MONTHLY SEPTEMBER 2025 ISSN 2309-6578

ENERGY UPDATE

EXCLUSIVE REPORT ON
2ND INT'L SOLAR POWER CONCLAVE AND TECHNOLOGY EXCELLENCE AWARDS 2025

IGCEP 2025–35:
A PLAN THAT NEEDS RETHINKING

FOOD-ENERGY SECURITY IMPERILLED
AS FLOODS INFLICT $1.4BN LOSS

CLIMATE DISASTER
LESSONS FOR PAKISTAN

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FROM THE

Editor's desk...

Emergency Declaration: Same Promises, No Delivery

The federal government has declared a climate and agriculture emergency in the country in view of the devastating floods and rains that have affected Punjab and Sindh provinces.

The decision came at a meeting of the federal cabinet, which was chaired by Prime Minister Shehbaz Sharif. The cabinet also announced the formation of a special committee led by Planning Minister Ahsan Iqbal to recommend measures to mitigate the impact of the floods on the country.

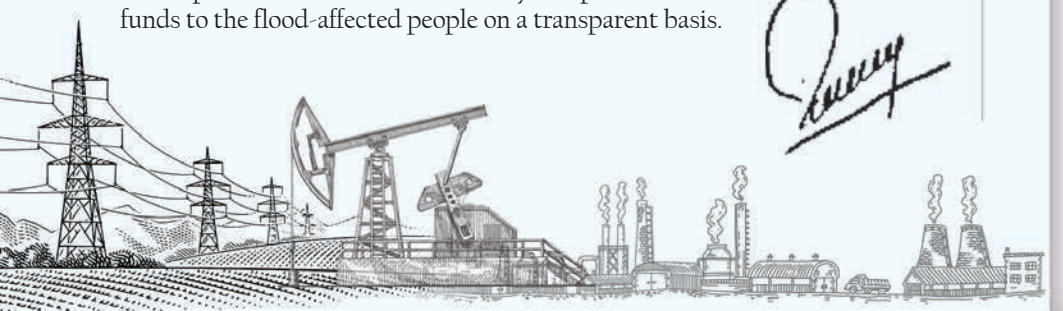
The need is to include members from all provinces in the special committee to show provincial harmony in tackling the natural disaster. This is not the first time that a special committee has been formed to mitigate the impact of the floods and rains, but the fact is that several such committees were also formed in the past, but no real outcome could be achieved from them due to massive corruption in flood and rain relief funds. Furthermore, the 2022 floods' relief money donated by the UN and other international organisations has still not reached many affected people.

The imposition of the climate and agriculture emergency is a welcome move that can help reduce the biodiversity and economic losses from ongoing floods and rains that have killed over 842 people, displaced 1.2 million others, affected more than 4 million, mainly in Punjab, and threatened economic losses between $6–10 billion so far. Rescue operations have been hampered by shortages of boats, helicopters, and trained staff. There is a lack of interest in performing relief operation.

According to a report, a significant funding gap remains for the UN's 2022 Pakistan Floods Response Plan, with substantial amounts still needed for urgent relief and rehabilitation. There is a critical need for ongoing support in rebuilding homes, restoring livelihoods, and implementing disaster risk reduction measures. A systematic response is required to address the long-term evolution of needs, including the crucial issue of documentation, which is essential for access to services and assistance.

The scale of the disaster overwhelmed the response, which relied more on debt financing than grants, and faced challenges like logistical barriers, discrimination in aid distribution, and the long-term impacts of insufficient support for recovery and reconstruction. Pakistan should use all available climate funds and also make an emphatic appeal for additional climate change funds. Feeling pain of the flood victims, the UN and Asian Development Bank have announced $6 million in relief aid each, while the UK has also announced £1.33 million in humanitarian aid to support Pakistan's monsoon response.

It will be good if new global relief aid funds are distributed through international agencies rather than the Pakistani government. There is also a dire need to accelerate rescue operations in all areas. It is hoped that the government will adopt a positive approach to perform relief operations with utmost sincerity and provide relief funds to the flood-affected people on a transparent basis.



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Monthly Energy Update
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REGISTRATION # DCO/DDO/LAW/CDGK-41/2006
Published by M. Naeem Qureshi for Energy Update
& Printed at Print Vision, Karachi Cell: 0333-2244586

IGCEP 2025–35: A Plan That Needs Rethinking

Rehan Javed

The Ministry of Power, NEPRA, the Special Investment Facilitation Council (SIFC), and the dedicated task force deserve credit for the efforts they have recently made to reduce industrial tariffs. These steps were difficult, complex, and often politically costly but show a recognition of how critical affordability and competitiveness are for industry and exports. They are a reminder that when policy is aligned with economic realities, progress is possible. Yet, as the new Indicative Generation Capacity Expansion Plan (IGCEP) 2025–35 comes up for approval, there is a risk that these gains will be undermined by a planning framework that still clings to outdated assumptions.

The central issue is not the absence of power plants on paper. Installed capacity already exceeds demand. The challenge is that electricity is too expensive, demand is shrinking, and circular debt continues to spiral. Unfortunately, the IGCEP, in its current form, risks making all three problems worse.

Capacity payments, fixed charges owed to power plants regardless of whether they produce electricity, have reached extraordinary levels. Today, about half of the tariff paid by consumers goes to capacity payments alone, around PKR 17 per kWh. Ten years ago, this figure was just Rs 2. Over the past five years, Pakistan has spent more than Rs 6 trillion on capacity charges, exceeding even the cost of the fuel used to generate electricity. The IGCEP projects capacity rising from roughly 43 GW today to 64 GW by 2035, even though real demand does not justify this. Without change, we are simply committing ourselves to higher fixed costs, higher tariffs, and more circular debt.

This problem is magnified by the IGCEP's failure to integrate the Competitive Trading Bilateral Contract Market (CTBCM). The market is about to open with an initial 800 MW quota. Over the coming decade, industries will increasingly procure power directly from generators, bypassing the central single-buyer system. This is a structural shift that will

reshape demand. Yet the IGCEP models the future as if nothing will change above 800 MW. It does not ask how demand migration will affect the need for central capacity, how stranded costs will be managed, or how competitive procurement will alter the generation mix. The risk is obvious: capacity built under today's assumptions may be stranded tomorrow.

The plan also overlooks a more immediate reality: demand is declining. In FY2025, electricity consumption dropped by 3.6%. Industrial demand fell 4%, and agricultural consumption plunged 34% as farmers switched to solar or diesel pumping. Rooftop solar has surged almost 300% in two years, with more than 150,000 consumers now generating their own electricity. This is not a passing trend. It is the start of a structural shift. Higher tariffs drive consumers away from the grid, leaving fixed costs to be spread over fewer units, which in turn raises tariffs further. That is the "death spiral" of the power sector. A credible plan must model this dynamic, not ignore it.

Location is another blind spot. Demand is concentrated in the North, while much of the cheap new generation is in the South. Transmission constraints mean efficient plants often sit idle while more expensive ones are dispatched to serve demand. Modern systems value location in planning, often through locational pricing. Our planning still treats every megawatt as equal, regardless of where it is built. The result is inefficiency, higher costs, and underutilized capacity. The IGCEP does not exist in a vacuum. Electricity is not just an infrastructure sector; it is the foundation of the economy. A plan that raises tariffs, deters consumption, and leaves industry uncompetitive is not just an energy plan — it is an economic straitjacket. Unless revised, the IGCEP 2025–35 risks locking Pakistan into another decade of unaffordable electricity and weak competitiveness.

NEPRA now faces an important test. It can approve the IGCEP as it is, effectively endorsing the continuation of old mistakes. Or it can insist on revisions that reflect affordability, competitiveness, and industrial growth as core priorities. The commendable recent steps to reduce industrial tariffs show what is possible when those goals are placed front and center. The IGCEP should reflect the same spirit.

ENERGY NEWS

Nepra hires firm for Halmore's forensic audit

EU Report

National Electric Power Regulatory Authority (Nepra) has hired a firm for forensic audit of 225 MW dual fuel Halmore Power Company after the former refused to revise the Power Purchase Agreement (PPA) through negotiations.

In a letter to Power Division, Nepra's Deputy Director, Junaid Altaf Bhatti referred to its own letter of August 9, 2025 whereby Power Division was requested to provide information regarding a Nepra Generation licencee Halmore Power Generation Company Limited (HPGCL). According to Nepra, despite lapse of time period specified in the Nepra letter, the requested information has not been provided to Nepra by Power Division.

Revised terms rejected: Nepra hiring firm to conduct Halmore's forensic audit. Nepra has requested Power Division again to provide the information mentioned in the Nepra letter of August 09, 2025. In December 2024, the government of Prime Minister Shehbaz Sharif received a formal notification regarding a claim from the owner of Halmore Power Company. This claim is made pursuant to the Bilateral Investment Treaty (BIT) between Pakistan and the United Kingdom and Northern Ireland, aimed at promoting and protecting investments. The notification is dated November 30, 1994. Karim-Ud-Din, a British national, is a protected investor under Article 1(c) of the BIT. He has made significant investments in Pakistan, which are protected under Article 1(a) of the BIT. Mr. Karim-Ud-Din is the owner of Halmore Power Generation Company Limited, directly holding 99.9% of its shares. Halmore has successfully operated in Pakistan for the past twenty years and has contributed to the country's electricity market.

M. Zakir Ali CEO Inverex Solar Energy signs MOU's with different Chinese Companies during Pakistan China B2B investment conference.

Risen Energy all set to be Pakistan's long-term partner in energy transition

Song Yifeng (Danny Song)

Director of Product Center at **Risen Energy**

Song Yifeng says we shipped over 100GW of products to more than 90 countries and regions worldwide; on the product side, we're pushing our heterojunction (HJT) modules hard—specifically the 740Wp Hyper-ion HJT series; our HJT modules don't just cut your electricity bills—they back it up with a 25-year power performance guarantee

Mustafa Tahir

Energy Update magazine conducted an interview with Mr Song Yifeng (Danny Song) pertaining to Pakistan's struggling energy sector. The details of the interview are given below:

Q. Risen Energy has established itself as a leading player in the global solar market. Could you share your perspective on the company's recent growth and its plans for Pakistan?

Ans: Absolutely. Let me start by saying—we're not new to this game. With 39 years under our belt in photovoltaics, innovation has always been our go-to engine. Back in 2002, when we first dipped our toes into the new energy sector, we zeroed in on solar cells and modules. Fast forward to today, we've shipped over 100GW of products to more than 90 countries and regions worldwide. That's not just numbers—it's proof the market trusts us, and it speaks volumes about the value of our tech groundwork.

Then, in 2018, we took a big leap by acquiring SYL. That move let us branch into energy storage, and now we've built up the know-how to handle all kinds of scenarios with "solar + inverters + storage" solutions. Whether it's a massive 5MWh utility-scale system or a compact 5kWh home setup, whether we're talking about our self-developed PCS/BMS/EMS tech or custom "kit packages"—we're equipped to cover every need.

Now, focusing on Pakistan. Let's be honest, it is really a good place for solar applications. The annual sunshine here is over 2,200 hours. That's prime solar real estate. Plus, energy demand is skyrocketing. So, we're doubling down here.

Our strategy? It centers on a dual-drive model called "products + service" working hand in hand. On the product side, we're pushing our heterojunction (HJT) modules hard—specifically the 740Wp Hyper-ion HJT series. Why? Because Pakistan's got that hot, sunny climate, and these modules thrive there. Their

high bifaciality (they soak up reflected light), low temperature coefficient and low degradation mean more power over time, which translates to better returns for our clients.

On the service side, we're tailoring solutions to local needs. Think "solar + storage" bundles for areas with spotty grids, or "residential + commercial" packages for mixed-use projects. We're also building a local tech team and teaming up with Pakistani partners to get projects off the ground faster. At the end of the day, it's all about helping Pakistan shift to cleaner energy—smoothly and sustainably.

Q. What are the unique strengths of Risen Energy's product portfolio that set it apart in the highly competitive solar industry?

Ans: Risen's product competitiveness stems from a dual strength: "technical depth" and "scenario adaptability." First, let's talk about the global leadership of our heterojunction (HJT) technology. We initiated HJT R&D in 2018, ranked first globally in HJT module sales for two consecutive years starting in 2020, and in 2022, we became the world's first company to mass-produce GW-scale HJT modules by integrating HJT with 210 silicon wafers, launching the world-first 700Wp+ modules. More critically, our Hyper-ion HJT modules achieve self-developed and patent soldering of 24 interconnection ribbons via 0BB (Zero Busbar) technology, by which reducing the risk of micro-cracks and increasing the efficiencies; TCO 2.0 coatings, minimizing light loss and lowering the risk of potential-induced degradation (PID), and Optical optimization of the encapsulation system.

These innovations have enabled our mass-produced HJT modules to reach an industry-leading efficiency of 23.8% and power output of 740Wp—currently the only ultra-high-power products available in the market at scale.

Second, our full-scenario product matrix. Beyond high-efficiency modules, we leverage 20 years of energy storage technology accumulation (strengthened by our acquisition of SYL) to provide a complete range of energy storage systems—from 5kWh residential units to 5MWh utility-scale solutions—paired with our self-developed inverters. This "solar + inverter+ storage " integrated capability better addresses the distinct needs of Pakistan's Utility, C&I, and residential sectors. Notably, in scenarios requiring high grid stability, combining storage with

solar significantly improves power supply reliability.

Take our Sunease residential energy storage series, tailor-made for Pakistan. It directly tackles local pain points: power outages, high diesel generator costs, and the inability to store solar energy at night. The Sunease system integrates HJT 730Wp+ solar panels, Barq hybrid inverters, and Hifz & Rige series batteries. Its high-efficiency design maximizes power generation, offering a one-stop home energy storage solution that makes clean electricity accessible.

Lastly, let's talk about how well it adapts to local climates. HJT technology has some built-in strengths here: first, it's got a high bifaciality rate—90%—which means it can pull extra power from sunlight bouncing off the ground or nearby surfaces. Second, its temperature coefficient is super low (-0.24% per degree Celsius), so even when it's scorching hot (like in Pakistan's summer!), it doesn't lose much efficiency. Third, it degrades really slowly—only about 1% in the first year—so it keeps producing power reliably for decades.

We've actually seen this play out in real-world tests in Saudi Arabia, where it's super-hot and sunny year-round. Compared to regular solar panels, our HJT modules generated 5-7% more annual electricity under those harsh conditions. That extra juice isn't just a number—it directly boosts how profitable a solar farm can be over its lifetime.

Q. Pakistan is rapidly moving toward renewable energy adoption. How do you see the opportunities and challenges in this market, and how is Risen Energy addressing them?

Ans: Let's start with the opportunities—they're quite clear. Firstly, the government has set a bold target: 30% renewable energy by 2030. That's a strong policy signal, giving the sector clear direction. Secondly, Pakistan's solar resources are world-class—abundant sunlight (over 2,200 hours of annual sunshine) and low land costs make it a prime location for solar projects. Thirdly, the energy shortage is urgent: the country currently faces a power deficit exceeding 10GW, and its heavy reliance on traditional energy sources (like fossil fuels) means the need for transition is immediate. These factors create a huge window for renewables to step in.

Now, the challenges. They mainly fall into three buckets. First, grid infrastructure in some regions is still weak—transmission lines and substations can't handle large amounts of renewable energy yet, which limits how much solar we can actually connect. Second, financing is tough. Project costs are high, and traditional funding models (like bank loans) can be inflexible, so we need more creative partnerships to make projects viable. Third, the local supply chain isn't fully developed. Right now, Pakistan relies heavily on importing solar equipment (panels, inverters, etc.), which drives up costs and creates logistical bottlenecks.

To tackle these, Risen's strategy boils down to two key moves: "tech-driven cost reduction" and "local collaboration." Let's break that down. On the tech front, we're using high-efficiency solutions like heterojunction (HJT) modules to slash the levelized cost of electricity (LCOE)—the total cost per unit of energy over a project's lifetime. For example, our 740Wp HJT panels use 15-20% less modules than standard modules, which directly cuts down on upfront costs for developers. On the local front, we're partnering with Pakistani businesses to set up service centers that handle everything from project design and installation to long-term maintenance. This way, we're not just selling panels—

we're providing end-to-end support. We're also exploring ways to localize more of our supply chain—for instance, we're looking at building energy storage assembly lines in Pakistan. That would shorten delivery times, reduce shipping costs, and create local jobs.

In short, we believe combining cutting-edge tech with deep local roots is the best way to help Pakistan accelerate its renewable transition—while making sure it's both affordable and sustainable.

Q. Could you elaborate on any landmark projects or partnerships Risen Energy has undertaken in Pakistan or the SCO region?

Ans: Absolutely—let me share a bit more detail on what we're doing on the ground. Right now, we're working on several promising projects in Pakistan, and I'd highlight two key types.

First, large-scale utility projects. We're in talks with local Pakistani companies to launch Pakistan's first "HJT + storage" demonstration project. This will combine our 740Wp Hyper-ion HJT modules with 5MWh liquid-cooled storage systems. The goal is to push the plant's annual utilization hours from the typical 1,800 hours with standard panels up to over 2,000 hours. That extra 200+ hours mean more stable, clean power for communities—something we know is critical for Pakistan's growing energy needs.

Second, C&I distributed projects. With Pakistan's industrial zones expanding fast and electricity demand spiking, we've rolled out a "solar + storage + smart micro-grid" solution. We've already had preliminary talks with major textile and food processing plants in Lahore and Karachi. "Self-consume first, feed the grid later." This setup lets factories cut their power bills by over 30%—a big win for businesses struggling with high energy costs.

Looking ahead, we're eager to build long-term partnerships with Pakistan's government, industry associations (like the Pakistan Solar Association), and leading local businesses. The idea isn't just to sell panels or storage—it's to create an ecosystem where we share knowledge, split benefits, and grow together. Think training local tech teams, co-developing projects, and aligning with Pakistan's broader energy transition goals.

At the end of the day, we want these projects to be more than just "deals"—they're stepping stones to a greener, more resilient energy future for Pakistan.

Q. Innovation is a key driver in the solar sector. How is Risen Energy investing in R&D to bring advanced, efficient, and reliable products to the market?

Ans: Great question. At Risen, our R&D philosophy is simple: focus on core technologies and solve industry pain points. Over the past three years, our R&D spending has grown over 20% annually—with more than 70% of that going into heterojunction (HJT) tech, energy storage, and new encapsulation solutions.

Let me break that down with examples. In HJT, we didn't just stop at being the first to mass-produce 0BB (Zero Busbar) tech, we also developed our own "Hyper-Link Connection" equipment to fix a big headache in traditional soldering: micro-cracks. In energy storage, our self-developed PCS (power conversion system) paired with AI algorithms boosted storage system efficiency to 92%—that's way above the industry average of ~88%. and we're not just resting on our laurels—we're also investing in perovskite tandem tech, which already hits over 30% efficiency in the lab. That's our bet for the next generation of ultra-high-efficiency panels.

These investments are starting to pay off. In 2023 alone, our HJT module shipments jumped 120% globally. Our energy storage systems are winning more bids for large-scale projects—both in China and overseas, from Europe to North America, South America, and Australia. Moving forward, we'll keep listening to the market. Our goal is to turn those lab breakthroughs into products that can be scaled up fast.

Q. As Director Products, what is your long-term vision for contributing to sustainable development and a low-carbon future?

Ans: My vision's pretty straightforward: I want efficient, and reliable clean energy products to become the "infrastructure" of global low-carbon transitions. Here's how we're planning to make that happen:

First, we're not slowing down on tech. By 2026, we aim to push HJT module power output past 780Wp (with 25.1% efficiency) and cut per-watt costs by 10%. Why? Because we want more developing countries to access "affordable, high-efficiency" clean energy without breaking the bank.

Second, we're getting hyper-specific with solutions. Different regions have different needs. Take off-grid areas or places with sky-high electricity prices for businesses—we're developing "customized" product packages for these. For example, we're designing an all-in-one "residential solar + storage + off-grid inverter" system for rural Pakistan. This isn't just about selling panels—it's about solving real problems, like powering communities that still don't have reliable electricity.

Third, we're taking responsibility for the entire product lifecycle. From day one of design, we're building in recyclability—think materials that can be reused at the end of a panel's life. And when we install a system, we're not walking away. We're committing to 25 years of maintenance to ensure every kilowatt-hour it produces stays green and sustainable.

At the end of the day, I believe that with the right mix of innovation and local collaboration, Risen can offer a "China solution" to Pakistan's low-carbon future—and the world's, too.

Q. What message would you like to share with policymakers, industry stakeholders, and customers in Pakistan?

Ans: First, to policymakers: Risen Energy wants to be Pakistan's "long-term partner" in its energy transition. We're ready to work with the government to refine renewable energy policies—whether that means streamlining approval processes, introducing tax incentives, or supporting subsidies. We also want to contribute to industry standards, like drafting safety regulations for energy storage, to ensure the market grows healthy and orderly.

Second, to industry partners: Collaboration drives progress. We're opening our technical exchange platform—sharing empirical data on our HJT modules (like power generation reports tailored to Pakistan's climate), co-developing training programs for local technicians, and pooling expertise to boost the entire sector's competitiveness. This isn't just about business; it's about lifting Pakistan's solar industry together.

Third, to customers: Choosing Risen means choosing "higher returns, lower risks." Our HJT modules don't just cut your electricity bills—they back it up with a 25-year power performance guarantee to protect your long-term investment. Our energy storage systems are designed for flexibility: modular scalability lets you upgrade as your needs grow, easing upfront cost pressures.

And finally, a personal note: Pakistan's sunshine isn't just a natural gift—it's a treasure trove of future energy. Risen is here to walk alongside the people of Pakistan, chasing the sun and building a zero-carbon future—together. ■

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Food-energy security imperilled as floods inflict $1.4bn loss

EU Report

Pakistan's fragile economy has once again been battered by nature's fury, as the catastrophic monsoon floods 2025 continue to wreak havoc across large swathes of the country. According to initial assessments by Arif Habib Limited (AHL), the financial cost of the disaster is expected to exceed Rs409 billion ($1.4 billion) — equivalent to 0.33 per cent of GDP. The damage estimate, however, is likely to climb as floodwaters advance further downstream and secondary impacts materialise in the weeks ahead.

