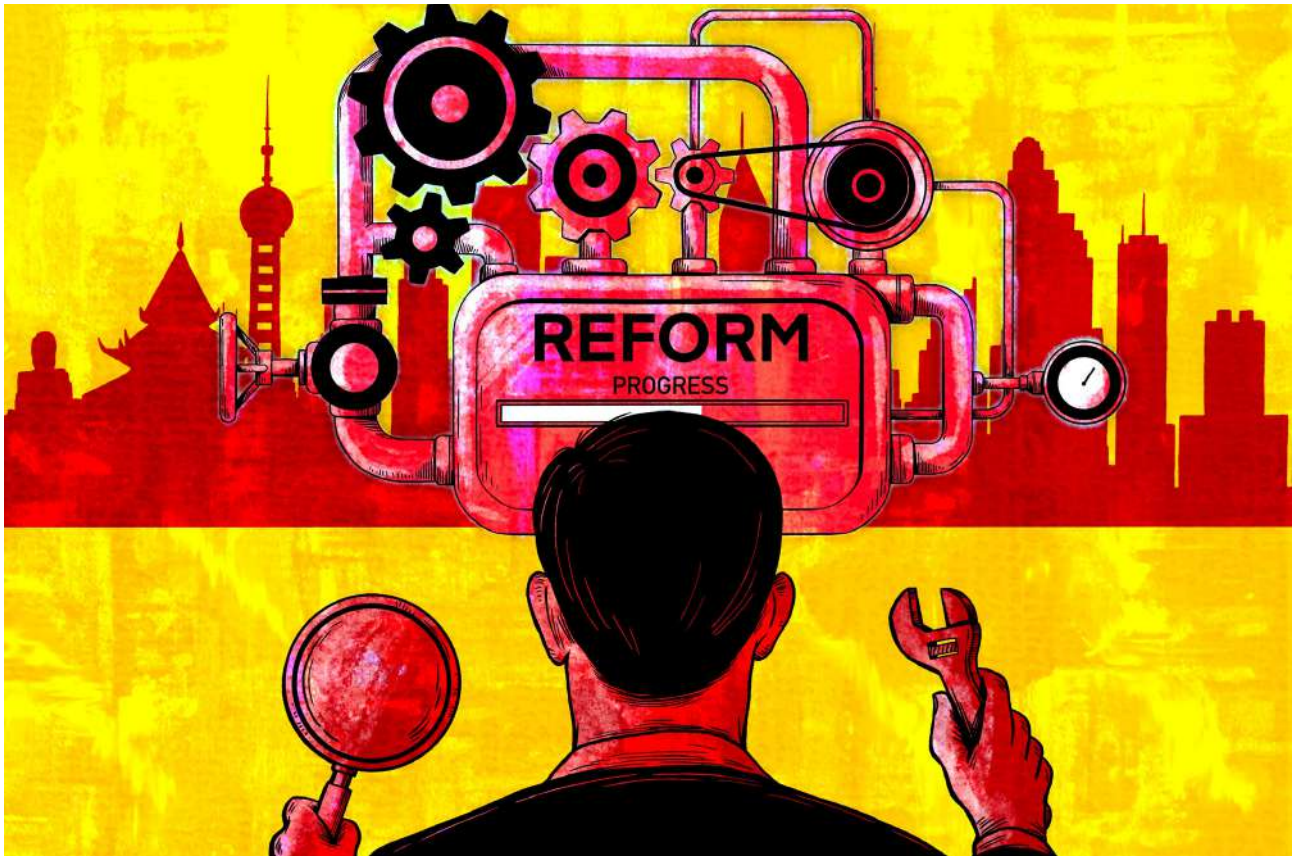
At the signing ceremony, Secretary of the Ministry of Economic Affairs Muhammad Humair Karim expressed appreciation for ADB's continued support, describing the bank as one of Pakistan's most reliable development partners. He said the power transmission project will facilitate the safe and reliable evacuation of nearly 2,300 megawatts of electricity from upcoming hydropower projects, ease pressure on existing transmission lines, and strengthen the national grid's resilience during emergencies.

Karim added that the SOE Transformation Programme aims to improve compliance with the SOE Act 2023 and SOE Policy 2023, while boosting operational efficiency across state-owned enterprises, with a special focus on the National Highway Authority (NHA).

He described both initiatives as transformative, noting that the transmission project will help secure Pakistan's energy future, while the SOE programme will promote greater transparency, efficiency, and long-term sustainability in the public sector.

ADB Country Director Emma Fan welcomed Pakistan's strong commitment to the projects, emphasizing the role of the power transmission initiative in reinforcing the country's energy infrastructure. She also said the SOE Transformation Programme comes at a crucial time and will support the government's ongoing reform agenda.

Both Pakistan and ADB reaffirmed their commitment to the effective use of the financing and the timely and successful implementation of both initiatives.



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POWER SHORTAGES AND RISING ENERGY COSTS ERODE COMPETITIVENESS OF FISHERIES EXPORTS

Federal Minister for Maritime Affairs Muhammad Junaid Anwar Chaudhry has said that persistent power shortages and high energy costs are constraining Pakistan's fisheries output and undermining the global competitiveness of its seafood exports, according to an official statement.

Speaking at a meeting focused on the sector, Chaudhry stressed that a stable electricity supply and reduced input costs are essential to increase production and protect export earnings. He underlined that uninterrupted power, reasonably priced feed and efficient energy generation are key to transforming fisheries into a fully functional and sustainable industry.

Participants at the meeting highlighted several operational and structural challenges facing the sector. They noted that Pakistan has more than 100 fish processing units of varying capacities and around 400 registered exporters, with the majority of facilities located in Karachi. In contrast, infrastructure in Balochistan remains limited, while fisheries processing capacity in Khyber Pakhtunkhwa and Punjab is reported to be minimal.

The minister also pointed to Pakistan's strong raw material base — including fish, shrimp, crabs, lobsters, squid, cuttlefish and bivalves — which could support value-added processing if energy constraints and cost pressures are eased.

Citing the UN Food and Agriculture Organization's State of World Fisheries and Aquaculture (SOFIA) 2022 report, officials noted that fisheries play an important role in Pakistan's economy, contributing around 1% to GDP and nearly 4% to the agriculture sector. In FY2024–25, fish and fish products ranked 10th among Pakistan's exports, accounting for 1.34% of the country's $32.04 billion export earnings. The sector directly employs more than one million people and supports another 1.5 million livelihoods indirectly.

CLIMATE CHANGE

Scientists warn that world's climate is changing because of rising greenhouse gas emissions that might end up warming up the planet by well of 2 degrees. Here are some glaring numbers that show the impacts of climate change in Asian and the Pacific.

ASIA IS KEY

35%

percentage of worldwide energy-related carbon dioxide emissions from developing Asia, compared to *17% in 1990*.

75%

percentage of the region's emissions that comes from the People's Republic of China. The country's per capita emission, however, is only about *50%* of the developed world's average.

IMPACTS TO THE REGION

7 out of the *10* of nations at highest risk to climate change and natural disasters worldwide are in *Asia and the Pacific*, 3 of which are tiny Pacific island states.

20 MILLION number of Bangladeshis who will be displaced by a *1-meter rise in sea level in 2050*.

More than *60%* number of the region's population working in *agriculture, fisheries and forestry* - sectors most at risk to climate change.

DISASTER RISK MANAGEMENT

$53.8 BILLION annual average economic cost of disasters in Asia and the Pacific

$40 BILLION budget required annually to help Asia and the Pacific transition to low-carbon and climate-resilient economies.