Agriculture bears the heaviest brunt

The floods have dealt a crushing blow to Pakistan's agriculture sector, long considered the backbone of the national economy. The AHL report suggests that nearly three-fourths of the total economic loss — an estimated Rs302 billion ($1 billion) — is concentrated in agriculture alone.

At least 1.3 million acres of fertile farmland have been submerged in Punjab, destroying critical summer crops including rice, sugarcane, cotton, and maize. These losses have immediate and long-term implications for Pakistan's already precarious food security. Analysts warn that national crop output could fall by 15 to 20 per cent, shrinking GDP growth by between half to one percentage point.

The devastation is not confined to Punjab. As floodwaters flow downstream, Sindh — Pakistan's traditional agricultural powerhouse — is bracing for a fresh wave of destruction. Authorities fear a repeat of the 2022 catastrophe, when Sindh's farmlands were left under water for months, crippling crop production and killing vast numbers of livestock. With the Indus River still swollen, the threat to Sindh's fertile plains remains dire, raising concerns of further food shortages and severe disruption to rural livelihoods.

Food security under severe strain

The unfolding disaster has raised the spec-

tre of a food security crisis in the coming months. With rice paddies destroyed, wheat reserves already insufficient, and vegetable fields drowned, the country faces a mounting deficit in staple foods. Import needs for essential commodities, particularly wheat and cotton, are expected to rise by 10–15 per cent.

Secondary effects will deepen the strain: inundated soil may suffer lasting salinity problems, irrigation networks have been compromised, and transport bottlenecks are slowing the delivery of what little produce is available. Food inflation, already troubling for low-income households, is projected to spike by 20–30 per cent in the months ahead. This means higher costs for basic items such as rice, flour, sugar, pulses, and vegetables — a grim prospect for millions of Pakistanis already living on the margins.

Energy security in jeopardy

Beyond agriculture, the floods have exposed Pakistan's fragile energy security. Heavy rains and overflowing rivers have washed away sections of electricity transmission lines, damaged distribution networks, and left installations in ruins. Several affected areas of southern Punjab and upcountry are facing prolonged power outages, paralysing small businesses, markets, and essential services.

For small traders, shopkeepers, and cottage industry operators, electricity is the lifeline of daily survival. Without it, businesses have ground to a halt, inventories have been lost, and incomes have evaporated. Farmers reliant on electric tube wells for irrigation and storage facilities for perishable goods have been left in despair. In many flood-hit towns, people have endured nights in darkness and days without the ability to pump clean water or refrigerate food supplies.

The wider economic impact is equally severe: with industrial hubs experiencing intermittent blackouts, productivity has dipped, and the cost of production is rising. Analysts caution that without urgent repairs and investment in resilient infrastructure, Pakistan's energy vulnerabilities will deepen, jeopardising both economic recovery and public welfare.

Growth, inflation, and trade outlook deteriorate

Reflecting these compounding shocks, AHL has revised its GDP growth forecast for FY26 downward, from 3.4 per cent to 3.2 per cent. Agriculture growth has been slashed from 2.2 per cent to a meagre 1.1 per cent. Inflationary pressures are mounting as shortages of meat, rice, sugar, and vegetables worsen. The annual average inflation forecast has been revised up to 7.2 per cent from a pre-flood estimate of 5.5 per cent.

The trade balance is set to weaken by an estimated $1.9 billion in FY26. Cotton imports alone may rise by over $1 billion to sustain the textile sector, while exports are projected to shrink sharply — rice exports could decline by $278 million, sugar by $283 million, and textiles by around $300 million.

Human suffering and heroic response

Behind these statistics lies the human suffering of millions. Families have lost their homes, farmers their crops and livestock, and small traders their shops and earnings. Schools, clinics, and marketplaces have been submerged, displacing communities and severing access to essential services. Women, children, and the elderly remain among the most vulnerable, enduring crowded relief camps, food shortages, and the threat of waterborne diseases.

Amid this tragedy, the courage and dedication of rescue and relief workers stand out. Volunteers from emergency services, local charities, and humanitarian organisations have waded through floodwaters to deliver food rations, evacuate stranded families, and provide medical care. Their heroic efforts, often undertaken with limited resources and at great personal risk, have saved countless lives.

It is imperative that the government not only strengthen relief coordination but also formally recognise these unsung heroes. Conferring national civil awards on frontline rescuers and volunteers would be a fitting tribute to their service and sacrifice.

The road to recovery — international support vital

The scale of devastation underscores that Pakistan cannot shoulder the burden of recovery alone. Reconstruction of homes, schools, hospitals, electricity grids, and farmland rehabilitation will require substantial financial resources far beyond the government's limited fiscal capacity. International support, both bilateral and multilateral, will be indispensable for restoring livelihoods and preventing long-term impoverishment of affected communities.

Past experiences, including the floods of 2010 and 2022, demonstrate that timely international assistance can play a transformative role in stabilising Pakistan's economy and rebuilding shattered lives. Donor countries and global financial institutions must therefore respond generously to appeals for relief and rehabilitation.

Conclusion

The floods of 2025 are not just a humanitarian emergency; they are a stark reminder of Pakistan's acute vulnerability to climate-induced disasters. The damage to agriculture threatens food security, the destruction of power infrastructure undermines energy security, and the wider economic losses imperil national stability. As the waters continue their destructive journey towards Sindh, urgent action is required to save lives, restore livelihoods, and prepare for a long and arduous recovery. ■

Rs6.5m Solar Panels Stolen from Punjab Schools

EU Report

An audit report submitted to the Punjab Assembly's Public Accounts Committee-III has uncovered theft of solar panels worth over Rs6.5 million from 50 government schools in Rajanpur district during 2022–23.

The revelation sparked strong concern from the committee, which directed police to expand investigations across Punjab, warning that similar incidents could be occurring in other districts.

Committee member Tanveer Aslam Malik pressed for strict directives to be issued to district police officers in the affected areas. He also called for a detailed record of all targeted schools and an update on whether any stolen equipment had been recovered.

Officials from the Education Department confirmed that police cases had been registered, but the Audit Department observed that local education authorities had failed to safeguard the solar panels installed at schools.

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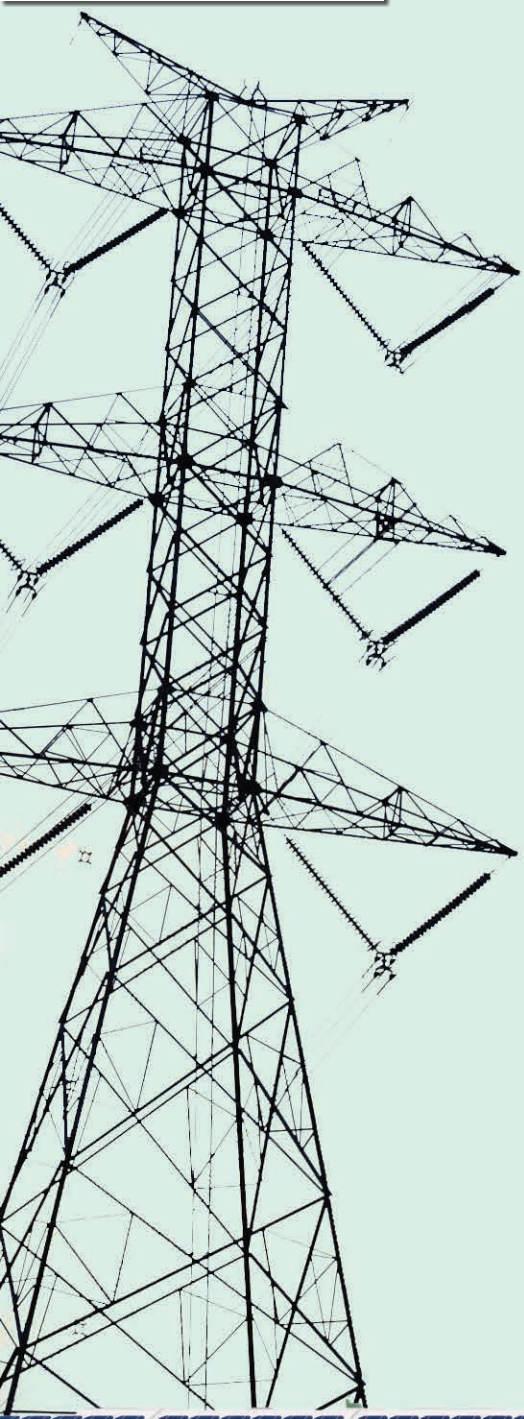

Solar duck curve dictating power dynamics

EU Report

Electricity demand and generation profiles are not supposed to transform dramatically within the span of just twelve months. Yet, Pakistan's July 2025 versus July 2024 hourly electricity curves tell a strikingly different story — one that is increasingly being scripted not inside the control rooms of the NTDC or NPCC, but by the uncoordinated solar rush playing out on rooftops across the country.

Look closely at the two charts. The demand and generation profiles for July 2025 reveal steep midday dips, followed by sharp evening rebounds.

Compare this with 2024, where the curves were relatively smoother, and the contrast is glaring. These are not seasonal anomalies, nor random fluctuations. They are structural shifts in the way electricity is being consumed and produced.

And at the heart of it is solar energy — particularly the explosion of off-grid and net-metered rooftop installations.

In July 2024, demand stayed broadly within the 18,000–20,000 MW range for much of the day, with the evening peak and morning troughs being manageable. Generation, too, followed the conventional rhythm. Fast forward to July 2025, however, and the midday collapse is unmistakable.

Demand during hours 9–14 has dropped nearly 2,000 MW below last year's comparable levels. Simultaneously, system generation has also receded in those hours, only to swing upward in the evening as solar contribution fades and consumers rush back to the grid.

This is the classic "duck curve" — a pattern already familiar in markets like California, now emerging in Pakistan with startling speed.

Except here, it is not being managed through utility-scale renewables or carefully planned capacity additions. Instead, it is being driven bottom-up, with households and businesses rushing to insulate themselves from high tariffs and unreliable supply through solar panels, often with little coordination or system-level foresight.

The implications are profound. For one, traditional demand projections are becoming increasingly unreliable.

A flat 4–5 percent annual increase in demand no longer captures the hourly dynamics that now matter more than ever. Daytime demand is being shaved off by solar self-generation, while evening demand is intensifying, requiring expensive plants or imported fuel-based capacity to fire up at precisely the time when the system is most stressed.

Second, the current approach to

capacity addition — long-term, base-load-heavy, and slow-moving — risks being fundamentally misaligned with this new reality. Adding coal or RLNG plants to a system where the midday demand troughs are deepening makes little economic sense. Instead, flexible, fast-ramping, and storage-backed options should become the core of planning.

Third, and perhaps most critically, the solar pricing regime itself needs urgent rationalization. Net metering was designed to incentivize adoption, but its unchecked expansion is creating distortions. If left unaddressed, the costs of balancing the system during evening peaks will fall disproportionately on non-solar consumers, deepening inequities and exacerbating circular debt.

Pakistan's power sector has long suffered from planning that looks backward instead of forward. These hourly profiles are flashing a warning sign in real time: the energy transition is happening faster than official forecasts anticipate. Policies that continue to treat solar as a marginal side story will soon find themselves completely detached from reality.

What is needed now is a recalibration of the entire planning framework around the new demand-generation interplay. That means aligning capacity additions with hourly realities, integrating storage solutions, incentivizing demand-side management, and revisiting net metering tariffs to reflect actual system costs.

Twelve months apart, the graphs of July 2024 and July 2025 may appear as just another set of lines. But behind them is a revolution in motion — one that is already dictating terms. Whether policymakers catch up in time will determine if this revolution leads to stability and sustainability, or deeper imbalances in Pakistan's power sector. ■

PD's arm fails to adjust GENCOs' staff in Discos

EU Report

The Power Planning and Monitoring Company (PPMC), an arm of Power Division has reportedly failed to adjust employees of Generation Companies (GENCOs) in power Distribution Companies (Discos), sources told Business Recorder.

Power Division, in a letter addressed to Managing Director PPMC, Abid Lodhi, has conveyed that GENCOs are in the process of winding up and all their old and defunct power plants have been disposed of, whereas dismantling of certain units has already been initiated.

According to Power Division, to decide about the GENCO's employees and to consider different options as directed by the Prime Minister, a meeting was held in the office of the Federal Minister of Economic Affairs & Establishment, participated by the Secretary Power Division, Additional Secretary Power Division, CEO GHCL and representatives of Task Force on Implementing Structure Reforms in Power Sector.

Fresh hiring directed: PM says 'no' to adjusting Gencos' staff in Discos

It was decided that GENCO's employees will be absorbed/adjusted in DISCOs. The decision, duly approved by the Prime Minister, was conveyed by the Ministry of Economic Affairs & Establishment in a communication on April 30, 2025.

Data of all GENCO employees was shared by GHCL with PPMC for the adjustment of GENCO's employees in DISCOs according to their options. Subsequently, 1127 employees were relieved on 10.06.2025, and 1775 employees were relieved on June13, 2025. Power Division claimed that it has been reported that MEPCO, LESCO, PESCO, and HAZECO have not issued adjustment orders so far, whereas other DISCOs have either adjusted some of GENCO's employees to much lower positions or returned to GENCO's being un-adjusted. This is contrary to the decision made at the highest level for the adjustment of all GENCO employees in DISCOs and defeats the approved scheme of adjustment/absorption. Power Division has conveyed the following to PPMC: (i) DISCOs have to adjust all GENCOs' employees according to their options;(ii) all employees should be adjusted in equal pay scales according to their qualifications;(iii) in case positions in DISCOs for certain categories of GENCO employees are not available or due to some procedural encumbrances and Service Rules differences, such employees can be adjusted against the already available posts.

The DISCO should create a special pool for their employees in whatever Basic Pay Scale they are in. However, DISCOs can utilize their services according to their skill set and experience; (iv) GENCOs have relieved their employees on June 10, 2025 and June 13, 2025, but due to non-adjustment, these employees are unable to receive their monthly salaries.

Power Division has directed that DISCOs must resolve the adjustment at the earliest and ensure that employees reported for work are paid their salaries regularly. The PPMC has been directed to convey to all DISCOs to implement the same as soon as possible. In December 2024, Prime Minister had reportedly directed that employees of Generation Companies Distribution Companies not be adjusting and the latter must go for fresh hiring. These decisions were taken at a recent meeting presided over by the Prime Minister, wherein performance of three DISCOs, namely the Faisalabad Electric Supply Company (FESCO), Lahore Electric Supply Company (LESCO), and Peshawar Electric Supply Company (PESCO) came under discussion. "Those absorbed shall be immediately repatriated.

The employees of GENCOs must be parked in surplus pool and may be given handshake/voluntary retirements. DISCOs shall make fresh equipment against their Human Resource requirements," the sources quoted Prime Minister as saying. ■

Ongoing Devastating Floods

Climate disaster lessons for Pakistan

Ali Tauqeer Sheikh

The writer is a climate change and sustainable development expert

The timing of Prime Minister Shehbaz Sharif's lament that Pakistan has not drawn any lessons from previous climate-triggered disasters coincides with the launch of the 11th National Finance Commission on the distribution of resources between the federal and provincial governments.

Both exercises will need to converge on the local sources of Pakistan's climate vulnerability and financing. The seesawing between the federation and provinces over the distribution of finances has cast a dark shadow over national climate and economic vulnerabilities. With the cost of reconstruction, development, debt and defence increasing, the resource trickle is dwindling further. Are there any lessons in the NFC awards to help respond to the PM's lament?

Climate vulnerability at the district level has three basic drivers:

Population growth: In what constitutes Pakistan today, the population has exploded from 33.7 million in 1951 to 242.7m in 2025, and is projected to reach 380-403m by 2050, making it the world's third most populous nation. This demographic explosion, coupled with economic stagnation and declining per capita income, creates escalating climate vulnerability.

Currently, 108m people, or 42.3 per cent of the population, according to a recent World Bank study, live below the poverty line with limited adaptive capacity.

Under business-as-usual scenarios, 190-200m people could be in poverty by 2050 — nearly half the projected population. In brief, every other child born in Pakistan will now be born to families below the poverty line — leaving them unable to afford climate adaptation and disaster recovery. This vast population spread in the high-risk areas of 169 districts with about 1,200 tehsils represents Pakistan's most critical vulnerability driver.

Are there any lessons in the NFC awards to help respond to the PM's lament?

Disproportionate exposure: The second key driver is the disproportionate concentration of the poor in high-risk areas. Data shows that in recent years, 18-26 districts have faced droughts in Balochistan and Sindh, 18 faced glacial lake outburst floods in Gilgit-Baltistan and KP, six faced tropical storms in Sindh and Balochistan and 84 districts were hit by floods across the provinces, not to mention urban flooding, forest fires, landslides and cloudbursts. Each district is exposed to two or more types of climate disasters.

The vulnerable populations are clustered in regions that are most susceptible

to climate shocks, including low-lying floodplains, marginalised farmland and unauthorised settlements on riverbeds and urban peripheries. This geographical alignment guarantees that in the event of a climate disaster, the poor are hit first and the hardest, as their settlements are the most exposed and least resilient.

Limited adaptive capacity: Finally, low per capita income severely limits the adaptive capacity of our population. With a 2024 GDP per capita of just $1,485, and projections suggesting a decline to $1,200-$1,300 by 2050, the poor have virtually no financial buffer to absorb climate shocks.

The massive economic losses from climate events further drain resources, making it nearly impossible for individuals to invest in their assets: housing, livestock, standing crops, lives and microenterprises. This lack of financial capacity creates a vicious cycle of poverty and disaster.

Against this backdrop, what lessons can be drawn to respond to the PM's remarks?

Incremental changes: Some answers by policy managers can be inferred: more resources for infrastructure to fill the financial gaps for recovery, reconstruction and rehabilitation from previous disasters; early warning systems; financing for the staggering 1,071 pending PC-1s; and upgradation of equipment or building new infrastructure. Other important elements include improved inter-agency cooperation, capacity-building, and access to international climate finance.

Many of these won't be new lessons, but it is still important for each agency to develop and share its lessons. While these needs are necessary for government efficiency, where are the transformative lessons?

Transformative changes: Several initiatives remain trapped in approval processes: promoting land-use planning to guide human settlements away from low-lying flood-prone regions to designated safer areas; adaptive social protection to invest precious resources in damage prevention rather than post-disaster recovery; creation of sub-national disaster risk financing facilities; adoption of resilient construction standards; mandatory insurance for public sector infrastructure in PC-1 proposals; risk transfer and insurance mechanisms to prevent governments from harvesting unspent funds from development projects; and earnest implementation of climate risk screening for public sector portfolios.

The delays in their operationalisation and absence of prioritisation erode the synergistic impact necessary for transformative change. All of them, however, establish project-level, not policy-level, programmatic and strategic direction for our safe journey into the future.

Four transformative lessons: Pakistan's climate adaptation demands structural governance transformation. Top-down interventions have failed to generate ownership. Globally, bottom-up initiatives by elected local governments increase implementation and accountability systems. Four key lessons emerge from entrusting district-level decision-making.

First, local communities, and not distant bureaucrats, must manage land-use planning at the tehsil and district levels. Second, locally developed zoning laws must protect shamilaat, communal and state lands from vested interests and ban high-risk development. Third, reclamation of the encroached commons must be achieved through local-level resilience management action plans that restore the natural flood management capacity. Fourth, districts must develop asset inventories as revenue sources using credible valuation mechanisms for standardised property assessments.

Given this scale, it's the right time to establish a 'National Reclamation Commission' to develop a national framework and provincial guidelines for local actions.

Learning challenge: Learning is expensive. To learn from climate disasters, Pakistan must 'unlearn' destructive practices: ending floodplain encroachment and not treating communal lands as private profit centres. This process can be negotiated but requires decisive political pushback against powerful networks.

Despite decades of disasters, Pakistan repeats its mistakes: allowing encroachment, enabling elite capture, treating prevention as an expense rather than an investment. Lessons remain unlearned because learning requires confronting power, not merely studying flood patterns or providing relief assistance.

True climate adaptation demands political consensus and the courage to implement what we already know but refuse to do. Let the NFC award spearhead this transformation. ■

Hurting Pakistan's hydropower and cotton

Dr Ikramul Haq

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Pakistan and India sprang from the same subcontinent, sharing rivers, soil, and memory. Yet for 78 years since partition, these nuclear-armed neighbors have drifted to opposite shores, their estrangement deepening with each passing decade.

Skirmishes that could have swollen into a full-scale nuclear war after World War II were averted—often, we contend, because the United States stepped in. But another war has raged outside the headlines for over three decades: an unseen, lethal war of economic espionage. With a bleeding heart, we record this Op-Ed as a warning to the global community and a reckoning for those who still doubt that the battlefield is now the balance sheet, the factory floor, and the policy file.

The doctrine that frames this contest is not imagined. Consider the strategic thesis attributed to Indian spymasters and discussed under titles like Geo-Politics of South Asian Covert Action, overseen by figures such as B. Raman (former additional secretary in the Cabinet Secretariat and former Deputy Chief of RAW). Its core argument is chillingly clear: India must move beyond defence and diplomacy and shake Pakistan from within—not by targeting its people, but by prying at the iron grip of its army, bureaucracy, but the target is the economy, the institutions said to anchor hostility.

The playbook is explicit: psychological warfare, disinformation campaigns, and precision operations against Pakistan's soft underbelly—financial hubs like Karachi, ports, communication lines, and emblematic assets such as large dams.

The objective is not dismemberment, but to cripple the economy, rattle institutions, and force leaders into chaos and recalculation.

Executed well, this covert storm would stretch security forces thin, kindle paranoia at the core, and splinter the military-bureaucratic fortress. The endgame? Flip the proxy script—force Islamabad to fight inside its borders while New Delhi claims composure at the diplomatic table.

After the triumphs of Mangla and Tarbela, Pakistan's dams fell prey to a sinister campaign of economic espionage. India, draped in the rhetoric of climate and environment, unleashed stooges to corrupt our debate, branding dams—once monuments of progress—as ecological disasters.