HITACHI ENERGY AWARDED STRATEGIC CONTRACT TO ENHANCE PAKISTAN'S POWER INFRASTRUCTURE

Pakistan is undergoing rapid transformation, with expanding cities, growing industries and a surging need for dependable, sustainable electricity. To support these ambitions, the National Grid Company of Pakistan (NGC) has selected Hitachi Energy as a strategic partner for a landmark initiative — the 765/220 kV Mansehra Grid Station (Lot III), the first project of its kind in the country. More than a routine infrastructure upgrade, the project represents a decisive step toward a smarter, more resilient power system.

As energy demand continues to rise, Pakistan faces mounting pressure to modernise its national transmission network. Reducing power losses while accommodating a higher share of renewable energy has become a critical priority. Strengthening the grid is essential to improve reliability, curb inefficiencies and align with the country's long-term sustainability objectives.

Under the contract, Hitachi Energy will be responsible for the design, supply, installation, testing and commissioning of major equipment for the Mansehra Substation (Lot III). This includes the delivery of advanced circuit breaker technology manufactured at Hitachi Energy's flagship facility in Ludvika, Sweden. Once completed, the substation will serve as a vital hub in Pakistan's transmission system, enabling higher voltage operation and more efficient long-distance power transmission.

The project represents an important milestone for Pakistan's power sector and for Hitachi Energy's global manufacturing footprint. It underscores the value of international collaboration in deploying high-performance grid technologies in rapidly growing markets. As Pakistan strengthens its transmission network to meet rising residential and industrial demand, the Mansehra Substation will be central to ensuring reliable, high-quality electricity for millions of consumers.

A message by the pv+ journal team

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LET'S PLANT A TREE

PLANT • PLANT • PLANT • PLANT • PLANT

OGDC BOOSTS PAKISTAN'S ENERGY RESERVES WITH BARAGZAI X-01 DISCOVERY

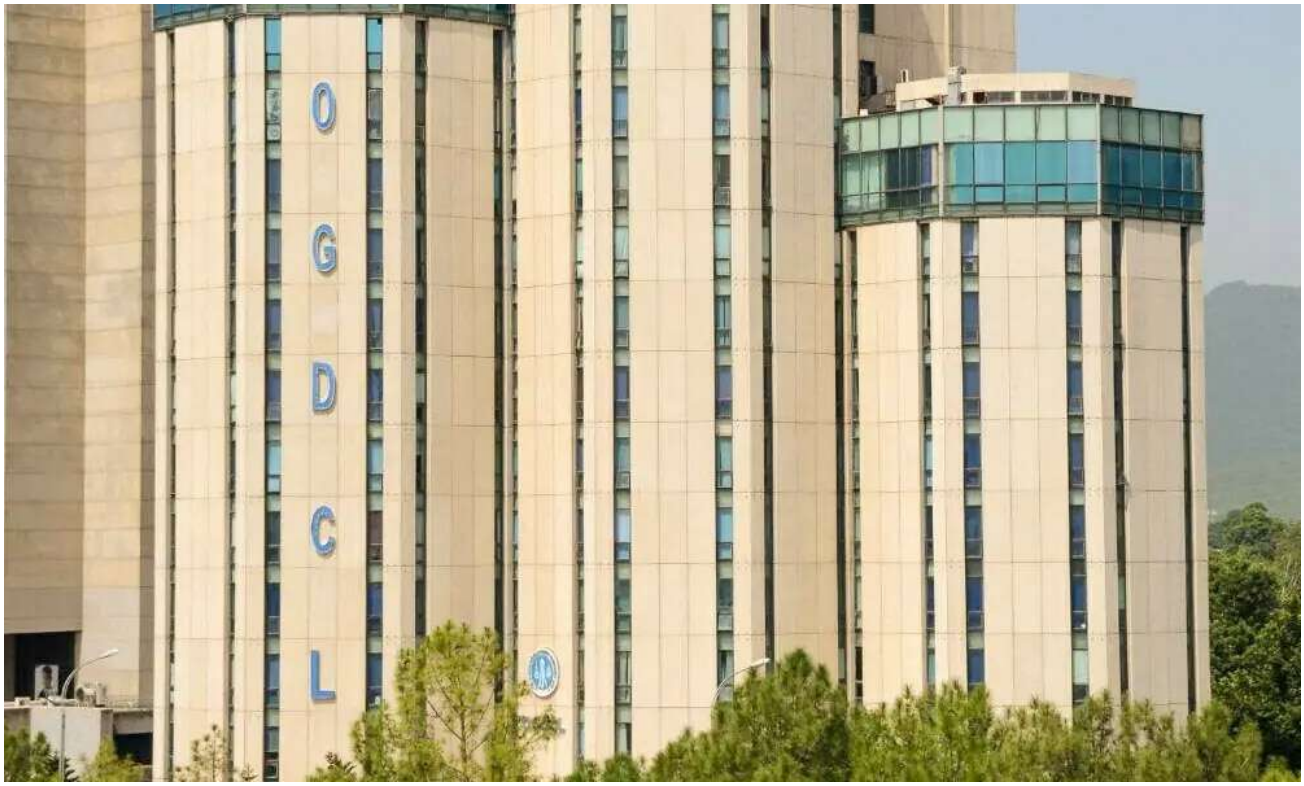
Oil and Gas Development Company Limited (PSX: OGDC), the operator of the Nashpa Exploration License with a 65% working interest, alongside joint venture partners Pakistan Petroleum Limited (PPL) holding 30% and Government Holdings (Private) Limited (GHPL) with 5%, has announced a significant oil and gas discovery at the Baragzai X-01 (Slant) exploratory well in District Kohat.

The discovery was made in the Jurassic-age Datta Formation, where a cased-hole Drill Stem Test (DST-02) delivered encouraging results. The well flowed at a rate of 4,100 barrels of oil per day (BOPD) and 10.5 million standard cubic feet of gas per day (MMSCFD) on a 32/64-inch choke, with a flowing wellhead pressure of 3,880 psig.

Drilling at the Baragzai X-01 (Slant) well commenced on December 30, 2024, and reached a total depth of 5,170 metres, penetrating the Triassic-age Kingriali Formation. Around 187 metres of the Datta Formation were encountered during drilling.

The decision to conduct the cased-hole test was supported by strong hydrocarbon shows, favourable petrophysical analysis from open-hole wireline logs, and fracture indicators identified through image logs. Previously, a successful cased-hole drill stem test (CHDST-01) in the Kingriali Formation had also confirmed the presence of hydrocarbons.

The company said the discovery will help narrow Pakistan's energy supply-demand gap by adding indigenous resources, while strengthening the hydrocarbon reserves of OGDCL, its joint venture partners, and the country as a whole.



Global Scoop.

Here we dive into the latest developments in the industry as we explore the remarkable strides countries are making towards sustainable power sources, highlighting groundbreaking innovations and initiatives that promise a greener future for our planet. From cutting-edge solar technologies to revolutionary wind farms, this is your gateway to staying informed on the global transition to clean energy.

OIL SLIPS ON OVERSUPPLY WORRIES AS INVESTORS WATCH UKRAINE NEGOTIATIONS

Oil prices edged lower on Tuesday as concerns about a growing supply glut outweighed lingering fears that Russian exports could remain constrained while Ukraine peace talks show little progress.

Brent crude fell 33 cents, or 0.5%, to $63.04 a barrel at 1146 GMT, while U.S. West Texas Intermediate (WTI) dropped 32 cents, or 0.5%, to $58.52. Both benchmarks had risen 1.3% on Monday amid doubts that a Russia-Ukraine peace agreement would materialize, reducing expectations of unrestricted Russian crude and product flows under Western sanctions.

Despite uncertainty over Russian shipments, analysts say the global supply-demand balance looks increasingly loose for 2026, with forecasts suggesting supply growth will outpace demand. "In the short term, oversupply remains the key risk, and current prices appear vulnerable," said Priyanka Sachdeva, senior market analyst at Phillip Nova.