The truth is stark: hydropower emits just 23 gCO-eq/kWh, cleaner than solar's 48, and leagues ahead of gas at 490 and coal at 820, with only wind and nuclear lower. Beyond clean power, dams promise irrigation, flood protection, and energy sovereignty. Yet disinformation killed this lifeline, stripping Pakistan not

only of cheap energy but of resilience, stability, and independence.

Yet beginning in the 1990s, a polished campaign in Pakistan's capital framed dams as anti-environment, hydro as dirty, and "big water" as colonial relic—a discursive switch that just happened to funnel Pakistan toward imported gas and oil. The consequence? Our domestic gas reserves dwindled; cheap hydro was delayed or shelved; and the grid was lashed to imported fuel.

We now carry an albatross of approximately US$40 billion in power-sector circular debt, while LNG imports—we contend ? $50 billion largely to keep lights on—drain scarce foreign exchange. Imagine: had the mid-1990s hydro pipeline been built on schedule, Pakistan could have met peak demand with clean, dispatchable water power—and much of this fiscal haemorrhage might never have begun.

The textile front was no less brutal. Once a cotton exporter, Pakistan now imports over US$2 billion of cotton annually. A Desi Lawrence, we argue, made cotton not just an agronomic issue, but a moral panic.

Meanwhile, the climate file was sharpened into a sword: heatwaves, erratic rainfall, floods, and droughts were marshaled as proof that cotton is no longer viable; pest surges (whitefly, pink bollworm) were spotlighted; water-intensity was hammered—until many districts quietly shifted to sugarcane, arguably the most water-hungry major crop on earth. Thus we traded a fiber aligned with our installed industry and export capacity for a crop that depletes aquifers faster, yields fewer export dollars, and locks us deeper into food-water-energy stress.

Meanwhile, in India's states neighbouring Pakistan—Rajasthan, East Punjab, and Gujarat—cotton production has multiplied. Is climate change targeting only the Land of the Pure?

India, through economic espionage and its local actors, weaponized climate change to strike at Pakistan's two lifelines—cotton and hydropower. Cotton was branded unviable, hydropower condemned as destructive, and policymakers misled into abandoning their strengths.

As the trap closed, global price shocks strangled farmers, lack of credit and research stifled adaptation, and propaganda pushed false 'solutions'—diversify out of cotton, rely less on dams, chase empty resilience. What appeared progressive was sabotage: our competitive edge was dismantled, leaving Pakistan dependent on costly imports of both LNG and fibre.

What kept the blade sharp was, in our view, regulatory capture. Over time, the influence of this entity reached deep into the arteries of the state—National Electric Power Regulatory Authority (NEPRA) in power, Oil & Gas Regulatory Authority (OGRA) in oil and gas, and beyond—where technical thresholds, tariff logics, and procurement choices can quietly bend a nation's fate.

A procurement pause here, an environmental objection there; an "interim" tariff that turns permanent; a capacity charge renegotiated against the public interest; a standards tweak that sidelines local engineering; a licensure delay that kills a hydro feasibility just long enough for the fuel markets to tighten. None of these acts is theatrical. All are catastrophic in aggregate. This is the Trojan horse we failed to see: an "advisory" footprint that became a policy fingerprint—everywhere.

We mourn not only the cunning of external hands but the compliance—witting or unwitting—inside our own house. The cost is incalculable: a textile engine forced to buy foreign cotton and bleed margins; a power system starved of hydro's cheap baseload and trapped in fuel shocks; a sovereign state paying for energy in dollars it doesn't earn because its export spine has been bent. Pakistan, once poised to electrify with water and export with fiber, now begs for fuel and raw cotton.

To the global community, we say: you once intervened to stop nuclear war—will you now confront the covert economics that can destroy nations without a shot fired? Let Pakistan breathe, free from the dirty tricks of economic espionage. Pakistan may lack the capacity to repel these assaults, but we must be allowed to build modern reservoirs for power, irrigation, and flood control; to restore cotton production; and to add value so we export strength, not volatility.

Our regulators—Nepra, Ogra, and others—must be purged of shadow influence and rebuilt on transparency. And above all, the local actor who enabled this sabotage must face trial at the International Criminal Court—for waging economic war on a nuclear-armed nation. ■

Younus Dagha Demands Fair Fiscal Share for Pakistan's Economic Engine

EU Report

Retired senior bureaucrat and former Sindh Caretaker Minister, Younus Dagha, has asserted that Karachi is entitled to a staggering Rs 880 billion annually as its rightful fiscal share from the federal and Sindh government budgets.

He emphasised that this amount would be more than sufficient to resolve the chronic civic and infrastructural challenges of Pakistan's financial capital.

Dagha, who earlier served as the federal secretary, voiced these concerns during a widely watched TV news show hosted by renowned senior anchorperson Shahzeb Khanzada. He referred to his recently published newspaper article, which laid bare a startling revelation: over the past 15 years, Karachi has been deprived of an estimated Rs 3,360 billion that should have rightfully been allocated to the metropolis.

According to Dagha, Karachi can only receive the Rs 880 billion figure if multiple fiscal commitments are met. These include: due development funds from the federal government proportionate to Karachi's population share; Rs 377 billion to be reserved by the Sindh government under its Annual Development Programme; and Rs 222 billion to be allocated to local governments in line with the agreed formula of one-sixth of General Sales Tax (OZT share). Additionally, the sum incorporates Rs 200 billion that Karachi is entitled to receive annually from the provincial infrastructure development cess.

Dagha argued that if this fiscal reality were honoured in the upcoming financial years, Karachi would never face a shortage of funds for large-scale urban projects. He cited transformative initiatives such as the city's mass transit system, modern road networks, and bulk water supply schemes that are yet to be completed despite the passage of several years. He questioned why, despite receiving unprecedented revenues under the last NFC Award and the 18th Constitutional Amendment, the Sindh government continued to wait for federal support to complete long-delayed schemes like the K-IV bulk water supply project, which, he claimed, could be executed with just Rs 75 billion.

The former secretary noted that the Bus Rapid Transit system should have been fully operational by now, providing a long-awaited solution to Karachi's crippling public transport crisis, had the city been given its rightful allocations over the last decade and a half. He lamented that, while Sindh's budget had multiplied eightfold in the last 15 years, the financial support for the Karachi Metropolitan Corporation had remained stagnant at around Rs 25 billion.

Dagha stressed that equitable transfers from the federal to the provincial governments must not come at the expense of local bodies. Rather, he said, resources received by the provinces should be fairly channelled down to metropolitan governments. He underscored that Sindh's Annual Development Programme now rivals the federal Public Sector Development Programme for provinces, and with additional international donor support at its disposal, the provincial government should not be looking towards Islamabad for Karachi's urban renewal.

Highlighting the national significance of the issue, Dagha urged that the newly formed National Finance Commission must, in its forthcoming deliberations, enshrine the principle of guaranteed fiscal shares for local governments, including that of Karachi. Only then, he said, could Pakistan's largest city undertake its much-needed development and sustain its role as the country's economic powerhouse.

"Karachi is the engine of growth for the entire nation," Dagha reminded his audience, "and unless it receives what is rightfully owed, the country itself cannot progress. ■

H.E. Minister Saad Sherida Al-Kaabi meets Pakistan's Petroleum Minister

His Excellency Mr. Saad Sherida Al-Kaabi, the Minister of State for Energy Affairs, met in Doha today with H.E. Mr. Ali Pervaiz Malik, the Federal Minister of Petroleum of the Islamic Republic of Pakistan. Discussions during the meeting dealt with bilateral relations and cooperation in the field of energy between Qatar and Pakistan and means to enhance them.

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Zainab Naeem

The writer is an environmental scientist and leads the programme on ecological sustainability and circular economy at SDPI

The devastating urban floods that Pakistan has witnessed in recent years are no longer isolated events that can be dismissed as seasonal misfortune. They are symptoms of a deeper malaise in our planning, investment choices, and urban governance

Every monsoon, the same cycle repeats itself. The streets turn into rivers in Rawalpindi and Islamabad as the Lai nullah overflows. In Karachi, outdated drainage systems collapse under the weight of heavy downpours, leaving entire neighbourhoods submerged. In Khyber Pakhtunkhwa and the Potohar plateau, flash floods cut through communities where encroachments have blocked the natural flow of rivers and streams. In Gilgit-Baltistan, hotels and restaurants have been built right along riverbanks, in some cases literally on top of them, making human settlements highly vulnerable to glacial melt and torrential rains.

These recurring patterns highlight not only the absence of resilience in our infrastructure but also a worrying trend in how investments continue to flow into projects that amplify risk rather than mitigate it.

Pakistan today stands at a crossroads where the conversation around investment cannot be detached from the realities of climate change. If we continue to build in floodplains, allow construction in ecologically fragile mountain regions, and expand housing societies without basic drainage plans, we will be compounding our vulnerabilities and inviting losses that far outweigh the profits. Climate-smart investment is not simply a catchphrase. It is the need of the hour to safeguard communities, attract sustainable capital and ensure that the real estate and construction sectors are aligned with national climate action.

The role of the real estate and construction industry in this regard is critical. Real estate activities contribute between approximately 5.4 and 5.8 per cent of GDP, while the construction sector adds roughly another 2.3 and 2.8 per cent. It is estimated that real estate alone accounts directly for nearly 2-3 per cent of GDP, with the total broader sector including housing finance, cement and allied industries at around Rs2 trillion annually. This highlights the economic stakes: millions rely on these industries for livelihoods even as they drive urban expansion.

Yet economic opportunity and environmental vulnerability cannot coexist unchecked. The climate-induced disasters in Pakistan cost around 1-2 per cent of GDP every year.

These sectors have traditionally operated in silos, treating environmental considerations as an afterthought. This must change. They need to be directly engaged in climate action planning so that developers and builders understand what kind of infrastructure can be classified as climate-resilient and where it should be located. This means introducing zoning regulations that clearly demarcate no-build zones along riverbanks, nullahs, floodplains and other ecologically sensitive areas. It also requires strict enforcement of building codes in the northern regions where deforestation to make way for real estate projects has destabilised slopes and increased the risk of landslides and debris flows. A climate-smart strategy must send an unambiguous signal that the days of unchecked construction in high-risk areas are over.

Housing societies are another area where reform is urgently needed. Too often, new societies are advertised as symbols of modern living without any consideration for how they will withstand climate impacts. Drainage planning should be the first test of credibility for such projects. No Objection Certificates should not be issued until developers submit comprehensive drainage designs that have been vetted by qualified urban planners and engineers. This requirement must not end once construction begins. Drainage management should be integrated into the long-term maintenance obligations of housing societies, with regular inspections to ensure systems are functional and upgraded as needed. These reports should be submitted not only to provincial authorities but also to relevant federal agencies, ensuring accountability is shared across all levels of government.

A crucial aspect of this debate is public awareness. Citizens often view investment in housing schemes or commercial projects in scenic river valleys or flat plains as desirable due to their location or price. What is less understood is that such investments carry significant hidden risks. A home constructed in the middle of a stream may look idyllic until the first major flood wipes it away. A hotel built on a riverbank may generate profits during tourist season, but one heavy spell of rain can destroy the property and put lives at risk. Awareness campaigns must therefore highlight the dangers of building in hazard-prone areas. Climate-smart investment is not only about infrastructure but also about reshaping mindsets so that communities and investors understand the actual costs of risky development.

This is where the public and private sectors must collaborate in a serious and structured manner. The private sector cannot remain on the sidelines of climate resilience. Corporate Social Responsibility and Environmental, Social, and Governance frameworks already provide pathways for businesses to align their investments with sustainability goals. The real-estate sector, for instance, can channel CSR funding into pilot projects that showcase climate-smart housing designs, flood-resilient construction and renewable energy integration.

Construction firms can adopt ESG-

linked standards that ensure their supply chains, materials, and practices minimise environmental harm while enhancing the resilience of final projects. Such efforts, when scaled, can change the market dynamics and shift consumer demand towards safer and more sustainable investment options.

At the same time, the government must create an enabling environment that attracts and directs private investment into climate-resilient infrastructure. The Pakistan Climate Change Fund, which needs to be established as directed under the Pakistan Climate Change Act 2017, can play a pivotal role in this regard. Public-private partnerships can be mobilised to develop large-scale initiatives, such as climate-smart urban housing clusters, green drainage corridors and nature-based solutions like wetland restoration, to manage floodwaters. Investors will only participate if they see clear frameworks, transparent governance, and enforcement of rules. This requires political will and institutional coordination that have often been missing in the past.

There is also a pressing need to integrate climate considerations more rigorously into the Environmental Impact Assessment process. Too many projects secure clearance without any serious review of how they will cope with climate stresses over their lifespan. Drainage plans, flood risk mapping, slope stability analysis and ecological impact studies should all be mandatory components of EIAs. Once submitted, these reports should not sit idle on shelves. They must inform the granting of licences and NOCs, and projects found lacking should be denied approval until compliance is demonstrated.

The broader picture is that climate-smart investment is not a niche activity for environmentalists. It is a national economic strategy. Pakistan is already one of the most climate-vulnerable countries in the world. International investors, multilateral institutions, and development partners are increasingly seeking resilience and sustainability before committing capital. If our infrastructure continues to fail under extreme weather conditions, it will not only harm local communities but also deter foreign investment. Conversely, if Pakistan can demonstrate that it is steering its urban growth and construction sector toward resilience, it can unlock new flows of capital, insurance and technical expertise that are currently out of reach.

Investments in areas prone to disasters must be phased out. No-build zones along rivers and floodplains must be enforced. Housing societies must incorporate drainage as a central feature of their design and maintenance. The real estate and construction industries must be integrated into climate action planning. Public-private collaboration must be scaled up. Financing mechanisms such as the Pakistan Climate Change Fund must be leveraged to attract and direct capital into projects that strengthen resilience. Above all, the mindset of investors, planners and citizens alike must shift from short-term profit to long-term survival.

Pakistan does not lack talent, ideas or ambition. What it has lacked is the discipline to align its investment decisions with the realities of climate change. The floods, the encroachments that choke our waterways and the crumbling drainage systems in our cities should serve as a wake-up call. The costs of inaction are already visible. The dividends of action will come only when climate-smart investment becomes the foundation of our development agenda. ■

Businesses, Civil Society, Experts Unite to Demand Action Against Environmental Lawlessness in Pakistan

Experts, business leaders, and civil society representatives have warned that Pakistan's worsening climate vulnerability—exposed by devastating floods, landslides, and torrential rains—is the outcome of unchecked real estate expansion, reckless tourism, and poor enforcement of environmental laws. The call came at a roundtable on the flood emergency, organised by the FPCCI's Central Standing Committee on SDGs at its Islamabad office.

Keynote speaker Zainab Naeem, environmental research fellow at SDPI, highlighted rampant deforestation by the timber mafia and warned of rising disaster risks in northern regions. She revealed that only 24% of the US$10 billion pledged after the 2022 floods has been disbursed, urging strict implementation of the Pakistan Climate Change Act 2017.

Environmentalist Arif Afridi stressed sustainable urban development, while Afzal Butt, President PFUJ, called for stronger media and parliamentary focus on climate policy. Development economist Ayesha Khan pointed out decades of weak enforcement of existing environmental laws. Entrepreneur Anila Fatima urged FPCCI to make environmental compliance mandatory for its real estate, tourism, and hospitality members. Veteran businessman and former Senator Mian Muhammad Ateeq Shaikh accused provincial watchdogs of corruption, while Air Vice Marshal (retd.) Ijaz Mahmood Malik advocated expanding civil defence volunteers. FPCCI Vice-President Tariq Jadoon and Karim Aziz Malik, head of FPCCI Capital Office, pledged full support for law enforcement, fundraising, and relief efforts.

Naeem Qureshi, Convener of FPCCI's SDG Committee, and Deputy Convener Haleema Khan assured continued dialogues for actionable solutions. Participants also noted Pakistan's status as the world's fifth largest methane emitter, with Karachi discharging 550 MGD of untreated effluents into the Arabian Sea. The meeting ended with a united call for accountability, strict law enforcement, and cross-sector collaboration to avert future climate disasters. ■

Cross subsidies—death knell for the industry

Electricity tariff required to be based on specific cost of service for a particular category and nothing else

Kamran Arshad

The writer is Chairman APTMA— North Zone

As the Power Sector is duly regulated by NEPRA, it was also important to understand the various regulations controlling the determination of power tariffs and the possible effects these could have on the power consumers in general and on the Pakistani industry in particular.

A brief foray into the regulations led to the understanding that basically the electricity tariff is required to be based on the specific cost of service for a particular category of electricity customers and nothing else. This basis is correct by all means and nearly unassailable. It is understandable that there can be no one tariff for all categories of electricity consumers when the cost of service for each category is different due to obvious reasons.

The government then has the hegemony and authority to notify the tariff after determination by the Regulator. The powers to notify tariff is understood and also accepted generally.

However, this acceptance only revolves around the fact and requirement that the government may desire to subsidize venerable segments of society from any untoward increase in electricity tariff and as such should retain the powers to notify the electricity tariff. The low tariffs for the protected domestic consumers fall in this subsidized class.

The legacy of WAPDA tariff structure, on the other hand, had an inbuilt mechanism that considered cross-tariff subsidy mechanism as Kosher. WAPDA had used this tool to arrange for what was known then as the lifeline tariff – specially, for users of up to 50 units of electricity and then for the 100 units per month category. Along this cross-tariff subsidy was used to lower the agricultural tube-well tariffs.

It was because of this that the original NEPRA Act, 1997 listed the requirements of doing away of this practice as soon as possible. Unfortunately,

instead of phasing out this distortion, it seems that the various amendments in the Act since the last five years or so have buffeted the earlier sin of provision of cross-tariff subsidies for some classes of consumer categories at the cost of others.

On the other hand, neither the law in the country nor our constitution allows anyone to start robbing Peter to pay Paul. This is so because this dictum can be rephrased as taking from one to gift to another or shifting resources or redistributing wealth in a stealthy manner.

It can also be described as solving one problem by creating another monster, or as a temporary fix that ultimately leads to further grave issues. This issue can be highlighted as the movement of assets from one area to another, often without addressing the underlying problem. This further emphasizes the transfer of resources, potentially implying a lack of equity or fairness.

In short: a simple shortsighted solution. Strangely, but very aptly, this also describes a deceptive practice where grave distortions are hidden through shifting resources from one category of electricity consumers to another to cover-up a serious problem. Here, we are talking about the cross-tariff subsidies which both the Regulator and the government employ in order to, on the face of it, fulfill the socio-economic issues of the country, which in fact are more of political shenanigans.

Looking back, we see that cross tariff subsidies were frowned upon and also castigated originally through section(s)31.5 of the NEPRA Act. However, recently through amendments in the Act, some space seems to have been created for cross-tariff subsidies cleverly labeled as socio-economic needs of the government. However, still the amended Act/relevant clause too in a way bars any cross-subsidization for obvious reasons. These are enumerated as below:

31(2)(e)The economic and socio policy objectives of the Federal Government, and31(2)(f)"The elimination of exploitation and minimization of economic distortions"31(3)(h)"Tariffs should, to the extent feasible, reflect the full cost of service to consumers categories with similar service requirements".

Unfortunately, no one knows about any specific socio-economic policy of the government which allows for the implementation of a strategy whereby any class of electricity/power consumers will be subjected to a burden forcing them to pay heavily for subsidizing some other categories of consumers.

And if at all any policy is there, it cannot be ever allowed to be put in place mindlessly and that too for burdening of industrial consumers in Pakistan. It has to be remembered that industry and its prowess makes or breaks any country's economy. Consequently, there is no reason that compels the regulator or the government to do so ever. Besides, the constitution too bars any such act whereby any specific category of people is made to pay for others.

According to calculations in our case, it is seen that a hefty cross tariff subsidy of nearly Rs 150 billion is placed on the shoulders of industrial customers of Pakistan. This translates into an illegal burden of over Rs 7/Kwh of industrial users for the FY viz. 2024-25. And the strange part is that still the industry is required to increase exports, be efficient and be an engine of growth, arranging for employment in Pakistan, etc.

This issue was highlighted last year, whereafter, reportedly, it had been proclaimed that the industry will not be made to suffer anymore and that the weight of cross subsidies to meet with the socio-political requirements of the government will either be funded from the yearly budget or will be diverted towards other unsuspecting consumer categories.

Unfortunately, nothing of the sort happened and the current electricity tariff carries on with the same distortions as ever. As presently, the industry has been forced to transit from gas to the grid through the grid transition levy, the situation requires correction of all distortions in the power tariff.

During the last five years at least 100 textile mills in the country have shut, leading to a loss of 60,000 direct jobs, half a million of tangential jobs and a great dent in the national GDP. Another serious issue is the sad demolishment of the industrial clusters created and matured after five decades or so in areas around Lahore, Gujranwala, Faisalabad and Multan in the Punjab and in Hyderabad and Karachi in the South. Even if the shut mills somehow get resurrected, the most important clusters will need at least 1-2 decades to reconstruct. ■

Musadik for capacity building to face climate change

EU Report

Federal Minister for Climate Change Dr Musadik Malik has urged capacity building to address climate change, saying the federal government will support provinces in improving urban drainage, disaster preparedness, and zoning enforcement.

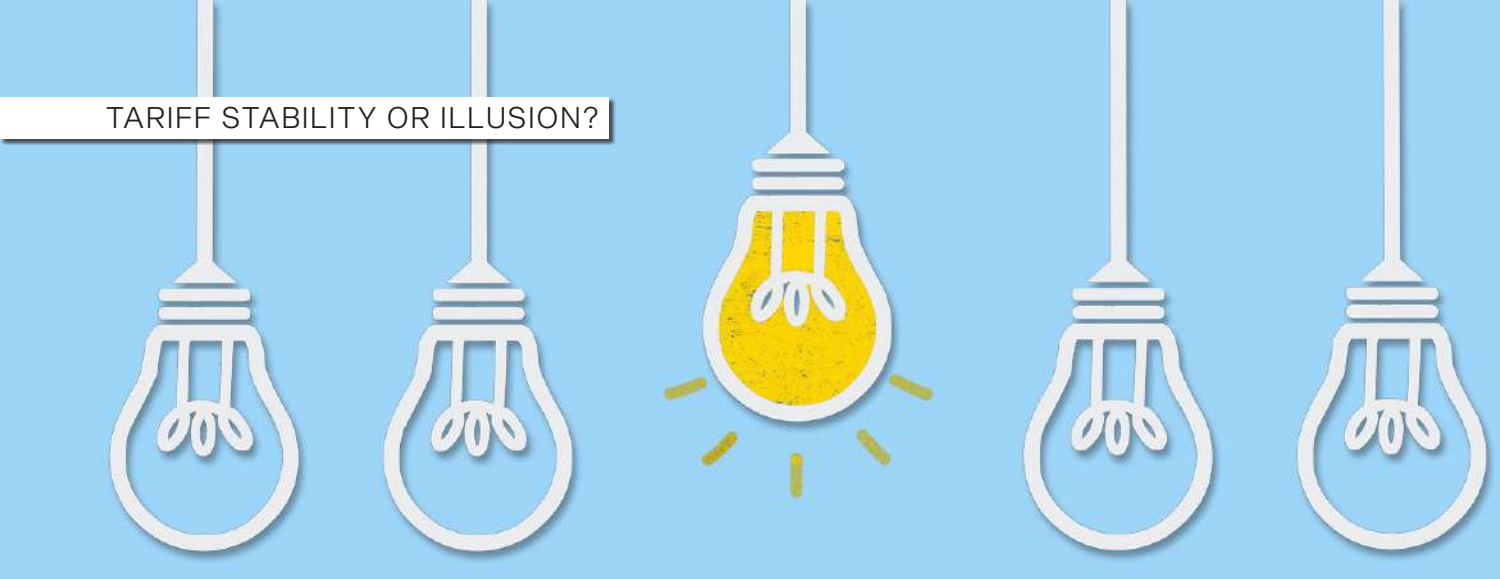
Speaking at a seminar titled "Building a Resilient Public Financial Management Ecosystem", jointly organised by the Institute of Chartered Accountants of Pakistan (ICAP) and the Chartered Institute of Public Finance and Accountancy (CIPFA), Malik said Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan, Gilgit-Baltistan, and Azad Jammu and Kashmir will receive equal support from the federation.

Calling climate change "a present and undeniable reality," he stressed the urgency of both local reforms and global fairness. "We cannot afford delay. Unsafe riverbank construction must go, our cities must prepare, and the world must deliver justice," he said.

He pointed out that Pakistan's share of global emissions is less than one per cent but it remains among the worst-hit countries. He added that nations responsible for most emissions consume nearly 80 per cent of the Green Climate Fund.

Admitting gaps in Pakistan's ability to access international funding, he called for stronger technical capacity and better-prepared projects to secure global financing. "It is not only the world's fault. Unless we improve, we will continue to lose out."

The minister also announced a federal strategy to demolish all illegal and unsafe resorts built along riverbanks to mitigate flood risks, warning that no one will be spared regardless of their influence. "These luxury resorts, whether legal or illegal, are not just buildings. In floods, they turn into missiles that smash through downstream villages, destroying lives and livelihoods," Malik said, adding that Prime Minister Shehbaz Sharif has already issued clear orders for their removal. ■



The real test of Pakistan's power reforms

Dr Rubina Ilyas

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

The specter of circular debt that has been haunting Pakistan's power sector for a long time, seems to be partly stabilized with a total stock standing at Rs 1.614 trillion as of June 2025 (Ministry of Energy, 2025). It represents a significant cut over last year (2022–23), which was Rs 2.393 trillion from prior FY, a decline of Rs 780 billion.

Over the first 16 months of the incumbent government (March 2024–June 2025), the debt was brought down from Rs 2.679 trillion to Rs 1.614 trillion — a drop of about Rs 1.065 trillion (Ministry of Finance, 2025). This unanticipated advancement is firstly the result of the breakthrough deal made by the Government of Pakistan with 18 leading commercial banks for Rs 1.275 trillion Islamic financing.

The government is now expected to repay this facility in 24 quarterly instalments over six years, at a rate linked to the three-month KIBOR minus 0.9 percent (Pakistan Banks Association, PBA).

The payments would retire Rs 683 billion payable to Power Holding Limited (PHL) and clear arrears of Rs 569 billion worth to Independent Power Producers (IPPs), bringing down the sector's circular debt to around Rs 561 billion. Secondly, the systematic policy given by the Finance Ministry to allow the Debt Service Surcharge (DSS) of Rs 3.23/kWh to be utilized only for debt servicing, which not only brought fiscal transparency but also seriousness to the unprecedented government finances. Prior to these measures, earlier in the fiscal year 2024-25 (FY25), circular debt had been recorded at Rs 2.4 trillion (approximately) by end-March 2025.

Yet, this doesn't indicate that the consumers will now enjoy tariff reductions. While a financial injection by the government may be the short-term solution to prevent the crisis in it still doesn't solve the circular debt problem. Even if it relieves some political pressure today, the cost will ultimately be passed directly on to the consumer — through future bills and tariffs, i.e., the Debt Service Surcharge (DSS) of Rs 3.23 per unit for the next six years.

While the loan may stave off pressure in the near term, unless these fundamental inefficiencies —losses, low levels of billing and a monolithic fixed cost structure — are tackled head-on, they will continue to weigh on the sector. Moreover, due to the IMF's stringent cost-recovery mandates, electricity prices will continue to be burdened by internal system inefficiencies. The IMF has demanded the end of a previous 10 percent ceiling on this surcharge, ensuring ultimately increased bills for users.

The already beleaguered power sector is heading for some short-term relief and long-term pain. The power sector is still plagued by high non-technical and technical losses in transmission and distribution, poor collection of overdue bills, an unbalanced cross-subsidy structure, the dependence on imported fuels, and the stagnation of new domestic power generation.

Unless there are drastic changes in DISCO performance, loss reduction and bill recovery measures, the borrowing will reemerge. The consequences for ordinary consumers are straightforward: years of increased electricity bills and levies to pay for the bailout.

The July debt deal is, in essence, an unavoidable but uneasy solution. The implications are very clear: years of elevated electricity tariffs and surcharges that will finance the bailout but do little to fix systemic inefficiencies. While this does provide some breathing room for the power sector, it will be paid for by households and industry for years to come.

Unless governance reforms, infrastructure upgrades, and accountability in distribution companies are pursued in parallel, this relief package may simply reset the clock on a recurring crisis.

In the absence of a decisive action to upgrade grid and enforcement aggressively on the usage of non-fossil fuel generation, energy revenues, governance on profit and cost regulation, and the industry's short-sighted dependence on circular debt will continue to erode any recent achievements. The government action has bought itself time and credibility for the time being– but real test lies ahead: can Pakistan turn this fleeting fix into a sustainable, cost-effective power future? ■

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Pakistan, India face mounting pressures from climate challenges

ENVIRONMENTAL PROTECTION ORDINANCE 1983 AND ACT 1997 LACK COMPONENTS OF A COHERENT, LONG-TERM STRATEGY

Ali Tauqeer Sheikh

The writer is a climate change and sustainable development expert

Pakistan's environmental journey since 1947 reflects the complex evolution of governance structures, policy frameworks and institutional responses to sustainability challenges. Though products of the same colonial legacy, India and Pakistan have developed fundamentally different approaches to ecological governance.

Genesis: Both embarked upon their sustainability journeys after the 1972 Stockholm Conference, where they were represented by Indira Gandhi and Nusrat Bhutto respectively. Their responses established divergent trajectories. India created a National Council for Environmental Policy and Planning, culminating in the 42nd constitutional amendment in 1976.

This embedded environmental protection in state responsibilities through Article 48A and made it a citizen duty via Article 51A(g). The foundation provided an enduring strategic framework guiding policy through multiple political transitions.

Progression continued with legislative milestones. The Water and Air Pollution Control Acts established regulatory bodies and created the Central and State Pollution Control Boards. The 73rd and 74th Amendments created the three-tiered Panchayati Raj systems, integrating governance structures from national to village levels. Each step built upon previous foundations.

Pakistan chose administrative action over constitutional amendment. It creating an Urban Affairs Division in 1972, which focused on urban pollution. However, the UAD remained largely inactive for two decades. It has since been reorganised at least six times under different names or mandates.

Later legislation — the

Environmental Protection Ordinance (1983) and Act (1997) — represented guidance by iconic environmental leaders like Dr Parvez Hassan but lacked the components of a coherent, long-term strategy. The superior courts then stepped in, expansively interpreting 'right to life' of Article 9 to include environmental rights in the landmark 1994 Shehla Zia vs Wapda case.

While this judicial innovation provided the foundation for environmental jurisprudence, it also highlighted the absence of clear executive and legislative direction in policy development.

Pakistan demonstrated early climate leadership by chairing the G-77 at the 1992 Rio Earth Summit. The country pioneered climate justice through the 2015 Leghari case, becoming the first nation to establish climate change as a fundamental rights issue. Pakistan's 'Ten Billion Tree Tsunami' was one of the world's most ambitious reforestation programmes, while significant renewable energy additions of over 1,300 MW since 2015 showed progress towards the 30 per cent renewables target by 2030.

Institutional evolution: India's federal structures enabled expansion of ecological capabilities, with the central ministry providing national coordination and states developing complementary frameworks. This approach created space for synergies with initiatives like the Mahatma Gandhi National Rural Employment Guarantee Act, which simultaneously provides livelihood security while protecting biodiversity and enhancing climate adaptation through water conservation and watershed management.

However, India's system faces significant challenges. Implementation gaps persist between constitutional mandates and ground reality, with persistent air quality crises in Delhi and major cities, along with industrial water contamination.

Enforcement varies dramatically between states, while federal-state coordination complexities create bureaucratic delays. Courts sometimes substitute for policymaking through judicial activism, creating inconsistent governance patterns that undermine the systematic approach that constitutional clarity was meant to provide. Several state-level climate action plans remain unimplemented.

Pakistan's institutional journey is a different story. Repeated restructuring consumed valuable time and energy while disrupting institutional memory and stakeholder relationships.

The 18th Amendment devolved powers to the provinces without adequate coordination mechanisms. While decentralisation offered benefits, implementation created fragmentation challenges. The 2017 Climate Change Act attempted to recentralise functions by creating an authority, thus undermining federal ministry mandates and creating duplication.

It added to federal-provincial tensions that remain unresolved in climate-related policy documents: National Climate Change Policy, Nationally Determined Contributions, National Adaptation Plan, Policy Guidelines for Trading in Carbon Markets, National Climate Finance Strategy and Pakistan Green Taxonomy. Despite the challenges, Pakistan has come up with notable innovations.

Resource mobilisation: India's constitutional mandate facilitated integration of sustainability considerations into domestic budgeting, enabling resource allocation that has grown. International cooperation supplements rather than substitutes domestic investment, maintaining autonomy in policy direction.

Pakistan's financing shows a drift through external dependency, though the country recently initiated budget-tagging. Provincial programmes remain underfunded, creating cycles where donor preferences override national goals. This dependency exposes challenges in boosting sustainable domestic capabilities.

India's enforcement benefits from frameworks created with constitutional clarity and systematic institutional development. Courts operate within the established law, providing interpretation that supports long-term planning. Despite enforcement challenges, the approach perhaps creates cumulative improvements in compliance and institutional capacity. Pakistan's enforcement reflects a broader strategic drift. The judiciary plays a central role, filling gaps left by inadequate policy frameworks. While the environmental protection tribunals represent innovation, they operate within uncertain policy direction parameters and insufficient resources, resulting in crisis-driven enforcement.

The strategic compass: The basic difference lies in strategic direction: clear guidance enabling institutions to navigate challenges while maintaining progress. India's constitutional framework provided this compass. Pakistan's journey, despite impressive institutional innovation and policy creativity, lacks consistent long-term direction.

This creates patterns of starting initiatives, changing course and restarting. Both countries face mounting pressures requiring sustained responses. Pakistan's experience demonstrates that success depends on developing strategic clarity to guide consistent progress.

The tale of these two environmental journeys demonstrates that in governance, as in navigation, knowing your destination and staying the course may be more important than the speed of travel. Environmental challenges require patience that comes from clear direction. As both countries face mounting pressures from transboundary climate challenges, the need for strategic clarity becomes even more critical for their shared environmental future. ■

Circular debt reduction masks structural failure

EU Report

The Power Division is keen to highlight that the circular debt stock has been reduced from over Rs2.3 trillion to Rs1.6 trillion, and will fall further after a new Rs1.275 trillion loan is disbursed.

Yet beneath the arithmetic the fundamentals remain unchanged. The debt may shrink on paper, but the real disease continues unchecked. Distribution losses, theft, and poor recovery practices are still draining the sector, now calculated at nearly Rs397 billion. And consumers, not the system, are being made to pay for the adjustment.

The government's latest plan relies on bank borrowing, with repayments to be serviced through the Debt Service Surcharge already imposed on every unit of electricity consumed.

In effect, the circular debt is not being retired by reforms or efficiency gains but by transferring the liability directly to households and businesses. This may clean up the balance sheet in the short term, but it does nothing to address why losses remain high, or why honest consumers are perpetually penalised for the failures of power companies and regulators.

The reduction in reported payables to power producers and fuel suppliers is welcome, but it is achieved through the use of fresh loans. That is not reform; it is rescheduling. Meanwhile, the distribution companies still show Rs265 billion in technical and distribution losses and Rs132 billion in recovery losses.

The figures may have declined from last year, but they remain at levels that would be considered catastrophic in any well-governed system. These are not accidents of climate or chance. They are the outcome of poor governance, corruption, and political interference in the boards and managements of state-owned Discos.

The result is a vicious cycle. Theft and non-recovery drive up costs, tariffs rise to compensate, and paying customers carry a heavier burden. The higher the tariff, the stronger the incentive to default or steal power, and the cycle repeats. Breaking it requires action at the point of leakage, not endless rounds of refinancing. Smart metering, independent boards, and credible enforcement against theft have been advocated for years, but implementation remains sporadic. Without these, even the headline figure of Rs397 billion in losses will prove temporary.

The larger issue is credibility. Circular debt has been "reduced" many times before, only to balloon again within a few years because the underlying problems were left untouched. This is the risk again.

The state may point to an improved balance sheet in 2025, but unless distribution losses are cut decisively and recoveries are raised to near 100 percent, the numbers will once more climb. Consumers, already squeezed by high tariffs, cannot be expected to carry this burden indefinitely.

What is required is a structural approach that moves beyond book adjustments. Discos must be held accountable through performance-based contracts and professional management. Theft-prone feeders should be prioritised for technology upgrades and strict enforcement. Tariffs must reflect efficiency, not inefficiency, and governance must ensure that those responsible for persistent losses face consequences, rather than passing the cost to the public year after year.

Thar projects key to regional development: Nasir Shah

EU Report

Syed Nasir Hussain Shah, Sindh's Minister for Energy, Planning & Development, reaffirmed the Government of Sindh's commitment to harnessing indigenous Thar coal resources as a cornerstone of Pakistan's economic and energy security.

During a visit to Thar Blocks I and II, accompanied by a high-level delegation of government officials and elected representatives, the Minister emphasized that these large-scale coal projects are significantly contributing to the national energy mix by helping produce affordable electricity.

At Thar Block II, the delegation was briefed on the Phase III expansion of the Sindh Engro Coal Mining Company (SECMC), one of Pakistan's most successful public-private partnerships between

the Government of Sindh, Engro and other affiliates. The expansion aims to increase the mine capacity from 7.6 to 11.4 million tons per annum, which will help energize around 4.5 million households daily.

To boost socio-economic opportunities in Thar, the Block II mine company has prioritized local talent development. Currently, 94% of the Company's workforce is from Sindh, with 60% belonging to the Thar region. In addition, more than 2000 youth have received industry relevant vocational training to improve their livelihood opportunities.

Speaking to the media, Minister Nasir Shah noted that prudent government policies have helped stabilize the macroeconomic environment and opened doors for investment across diverse sectors. He shared that studies are underway to explore coal gasification for fertilizer production, and the completion of the Thar rail link will facilitate coal transportation to major industrial sectors across Pakistan. The Minister also inaugurated an electric vehicle (EV) charging station for 70-ton electric dump trucks, recently introduced for the first time in Pakistan as part of a pilot project at SECMC's Block II mine. ■

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ENERGY UPDATE

2nd International Solar Power Conclave and Technology Excellence Awards 2025

Pakistan's deepening energy crisis and its direct link to climate change brought into the spotlight

Group Photo of 2nd Int'l Solar Power Technology Excellence Awards Winners 2025 with Chief Guest Governor Punjab Sardar Saleem Haider Khan and Team Energy Update.

Punjab Governor declares renewable energy to be the most effective remedy for environmental degradation

Mustafa Tahir

Pakistan's deepening energy crisis and its direct link to climate change were brought under the spotlight at the 2nd International Solar Power Conclave and Technology Excellence Awards 2025, held in Lahore.

The landmark event, organised by Energy Update in collaboration with the Private Power and Infrastructure Board (PPIB), the Pakistan Solar Association (PSA), the Pakistan Alternative Energy Association (PAEA), and the Renewable Energy Association of Pakistan (REAP), assembled senior policymakers, international technology providers, and industry leaders for dialogue on how renewable energy can reshape Pakistan's energy landscape.

Punjab Governor Sardar Saleem Haider Khan, in his keynote address, declared renewable energy to be the most effective remedy for environmental degradation, which he said had already unleashed devastating floods and extreme weather patterns across Pakistan. He praised the example of Sindh's post-2022 flood rehabilitation initiative, in which more than two million solar-powered houses were constructed for displaced families, describing it as a model for sustainable rebuilding nationwide.

The Governor also criticised policy instability on green meters, which, he argued, had shaken public confidence in renewable energy adoption. Stressing the need to break away from crippling power purchase agreements with independent power producers, he called for bold support of solar manufacturing at an industrial scale and assured the renewable energy sector of government backing.

Rana Mashood Ahmad Khan, Chairman of the Prime Minister's Youth Programme, described the clean energy shift as inseparable

From L to R Governor Punjab Sardar Saleem Haider Khan, Chairman PM Youth Programee Rana Mashood Khan, Member PM Solarization Committee Faizan Ali Shah, Chairman Organizing Committee Naeem Qureshi, Hamza Sajid, HOD Aftersales (Central/South Asia & Middle East), Solis Inverters, Engr. Mian Fahad, Country Director, Growatt New Energy, Mubarak Hussain Mir - Country Manager Huawei Digital Power Pakistan, M. Zakir Ali CEO Inverex Solar Energy, Danny Song, Director of Product Center Risen Energy Co., Ltd., Faizan Haider Hashmi Jinko Solar, Faraz Muhammad Khan, Sales Strategy & Development Manager, Jinko Solar Co., Ltd, Waqas Khaleeq, CEO, Smart Solar, Ruqiya Naeem, Director Admin and Finance Energy Update, Athar Hayat CEO Bahum Associates and Javed Afridi, CEO SunLife Solar addressing on this occasion.

from the technological transformation sweeping across the world. He explained that artificial intelligence and renewable energy were already defining the future of economies, and Pakistan must catch up quickly. Unveiling details of the government's Electric Vehicle Policy 2030, he announced that sixty per cent of the country's vehicles are planned to be converted to electric over the next decade, with Chinese partnerships being pursued to encourage local manufacturing. He emphasised that Pakistan's youth would be at the centre of this transition, calling technology not a choice but an inevitability.

Engr. Syed Faizan Ali Shah, a member of the Prime Minister's Pakistan Solarisation Committee, gave a sobering statistical picture of the country's energy profile. He revealed that the number of electricity consumers has now reached forty million, with eighteen million falling into the lifeline category—a sharp increase from eleven million in 2022. This rapid growth, he said, shows how unaffordable conventional power has become, forcing households towards subsidised usage and household solar solutions. He also highlighted the government's initiative to shift nearly six hundred captive industries to the national grid, while proposing the solarisation of grid stations and the introduction of battery storage systems to stabilise supply for industry.

The voices of private sector leaders underscored the frustration over policies that many felt were inconsistent and burdensome.

*Meanwhile, international and local industry representatives also emphasised the pivotal role of solar energy in reshaping Pakistan's future.

Hamza Sajid of Solis Inverters stressed that solar energy offered the most environmentally responsible path forward, helping Pakistan curb its carbon footprint while meeting growing power demand.

Engr. Mian Fahad, Country Director of Growatt New Energy, highlighted that localised solar solutions could unlock energy access in underserved areas, advancing both social equity and national security.

Mubarak Hussain Mir, Country Manager of Huawei Digital Power Pakistan, observed that large-scale solar

Ruqiya Naeem, Director Admin and Finance Energy Update presenting memento to Sardar Saleem Haider Khan, Governor Punjab

M. Zakir Ali CEO Inverex Solar Energy and Chairman PSA Waqas Moosa Presenting memento to Muhammad Yousuf Former Test Caption of Pakistan Cricket Team.

Group Photo of Sponsors and Speakers with Chairman PSA Waqas Moosa and PM Solarization Committee Member Faizan Ali Shah

Group Photo of Speakers

deployment would strengthen Pakistan's resilience against climate change, positioning the country as a regional leader in clean energy adoption.*

Faraz Muhammad Khan, Sales Strategy & Development Manager at Jinko Solar, described solarisation as the key to energy reliability, explaining that Pakistan could achieve long-term stability only by reducing its dependence on volatile fuel imports.

Dany Song, Director of the Product Centre at Risen Energy, noted that renewable energy was not only essential for lowering electricity costs but also for enhancing national independence by cutting reliance on external suppliers.

Waqas Khaleeq, Chief Executive of Smart Solar, pointed out that the widespread adoption of solar power would drive economic sustainability by easing the government's subsidy burden and making local industry more competitive.

Javed Afridi lamented that harsh taxation and unfriendly regulations had strangled local industrial growth, despite its potential to generate jobs and save foreign exchange. Business executive Faaz Diwan added that the imposition of taxes on solar panels placed an unfair burden on ordinary households, while wealthier consumers often secured exemptions. Renewable energy expert Engr. Haider Javed warned that Pakistan risked falling behind unless it adopted new technologies in time, pointing to the promise of floating solar systems which can simultaneously provide clean energy and conserve water. Similarly, Zakir Ali, Chief Executive of Inverex Solar Energy, maintained that solar power was now an irreversible part of the country's future, though government support would determine whether its potential was truly realised.