New sanctions on Rosneft and Lukoil — and bans on selling fuel made from Russian crude into Europe — have pushed some Indian refiners, including Reliance, to scale back purchases. With fewer buyers, Russia is pivoting toward China. Deputy Prime Minister Alexander Novak said on Tuesday that Moscow and Beijing are discussing ways to expand Russian oil exports.

"Markets are still assessing whether the latest European and U.S. sanctions will meaningfully curtail Russian oil exports," UBS analyst Giovanni Staunovo noted.

Analysts remain focused on the widening mismatch between supply and demand. Deutsche Bank expects a surplus of at least 2 million barrels per day in 2026, with no clear return to deficit even by 2027.
"The outlook for 2026 is decidedly bearish," said analyst Michael Hsueh.

Expectations of a softer market next year are overshadowing the lack of progress on Ukraine peace efforts, which had previously lent some support to prices. A peace deal could pave the way for sanctions relief and allow restricted Russian supplies to re-enter the global market.

Oil prices are finding some support from growing expectations of a U.S. interest rate cut at the Federal Reserve's December 9–10 meeting, as policymakers signal openness to easier monetary policy. Lower rates could boost economic activity and lift oil demand.

"The oil market is in a tug-of-war between an oversupplied landscape and hopes that easier monetary policy will support demand," Sachdeva added.

MALAYSIA TO DEVELOP $6 BILLION RENEWABLE ENERGY CORRIDOR

Malaysia has signed a collaboration agreement with the World Bank Group to develop the Southern Johor Renewable Energy Corridor (SJREC), a landmark project valued at 6 billion USD.

The agreement—finalized on Monday—brings together the International Finance Corporation (IFC), Permodalan Darul Ta'zim (the Johor state government's strategic investment arm), and Ditrolic Energy. According to a joint statement, the 2,000 sq km hybrid solar and battery energy storage zone in Johor is designed to supply clean power for the state's industrial expansion and support the ASEAN Power Grid through future cross-border electricity trade.

Signed alongside the launch of the Johor Renewable Energy Policy 2030, the collaboration outlines cooperation on project development, technical expertise, and potential financing. As a central pillar of the Johor–Singapore Special Economic Zone master plan, the first phase of SJREC will feature up to 4 GWp of solar capacity and 5.12 GWh of energy storage across a 10,000-acre site.

Judith Green, the World Bank Group's country manager for Malaysia, said the project will advance Johor's sustainable development goals, generate employment, attract foreign investment, and enable clean energy exchange between Malaysia and Singapore.

ARGENTINA'S GENNEIA OPENS $180 MILLION SOLAR PARK IN MENDOZA

Argentine renewable energy company Genneia has officially brought the San Rafael Solar Park online in the western province of Mendoza, marking a major milestone in the country's clean energy expansion. The project represents an investment of around $180 million and further strengthens Genneia's position as one of Argentina's leading renewable power producers, the company said in a statement on Tuesday.

San Rafael is Genneia's third solar park in Mendoza, a province that has emerged as a key hub for renewable energy development due to its strong solar resources. The facility is equipped with approximately 400,000 solar panels and has an installed capacity of 180 megawatts, making it one of the largest solar power plants currently operating in the country.

According to the company, the park will generate enough electricity to meet the annual needs of roughly 135,000 households, helping to reduce reliance on fossil fuels and lower carbon emissions. The project is expected to play an important role in improving energy security while supporting Argentina's transition towards a more sustainable and diversified energy matrix.

"This level of capacity makes the San Rafael Solar Park a benchmark for large-scale solar power generation," Genneia said, adding that the project will contribute significantly to improving the overall efficiency and resilience of the national energy system. With the launch of San Rafael, Genneia continues to expand its renewable portfolio and reinforce its long-term commitment to clean energy development in Argentina.

EUROPEAN RENEWABLE ENERGY SHARES DIP AFTER US FREEZES MAJOR OFFSHORE WIND PROJECTS

The Trump administration on Monday halted leases for five large offshore wind projects currently under construction along the U.S. East Coast, citing national security concerns. The decision triggered a sharp drop in shares of offshore wind developers.

Kepler Cheuvreux analyst Jose Porta said the move signals a shift away from broad efforts to block new offshore wind permits toward more targeted action against projects that are already well advanced. While the step is "more disruptive in the near term," it may not have lasting impact, he noted, pointing out that U.S. courts have overturned similar actions in the past. He added that delays, rather than outright cancellations, are the most likely outcome.

The U.S. Department of the Interior said the suspension followed warnings from the Pentagon that large turbine blades and highly reflective towers could interfere with radar systems, potentially hindering the detection and tracking of security threats. The pause, the department said, will allow federal agencies time to work with leaseholders and state partners to assess whether the national security risks can be mitigated.

Bernstein analyst Deepa Venkateswaran said the order requires offshore construction to stop for 90 days, with the option for the government to extend the pause. She said the main impact would be on developers such as Orsted, through higher costs from delays or reduced earnings and project value.

Orsted said the affected projects were already at advanced stages and were expected to begin supplying power to around one million homes across three states starting next year.

Dominion warned that the suspension could weaken grid reliability in Virginia, with potential consequences for customers including military facilities and AI-linked data centers. "These electrons will power the data centers that will win the AI race, support our warfighters, and build the nuclear warships needed to maintain maritime supremacy," the company said.

UBS analyst Mark Freshney said the lease suspension could result in construction activity coming to a halt, but noted that much of the downside for Orsted may already be priced in following the recent share selloff. He added that risks are unlikely to fully ease until the projects begin generating power and complete their tax-equity financing structures.

PAKISTAN'S NEM POLICY: RETHINKING ROOFTOP SOLAR AND DISTRIBUTED ENERGY

Pakistan's energy policymaking has long been marked by short-term fixes and politically expedient decisions, often taken without adequate analysis of long-term impacts. These measures are frequently reversed just as quickly, creating uncertainty and undermining investor and consumer confidence. The ongoing back-and-forth over net energy metering (NEM) is a clear illustration of this pattern.

This inconsistency has come at a particularly difficult time for consumers, who are already burdened by electricity prices that have nearly doubled over the past two years, with further increases signaled by NEPRA. NEM and other distributed energy resource (DER) schemes were always intended as transitional tools to help renewables compete in a fossil-fuel-dominated system. Revising or phasing out such policies is not unusual. However, the way these changes are being handled in Pakistan—and the explanations offered—raises serious concerns.

Key questions remain unanswered: why was the original three-year NEM policy extended to seven years under relaxed conditions? What was achieved by signaling revisions last year without implementing them? Why did a policy previously praised by NEPRA suddenly prompt distribution companies to rush NEM approvals? More critically, what progress has been made to establish a legal and regulatory framework that evaluates rooftop solar and other DERs based on their actual grid value, rather than a first-come, first-served approach?

The current challenges are not the result of NEM participants, who until recently made up only a small share of the system. Instead, repeated tariff hikes have made grid electricity unaffordable, pushing consumers toward rooftop solar—often installed in ways that are poorly integrated and invisible to DISCOs.

At the core of the problem lies NEPRA's cost-of-service regulation, which recovers all costs through electricity sales and penalizes utilities when demand falls. This outdated approach discourages support for technologies that can reduce system costs over time. While DERs do involve integration costs, their long-term benefits—lower losses, deferred investments, improved resilience, and energy security—far outweigh them.

Pakistan urgently needs a shift toward performance-based, technology-neutral regulation that recognizes DERs as partners in modernizing the power sector. Only through consistent, forward-looking policies can the country unlock the full potential of distributed energy and build a resilient, affordable, and sustainable electricity system.