Athar Hayat, Chief Executive of Bahum Global & Bahum Associates, described Pakistan as already being one of the top ten solar markets in the world, arguing that such a position should inspire greater urgency in expanding local manufacturing and investment.

Waqas Moosa, Chairman of the Pakistan Solar Association, closed the technical discussions by emphasising that public–private partnerships were the only way forward to scale renewable energy across Pakistan. International representatives from leading firms echoed this view, pointing to technology transfer, investment opportunities, and global best practices that Pakistan could adopt if it provided a stable policy environment.

Syed Fahad Zeeshan, CEO of Interface Engineering and Construction, argued that a vibrant solar sector would promote technological independence by encouraging domestic expertise and innovation.

The conclave also became a platform for reflecting on Pakistan's wider energy predicament. For decades, reliance on imported fuels and rigid power contracts has locked the country into a cycle of unaffordable tariffs and mounting subsidies. While the government shoulders enormous costs, industries remain uncompetitive and millions of households are increasingly dependent on subsidies. Yet, the experts at Lahore were unanimous in stating that Pakistan possesses more than enough solar potential to power its future many times over. The country's challenge, they agreed, was not potential but the political will and policy stability to convert this into reality.

In his welcome address, Muhammad Naeem Qureshi, Chairman of the Organising Committee, spoke about the journey of Energy Update magazine since its inception in 2008, stressing that the conclave was intended to be a knowledge-sharing and networking platform that reinforced Pakistan's alignment with both national development priorities and global climate goals.

The day concluded with the presentation of the Solar Excellence Awards 2025, which honoured 33 organisations and individuals for outstanding contributions to renewable energy. The ceremony, graced by former Pakistan cricket captain Muhammad Yousaf, added a symbolic touch to an event that aimed to inspire both policymakers and citizens.

The Lahore conclave ultimately carried a clear and urgent message: Pakistan's future stability, prosperity, and environmental survival depend on a renewable energy revolution. The question left hanging in the air was whether the momentum from this gathering would be translated into concrete and lasting action. ■

Group Photo of Organizers with Rana Mashood Khan and M. Yousuf

Glimpse of Panel Discussion includes Waqas Moosa, Chairman, Pakistan Solar Association, Faaz Diwan, Director, Diwan International Pvt Ltd., Syed Fahad Zeeshan, CEO, Interface Engineering & Construction (Pvt) Limited, Engr. Haider Javed, Practice Lead Renewables, MM Pakistan Pvt Ltd. and Zulfiqar

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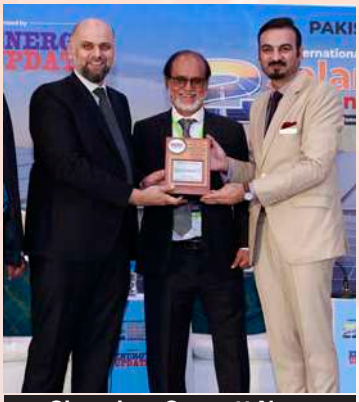

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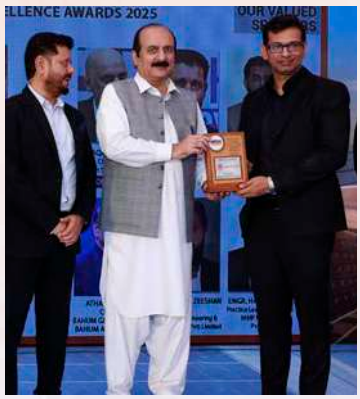

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SOLIS INVERTERS

Founded in 2005, Ginlong Technologies (Stock Code: SZ.300763), operating under the Solis brand, is one of the world's most experienced and leading manufacturers of solar inverters. With two decades of innovation, Solis has established itself as a global leader, providing cost-effective and reliable inverter solutions for residential, commercial, industrial, and utility-scale applications. Solis is consistently ranked among the world's Top 3 PV inverter manufacturers by Wood Mackenzie and BloombergNEF, achieving a reputation for technological excellence, bankability, and long-term reliability. As of 2025, the company has shipped over 120 GW of inverters worldwide, with an annual capacity exceeding 80 GW. In 2024 alone, Solis delivered 27.4 GW of shipments, earning recognition as the Global No.1 Residential Inverter Supplier and a BloombergNEF Tier 1 inverter manufacturer.

The Solis product portfolio spans grid-tied inverters (0.7 kW to 350 kW) and energy storage inverters (3 kW to 125 kW), designed with advanced string technology to ensure efficiency, flexibility, and durability across diverse energy needs. These solutions are trusted by homeowners, businesses, power producers, and renewable energy investors worldwide.

With a workforce of over 5,000 employees, including a 1,000-strong R&D team, Solis is committed to continuous innovation. Its products are certified under the world's most stringent international standards, ensuring quality and compliance in every market it serves. Supported by 53 global service centers and a dedicated customer service team of more than 300 experts, Solis provides localized expertise and end-to-end technical support, strengthening its position as a trusted partner in the clean energy transition.

Sustainability is central to Solis' mission. To date, its inverter deployments have generated 166.6 billion kWh of clean electricity, offsetting over 150 million metric tons of carbon emissions. The company ensures all suppliers comply with environmental protection agreements and RoHS directives, while in-house energy management initiatives reduce consumption and improve resource efficiency during manufacturing. Recognized by EUPD Research as a "Top PV Inverter Brand" for 10 consecutive years (2016–2025) and ranked among the Top 50 Most Innovative Companies by Forbes China (2023), Solis continues to demonstrate leadership in renewable energy. Its achievements, certifications, and global bankability reflect a strong commitment to accelerating the world's journey towards a more sustainable and carbon-neutral future. Solis – Global Reach, Local Expertise, and Proven Reliability in Solar Energy.

SHENZHEN GROWATT NEW ENERGY TECHNOLOGY CO,. LTD.

Growatt stands as a global titan in the renewable energy sector, officially recognized as the Global No. 1 Residential PV Inverter Supplier and a Global TOP 3 Hybrid Inverter Supplier in 2024 (Source: S&P Global Commodity Insights). Founded in 2011, the company has revolutionized the industry by providing intelligent and integrated energy solutions that encompass solar generation, storage, and management. With an unwavering commitment to innovation and quality, Growatt empowers homeowners, businesses, and utilities worldwide to achieve energy independence and sustainability. Its award-winning products are trusted in over 180 countries, making it a definitive leader in the clean energy transition.

Leadership and Market Position

Growatt's market leadership is consistently validated by leading industry analysts.Its designation as the world's top residential inverter supplier underscores its dominant share of the global market. This excellence is further confirmed by the prestigious EUPD Research Top Brand PV Award, which Growatt has been awarded for an impressive eight consecutive years (2018-2025). This accolade highlights its brand strength and customer satisfaction across key international markets, including Germany, Australia, Mexico, Brazil, Pakistan, and the Middle East & North Africa region.

Regional Dominance and Record-Breaking Growth Beyond its global rankings,Growatt has established unparalleled dominance in specific high-growth markets. The company has achieved record-breaking installation figures across Pakistan, its neighbouring countries, the Middle East, and Central Asia. This remarkable growth is fueled by a combination of high-performing, reliable products tailored to regional needs and a robust distribution network. In Pakistan specifically, Growatt has secured the highest sales volume, cementing its position as the most trusted inverter brand in the market and a key driver of the country's solar energy adoption.

Product Ecosystem and Innovation

Growatt's success is built on a comprehensive and innovative product portfolio, including:

- Solar Inverters: Ranging from residential microinverters to large-scale utility solutions, all known for high efficiency (up to 99%) and reliability.
- Energy Storage Systems: Modular battery solutions like the ARK series that provide backup power and maximize self-consumption of solar energy.
- Smart Energy Management: Advanced monitoring platforms that allow users to optimize energy usage in real-time.

HUAWEI INTERNATIONAL CO. LIMITED

Founded in 1987, Huawei is a leading global provider of information and communications technology (ICT) infrastructure and smart devices. We have approximately 208,000 employees and we operate in over 170 countries and regions, serving more than three billion people around the world. We are committed to bringing digital to every person, home and organization for a fully connected, intelligent world.

Today, we live in a dynamic and turbulent world, where changes occur at breathtaking speed. Challenges loom large, yet the opportunities before us are unparalleled. At Huawei, we have two key drivers of innovation: science and technology, and customer needs. Both commercial value and market demands are driving our innovation and determining how we invest in science and technology. Breakthroughs in technology, in return, stimulate customer needs and allow us to create greater value for customers. In 2024, our total R&D spending reached CNY179.7 billion, representing 20.8% of our total revenue. Sustainability is a key part of Huawei's corporate strategy, so we have continued to make progress on our four sustainability strategies: digital inclusion, security and trustworthiness, environmental protection, and a healthy and harmonious ecosystem. These efforts will contribute to achieving the United Nations Sustainable Development Goals (UN SDGs).

JINKO SOLAR CO., LTD

JinkoSolar Holding Co., Ltd. is one of the world's largest and most innovative solar module manufacturers, leading the global clean energy transition. Listed as a public limited company on both the Shanghai Stock Exchange (SSE STAR Market) and the New York Stock Exchange (NYSE: JKS), JinkoSolar operates with global standards of transparency and governance. Headquartered in Shanghai, China, and active in over 190 countries, the company has supplied more than 320 GW of solar modules worldwide, including over 150 GW of its advanced N-type TOPCon (Tiger Neo) PV modules.

JinkoSolar offers a wide range of high-performance modules with power ratings of 580–600W, 610–625W, 630–670W, and 705–735W, meeting diverse project needs across utility, commercial, and residential applications. The latest Tiger Neo modules deliver efficiencies up to 24.8%, with a bifaciality gain of up to 90% that boosts annual energy yield. Equipped with superior low-light performance and anti-shading technology, they ensure consistent and reliable energy generation throughout the year. Globally recognized for quality and reliability, JinkoSolar has consistently ranked as a Bloomberg Tier 1 manufacturer and a Top Performer by Kiwa PVEL for 11 consecutive years. Backed by advanced R&D and sustainable operations, JinkoSolar continues to drive a cleaner, brighter energy future worldwide.

RISEN ENERGY CO., LTD.

Founded in 1986, Risen Energy was listed on the Shenzhen Stock Exchange in 2010 (Stock Code: 300118). As a global leader in the renewable energy industry, Risen Energy has consistently prioritized technological innovation, making significant contributions to the sustainable development of the global energy ecosystem. With its cutting-edge heterojunction (HJT) photovoltaic module technology, the company is driving a technological revolution in the solar industry. Risen Energy integrates photovoltaics, energy storage, power station development, and smart energy management. Through strategic investments across the entire energy value chain—from production, conversion, and storage to consumption, operation, and management—Risen Energy accelerates the fusion of solar and storage. This enables the delivery of holistic, green solutions that empower partners to achieve more efficient and intelligent energy utilization, driving the transition towards a low-carbon future.

SOLAX POWER NETWORK TECHNOLOGY (ZHEJIANG) CO., LTD

Established in 2012, SolaX Power is a publicly listed global leader specializing in solar energy storage and smart energy technologies. Offering a comprehensive product portfolio including inverters, batteries, energy storage systems, EV chargers, heat pumps, and integrated smart energy solutions, SolaX serves diverse application scenarios across residential, commercial and industrial, and utility-scale projects. With a strong commitment to innovation, driven by an R&D team representing 30% of its workforce, SolaX continues to deliver market-leading solutions worldwide. Dedicated to sustainability and backed by extensive global partnerships, SolaX helps customers in over 110 countries achieve their energy transition goals and significantly reduce carbon emissions.

INVEREX SOLAR ENERGY

Established in 2007, Inverex Solar Energy has emerged as Pakistan's No.1 solar brand and a pioneering leader in renewable energy solutions. Guided by a vision of sustainability and innovation, Inverex has been at the forefront of driving the nation's transition toward clean and affordable energy.

With a comprehensive product portfolio that includes state-of-the-art solar inverters, lithium-ion batteries, and high-performance solar panels, Inverex delivers reliable and efficient energy solutions designed for Pakistan's unique environment. The company is trusted by households, businesses, and industries alike for its commitment to quality, durability, and advanced technology.

Customer service is at the heart of Inverex's philosophy. With a network of 35+ service centers and a team of trained engineers nationwide, Inverex ensures seamless support and satisfaction for its valued customers.

In 2025, Inverex took a bold step forward by entering the Electric Vehicle (EV) segment, making affordable green mobility accessible for every Pakistani. This milestone reflects Inverex's unwavering mission to integrate clean energy with next-generation solutions, empowering a sustainable and self-reliant future.

Today, Inverex stands not only as a market leader but also as a symbol of Pakistan's renewable energy revolution.

JOLYWOOD (TAIZHOU) SOLAR TECHNOLOGY CO.,LTD.

Founded in 2008 and publicly listed in China in 2014, Jolywood Solar has established itself as a state-level high-tech enterprise, specializing in the research, development, and manufacturing of advanced photovoltaic (PV) products. Renowned globally for its commitment to innovation, efficiency, and sustainability, Jolywood has emerged as a trusted leader in the renewable energy sector.

Jolywood is recognized as the world's largest producer of N-type bifacial solar cells and modules, a technology that delivers unmatched energy yield, superior durability, and long-term reliability even in the most challenging environments. With continuous investment in R&D and a strong focus on high-efficiency PV products, Jolywood is setting new standards in the solar industry, making clean energy more accessible worldwide.

In Pakistan, Inverex Solar Energy proudly serves as the official partner of Jolywood Solar, introducing its advanced product portfolio to meet the nation's rising energy demands. Together, Jolywood and Inverex are empowering households, businesses, and industries with world-class solar solutions — reducing dependence on fossil fuels, supporting energy independence, and contributing to a greener, more sustainable future.

Through this collaboration, Pakistan gains access to global expertise, state-of-the-art technology, and a reliable partner for its renewable energy journey.

ZIEWNIC PVT LIMITED

Ziewnic Solar Energy is one of Pakistan's emerging leaders in sustainable energy solutions, dedicated to transforming the way people power their lives. With a vision of reducing dependency on conventional electricity and combating rising energy costs, Ziewnic provides advanced solar inverters, lithium batteries, and smart energy systems tailored to the country's unique needs.

At Ziewnic, innovation meets reliability. Our product range includes state-of-the-art solar inverters with dual MPPT technology, high-efficiency lithium batteries, and user-friendly monitoring systems that ensure maximum output and durability. Designed to withstand extreme weather, our solutions deliver consistent performance in Pakistan's challenging conditions, making renewable energy accessible for homes, businesses, and industries.

We believe in more than just selling products – we deliver complete energy independence. From installation support to after-sales service, Ziewnic focuses on building long-term trust with customers and partners. Our loyalty programs, installer incentives, and distributor tours are proof of our commitment to strengthening the solar community nationwide.

By embracing Ziewnic Solar Energy, customers not only save on electricity bills but also contribute to a greener and smarter Pakistan. Together, we are lighting the path toward a sustainable future, one home and business at a time.

BAHUM ASSOCIATES (PVT) LTD

Founded in 1984, Bahum Associates is a multidisciplinary engineering and technology solutions provider with over 35 years of expertise in Pakistan and abroad. The company has successfully delivered turnkey solutions across mechanical, electrical, civil, telecom, and IT domains.

In the past six years, Bahum has strategically focused on Solar PV solutions, playing a vital role in combating Pakistan's energy crisis. Under the visionary leadership of Mr. Athar Hayat (CEO), Bahum has consistently upheld its commitment to innovation, quality, and client satisfaction.

Choosing Huawei as its trusted C&I inverter brand in Pakistan, Bahum has set benchmarks in the solar sector. The company's performance has been recognized internationally, earning Huawei's Best Performance Award for the Middle East & Asia multiple times, along with the Highest Buyer Award in 2024.

Bahum has enabled industries to meet their sustainable energy targets through landmark EPC deployments, including Kohat Cement (24MW), Gharibwal Cement (30MW), Kohinoor Textile (20MW), Sapphire (13MW), and Mehmood Group (25MW).

With nationwide presence, a skilled team of engineers, and a proven track record, Bahum Associates continues to drive excellence and innovation, reinforcing its position as a leader in Pakistan's solar industry.

DIWAN INTERNATIONAL PVT LTD.

Since 1993, Diwan Group of Companies has been shaping progress in Pakistan with a legacy built on trust, integrity and growth. Through Diwan International Private Limited, we have emerged as one of the country's most dynamic and respected business groups. By introducing global brands into Pakistan and building strong international partnerships, we continue to create opportunities, transfer knowledge and raise industry standards. Our diverse portfolio covers Renewable Energy, Power Solutions, Food Commodities, Textiles and Building Materials. In particular, our renewable energy initiatives are playing a vital role in building a greener Pakistan by offering sustainable products and solutions that reduce dependence on traditional energy sources. With strong equity and world-class technical collaborations, we bring the best of global expertise together with local strength to serve industries, businesses and communities across the nation. Guided by family values and strengthened by professional leadership, Diwan Group continues to evolve as a progressive, future-focused organization. With a clear commitment to excellence, sustainability and long-term growth, we remain dedicated to shaping a stronger and greener Pakistan.

SHANGHAI PYTES ENERGY

As a leading lithium battery solution provider, Pytes is committed to providing energy storage solutions. Started in 2004, with continuous support and technical experience, more than 1,000 Pytes employees are now working to build a greener future. Grasping the general trend of globalization, Pytes not only has multiple production bases in China, but also runs branches, offices and factories in North America, Europe, Vietnam and other sites to achieve multi-regional coverage of the service network, with faster delivery and quicker response. Creating, Undertaking, Sharing, we practice our philosophy and fulfill the mission that to deliver safe, reliable and affordable clean energy to home and community for a more carbon-free future.

TRUE SOLAR (PVT.) LIMITED

True Solar Pvt. Ltd. stands at the forefront of Pakistan's renewable energy revolution. As an AEDB- and PEC-licensed company with over 50 MW of solar projects successfully delivered, we are redefining how industries, hospitals, and businesses harness the power of the sun. Our strength lies in precision engineering, global technology partnerships, and a customer-first approach ensuring every installation delivers maximum savings, reliability, and long-term value. From industrial giants to healthcare institutions, leading organizations have placed their trust in True Solar to power their growth. Our prestigious portfolio includes Jilani Plastic, Guard Group, Ideal Group, MCIB, Sahil Wood, FWO, Texo Poly, Stellar, Gallop Water, Mass Pharma, Samsol, Arshad Textiles, Royal Leather, AJ Leather, Rasheed Hospital, Mumtaz Bakhtawar Hospitals, Aesthetic Labs, Al-Shifa Hospital, Faisal Rice, Sahiwal Flour Mills, and Diyan Flour Mills. Each project stands as a proof of our expertise in delivering on-grid, hybrid, and customized solar solutions that reduce energy costs and carbon emissions. With operations expanding internationally, including Australia, True Solar is evolving into a global clean-energy brand. Our vision is bold yet simple: to empower communities, industries, and nations with sustainable energy solutions that create measurable impact—today, and for generations to come.

PROGRESSIVE VENTURES

Progressive Ventures is a dedicated partner of EPEVER, a globally recognized manufacturer with more than 15 years of expertise in renewable energy technologies. As EPEVER's official representative in Pakistan, we are committed to providing innovative, reliable, and efficient solar solutions that align with Pakistan's growing energy requirements.

Product & Service Portfolio

Our specialized portfolio includes:

- Solar Charge Controllers – Advanced MPPT and PWM controllers ensuring efficient charging and protection.
- Small Home Systems – Complete solar kits for residential applications, including panels, controllers, and accessories.
- Solar Inverters – High-performance inverters with multiple capacity options for reliable DC–AC conversion.
- Lithium Batteries – Durable energy storage solutions with integrated battery management systems.
- Turnkey Solar System Installation – Complete design, supply, installation, testing, and commissioning of solar energy systems for residential, commercial, and institutional applications.

All products conform to international quality standards and are engineered to deliver optimal performance under Pakistan's diverse climatic conditions. Our installation services are delivered by trained professionals, ensuring compliance with safety and technical standards.

Progressive Ventures ensures:

- Competitive pricing structures
- Reliable and timely deliveries
- Professional installation and commissioning
- Dedicated after-sales and technical support

BS ENGINEERING & CONSTRUCTION WORKS

Founded in 2019, BS Engineering & Construction Works (BSECW) has rapidly emerged as one of Pakistan's leading renewable energy solution providers. With a strong commitment to sustainability, innovation, and reliability, the company specializes in solar energy system design, EPC services, net metering solutions, retrofitting, and smart energy integration. Over the years, BSECW has successfully executed 500+ projects across residential, commercial, industrial, and government sectors, with a combined installed capacity exceeding 100 MW. Our notable initiatives include the Solarization of Public Colleges (5 MW), Model Children's Homes (4 MW), DHQ Hospitals (3 MW), and Police Stations in Punjab (1.15 MW), alongside large-scale industrial and commercial projects with leading private sector clients. Currently, BSECW is proudly executing the Chief Minister Punjab Free Solar Panel Scheme (8.7 MW, Rawalpindi), along with many other government solarization projects across Punjab. These landmark initiatives are empowering communities, reducing energy costs, and promoting sustainability at scale. Recently, BSECW was also honored with an Award and Shield at the 2nd International Solar Power Conclave & Awards 2025, recognizing its excellence in driving solar adoption in Pakistan. Backed by a dedicated team of qualified engineers, advanced design tools, and partnerships with Tier-1 global manufacturers, BSECW ensures efficient, reliable, and cost-effective solar solutions. The company is also among the pioneers in innovative financial models, including partnerships with banks under SBP refinancing schemes and Power Purchase Agreements (PPA), enabling broader access to solar energy.

With a vision to revolutionize Pakistan's energy landscape, BS Engineering & Construction Works continues to drive the transition towards a clean, green, and sustainable future.

SUN LIFE SOLAR PVT LTD

Sunlife Solar is the first company manufacturing A-Class photovoltaic (PV) modules and is recognized as one of the largest manufacturers in Pakistan. Our factory, covering about 174,240 square feet, is equipped with advanced international-standard production lines. Our PV modules are manufactured on state of the art international standard plant having a capacity of 300MW per annum. We produce Mono-crystalline and Poly-crystalline PV modules in a wide range of sizes, from 50 Watts to 450 Watts, Quality Assurance is our motto and the product at each stage of production goes through detailed quality inspections and checked on state-of-the-art Electro-Luminance (EL) testing machine five-sets automatic soldering machine. Our PV modules are tested, as required basis, on IEC 61215 (10.1) and Certified as Top Class by PCRET, Ministry of S & T, and Government of Pakistan.