Happen-ings.

Get ready to immerse yourself in a comprehensive exploration of the dynamic world of renewable energy and beyond. Here we will uncover the latest trends, breakthroughs, and impactful events shaping the global transition to sustainable practices, empowering you with the knowledge and inspiration to be at the forefront of the green revolution.

UN WARNS FRAGILE GRID COULD DERAIL RENEWABLE ENERGY TRANSITION DESPITE PAKISTAN'S STRONG SOLAR AND WIND POTENTIAL

"Pakistan must expand grid for renewables: UN", 9 Nov 2025

Pakistan's vast solar and wind resources give it a strong foundation to move toward affordable, low-carbon electricity, but inadequate grid infrastructure remains a major constraint, a United Nations report has cautioned. The 2025 Review of Climate Ambition in Asia and the Pacific, published by the UN Economic and Social Commission for Asia and the Pacific (UN-ESCAP), says Pakistan will require substantial investment, planning and coordination to modernise and expand its transmission network so it can absorb large-scale renewable energy while preserving system reliability

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The report notes that phasing down coal in Pakistan will only be possible through a comprehensive energy transition strategy that includes clear targets, robust policies and the active involvement of all stakeholders. It stresses that the transition must be "just", ensuring workers, businesses and households are not disproportionately affected by structural changes in the energy sector.

UN-ESCAP highlights that falling technology costs have made solar and wind power competitive with coal, presenting Pakistan with a significant opportunity to accelerate its shift to cleaner energy.

According to data from the SDG-7 Roadmap for Pakistan, the levelised cost of electricity (LCOE) for solar and wind generation is now substantially lower than that of coal-fired power, strengthening the economic case for renewables.

Placing Pakistan's challenges within a wider regional picture, the report describes the Asia-Pacific as being at a "critical juncture", as rapid economic growth coincides with intensifying climate risks. The region's economy grew by 4.6% in 2024 and accounted for 60% of global GDP growth over the past decade. At the same time, rising debt burdens, climate change and biodiversity loss continue to expose countries to increasing vulnerabilities.

Despite these pressures, the Asia-Pacific remains a global leader in renewable energy deployment, accounting for 70% of new renewable capacity added worldwide in 2024. Governments across the region are increasingly setting net-zero targets, strengthening climate policies and incorporating them into updated Nationally Determined Contributions (NDCs) as they seek to meet long-term emissions-reduction goals.

How AI Can Accelerate the Clean Energy Transition – MIT

Artificial intelligence is emerging as a powerful enabler of the clean energy transition. While growing AI workloads are increasing electricity demand — particularly from energy-intensive data centers — AI itself is also helping reduce emissions, optimize power systems, and accelerate innovation across the energy sector.

AI is already cutting energy use in buildings, transport, and industry, while improving the design, placement, and performance of wind, solar, and storage projects. On modern electricity grids, AI-driven control systems help operators balance supply and demand in real time, enhance efficiency, reduce costs, and integrate rising levels of intermittent renewables. AI can even predict when key equipment needs maintenance, preventing failures and reducing the risk of blackouts.'

With today's more complex grid — shaped by distributed solar, variable wind resources, extreme weather, and cyberthreats — AI is becoming essential. Algorithms can forecast short-term generation needs, optimize system frequency and voltage, and enable new flexibility tools such as smart EV charging, home energy management, and responsive data centers. These capabilities help smooth demand peaks and allow batteries, electric vehicles, and buildings to support the grid.

AI is also transforming long-term planning. Grid developers must anticipate future infrastructure needs years in advance, but rising renewable penetration and climate-driven weather uncertainty make this increasingly difficult. AI models can simulate future system behavior, evaluate resilience under extreme conditions, speed up regulatory reviews, and analyze vast datasets to guide investment decisions.

Another major frontier is materials discovery. AI-powered simulations and autonomous labs are accelerating the development of advanced materials for batteries, nuclear reactors, solar cells, and hydrogen technologies. By rapidly generating hypotheses, designing experiments, and learning from results, AI can compress materials development cycles from decades to only a few years.

At MIT, researchers are applying AI to fusion reactor modeling, grid resilience planning, advanced material design, autonomous maintenance robots, and improving the efficiency of data center infrastructure. Through the MIT Energy Initiative (MITEI), experts from industry, academia, and government are collaborating on both the challenges and opportunities AI presents. At its 2025 conference, MITEI launched the Data Center Power Forum to address rising energy demand from digital infrastructure while harnessing AI's potential to support sustainable energy systems.

AI represents both a challenge and a powerful tool. With the right research, policy, and collaboration, it can play a pivotal role in achieving a cleaner, more reliable, and more efficient energy future.

Rooftop solar surges in Pakistan. Can its neighbours keep pace?

South Asia has witnessed a sharp rise in rooftop solar power generation over the past two years as countries seek to reduce dependence on polluting and often imported fossil fuels such as coal, oil and gas. The most dramatic expansion has taken place in Pakistan, where rooftop solar now provides about a quarter of the country's electricity supply, according to the Institute for Energy Economics and Financial Analysis (IEEFA), a U.S.-based think tank.

Other South Asian nations trail well behind.
India, the region's largest renewable energy producer, increased its rooftop solar capacity from roughly 11 gigawatts (GW), or 2.6 per cent of its total energy mix in 2023, to 18 GW by May 2025, IEEFA said. Even so, this represents only 3.9 per cent of overall generating capacity.

Sri Lanka has also made notable gains, more than doubling its rooftop solar capacity from 516 MW in 2022 to 1,347 MW by the end of 2024. Rooftop solar now accounts for 23 per cent of the island nation's energy capacity, according to the IEEFA study.

Bangladesh, however, has seen limited progress. Its rooftop solar capacity stands at just 245 MW, accounting for slightly under 1 per cent of total energy supply.

What sparked Pakistan's rooftop solar boom?

In Pakistan, the rapid uptake of rooftop solar has largely been driven by market forces, according to Paris-based think tank REN21. Electricity prices in the country rose by 155 per cent over three years, while solar panel prices dropped by nearly 50 per cent and were exempt from import duties and sales taxes. This made solar a far cheaper option for households and farmers, according to an analysis by the World Resources Institute (WRI). At the same time, local entrepreneurs trained themselves to install rooftop solar systems, helping spread adoption at the community level, WRI said.

How has India promoted rooftop solar?

India's growth, by contrast, has been steered by government policy and incentives. In February 2024, New Delhi launched a programme offering 75 billion rupees (US$9 billion) in subsidies to install 30 GW of rooftop solar capacity across around 10 million homes.
So far, subsidies worth US$1.05 billion have been disbursed to 1.6 million households, according to IEEFA.

India's rooftop solar potential could reach as much as 960 GW — nearly double the country's current total power generation capacity of 500 GW — according to a June 2025 report by The Energy and Resources Institute (TERI).

Why has Bangladesh lagged behind?

Despite its dense population making it well suited for rooftop solar, Bangladesh has struggled due to limited access to affordable financing for homes and businesses. High import duties on solar components have also slowed adoption, IEEFA said in an August analysis. In July, the government announced a target to add 3 GW of rooftop solar capacity on government buildings, schools and hospitals nationwide.

However, Bangladesh will need to train bank officials on solar financing, provide low-cost funding to solar businesses and remove import duties on components to accelerate growth, the IEEFA study noted.

Is rooftop solar accessible to everyone?

Not entirely. The expansion of rooftop solar has been uneven across regions and income groups. In India, states such as Gujarat, Maharashtra and Kerala had rooftop solar capacities of about 6 GW, 4.1 GW and 1.6 GW respectively. In contrast, northeastern states like Manipur and Meghalaya had only 10.6 MW and 0.21 MW as of September 2025, according to the Ministry of New and Renewable Energy.