Upcoming Projects: Our upcoming major projects, which will further strengthen our vision of a self-reliant and energy-secure Pakistan. Sunlife Solar Co. (Pvt.) Ltd. is embarking on two groundbreaking initiatives.

1. Local manufacturing of Lithium Batteries, designed to provide advanced and reliable energy storage solutions for households and industries.
2. Launch of Electric Vehicles (EVs) by next year, marking a significant step towards promoting clean, green, and sustainable transportation in Pakistan.

These initiatives will not only diversify our portfolio but also accelerate the country's transition towards renewable energy and eco-friendly mobility.

DYNESS DIGITAL ENERGY TECHNOLOGY CO., LTD.

Dyness, founded in 2017, is a global pioneering energy storage solutions innovator. Relying on advantageous technology and robust product R&D capabilities, Dyness has established a comprehensive product portfolio for full scenarios, including C&I and residential energy storage throughout the entire lifecycle. With its global headquarters in Suzhou, China, Dyness has provided safe, reliable, and high-quality products and services to 500,000+ users in 100+ countries and regions. At Dyness, customer satisfaction is always Dyness' top priority. Aligned with its mission to reduce the Earth's temperature, Dyness is collaborating with 90+ global brand partners to reduce the cost of renewable energy usage for users. As the pace of global energy transition accelerates, Dyness is committed to promoting sustainable development on a global scale through commercial deepening. It strives to work alongside the industry, market and society to build a low-carbon future worldwide.

MEEZAN BANK LTD

Meezan Bank, Pakistan's best bank and the first and largest Islamic bank, is a publicly listed company with a paid-up capital of Rs. 18 billion. It is one of the fastest growing financial institutions in the banking sector of the country. With its Vision of establishing 'Islamic banking as banking of first choice ...' – the First Islamic Bank commenced operations in 2002, after being issued the first-ever Islamic commercial banking licence by the State Bank of Pakistan. The Bank provides a comprehensive range of Islamic banking products and services through a retail banking network of more than 1000 branches in more than 300 cities of the country. Backed by a state-of-the art T-24 core banking system, the branch network is supported by 24/7 banking services that include over 950 ATMs, VISA and MasterCard Debit cards, a Call Center, Internet Banking, Mobile Application and SMS Banking facility. The Bank operates strictly under the principles of Islamic Shariah and is well-recognized for its product development capability, Islamic banking research and advisory services. In order to ensure strict Shariah-compliance in all its products and services, the Bank has established a dedicated Product Development and Shariah Compliance department that operates under the supervision of the Bank's in-house Resident Shariah Board Member and a Shariah Board comprising of internationally renowned Shariah scholars.

CROWN SOLAR ENERGY

Crown Solar Energy, an initiative of Crown Group, entered Pakistan's renewable energy sector in 2022 with a vision to transform the nation's energy landscape. Building on more than 20 years of Crown Group's engineering expertise in the automotive industry, Crown Solar delivers the same tradition of trust, quality, and performance to clean energy solutions. What sets Crown Solar apart is its focus on reliability, customer satisfaction, and lifelong value. With 25-year product warranties, 30-year linear power output guarantees, and a 10-year open replacement warranty on its Elektra Boost Battery, the company offers unmatched confidence and support. Its products meet Japanese Standard benchmarks, using Tier 1 N-Type solar modules built for efficiency and durability in Pakistan's toughest climates. The portfolio includes premium solar panels such as Vista X, Tiger, and N-Type modules, as well as advanced solutions like the Nexus Hybrid Inverter, Yorker Hybrid Inverter, Pridor Solar Pump Inverter, and the Elektra Boost Battery. Each product is backed by dedicated after-sales service, ensuring smooth installation, maintenance, and long-term performance. From homes and industries to agriculture and education, Crown Solar Energy is delivering clean, stable, and affordable energy while shaping a greener Pakistan.

AIKO SOLAR TECHNOLOGY CO. LTD

AIKO is a global leader in new energy technology, pioneering innovation in the photovoltaic (PV) industry for over 16 years. With a mission to empower humanity's transition toward a carbon-free era, AIKO continuously drives breakthroughs in solar technology, setting new benchmarks in efficiency, reliability, and sustainability. The company specializes in high-efficiency solar cells, advanced All Back Contact (ABC) modules, and scenario-based PV solutions tailored to residential, commercial, industrial, and utility-scale applications. With cumulative shipments exceeding 170 GW, AIKO is the trusted choice of high-end customers worldwide.Guided by a strong R&D foundation, AIKO operates three global research centers and invests over 20% of its resources in innovation, supported by 1,000+ patents and collaborations with leading laboratories. Its ABC technology, ranked No.1 globally in commercial module efficiency since 2023, redefines industry standards with record-breaking performance and ultra-safe design. AIKO also leads in sustainable manufacturing, with multiple zero-carbon smart factories and certifications in green production. The company actively contributes to global energy transformation through strategic projects, including zero-carbon cities, islands, and transport initiatives. With over 10,000 employees and operations across 20+ countries, AIKO continues to deliver solutions that maximize energy conversion, minimize carbon impact, and power progress worldwide.

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TARIQ ELECTRIC PRIVATE LIMITED

Tariq Electric (Pvt) Ltd is an engineering-based organization XPERT IN SWITCHGEAR AND POWER NETWORK ARCHITECTURE with a strong operational presence across numerous Commercial & Industrial Projects across Pakistan. Late Mr. Tariq was the co-founder of the company. Founded in 1993 with a modest start, Tariq Electric (Pvt) Ltd has seen constant growth in its product range and client base.

We offer a wide range of Electrical Distribution Solutions including Switchgear, Transformers, Cable Management Systems and Solar PV Power Systems.

We have one of the largest switchgear manufacturing plants having a 90,000 Sq feet area. Our state-of-the-art production facility, innovative solutions, and strict quality policy enable us to deliver world-class switchgear solutions in accordance with relevant IEC and National standards.

VISION: To enable growth through seamless integration of advanced electrical technologies. We are dedicated to fostering advancement through the seamless integration of state-of-the-art electrical technologies, catalyzing growth and elevating the standards of technological integration.

MISSION: Our mission is to prioritize customer satisfaction, resource efficiency, and uphold corporate values. Our commitment includes promoting good governance, maintaining a secure work environment, and embracing social responsibility.

DECENT SOLAR

Founded in 2019 by Mr. Daniyal Raheed, Decent Solar is dedicated to delivering affordable, high-quality solar solutions tailored to the unique needs of homes, businesses, and industries.

Our mission is to bridge the gap between customers and solar energy providers by offering cost-effective, reliable, and sustainable solar power systems. We pride ourselves on exceptional service—from customized system design to professional installation and ongoing after-sales support—to ensure complete client satisfaction.

At Decent Solar, we aim to revolutionize the solar industry by setting new standards in quality, reliability, and customer care. We envision a future where solar energy becomes the primary source of power, reducing dependence on fossil fuels and minimizing environmental impact.

What We Do: Residential Solar Solutions – Efficient, affordable systems designed to power homes sustainably.

Corporate & Commercial Solar Services – Scalable solutions for offices, industries, and large-scale projects.

Installation & Maintenance – End-to-end support, from consultation and design to installation and long-term servicing.

Our Commitment: We believe that every step toward renewable energy makes a difference. By adopting solar solutions, our clients not only reduce costs and improve efficiency but also contribute to a cleaner, healthier planet.

At Decent Solar, we don't just install solar systems—we create sustainable energy solutions for a brighter future.

PROSUME SOLAR ENERGY

Prosume Solar Energy (Pvt) Ltd is a leading renewable energy solutions provider in Pakistan, dedicated to making clean and affordable solar energy accessible for all. Guided by our vision of "Energy for the People, by the People," we empower individuals and businesses to achieve energy independence while contributing to a sustainable future. With over 500 successful projects across 10 cities, delivering more than 2.5 MWs of installed capacity, Prosume has earned a reputation for reliability, quality, and customer-centric solutions. Our expertise spans residential, commercial, industrial, and agricultural sectors, offering services that include On-Grid, Off-Grid, and Hybrid Solar Systems, Net Metering, Agricultural Solar Solutions, and Solar Financing options. We are certified by NEPRA (AEDB), PEC, and SECP, ensuring compliance with the highest industry standards. Our approach combines innovation, sustainability, and transparency, from initial consultation and system design to installation and after-sales support. At Prosume, we believe in building strong partnerships, delivering optimal ROI, and reducing carbon footprints through cutting-edge solar technology. By transforming energy consumers into "prosumers," we are committed to driving Pakistan towards a greener, self-reliant future.

PAKISTAN CABLES LIMITED

Founded in 1953, Pakistan Cables Ltd. is the country's premier and most reputable cable manufacturer in Pakistan. During 2010-2017, Pakistan Cables remained an affiliate of General Cable, a Fortune 500 company with a global presence of 57 plants in 26 countries. Currently, Pakistan Cables has an exclusive technical collaboration with CTC Global Inc., US. The Company is ISO 9001:2015, ISO 14001:2015 and ISO 45001 with certifications from KEMA Netherlands, CNC Germany, Bureau Veritas, TÜV SÜD, TÜV Rheinland, TÜV Austria, UKAS, BSI, USACE, PSQCA and PCSIR. Furthermore, Pakistan Cables is also the first wires and cable manufacturer in Pakistan to provide KEMA certified LSZH Power Cables. The company is a member of the Amir S. Chinoy Group, one of the largest and trusted industrial groups of Pakistan. Exporting to 40 markets, Pakistan Cables has the largest geographical footprint globally, across all major continents. As winners of the prestigious FPCCI Export Trophy consecutively for seven years since 2016, Pakistan Cables is leading the wires and cable exporter from Pakistan. Recently it expanded its operations to a new 42-acre, purpose-built, state of the art manufacturing facility in Nooriabad, Sindh. It unveiled Pakistan's first 69 kV CCV line for MV cables earlier in 2023 based on superior German technology at its new factory in Nooriabad, Sindh.

SOLAR MASTER

Founded in 2013, Solar Master is one of Pakistan's leading solar energy solution providers, with a strong presence in Multan and across the country. Over the past decade, we have built a reputation for excellence by delivering megawatt-scale installations, cutting-edge solar products, and complete energy solutions to industries, businesses, and households.

We are proud to be the official partner of FoxESS in Pakistan, offering solar inverters and batteries with up to 10 years full product replacement warranty, ensuring risk-free investment for our clients.

Our mission is simple: to provide reliable, clean, and cost-effective solar energy that empowers individuals and organizations while contributing to a sustainable future.

Our Vision: To lead the renewable energy revolution in Pakistan by providing innovative solar solutions that reduce dependence on traditional energy sources, minimize carbon footprints, and create a greener tomorrow.

Our Mission:

- Deliver high-quality solar products and services with unmatched customer satisfaction.
- Expand access to clean and affordable solar energy across Pakistan.

Build long-term partnerships with businesses and industries for sustainable growth.

INTERFACE ENGINEERING & CONSTRUCTION PRIVATE LIMITED

Interface Engineering & Construction (Pvt.) Ltd. (IEC) is a Pakistan-based turnkey provider delivering telecom, renewable energy, MEP, construction, instrumentation, and renovation solutions since 2006. Evolving from Interface—A Telco Resource Firm and incorporated as a private limited company in 2019, IEC couple's deep telecom heritage with a fast-growing Solar Power Systems business.

Our teams execute end-to-end design, build, commissioning, and O&M, backed by in-house PV design using Helioscope, SketchUp, and 3D structure modeling.

We practice ISO 9001, ISO 14001, ISO 45001, and OHSAS 18001 frameworks and hold PEC and SECP registrations.

With a strong footprint in Sindh and Baluchistan and support offices in Lahore and Islamabad, IEC has delivered 5,800+ telecom sites and nearly 30 MW across industrial, commercial, and residential solar portfolios.

Our HSE-first culture emphasizes risk assessment, training, and zero-incident execution.

Clients across telecom, industry, healthcare, banking, and retail rely on IEC for rollouts, upgrades, audits, maintenance, and customized training in HSE, transmission, core networks, FTTH, and solar PV.

Guided by integrity, innovation, and customer success, IEC delivers efficient, timely, quality solutions that create sustainable value nationwide. We partner with clients as a single point of accountability from feasibility to lifecycle support, backed by experienced engineers and logistics capability.

ACM GROUP OF INDUSTRIES

ACM is a conglomerate company which is collectively committed to exhibiting excellence and innovation in every situational manner. The ACM Group comprises dynamic establishments that contribute diversely in their respective domains and more, including:

- Pakistan Accumulators (Pvt) Ltd.
- ACM Hi-Tech Engineering
- ACM Plasco International
- ACM Mines & Minerals
- MTM Developers
- MTM Traders
- ACM Refineries

The ACM Group thrives in advancing, sustaining and expanding by concurrently maintaining the principles of integrity, motivation to innovate and fulfilling the social responsibility. ACM is dedicated to fostering prosperity across society, nurturing the environment, and contributing to the global economy. Our diversely extensive experiences range of experiences empowers us to envision and achieve the highest standards of excellence.

Join us to shape a more promising future through exploration, transformation, and progress. ACM Group is not just a chain of companies, instead it is the foundation of visionaries who strive to thrive towards a better future every day.

WORLD WIDE CABLES (PVT) LTD

Founded in 2001 by Mian Muhammad Kashif, Worldwide Group has grown into a leading force in Pakistan's cable industry. Starting with instrument leads, the company expanded into flexible cables and battery leads, quickly becoming a market leader through quality and innovation. By 2008, it added solar cables and house wiring to its portfolio, distributed nationwide.

Driven by its philosophy to "do the un-doable," Worldwide began manufacturing products previously imported, including Ethernet cables (CAT-5, CAT-6, CAT-6a) and RG-59 CCTV cables. Later, it advanced into Optical Fiber Cables for PTCL's telecom networks, reinforcing its role in Pakistan's digital infrastructure. In 2020, all operations were consolidated under Worldwide Cables (Pvt) Ltd.

With state-of-the-art facilities at Sundar Industrial Estate, Lahore, the company uses advanced imported machinery, 99.99% pure copper, premium polymers, and rigorous testing standards. Continuous R&D and workforce training ensure uncompromising quality. Safety and sustainability remain core, with LSZH insulation for house wiring and XLPO upgrades for solar cables.

Today, Worldwide manufactures a complete range of Power, Solar, Ethernet, Fire Alarm, CCTV, and Optical Fiber Cables. Recognized with the Technical Excellence Award 2025 for its solar cables, the company continues to drive innovation, supporting Pakistan's solar, networking, and power industries.

NIPPON ENERGY

Nippon Energy has evolved from an EPC and solar development company into a comprehensive manufacturer of renewable energy solutions. We now specialize in the production of HJT and TOPCon solar PV panels, lithium batteries, and solar inverters.

Our manufacturing process is driven by cutting-edge technology and a commitment to quality. We utilize state-of-the-art equipment and adhere to stringent quality control measures at every stage of production.

Our Vision

Empowering a Clean, Intelligent Energy Future.

At Nippon Energy, our vision is to lead the global transition to sustainable, smart energy by delivering cutting-edge solar, storage, and power electronics technologies. We aim to redefine how the world produces, stores, and secures energy—driven by AI, innovation, and the highest standards of engineering excellence.

Our Mission

Innovate. Integrate. Inspire.

Design and manufacture AI-powered inverters, next-generation solar modules (HJT & Perovskite), and high-performance lithium battery systems.

Embed intelligent software, security (blockchain), and R&D into every solution we deliver.

Enable energy independence and reliability for industries, communities, and nations through scalable, integrated clean energy ecosystems.

Continuously push the boundaries of renewable energy through relentless innovation and research.

By building facilities that are sustainable and introducing cutting-edge latest technology, we improve and optimize energy utilization through eco-friendly and effective solutions.

GROWATT

"Let's Store the Sun for Pakistan"

Marks Landmark Solar Industry Gathering in Karachi

EU Report

Growatt, a global leader in inverter and energy storage solutions, successfully staged its flagship event "Let's Store the Sun for Pakistan" at Mövenpick Hotel, Karachi, drawing an elite audience of government officials, industry leaders, EPC contractors, distributors, influencers, and end-users. Widely regarded as the solar industry's most significant gathering of the year, the event showcased Pakistan's accelerating journey towards renewable energy and innovation.

The ceremony was graced by Chief Guest, Dr. Mirza Ikhtiar Baig, Member of the National Assembly, Chairman of Baig Group, and Member of the Standing Committee on Commerce. Guest of Honour, Mr. Mushtaq Soomro, Secretary of the Energy Department, Government of Sindh, and Mr. Wazirullah Khan, Former Member of the Federal Board of Revenue, also attended as special dignitaries.

Delivering the keynote address, Mr. Mian Fahad, Country Director for Growatt, highlighted Pakistan's evolving energy mix and the critical role of solar in achieving national energy security. He revealed that Growatt commands 87% of the on-grid inverter market and 46% of the hybrid inverter market in Pakistan, cementing its leadership role. He also underscored Growatt's community-focused CSR initiatives in education, healthcare, and orphanages, and announced the launch of Growatt's next-generation product lineup including WIT, SPM, SPE, and SPH series designed for Pakistan's diverse energy needs.

In their speeches, Dr. Mirza Ikhtiar Baig lauded Growatt's leadership in renewable energy and emphasized the importance of collaboration between the public and private sectors for Pakistan's sustainable growth. Mr. Mushtaq Soomro praised Growatt's contributions toward Sindh's renewable energy roadmap and stressed the need for innovative solutions to address the energy crisis. Mr. Wazirullah Khan spoke on the necessity of policy reforms and fiscal incentives to encourage further investment in the solar sector.

The ballroom was filled with an audience of 200 distinguished guests, including EPC companies, distributors, major importers, installers, and social influencers, who witnessed the unveiling of innovative technology shaping Pakistan's clean energy future. The evening concluded with networking sessions, celebrating a milestone moment in Pakistan's transition towards sustainability. ■

Climate Change's Onslaught in Pakistan

Sajjad Hussain

The writer is a Political Science graduate from Punjab University, hailing from Skardu

Once, Pope Francis said, "God always forgives, man sometimes forgives, but nature never forgives." These words have proven to be gospel truth today, as the world is reaping the harvest it has sown in the past century. The unfortunate reality, however, is that those who are not responsible for this maltreatment of nature must bear the brunt of those who are. For example, the largest carbon contributors are the countries of the Global North, including China, but the worst hit are the poor countries of the Global South.

The claims and promises under the Kyoto Protocol, the Paris Agreement, and the COP conferences have yet to be realised. Article 10(c) of the Kyoto Protocol suggests that countries work together to develop, share, and finance environmentally friendly technologies and methods that help fight climate change. Article 9(1) of the Paris Agreement requires developed countries to provide financial resources to developing countries to combat climate change. At the COP27 conference in Egypt, developed countries were assigned to set up a loss and damage fund to help developing countries mitigate and adapt to the effects of climate change.

Pakistan and Bangladesh — From Bitter Pasts to New Pathways

Therefore, without the disbursement of funds for loss and damage by developed countries, the survival of developing nations such as Pakistan, in the face of climate-induced catastrophe, remains at stake.

As far as Pakistan is concerned, its contribution to global carbon emissions is less than 1%; however, it is one of the most vulnerable countries to climate change. The floods of 2022 lent credence to this, causing immense economic loss to Pakistan. They rendered 33 million people homeless and inflicted over US$30 billion in GDP losses. For the first time in the country's history, the northern region experienced glacial lake outburst floods (GLOFs) on a larger scale. Almost 3,044 glacial lakes were formed in KP and GB, of which 33 were identified as vulnerable to outburst.

The recent onslaught of floods in Gilgit-Baltistan (GB) and Khyber-Pakhtunkhwa (KPK) is hardly without anticipation. The 2022 floods should have served as a wake-up call. According to UNDP, from 2018–21 almost 18 GLOFs occurred; 75 occurred in 2022, and 83 such events were recorded in 2023 alone. The country should therefore have braced itself for the upcoming events.

'TEVTA's historic budget sparks global hospitality careers, empowering rural women'

The GLOF II project, which began in 2017 as a continuation of the first project, has failed to prevent disasters in various areas of GB. The project was primarily focused on empowering climate-vulnerable communities to mitigate the impact of GLOFs by improving community preparedness and disaster response. It aimed to station early warning systems in areas prone to GLOFs, as well as tree plantation, drainage control, and the construction of mini dams.

The GLOFs are not the sole reason behind recent devastation in northern Pakistan. Cloudbursts are another factor wreaking havoc in KP and GB. On 21 July, a heavy flood triggered by cloudbursts swept away 15 tourist vehicles in the Babusar area of GB, leaving 5 dead and 15 missing. The cloudburst caused torrential rain that inundated KKH, leaving hundreds of tourist vehicles stranded on both sides of the highway.

The following day, a heavy cloudburst caused a severe flood in Kondus, Khaplu. According to local sources, the flood swept away 50 houses, 20 shops, and 2 mosques. In Skardu, Sadpara Nalla and Burgi Nalla also faced floods after cloudbursts. Important tourist sites — Khamosh and Mantokha Waterfalls, Kharmang — were also severely damaged by flash floods. Cloudbursts also caused devastation in the Ghizer district, destroying agricultural land and basic infrastructure.

Unpacking livestock crisis in flood-hit Malakand division

By the end of the month, 37 villages in GB were declared disaster zones by the government. It estimated the floods caused losses of 15–20 billion rupees through the destruction of homes, crops, and public infrastructure.

On 1 August, a flash flood caused heavy damage to crops, livestock, houses, and educational institutions in the Ishkoman area of Ghizer. The flood was so sudden that residents barely managed to survive. On 6 August, floodwaters from the Shisper Glacier caused severe land erosion in Hassanabad Nalla in Hunza, damaging the protection wall of KKH. On 8 August, another flood from the Shutuber Glacier destroyed water facilities, bridges, and link roads in Gojal, Hunza. On 10 August, floodwater from the Shisper Glacier washed away a section of KKH, blocking the highway for traffic. On 11 August, 7 people died during a water restoration effort in Danyor Nalla after a flood.

In Baltistan, the plight was no different. On 12 August, a glacial flood in Horchas Nalla and Dogoro village in Shigar swept away houses, damaged agricultural fields, and blocked the only road to K2. On 14 August, in Saltoro Siachen, a flood swept away a suspension bridge connecting the village to other areas. On the same day, a flood blocked the Gilgit–Skardu road near Astak Nalla, leaving hundreds of passengers and goods vehicles stranded. At Baghicha, Roundu, floodwater washed away the bridge connecting Skardu to Roundu, causing a severe fuel shortage in Skardu. On 16 August, sudden flooding injured 10 people and killed a young boy in Xhoqgo, Gulapur, Shigar. On the same day, a flash flood in Haldi, Khaplu, damaged Siachen Road. The Sarmo Bridge in Khaplu was swept away after heavy rainfall caused the river water to rise. In Hushe Valley, the only suspension bridge was also swept away. ■

ENERGY NEWS

Pakistan to offer solar projects to Saudi firm

EU Report

Pakistan government has reportedly included two large-scale solar power projects, totalling 2,800 MW, in the Indicative Generation Capacity Expansion Plan (IGCEP) 2025-35, which may be offered to Saudi energy company M/s ACWA Power under a proposed Government-to-Government (G2G) agreement.

According to sources, the National Grid Company of Pakistan Limited (NGC), in a letter titled "Land Acquisition for Solar Power Projects at Layyah, Jhang and Muzaffargarh", informed the Private Power and Infrastructure Board (PPIB) about the inclusion of these projects in the IGCEP.

Shah Jahan Mirza, Managing Director of PPIB, has conveyed to the Power Division that the draft IGCEP—currently under finalization—includes various scenario analyses by the System Operator (ISMO).

Among them are two specific solar PV development scenarios proposing 1,000 MW and 1,800 MW capacity additions, earmarked for potential development by ACWA Power.

However, he emphasized that the offer to the Saudi side would depend on the approval of these scenarios by NEPRA. Mirza also advised the Power Division not to de-notify the land identified for these solar PV projects until the IGCEP is formally approved.

The project's future had earlier appeared uncertain. In November 2023, Pakistan's Ambassador to Saudi Arabia reported that ACWA Power had declined to sign any agreement with Islamabad, citing security concerns. However, a shift in momentum was seen after a delegation of Saudi investors—including ACWA representatives—visited Pakistan and held talks with the Special Investment Facilitation Council (SIFC). Since then, Pakistan's embassy in Riyadh has remained in contact with the company. ■

Pakistan continues to face challenges related to energy affordability

Govt offering incentives to attract private sector investment in renewable energy; electricity usage in the agriculture sector dropped significantly by 34.3 percent; coal continues to play a significant role in the power sector, particularly through projects based on Thar coal; PPIB is facilitating 19 power generation projects with a combined installed capacity of 6,536 MW

Special Report by Mansoor

Pakistan continues to face challenges related to energy affordability, sustainability, and security. However, some key reforms, capacity enhancements, and shifts in the energy mix indicate gradual progress towards a more resilient and diversified energy landscape.

According to the Economic Survey 2025, this year, the total installed electricity generation capacity stood at 46,605 MW, with a progressive shift toward cleaner energy sources. Hydel, nuclear, and renewable sources collectively accounted for 44.3 percent of the installed capacity, up from previous years, while the share of thermal power declined to 55.7 percent. In terms of electricity generation, Pakistan produced 90,145 GWh during July-March FY 2025, of which 53.7 percent was contributed by hydel, nuclear, and renewable sources.

In the petroleum sector, domestic production remained constrained, and reliance on imports continued. However, international oil price stability helped moderate the energy import bill compared to the previous year. Domestic refining capacity utilization remained suboptimal, while efforts to attract investment in refinery upgrades and new capacity continued.

On the natural gas front, the depletion of indigenous reserves remains a major concern. With no significant new discoveries, the country relied heavily on LNG imports to meet domestic demand, especially for the power and industrial sectors. In response, efforts are underway to improve energy efficiency and expand the LNG supply chain infrastructure.

Coal continues to play a significant role in the power sector, particularly through projects based on Thar coal. Indigenization of coal-based energy is being actively pursued, with several Thar coal-fired plants contributing to the national grid. However, environmental concerns and the need for clean technology adoption remain important policy considerations.
The government remains committed to ensuring energy security, affordability, and sustainability through improved governance, enhanced private sector participation, and strategic investment in renewable and indigenous resources. The Integrated Generation Capacity Expansion Plan (IGCEP) and ongoing reforms under the National Electricity Policy 2021 and Alternative & Renewable Energy Policy 2019 provide the roadmap for future sectoral transformation.

Pakistan's total installed electricity generation capacity stood at 46,605 MW, reflecting a 1.6 percent increase compared to 45,888 MW recorded in the corresponding period of FY 2024. The increase can be attributed with the installed capacity of 2,813 MW from net metering. However, the Government of Pakistan terminate Power Purchase Agreements (PPAs) with several Independent Power Producers (IPPs), notably HUB Power, Lalpir Power, Pakgen Power, Roush

Power, Saba Power, and Atlas Power, with effect from October 1, 2024.

The percentage shares of hydel, nuclear,] renewable, and thermal are 24.4 percent, 7.8 percent, 12.2 percent, and 55.7 percent, respectively (Table 14.1). 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 the total electricity generation of 90,145 GWh, the share of hydel, nuclear, and renewable stands at 53.7 percent. This shift marks a positive development of the economy, as the energy mix transitions away from thermal generation towards more sustainable and environment friendly alternatives.

Electricity usage in the agriculture sector dropped significantly by 34.3 percent, falling from 6,951 GWh to 4,566 GWh, which reduced its share from 8.4 percent to 5.7 percent. This sharp decline is likely due to changes in irrigation practices, rainfall patterns, and possibly a switch to diesel-powered or solar alternatives in response to rising electricity costs.

The commercial sector recorded a modest increase in consumption, from 6,776 GWh to 6,898 GWh, slightly raising its share to 8.6 percent. This rise indicates a marginal pickup in business and retail activity, particularly in urban centers.

The role of the Private Power and Infrastructure Board (PPIB) emerges as a cornerstone in Pakistan's efforts to diversify its energy generation sources. As the focal organization charged with the responsibility of promoting private sector investment in power generation and transmission, PPIB is leading Pakistan's energy transition through the facilitation of diversified, secure, and sustainable power production and infrastructure development via innovative public-private partnership and strategic policy implementation.

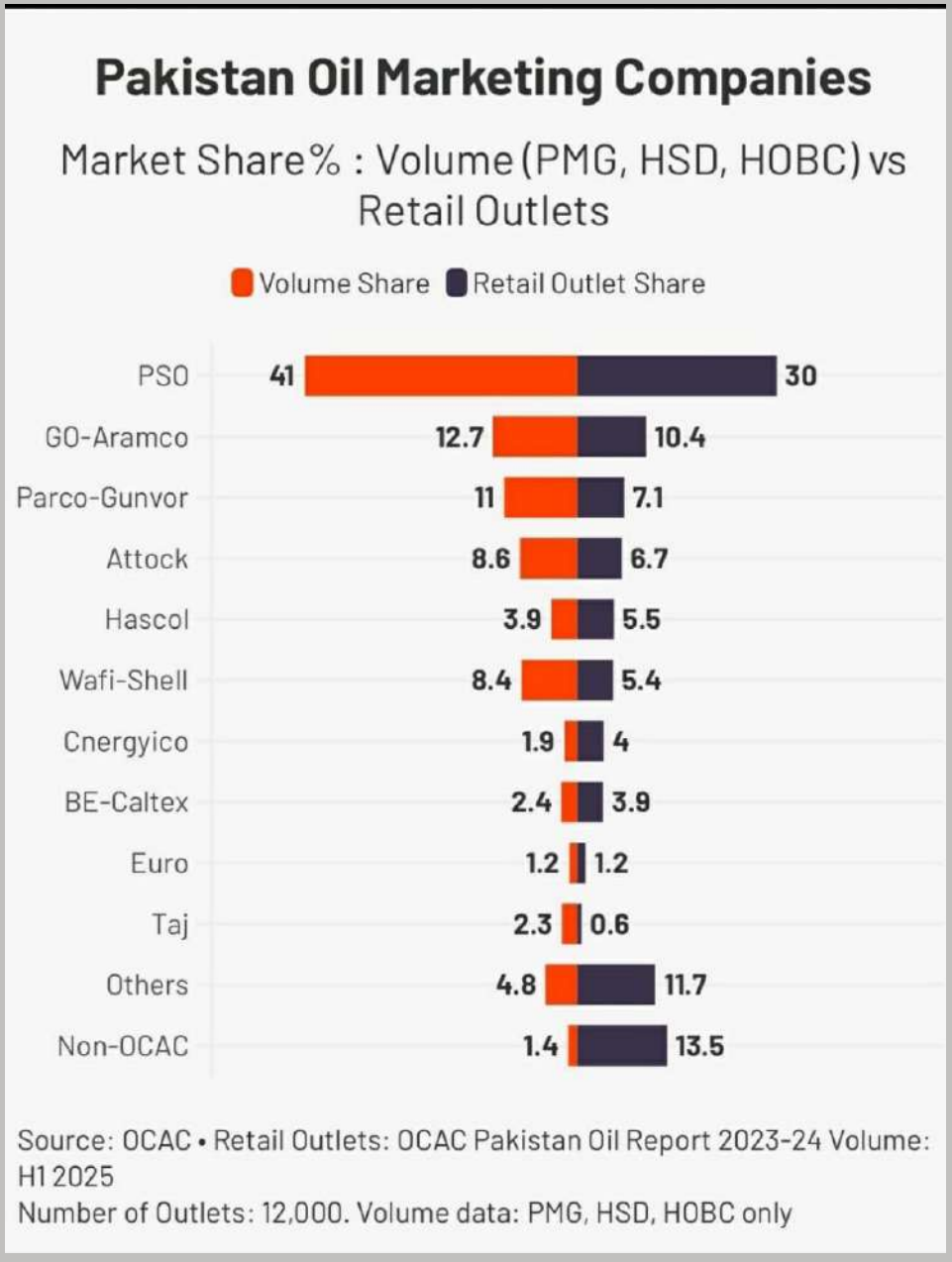
The strategic reduction in installed capacity, driven by the termination of costly and underutilized thermal PPAs, reflects the government's deliberate shift towards a more sustainable, cost-efficient, and environmentally responsible energy future. The government is prioritizing energy security, fiscal prudence, and climate resilience by gradually phasing out expensive fossil fuel-based generation and increasing the share of hydel, nuclear, and renewable sources in the energy mix.

These actions are in line with broader national and international commitments to transition towards low-carbon energy systems, signaling a decisive move toward a cleaner and more sustainable electricity sector. Achieving self-reliance in energy production is essential for reducing economic vulnerabilities, lowering production costs, and enhancing global competitiveness. In this regard, Pakistan's energy sector is making significant strides toward transitioning from imported fossil fuels to renewable energy sources, supported by substantial investments in wind and solar power.

To accelerate this shift, GoP has approved the Framework Guidelines for Fast Track Solar Initiatives 2022, aimed at promoting the development of cost-effective, climate-friendly, and locally sourced renewable energy solutions.

As outlined in the IGCEP-2022, no additional power plants utilizing imported fossil fuels will be developed. By 2030, the share of electricity generated from hydropower, wind, and solar sources is expected to increase from the current levels of 28 percent, 4 percent, and 1 percent to 39 percent, 10 percent, and 10 percent, respectively. This transition will elevate the overall contribution of green energy in the generation mix to around 59 percent.

In support of this shift, the government is prioritizing the enhancement of the regulatory framework and offering incentives to attract private sector investment in renewable energy. These efforts aim to bolster energy security and support climate change mitigation. To this end, the PPIB is facilitating 19 power generation projects with a combined installed capacity of 6,536 MW, all slated for completion by 2034. ■



Solar Pakistan Exhibition concludes on a high note

Sindh fully supports every initiative that promotes industrial collaboration, says Nasir Shah

EU Report

The three-day Solar Pakistan 2025 exhibition successfully concluded at the Karachi Expo Centre, marking a significant milestone in Pakistan's transition towards renewable energy.

The event showcased cutting-edge, industrial-scale solar technologies, many of which were introduced in Pakistan for the first time. Serving as a dynamic platform for business growth, investment, and industrial cooperation, the exhibition resulted in multiple partnerships and agreements.

Addressing the closing ceremony as Chief Guest, Sindh Energy Minister Syed Nasir Hussain Shah said: "Events like Solar Pakistan are vital for highlighting the real potential of renewable energy in our country. The Government of Sindh fully supports every initiative that promotes industrial collaboration, creates economic opportunities, and drives us toward a sustainable energy future."

Commenting on the success of the exhibition, Saleem Khan Tanoli, CEO of Fakt Exhibitions (Pvt.) Ltd, said: "We are delighted to witness the overwhelming participation and keen interest of both national and international stakeholders. Solar Pakistan has proven to be an effective platform of innovation and collaboration that is shaping the future of Pakistan's energy sector."

The exhibition attracted over 250 prominent local and international companies, alongside energy experts, policymakers, and industry stakeholders. Business leaders and the general public also showed remarkable interest, underscoring the growing demand for renewable energy solutions.

Solar Pakistan 2025 created vast opportunities for investment, partnerships, and practical solutions to help address the country's ongoing energy crisis. The event highlighted innovative technologies, including smart solar panels, hybrid systems, and sustainable energy models designed specifically for rural communities.

Amid rising energy demand and mounting environmental challenges, Solar Pakistan 2025 underscored the urgent need for a transition to renewable energy and presented a comprehensive roadmap for accelerating the growth of sustainable power in Pakistan. ■

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Nature Punishes Neglect

Climate priorities: Mistakes still not addressed

Arifa Noor

The writer is a journalist

The monsoons came earlier this year. But they were not unexpected. The very people who had been warning us of a terrible summer with its punishing heat had also cautioned that the rains would come early and would come down hard. And yet, the country continued to be distracted by the usual business of politics.

It is no wonder then that the ferocity of the rains took most of us by surprise in the mountains, in the plains and in the cities — both those we claim are well run and those where the governance crisis is so severe that we discuss it ad infinitum.

Partisan views aside, there is little evidence anywhere of any of the governments — provincial or federal — being prepared to

deal with the rage of climate change. In fact, in most places, when nature spins out of control, it is helped in its destruction by the mistakes of governance.

The mistakes have not been addressed even though it has been three years since the super floods of 2022. The havoc that the deluge caused should have convinced us to change our errant ways. But it seems that it has not.

The rains, their pattern, the rising temperatures, even the pollution in winters — how often has everyone been warning about them and about what some of these factors mean for our mountains and glaciers? But governments are said to have encouraged or turned a blind eye to those wielding the axe. According to those who keep an eye on the issue, the rate of deforestation has a direct link with the damage caused in the northern parts of the country.

The mistakes have not been addressed even three years after the super floods of 2022.

Even after the devastation, there is not much discussion of what needs to change. Judging from the actions of those in power to most of the reporting on the issue, there is little effort to understand what has happened. Had it not been for the footage on social media, I doubt most of us would even know about the level of destruction.

Indeed, our reporting and the ensuing discussion are about some missing technology — the early warning system — which got stuck in bureaucratic red tape. That is a story which appeals to us far more than the cutting down of trees in the north.

But I would be wrong to say that this is the only preferred topic. Encroachments are another favourite subject. The encroachments on riverbeds have been a recurring theme since the 2010 floods but neither the people, who have to pay to reconstruct the 'encroachments' again and again, or the government, which has to help the people pick up the pieces, makes any difference to the policies or administrations that allow this. Come the next floods, and the hotels by the river will still be there.

Sadly, despite this scenario, prime ministers and chief ministers will only talk about this. Shehbaz Sharif, who mentioned it during his trip to the affected areas up north recently, is no different.

If I make a guess, then encroachments and their removal tend to be a comfortable subject for most of our ruling elite, regardless of party or province. It is somehow linked with their idea of good governance — for instance, bigger, wider roads for cars or the space to build automobiles, as well as their discomfort perhaps with shabby buildings or carts owned by the poor. And because it is easy to implement their words in the case of poor segments, it's a comforting promise to make.

The idea or notion of encroachments is complex and can also refer to the overreach of the rich, which is easily ignored. Rarely do we refer to the upmarket housing societies built on prime agricultural land as encroachments, or even to expensive homes whose construction involves covering water channels or altering the level of the riverbed.

Indeed, nearly every year, Islamabad is witness to chaos as rainwater makes its way through land where its path has been blocked or narrowed. And yet, the conversation about encroachments for us begins and ends with images of a shoddy hotel falling into a river in the north of the country. Or the cart of the poor person or the shantytowns where migrants live. But be it the environment or security, only some of these 'encroachments' are tackled.

All of this happens because none of us want to accept that a large part of this environmental disaster is caused by our development model — be it in the cities or the mountains.

A development model which thinks construction is progress — be it the hotels in the north or big interchanges, wide roads in the middle of cities or sprawling housing societies on their outskirts. Indeed, other than Karachi, no city in Pakistan is trying to encourage vertical growth; it's far easier to allow property developers to cut down trees, take over agricultural land and build housing societies on it.

Of course, all of this is connected to Pakistan's population explosion. And this is a topic that we just can't be bothered to discuss — ever.

All of this ronadhona (and it is little else than lamenting) might sound familiar to regular readers (if there are any) of this space. But it is hard to avoid this as the environmental crisis grows with every passing season and every passing year. In the meantime, it appears hopeful that unlike three years ago, the entire focus of our ruling elite is not to speak of climate justice and ask the world for money to fix this.

Though only time will tell if this relative silence means they are ready to take some responsibility or not — responsibility which moves beyond announcing compensation and then providing it to some extent.

Power export beyond borders

Dr Ikramul Haq
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The menace of circular debt has today become one of the gravest threats to Pakistan's sovereignty and survival, rivaling the scourges of terrorism and insurgency that have long plagued the state.

The circular debt in the power sector has already surpassed five trillion rupees, creating a financial vortex that cripples the government, suffocates economic growth, and burdens citizens with unaffordable tariffs.

Unless Pakistan begins to think imaginatively, innovatively, and courageously, this spiraling debt will continue to erode the very foundations of the national economy.

One solution, which is both viable and strategic, lies in transforming Pakistan into a regional exporter of electricity, supplying power to Afghanistan, China, and even India, thereby ensuring not only the monetization of Pakistan's surplus energy but also the creation of a unified regional grid that could anchor stability, interdependence, and peace.

In the last two years, Pakistan, China, and Afghanistan have held multiple sessions of the Trilateral Foreign Ministers' Meeting, yet the outcomes remain little more than scripted press releases, with no clarity about concrete achievements or actionable steps toward grid connectivity. The truth is that nobody knows whether there has been any genuine progress, for the discussions remain cloaked in diplomatic ambiguity.

What is certain, however, is that while official communiqués speak of cooperation, the ground realities tell another story. The outlawed Tehreek-e-Taliban Pakistan (TTP) invaders from Afghanistan continue to launch deadly attacks in Khyber Pakhtunkhwa and Balochistan, killing soldiers and civilians alike.

The metaphor is painfully clear: Pakistan and Afghanistan are not "on the same grid." Neither in energy nor in security do the two countries operate with alignment, and until such time as they are brought onto one common platform, both will continue to bleed—Pakistan in particular, with its soldiers' blood flowing in the borderlands and its economy drained by the circular debt crisis.

The question then arises: how can these neighbors be brought onto one grid? This is not a rhetorical issue but a matter of national survival. The hope is that the articulation of this argument may reach policymakers who today face simultaneous challenges of insurgency, terrorism, economic fragility, and now the more insidious threat of circular debt that has begun to undermine national sovereignty more effectively than terrorism ever did.

The solution requires out-of-the-box thinking and applied strategy, but such strategies demand statesmanship and loyalty to Pakistan rather than loyalty to entrenched interest groups. To understand why this path is both necessary and feasible, it is essential to examine the current installed capacity and future electricity demand of China, Afghanistan, and Pakistan.

In November 2014, one of us, Engineer AHA, had already written a letter to the Prime Minister of Pakistan prior to his scheduled visit to Beijing, emphasizing the need to connect Pakistan's electricity grid with that of China. That suggestion was made in recognition of the historic ties between the two nations and the vast strategic potential of bilateral cooperation. It remains on record, and it is more

relevant today than ever.

China already has an installed capacity of 3,349 GW, with over 56 percent from renewables, but this falls short of its future needs. By 2035, electricity demand will soar due to industry, transport electrification, data centers, and artificial intelligence (AI), with renewable capacity expected to double by 2030 to over 3,000 GW, still insufficient. Connecting Pakistan's northern grid to Xinjiang could allow surplus Pakistani hydropower and renewable energy to flow into China, helping meet demand while generating revenue for Pakistan.

The Afghan case is different but equally pressing. Afghanistan generates barely 600 megawatts of electricity domestically, drawing from hydropower plants, fossil fuel stations, and some solar installations. Its demand, however, is estimated at a minimum of 5,000 megawatts, potentially rising to 7,000 megawatts as the population grows, expatriates return, and the economy finds its feet. To bridge this deficit, Afghanistan already imports more than 720 megawatts from Iran, Tajikistan, Turkmenistan, and Uzbekistan, yet tellingly, not a single watt from Pakistan.

This is both a political and technical failure. If Pakistan were to supply electricity to Afghanistan, the latter could reduce dependence on Central Asia while Pakistan would gain a guaranteed external market as well cementing of relations with a neighbour sharing cultural bonds and geopolitical interests.

Such an arrangement could do more than solve energy shortages: it could bind Kabul and Islamabad into a shared economic destiny, making militancy less appealing and stability more mutually rewarding. Electricity in this sense becomes more than a commodity; it becomes a currency of peace.

Paradoxically, while Afghanistan languishes in shortage and China thirsts for energy, Pakistan itself is caught in the contradiction of abundance amid collapse. The country's installed capacity stands at 46,605 megawatts, including a 2,813 megawatt increase from net metering.