In Pakistan, total installed generation capacity across all energy sources stands at 46 GW, while peak demand ranges between 20 and 30 GW, according to Islamabad-based think tank Renewables First.

The government must still make capacity payments — fixed fees based on potential generation — to power plants even when surplus capacity leaves them idle.

As wealthier consumers shift to rooftop solar and reduce reliance on the grid, overall grid demand has fallen. Meanwhile, capacity payment obligations have nearly tripled, rising to 2.1 trillion Pakistani rupees (US$7.46 billion) in 2024 from 721 billion rupees in 2022.

In response, the government imposed a 10 per cent tax on imported solar panels in this year's budget, while utilities raised electricity prices. Poorer, grid-dependent consumers who cannot afford to switch to solar have been hit the hardest.

‘CUTTING EMISSIONS UNDER PRESSURE’: JAPAN TURNS TO NUCLEAR MAXIMISATION ALONGSIDE RENEWABLES

Widespread post-Fukushima nuclear closures pushed the country toward fossil fuels, raising emissions and delaying climate targets. The quiet of a sharply cold afternoon is punctuated by the soft swish and swoosh of three 50-metre blades, automatically responding to the slightest change in the steady westerly wind that keeps them spinning around the clock. From a mountain ridge in rural Fukushima prefecture in north-east Japan, rows of wind turbines extend as far as the eye can see. In the distance stand the silhouettes of the reactor buildings at the Fukushima Daiichi nuclear power station, now being painstakingly dismantled at a cost that has already reached $35bn (£26bn), nearly 15 years after a magnitude-9.0 earthquake and a 15-metre tsunami triggered a triple meltdown. Another nuclear plant further south remains dormant.

Yet the 46 turbines that form the vast Abukuma windfarm – Japan’s largest onshore wind project – hint at a different energy future for the region. Constructed for ¥67bn (£310m), the windfarm became fully operational in April, just weeks after the government outlined its latest strategic energy plan as it works toward net-zero emissions by 2050.

That plan has drawn criticism from environmental campaigners because it abandons earlier efforts to cut Japan’s dependence on nuclear power after the Fukushima disaster. Instead, it calls for the “maximisation” of nuclear energy, which is expected to provide about 20% of total electricity generation by 2040. Around 14 reactors have already been restarted, with projections that roughly 30 will be operating by then.

The shutdown of dozens of nuclear reactors in the aftermath of Fukushima forced Japan to lean heavily on imported fossil fuels. Last year, it ranked as the world’s second-largest importer of liquefied fossil gas after China and the third-largest coal importer by volume. Under the new energy plan, however, renewables are expected to supply 40–50% of electricity, up from just under one-third in 2023, while coal’s share is set to fall from 63% to between 30% and 40%.

Fukushima has set its sights on becoming a renewable energy leader – a goal that would have seemed implausible before tsunami waves crashed ashore on 11 March 2011, disabling backup power at the Daiichi plant and causing the world's worst nuclear accident since Chornobyl 25 years earlier. Under its Renewable Energy Promotion Vision, the prefecture, home to 1.7 million people, aims to source all its power from renewables by 2040, with an interim goal of 70% by 2030.

"Everyone in the prefecture is committed to meeting that target," said Takayuki Hirano of Fukushima Fukko Furyoku (Fukushima Wind Power Recovery), a joint venture backed by nine companies and led by Sumitomo Corporation. "That's why there are so many subsidies for solar, wind and other renewables. I truly believe we can make it happen.

"People still carry painful memories of nuclear power and Fukushima, and they continue to struggle with that legacy." The damaged plant once supplied electricity to homes, businesses and factories in Tokyo, about 150 miles to the south. Fifteen years later, some of the 160,000 evacuees have returned after radiation levels were deemed safe, though other areas remain uninhabitable.

In contrast, part of the electricity generated by Abukuma's turbines is used locally, including by a mackerel aquaculture project and a municipal town hall. This is made possible through feed-in premiums, which allow power to be sold on the wholesale market or directly to consumers. "It's about producing energy locally for local use," Hirano said. Japan, the world's fifth-largest greenhouse-gas emitter, has made some progress in cutting emissions. Output fell by 4% to a record low in the year ending March 2024, driven by reduced energy consumption, increased renewable use and the restart of nuclear plants. The country aims to cut emissions 46% below 2013 levels by 2030.

Still, the widespread post-Fukushima nuclear shutdowns – and the politically sensitive process of restarting reactors – have left Japan more reliant on fossil fuels than many comparable economies. At Cop30, it once again received the Fossil of the Day award from Climate Action Network, a global NGO alliance, for lagging on decarbonisation. While Japan argued it had been unfairly singled out compared with larger emitters such as China, the network said the award reflected Tokyo's promotion of carbon capture and storage, which it described as solutions "dressed up as answers".

As the summit drew to a close, environment minister Hirotaka Ishihara faced criticism after suggesting Japan would not endorse Brazilian president Luiz Inácio Lula da Silva's proposed roadmap to move away from fossil fuels, placing it at odds with around 80 other nations attending the talks in Belém. Ishihara "sent the wrong message by declining to back global efforts to speed up a fair transition from fossil fuels to 100% renewables to meet the Paris Agreement's 1.5C target," said Masayoshi Iyoda of environmental group 350.org.

Japan's new prime minister, Sanae Takaichi, "must recognise that energy efficiency and renewable power offer the fastest route to full energy self-sufficiency," Iyoda added. "Backing the fossil-fuel phaseout roadmap would strengthen, not undermine, Japan's long-term interests by supporting a resilient and sustainable economy."
Hirano said the Abukuma project was "our contribution to Fukushima's recovery, so that one day the name Fukushima will be linked with renewable energy rather than nuclear power". Geothermal energy is also part of that vision.
Further inland, Tomio Sakuma, renewable energy area manager at Genki Up Tsuchiyu, opens a valve, releasing a powerful jet of steam rising from deep underground. In the hot-spring town of Tsuchiyu Onsen, local authorities are tapping Japan's volcanic geology to reshape Fukushima's energy narrative.

Few locations are better suited. Across Japan's more than 3,000 onsen resorts, businesses usually drill separate wells for hot water. In Tsuchiyu, however, the town relies on a single shared source, making it easier to capture underground steam to drive a turbine before blending it with cold mountain water for bathing.
Geothermal power is expected to contribute to Japan's net-zero goals.

"The strength of this project is that we don't treat energy generation as an afterthought," Sakuma said. "It's a simple, linear process." Delegations from other hot-spring towns regularly visit, hoping to replicate Tsuchiyu's model.
The plant resembles something from a steampunk novel: a dense web of pipes, gauges and valves producing 440kW of electricity – enough for around 800 homes and to supply water to a nearby aquaculture facility. Revenue from feed-in tariffs helps fund Tsuchiyu Onsen's recovery from the 2011 disaster and supports the construction of new ryokan inns for visitors, including a growing number of overseas tourists.

Fukushima as a whole is steadily closing in on its target. Renewables – led by solar arrays spread across land once home to families displaced by the meltdown – now account for nearly 60% of the prefecture's electricity generation, up from just 23% at the time of the disaster.

NEW OIL, GAS FIND IN KOHAT SIGNALS BOOST TO PAKISTAN'S ENERGY SECURITYV

In a significant boost to Pakistan's energy sector, substantial oil and gas reserves have been discovered in Kohat district of Khyber Pakhtunkhwa, sparking optimism about higher domestic energy output and a reduced dependence on expensive imports, APP's local correspondent reported from Kohat on Sunday.