Yet this figure is deceptive, for much of the capacity remains unused due to inefficiencies in generation, transmission, and distribution. Even more alarming is that demand is actually shrinking at a rate of 10 to 12 percent annually, as citizens revolt against unaffordable tariffs dictated by National Power & Regulatory Authority (NEPRA), Central Power Purchasing Agency (CPPA), Private Power and Infrastructure Board (PPIB), and the Ministry of Power.

Nearly half of Pakistan's electricity is consumed by domestic users, many of whom are now abandoning the grid in favour of privately financed solar systems, even if it means selling household belongings or cattle to afford the panels. In the agricultural sector, too, farmers are migrating to independent solar solutions, escaping from the state's exploitative electricity regime. It is feared that within a year, only those engaged in outright theft will remain tied to the government's grid, while honest consumers will exit altogether. The rapid advancement of long-life battery technology only accelerates this exodus.

Despite collapsing demand, the state continues to add more capacity. The PPIB remains committed to inducting Independent Power Producers with a combined capacity of 6,026 megawatts regardless of the consequences. Meanwhile, mega projects like the Diamer-Bhasha Dam, Mohmand Dam, Dasu Hydropower Project, and Tarbela's Fifth Extension will add more than 12,000 megawatts in the near future.

With an existing overcapacity of nearly 35,000 megawatts, one must ask what rational plan exists for this additional power. Already burdened by 5 trillion rupees of circular debt, how much further will this overcapacity inflate the crisis? Has any government thought through this paradox? Sadly, the answer is no, and official blueprints such as Uraan Pakistan conveniently omit the terrifying implications.

It is therefore clear that Pakistan must turn surplus electricity into an export commodity. Afghanistan is an obvious buyer, China an immense market, and India—despite being an adversary—should not be ignored. India has already suspended the Indus Waters Treaty to construct hydropower projects generating 14,000 megawatts on the Western Rivers. Were Pakistan to sell electricity to India instead, it could contribute to the preservation of forests in Kashmir and Himachal Pradesh, which otherwise face devastation from the construction of hydropower projects. This proposal may appear politically radical, but it is not without precedent.

India itself has built electricity connectivity with Nepal, Bhutan, Bangladesh, Myanmar, and is pursuing similar links with Sri Lanka. By contrast, Pakistan has failed even to connect Gwadar and Gilgit-Baltistan to its own national grid, thanks to bureaucratic inertia in National Transmission & Despatch Company (NTDC) and the Ministry of Power. If India can pursue rational interconnectivity with its neighbours, Pakistan too can consider strategic engagement, even with an adversary, for the sake of national survival.

The broader vision is unambiguous. By connecting with China, Afghanistan, and eventually even India, Pakistan can export its surplus electricity, monetize stranded capacity, stabilize its power sector, and reduce the circular debt that today threatens sovereignty itself. At the same time, such connectivity would promote economic interdependence, reduce the appeal of militancy, and turn electricity into an engine of peace and prosperity.

The alternative is grim. Without exports, Pakistan's overcapacity will remain idle, feeding only into greater circular debt until the power sector collapses under its weight.

The urgency cannot be overstated. Circular debt today is a more dangerous enemy than terrorism, because it erodes sovereignty silently and persistently.

Terrorism may kill the body, but circular debt kills the soul of the state by weakening its financial capacity to govern. If Pakistan fails to act, the over-installed capacity of 35,000 megawatts will transform from an asset into a noose around the economy's neck. If it acts wisely, however, it can convert this into a strength, exporting electricity to neighbors and positioning itself as the hub of a regional grid.

The conclusion is therefore simple but urgent: Pakistan cannot survive by generating electricity for domestic consumption alone. It must export it, integrate it, and bind its destiny with the region on one grid, one future. This is the only path that can arrest circular debt, stabilize the economy, and create the conditions for lasting peace. ■

Power sector circular debt slashed by Rs780bn

Officials say better Disco performance saved Rs200 billion, with other interventions trimming costs further

EU Report

Pakistan has slashed its power sector circular debt by Rs780 billion to Rs1.614 trillion, a move government credited to lower line losses, improved bill recovery and savings from renegotiated Independent Power Producer (IPP) contracts.

The Power Division disclosed the reduction to the National Electric Power Regulatory Authority (Nepra) during a public hearing on distribution companies' (Discos) petition for the fourth-quarter tariff adjustment (QTA) of last fiscal year. Officials said better Disco performance saved Rs200 billion, with other interventions trimming costs further.

But industrialists warn the relief could be short-lived, accusing the government of using bank loans to wipe arrears. Power division official said that Rs1.275 trillion more is being raised from banks to pare down circular debt, adding the borrowing would not require the imposition of any separate surcharge for repayment.

While hearing the Discos' case of QTA, the power regulator said electricity consumers could see a Rs1.8 per unit cut under the April–June 2024-25 QTA. If it was approved, then Discos will have to refund Rs53.393 billion, including K-Electric customers. The cut stems from a Rs53.7 billion drop in capacity payments and Rs662 million in transmission gains, partially offset by Rs182 million in maintenance and Rs804 million in system fees.

The hearing also highlighted contradictions between official data showing a 49 per cent jump in industrial power consumption and industry's claims of factory shutdowns. Nepra Member Maqsood Anwar questioned, "If industries are consuming more power, why are they claiming closures?"

Officials said four power plants and the Neelum-Jhelum hydropower project remained offline, yet consumption grew as industries shifted captive power generation to distribution companies (Discos). Nepra sought a detailed briefing on the load shift. However, the closure of the Neelum-Jhelum Hydropower Plant adversely impacted the sector by Rs18 billion.

The session revealed 128,000 new connection applications pending nationwide, representing 1,070 megawatts of potential load, along with 4,000 pending net metering requests, half of them in Faisalabad Electric Supply Company (Fesco). Nearly 70,000 defective meters also remain in use.

Quetta Electric Supply Company (Qesco) Chief Executive Officer disclosed that 13,000 to 14,000 tube well connections have been disconnected in line with the prime minister's directive to shift agricultural tube wells to solar energy. "This has reduced electricity consumption in our service area," the CEO said. The Nepra said that it will issue its final QTA decision after reviewing data and stakeholders' feedback. ■

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'RLNG: Supply glut or policy failure?: KE's response'

Imran Rana

The writer is a seasoned marketing and communications professional with a focus on Pakistan's energy sector

It is important to clarify certain points and provide factual context to the assertions made. The article's assertions are factually incorrect. K-Electric (KE) does not contract directly with international RLNG suppliers, rather, it utilizes RLNG procured under existing government contracts through its Gas Sales Agreement with Pakistan LNG Limited, the terms of which have been appropriately disclosed to Ogra and Nepra.

RLNG: Supply glut or policy failure?—II

Therefore, the responsibility for managing RLNG procurement, including cargo diversions, rests solely with the relevant government entities. It is inappropriate to attribute this responsibility to KE, whose role is limited to utilizing the RLNG as per Gas Sales Agreement.

We would like to highlight that commissioning of KE's RLNG plant was not out of corporate preference but as a result of actions and policy of government. Following 2009, there had been drastic reduction in local gas supply to KE and since 2018 the major portion of supply from SSGC comprised of imported RLNG and till recent amendments a major portion of local gas was being supplied to captive consumers.

The matter of inadequate supply of indigenous gas is also a sub judice matter and being contested in courts. Furthermore, KE's earlier plan to add a 700 MW Coal Plant was set aside at the government's request due to surplus national grid capacity.

Based on above, commissioning an efficient RLNG based plant was the only viable option to reduce reliance on the expensive legacy BQPS-I and prevent load-shedding. Since its commissioning, BQPS-III has not only avoided outages but also saved over PKR 100 billion in fuel costs for government and consumers due to its superior efficiency, ranking it amongst the most efficient power plants in Pakistan.

Moreover, KE's Vision 2030 commits to 30 percent renewable sourcing, in alignment with national energy policy. Three projects — the 220 MW Dhabeji wind-solar hybrid and 150 MW solar projects at Winder and Bela in Balochistan — have received Nepra's approval.

Dhabeji's tariff, determined via open competitive bidding, is the lowest levellised solar-hybrid price cleared in Pakistan to date, ensuring more affordable power once operational. Together, these projects will shift the portfolio toward lower-cost, zero-fuel-cost energy. 'Under Vision 2030', KE targets 30 percent renewables, a 30 percent cut in outages, and 95 percent load-shedding exemption city-wide, backed by USD 2 billion in fresh investment.

RLNG: Supply glut or policy failure?—I

KE's generation cost differs from CPPA-G because KE does not have access to nuclear or large hydropower resources, nor is it supplied with sufficient indigenous or low-Btu gas to run its plants. Had KE received the committed supply of indigenous gas, its fuel costs, and thus electricity generation costs, would have been lower.

Finally, it is important to note that K-Electric's electricity consumers are not charged a higher price for electricity; customers nationwide pay base tariff and quarterly adjustments according to the uniform tariff policy determined by the Government of Pakistan. The only variation lies in Fuel Cost Adjustment (FCA) charges, which importantly have consistently remained lower than those charged by XWDISCOs nationwide. ■

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Power generation capacity may surge by 49pc

Mushtaq Ghumman

Pakistan's installed power generation capacity is projected to increase by 49 percent, reaching 64,035 MW by 2025, up from 43,069 MW in 2024, according to the Indicative Generation Capacity Expansion Plan (IGCEP) 2025-35.

The IGCEP, submitted by the Integrated System and Market Operator (ISMO) to the National Electric Power Regulatory Authority (Nepra), is currently under review and will be formally approved after receiving stakeholder feedback. Alongside this, ISMO has also submitted the Transmission System Expansion Plan (TSEP) 2025-35.

Together, the generation and transmission plans require an estimated investment of over USD50 billion over the next decade.

PM approves 10-year IGCEP 2025–35

According to the IGCEP 2025-35, ISMO has presented different scenarios: peak load will reach 43,069 MW in 2035 from 26,913 MW in 2024 with 4.4 per cent increase in load growth. Nearly 61 percent of electricity is to come from renewable sources — mainly hydro, solar, and wind.

Hydropower will be 21,395 MW (34 percent) while solar is expected to rise to 21 percent. RFO 918 MW (1), imported coal 4,680 MW (7), local coal 3,300 MW (5 percent), RLNG 8,224 (13 percent), gas 1,4 33 MW (2 percent), nuclear 4,730 MW (7 percent), baggasse 400 MW (1 percent), cross border 1,000 MW (2 %) and wind 4,711 MW (7 percent).

The country's installed capacity which was 41,516 MW in November 2024 expected to reach 64,035 MW in 2035. Of this, generation from local is expected to touch 3,300 MW, hydro, 21,395 MW, RLNG, 8,224 MW, nuclear 4,730 MW, imported coal, 4,680 MW, RE, 18, 455 MW, natural gas 1,433 MW, furnace oil 819 MW and cross border (CASA) 1000 MW.

The results obtained from above scenarios show that the capacity would become excess in future. Consequently, the electricity tariff will touch the highest numbers making it unaffordable for a common person. Hence, there is a dire need to rationalize the capacity addition required to meet the future load demand.

In this regard, only under construction power plants have been considered as committed, remaining all power plants are modelled as candidates for least cost selection by the planning tool. The following sensitivities are performed in this scenario:

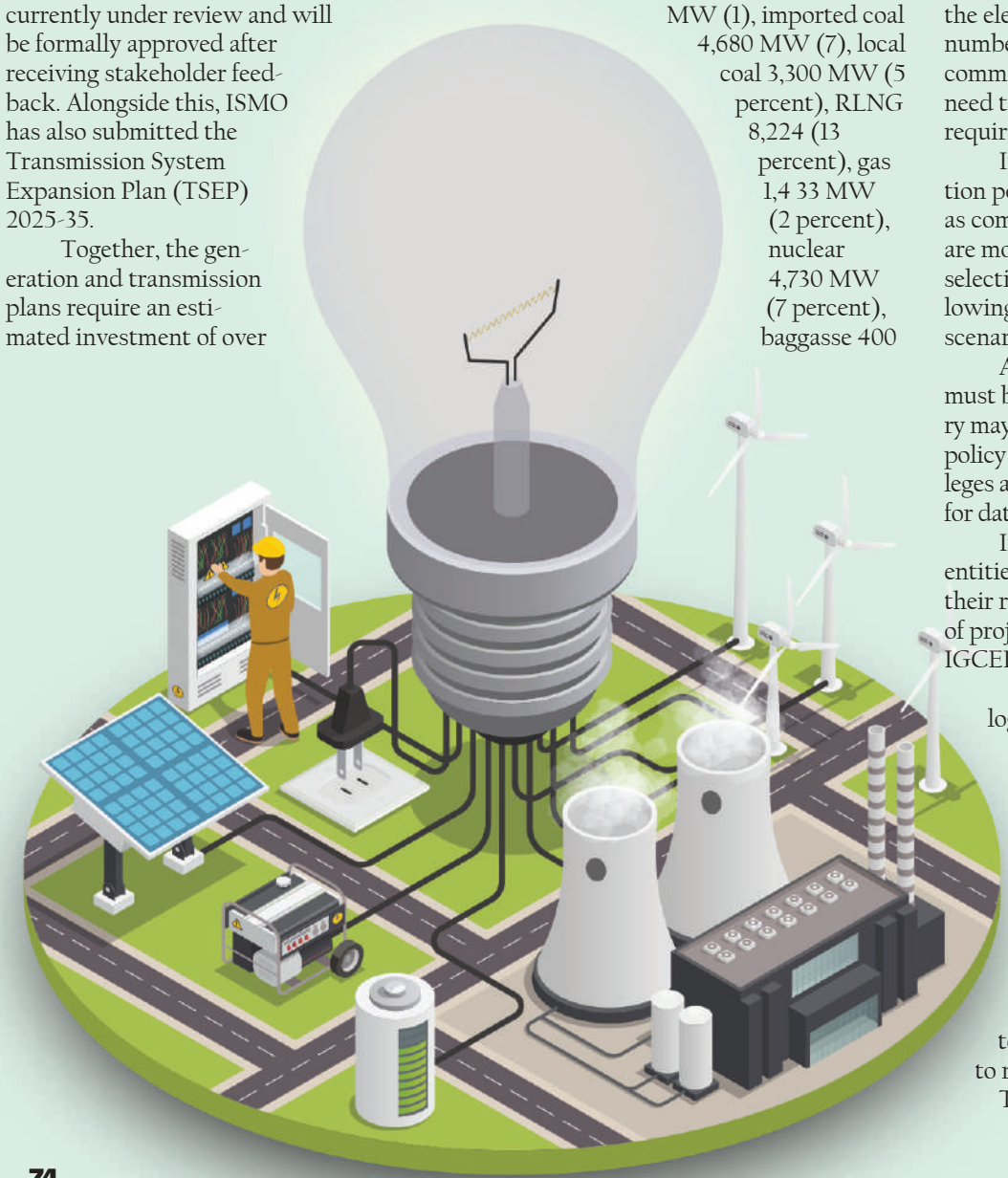
Access to relevant and quality data must be facilitated. A central data repository may be formed to facilitate planners and policy makers, having specific data privileges and to ensure access to quality data, for data modeling and decision making.

In a similar vein, project execution entities should enhance and accelerate their response, with respect to provision of project data to NGC, for updating of the IGCEP, in a precise and timely manner.

Keeping in view the latest technological changes and latest advancements in the power supply and delivery business, customized trainings should be provided, especially for the power system planners, system operators, and DISCO staff.

In order to ensure indigenization of energy mix with higher share of clean energy, future plans are required to be aligned with international best practices pertaining to renewable energy.

Though not envisaged in the pre-



vailing schemes, wind power projects can provide grid support such as frequency regulation, voltage regulation, and reserve power provided hybridization is opted with solar PV as well as battery energy storage. Grid impact and economic implication studies for individual wind power project will need to be carried out by the stakeholders.

The combination of wind and solar PV has the advantage that the two sources will complement each other since the peak operating times for each system occur at different times of the day and year.

The power generation of such a hybrid system including battery storage, is more continuous, ie, fluctuates less in terms of time and frequency if these are developed and operated jointly.

Enabling environment including regulatory and commercial arrangements as well as technical studies should be undertaken for this purpose to maximize the value of indigenous energy resources. The relevant project execution agencies should provide data hybrid RE technologies.

System operational performance and grid flexibility studies are required to be carried out for VRE intermittency management to ensure its optimal region wise penetration by considering ramping up/down capability by synchronous generators in the system and FACTS/ BESS applications. The quantum and/or timelines of wind and solar may vary in future as a result of these studies.

Thar coal reserves are estimated by the Geological Survey of Pakistan to be approximately 175 billion tons – making it one of the largest lignite coal reserves in the world. Thar coalfield, Block II area has exploitable lignite coal reserves of 1.57 billion tons. The total mining capacity of the project is expected to be 20.6 MT/annum.

The ISMO is of the view that the power system planners should be communicated, by the project execution agencies, of the study-based analysis of block-wise potential of Thar coal that can be exploited for generation of electric power so it can be adequately modelled in the generation capacity expansion software for the next iterations.

Similarly, the precision and authenticity of data and information pertaining to hydrology of upcoming hydro power projects needs to be validated by the concerned project execution agencies in the most meticulous manner.

Keeping in view the growing demand of net-metering connections in the country, its impact has been considered in IGCEP.

The net metering targets for the NGC system were rationalized by industry experts as part of a solarization study conducted by the Ministry of Petroleum. This assessment was based on recent historical trends and the volume of solar panel imports recorded over the past year. This capacity of 8,120 MW is modelled at the supply side, since the generation through Net Metering will also be contributing towards meeting the Renewable Energy targets

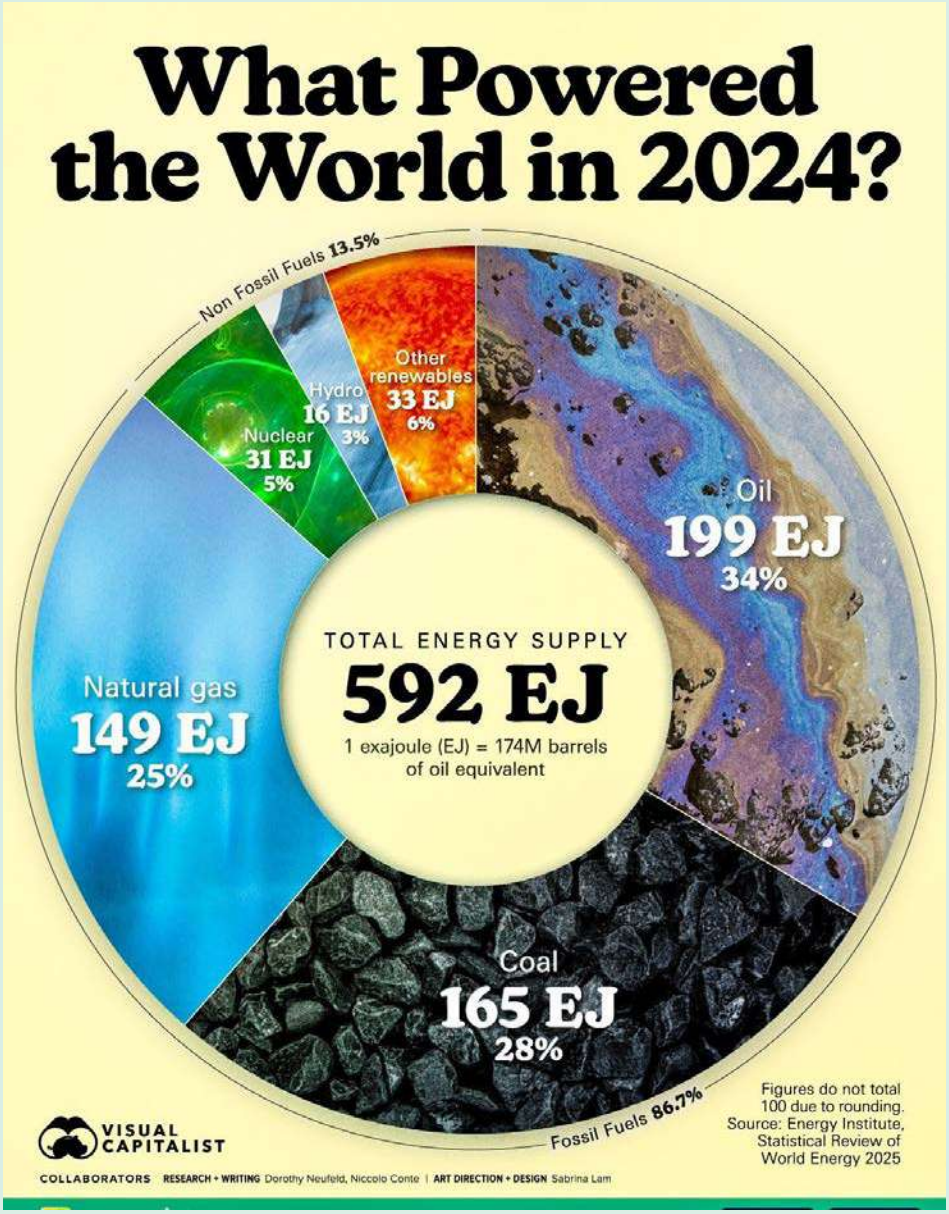
Following the same approach used for the NGC system in the aforementioned solarization study, the net metering targets for the K-Electric system is projected to be 900 MW by 2035.

On net metering, ISMO has stated that the addition of Net-Metering in the recent past has shown very aggressive trend which has also reduced the energy supply from interconnected grid.

However, the present regulations governing the net-metering are showing a great loss to remaining grid connected consumers. Therefore, an amendment in the regulations is very necessary so that the financial burden of infrastructure development should be fairly shared by all the consumers. T

he Government and NEPRA are in a process to amend these regulations. The new policy or regulations should be developed in such a way that there is a balance between both types of consumers.

On EV Policy, ISMO said that the policy for Electric Vehicles was approved in 2019 according to which 30 percent of the vehicles should be EVs until 2030. But the cost of EVs is much higher compared with other types, so the ground realities show that the implementation of the policy is negligible. ■



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