Preliminary estimates suggest the exploratory well could yield around 4,100 barrels of oil per day, a development experts have termed both timely and encouraging as the country's energy resources continue to decline. The discovery comes at a crucial time, with Pakistan facing ongoing power shortages and rising energy import costs.

Energy experts say the find could help relieve pressure on foreign exchange reserves, enhance indigenous energy supply and stimulate economic activity in the area, including job creation and infrastructure growth. They add that Kohat has the potential to become a key contributor to Pakistan's overall energy mix.

Officials said comprehensive technical and commercial studies will be conducted in the coming days to assess the field's full production capacity and long-term feasibility. The outcomes of these evaluations will shape future development strategies and the integration of output into the national energy system.

The exploration initiative is being spearheaded by Oil and Gas Development Company Limited (OGDCL) in partnership with other stakeholders, reflecting Pakistan's commitment to boosting local energy resources. The discovery is widely seen as a strategic achievement that could strengthen energy security and support sustainable economic growth amid ongoing global market volatility.

WHAT IS RENEWABLE ENERGY?

The Answer is Blowing in the Wind

We hear a lot about renewable energy, but what is it, exactly?

> It is an energy source that is perpetual ... inexhaustible... "to infinity and beyond!" Renewable energy has storage limitations, however, and some types are not available 24/7.

A FEW FACTS

- According to the University of Michigan (U-M) Center for Sustainable Systems, about 80% of the nation's energy comes from fossil fuels, 8.4% from nuclear and 11.4% from renewable sources.
- In 2019, renewable energy sources accounted for about 17% of energy generation, according to the U.S. Energy Information Administration (EIA).
- The EIA projects that the share of renewables used for U.S. electricity generation will increase from 21% in 2020 to 42% in 2050.
- Wind and solar are the fastest-growing renewable sources, but they provide just 3.8% of total energy used in the U.S., according to the U-M center.

THE MAJOR TYPES OF RENEWABLE ENERGY SOURCES ARE:

1

BIOMASS, INCLUDING BIOFUELS
(comes from plants and animals)

WATER OR HYDROPOWER

2

3

GEOTHERMAL
(comes from the heat of the earth)

4

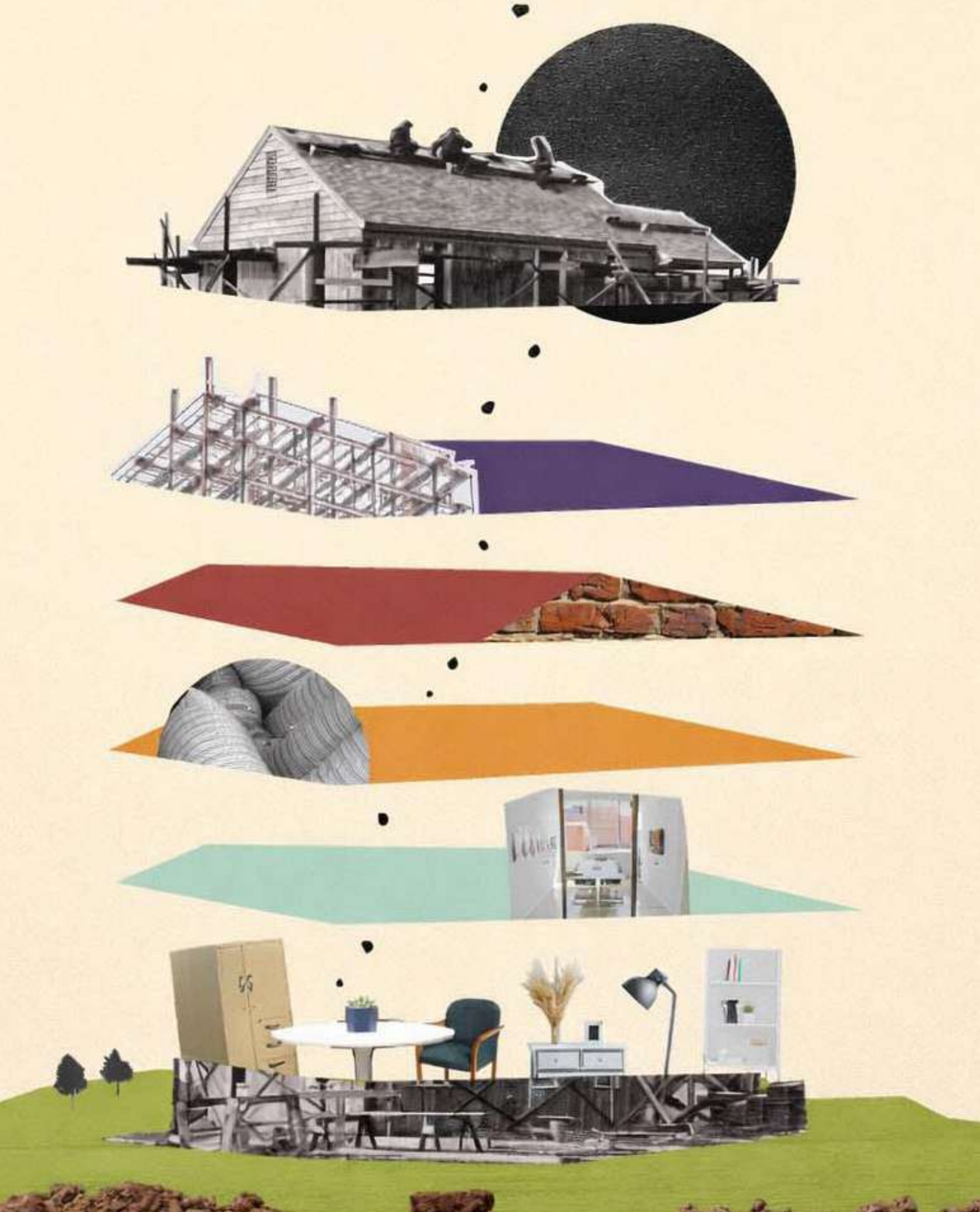
WIND

5

SOLAR

"IT'S NOT CLIMATE CHANGE THAT NEEDS TO BE TACKLED. IT IS THE POLITICAL POWER OF THE FOSSIL FUEL INDUSTRY."

RICHARD DENNISS, CHIEF ECONOMIST AT THE AUSTRALIAN INSTITUTE



PAKISTAN PM CLEARS FRAMEWORK FOR NATIONAL ENERGY PLAN TO REDUCE POWER COSTS

Prime Minister Shehbaz Sharif on Wednesday approved the framework for a National Energy Plan aimed at ensuring low electricity costs for industries and facilitating domestic consumers, Pakistani state broadcaster reported.

The development took place during a meeting of the Cabinet Committee on Energy in Islamabad presided over by Sharif. The Pakistani prime minister directed all ministries and provincial governments to present a "workable and coordinated" strategy under the proposed plan.

Electricity costs in Pakistan have been a major concern for both industries and domestic consumers. Industrial users often face high tariffs that increase production cost while residential consumers struggle with rising bills that impact household budgets.

"Prime Minister Shehbaz Sharif has given in-principle approval for the formulation of a comprehensive National Energy Plan in consultation with relevant ministries and provincial governments," Radio Pakistan said in a report.

"He emphasized that the government's top priorities include ensuring electricity supply to industries at the lowest possible cost and providing facilitation for domestic consumers." Sharif also approved the establishment of a dedicated secretariat for the National Energy Plan and gave approval to the framework guidelines for auctioning wheeling charges, it added.

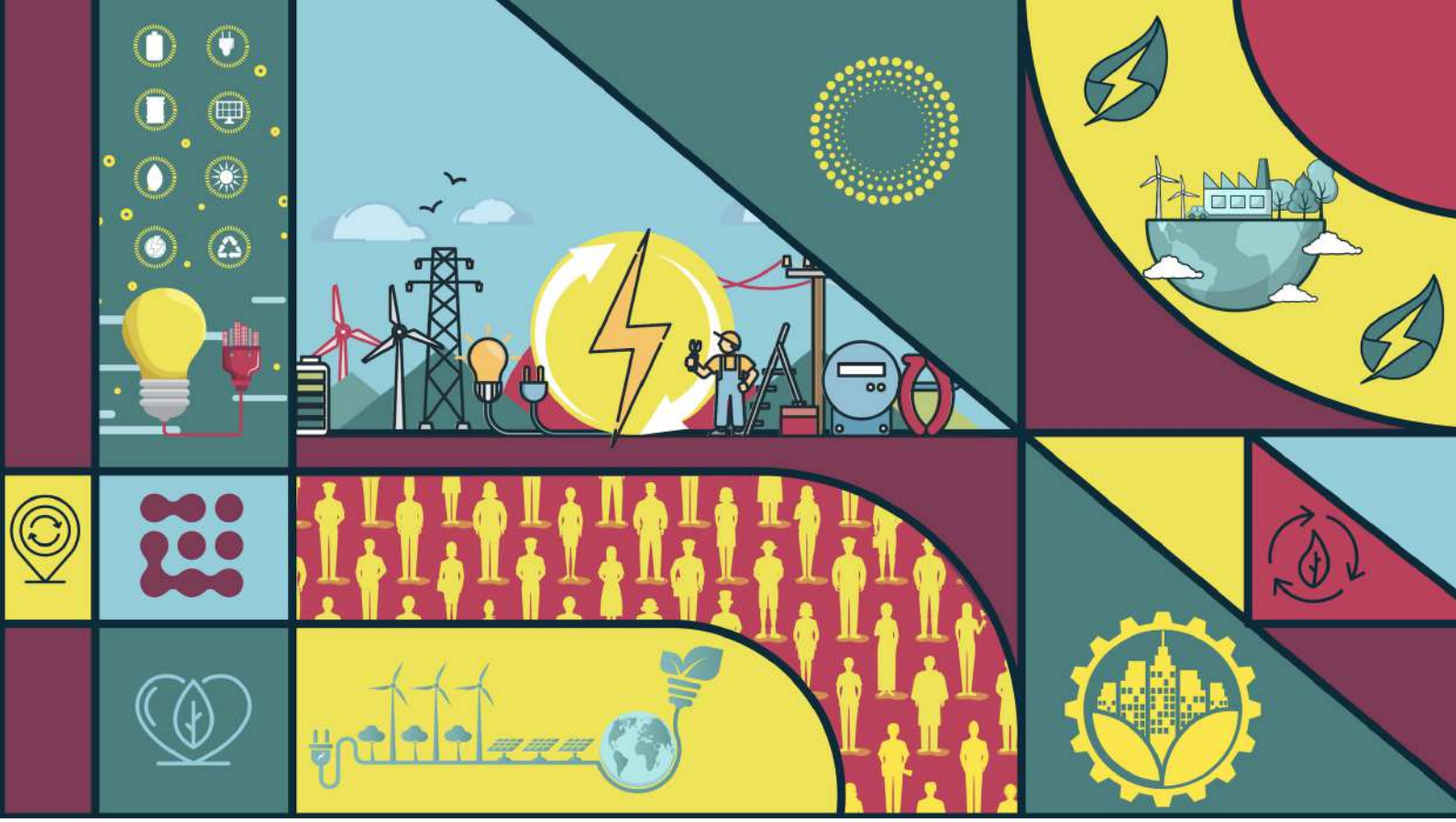
Wheeling charges are fees paid for using another company's power grid to transmit electricity from a generator to a consumer, covering the cost of transporting electricity over someone else's network.

The report said Sharif instructed authorities to include the recommendations of the climate change, finance, industries and petroleum ministries into the plan.

Sharif also gave instructions to expedite the privatization of power distribution companies (DISCOs) and urged competitive tariffs for industries to boost production capacity.

Fluctuations in fuel prices, inefficiencies in the power sector, and reliance on imported energy have contributed to high electricity costs in Pakistan in recent years, making energy affordability and stability a key focus for government policies and reforms.

Pakistan has pushed energy sector reforms to tackle long-standing issues like circular debt, power theft, and transmission losses, which have caused blackouts and high electricity costs. In February, Pakistan developed a new energy policy that it says will help the country attract $5 billion in investment through public-private partnerships.



WHY YOUNG PEOPLE SHOULD CARE ABOUT INVESTING IN CLEAN ENERGY

For younger generations, investing in clean energy is one of the most impactful ways to shape a better future—both for the planet and for their own financial well-being. As the climate crisis intensifies, clean energy offers a practical and forward-thinking investment option that supports innovation, job creation, and global sustainability.

Renewable energy sources like solar, wind, and hydropower are no longer niche technologies—they are rapidly becoming the backbone of modern energy systems. The clean energy sector is one of the fastest-growing industries in the world, offering vast opportunities in technology, engineering, finance, and entrepreneurship. For young people entering the workforce or beginning their investment journey, this sector represents growth, resilience, and long-term returns.

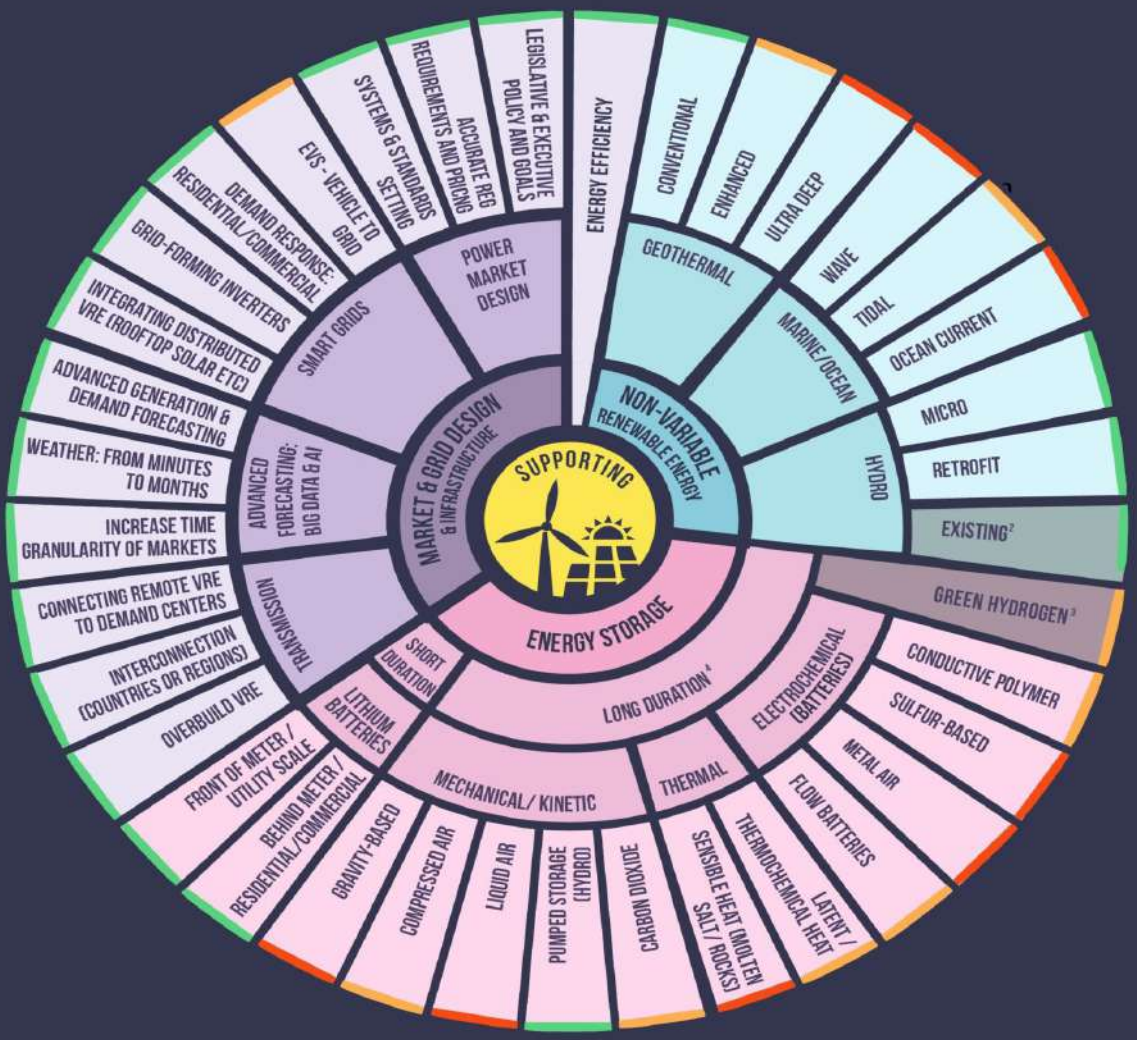
Investing in clean energy also reflects values that matter to many young people. Climate change, environmental justice, and sustainability are priorities for this generation. By choosing green investments—such as sustainability-focused mutual funds, green bonds, or shares in renewable energy companies—young investors can align their financial choices with their personal beliefs, contributing to positive environmental and social impact.

Moreover, clean energy is a more stable and secure alternative to fossil fuels, which are prone to price volatility and geopolitical risks. Renewable technologies offer decentralized, low-cost, and increasingly reliable energy solutions. As demand for electric vehicles, energy storage, and smart grids grows, so does the potential for clean energy to deliver strong financial performance.

Thanks to digital investment platforms, getting started is easier than ever—even with small amounts. For young people looking to build wealth while supporting the planet, clean energy offers a powerful and accessible opportunity. It's more than an investment—it's a step toward a cleaner, smarter, and more sustainable world they'll inherit.

Achieving Fossil-Free Electricity[1]

Policies, Tools and Technologies for Supporting Wind and Solar



Key: Market Readiness

- Commercial
- Newly Commercial
- Demo/Pilot

Footnotes:

1. Infographic shows the many choices available for supporting wind & solar to achieve reliable, dispatchable fossil-free energy. There is no one silver bullet. Not all are necessary, although most Market & Grid Design reforms are. List is not exhaustive.
2. No new large hydropower dams should be built. Existing projects should be operated in a way that minimizes impact on vulnerable communities.
3. Converting electricity to hydrogen and back again is inherently inefficient but may make sense in some contexts. Hydrogen should be manufactured, stored, and converted back to electricity, all at the same location, in order to limit inefficiencies and leakage risks.
4. Long Duration storage is mostly not needed until over 50% VRE penetration.

GAME-CHANGING PROJECT PAIRING SOLAR PANELS WITH CROPS — HERE'S HOW IT WORKS

A pioneering project that combines solar power generation with crop cultivation is set to reshape the future of solar farming. Germany's largest solar farm is expected to come online later this year, featuring an innovative agrivoltaic design that delivers multiple benefits. According to SolarQuarter, the project is being developed by the Greenbuddies Group in the Bavarian town of Oberndorf am Lech. Spanning 69 acres with an installed capacity of nearly 17 megawatts peak, it will be the largest agrivoltaic installation in Germany.

The solar panels will be mounted on tracking systems that follow the sun throughout the day, enabling up to 30% higher electricity generation compared to fixed installations. However, the most distinctive feature lies beneath the panels. Wheat will be cultivated under the solar arrays, demonstrating that large-scale solar power and agriculture can coexist on the same land. Appropriately named Triticum — the Latin word for wheat — the project aims to prove the viability of dual land use.

Solar energy is among the cleanest and most cost-effective power sources globally. When paired with other renewables like wind, it can significantly cut fossil fuel use and reduce heat-trapping emissions. Yet, the extensive land requirements of solar farms have long been a challenge.
Agrivoltaic projects like Triticum address this issue by allowing crops to grow beneath solar panels, creating dual-purpose land use. This approach not only makes solar installations more appealing to farmers but also offers additional revenue streams.

Similar models have already shown success worldwide. Farmers in Puerto Rico and western Colorado have integrated solar panels into coffee and peach farms, respectively. Meanwhile, the Czech Republic recently updated its farming regulations to permit solar installations above crops such as cabbage and tomatoes.
The Triticum project is expected to be completed by the end of the year.

INTERVIEW WITH MR EHTISHAM AKHTER
GROUP HEAD, ARTISTIC ENERGY

1 - What motivated your company to enter the renewable energy sector?

Pakistan's energy future depends on breaking free from imported fuels. For us, renewables are both a business opportunity and a national responsibility — a way to deliver sustainable power while contributing to energy independence

2 - Why do you think clean energy is important for Pakistan's future?

Clean energy is not optional for Pakistan — it's essential. It secures our energy supply, reduces emissions, and creates jobs. For a climate-vulnerable country, renewables are the path to resilience and prosperity.

3 - Which renewable energy areas is your company focusing on first, and why?

We're prioritizing the expansion of solar and wind power, complemented by advanced battery storage systems, as the cornerstone of our energy strategy. These renewable resources are not only abundant across Pakistan's diverse geography but are also highly scalable and increasingly cost-effective, making them well suited to meet both current and future energy demand. As technology advances and costs continue to decline, solar and wind offer a sustainable pathway to reduce reliance on imported fuels and stabilize electricity prices.

Battery storage plays a critical role in this transition by addressing the intermittency of renewable generation. By storing excess energy during periods of high production and releasing it when demand peaks or generation dips, storage systems ensure grid stability and uninterrupted supply. Together, solar, wind, and storage create a resilient, reliable, and environmentally responsible energy mix, positioning renewables as a dependable and viable alternative to conventional power sources in Pakistan.

4 - How do you see this move benefiting both your business and the wider community?

For us, investing in renewables strengthens market leadership while aligning our operations with globally recognized ESG standards and long-term sustainability goals. It positions us at the forefront of the energy transition, enhancing resilience, competitiveness, and investor confidence in a rapidly evolving market.

For communities, renewables translate into more affordable and reliable electricity, cleaner air, and improved public health, alongside the creation of skilled jobs across the value chain—from development and construction to operations and maintenance. Ultimately, this is inclusive growth: progress that drives economic opportunity, environmental responsibility, and shared value for everyone.

5 - What challenges do you expect in this transition, and how are you planning to handle them?

Regulation, financing, and grid integration are challenges we anticipate in the transition to renewables. Shifting policies, access to capital, and grid readiness all demand careful coordination and long-term planning.

We're addressing these issues through strong partnerships, advanced technologies, and proactive engagement with regulators, investors, and other stakeholders—turning potential obstacles into opportunities for sustainable and resilient growth.

GLOBAL EVENTS

Intersolar Europe Exhibition
Date: 23 – 25 June, 2026
Venue: Messe, München

SNEC
Date: 3 – 5 June, 2026
Venue: Shanghai, China

SOLAR PAKISTAN
Date: 17 - 19 April, 2026
Venue: Lahore Expo Centre

WBE
Date: 16 – 18 Sep, 2026
Venue: Guangzhou, China

RE+
Date: 16 – 19 Nov 2026
Venue: Las Vegas, NV

WETEX & DSS
Date: 20 – 22 Oct, 2026
Venue: Dubai World Trade Centre (DWTC)

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