

ENERGY UPDATE

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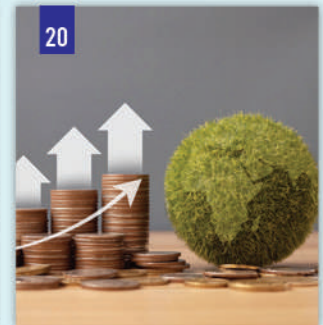


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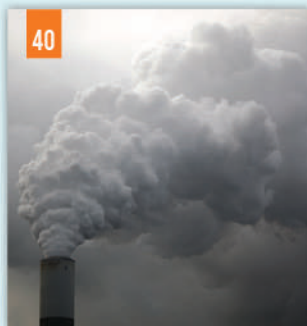
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Winter Package: Another Eyewash

The federal government recently announced the "Bijli Sahulat" winter package to provide some relief to domestic, commercial, and industrial consumers from skyrocketing electricity costs. The package, effective from December 2024 to February 2025, offers a flat rate of Rs26.07 per kilowatt-hour for additional electricity usage. The plan aims to stimulate economic activity, reduce reliance on gas for heating, and optimize electricity use during the low-demand winter season. As per government view, the package also aims to raise the use of available generation capacity while reducing gas demand.

Sorry to say, this package does not include any subsidy because it only excludes unjustified taxes levelled over extra use of electricity above 200, 300 and so on units. The International Monetary Fund (IMF) had earlier rejected a proposal to extend the package duration to six months (December to May). The government should adopt a positive attitude in order to stop too much interference of the IMF into basic facilities of life as this is a human rights violation.

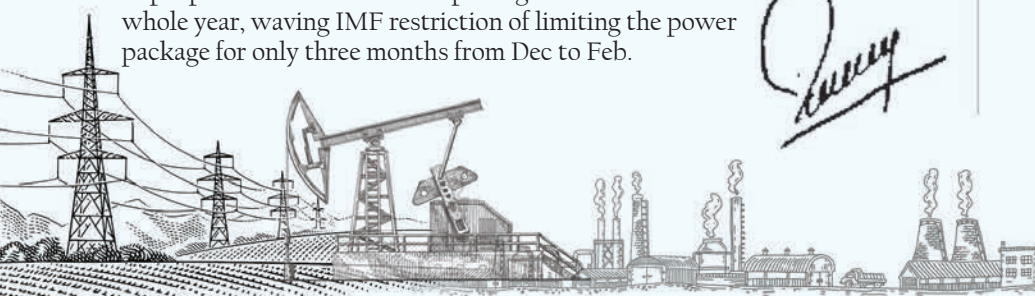
The cost of current electricity generation is approximately Rs26.07 per unit, while the government charges Rs52 per unit by adding unjustified and dictatorial taxes, which is a great injustice. Consumers need immediate subsidy in their power bills for at least one year. The implementation of this winter package will require the power sector to allocate additional regasified liquefied natural gas (RLNG) to meet the increased demand.

The package seems to provide less benefit to common people as its duration is too short. It is just an eyewash. Fact is that this package is actually intended to provide more benefit to the government itself as it is aimed at raising power consumption and sustain tax income because due to the rising solarization trend, power consumption has declined drastically and in winter, it will face more fall as power demand will decline due to low use of electricity.

The government tries to save its own skin, because in winter, gas use will increase almost by 50 percent and it will have to import more gas which is costly. Thus, it bids to turn people to use electricity to generate more money and import less gas.

History is witness that often, packages in Pakistan do not reach the most vulnerable populations due to bureaucratic inefficiencies, hurdles, lack of awareness, or corruption. Urban areas may get some meagre relief, but rural and remote regions will be overlooked as they are undergoing torments of 18 hours of power load shedding. The funding for the package may fall short of addressing the population's needs, resulting in half-measures that fail to make a meaningful impact.

The package may depend heavily on external loans, further straining the national economy. Without proper oversight, funds and resources could be wasted or misappropriated. Addressing these challenges requires a multi-faceted approach, focusing on better planning, transparency, and prioritization of long-term and sustainable relief measures. The good to people will come when this package is extended the whole year, waving IMF restriction of limiting the power package for only three months from Dec to Feb.





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Keeping the lights on

Understanding ancillary services in power grid

Engr Syed Faizan Ali Shah

The writer is a Renewable Energy & Grid Integration Expert, has a decade of experience in solar energy. Currently, he serves on the Prime Minister's Solarization Committee

With distributed generation on the rise, consumers now play dual roles as both energy producers and consumers, making the job of power system operators more complex. Stabilizing the grid amid fluctuating demand and supply—especially with unpredictable sources like rooftop solar and wind—is like balancing on a tightrope.

Ancillary services are the specialized support systems that help operators manage these shifts, protect the grid, and maintain reliable power delivery in an evolving energy landscape. Imagine being a DJ at a huge party, ensuring the music is steady, the lights are on, and everyone's having a good time. Just like a DJ, a power operator keeps electricity flowing smoothly despite unpredictable changes. Let's explore what ancillary services are, how they function, and why they're essential to the grid.

Ancillary services are specialized support functions that stabilize the grid. As electricity use fluctuates, these services keep power consistent, reliable, and safe. Just like a DJ maintains the beat, ancillary services ensure power flows smoothly, even when things go off-plan. There are several types of ancillary services, each designed to handle specific challenges within the power grid. Here's a look at some of the most important ones:

Frequency regulation (keeping the beat steady): Electricity flows in waves at a specific frequency, typically 50 or 60 cycles per second, depending on the country. If demand for power suddenly changes—like when a bunch of appliances are switched on or off—it's like the beat of the music speeding up or slowing down.

But for the party to be enjoyable, the beat (frequency) needs to be steady and stable regardless of who's coming in or out of the room (appliances being switched on or off). Frequency regulation services adjust the power flow to keep this beat stable.

Spinning reserves (backup speakers on standby): At a party, speakers play the main role in delivering music to everyone. If one of your main speakers stops working, you'd want to have a backup speaker ready to take over right away, right? In the power system, "spinning reserves" serve as backup power sources. Generators, like speakers at a party, deliver the power and energy needed to keep everything running. These reserves are on standby, ready to jump in if one of the main power generators suddenly fails. **Voltage control (keeping the volume just right):** When you're adjusting the volume at a party, you

want it to be just right—not too loud, not too quiet. Similarly, voltage in the grid needs to stay within specific levels (as defined in grid code) to protect appliances and electronics. Voltage control services make sure that electricity flows at a safe, balanced level, protecting equipment from damage and keeping the power quality consistent.

Black start (restarting after a power outage): Sometimes, the whole power grid can go down, similar to the music cutting out at a party. When this happens, we need a way to restart the grid from scratch. Black start services are like having an emergency generator that can bring the system back to life after a major outage. It's the "let's get this party going again" plan for when everything suddenly stops.

Effective management of ancillary services hinges on thorough preparation and planning. Power operators must determine the necessary backup power, the timing, and the most efficient deployment strategies. Just like a DJ preparing for a party trying to assess timing and type of guests, power system operators assess an unexpected power surge or generator failure, ensuring they're equipped to handle such changes seamlessly. ■



COP29

storms, pledges, politics

Heatwaves scorched East Africa and South Asia, while flash floods in

Dr Abid Qaiyum Suleri

The writer heads the Sustainable Development Policy Institute (SDPI) and is a member of the COP29 International Advisory Committee

As the 29th edition of the Conference of Parties (COP29) wrapped up in Baku, the world faced yet another dire warning: 2024 is likely to be the hottest year on record.

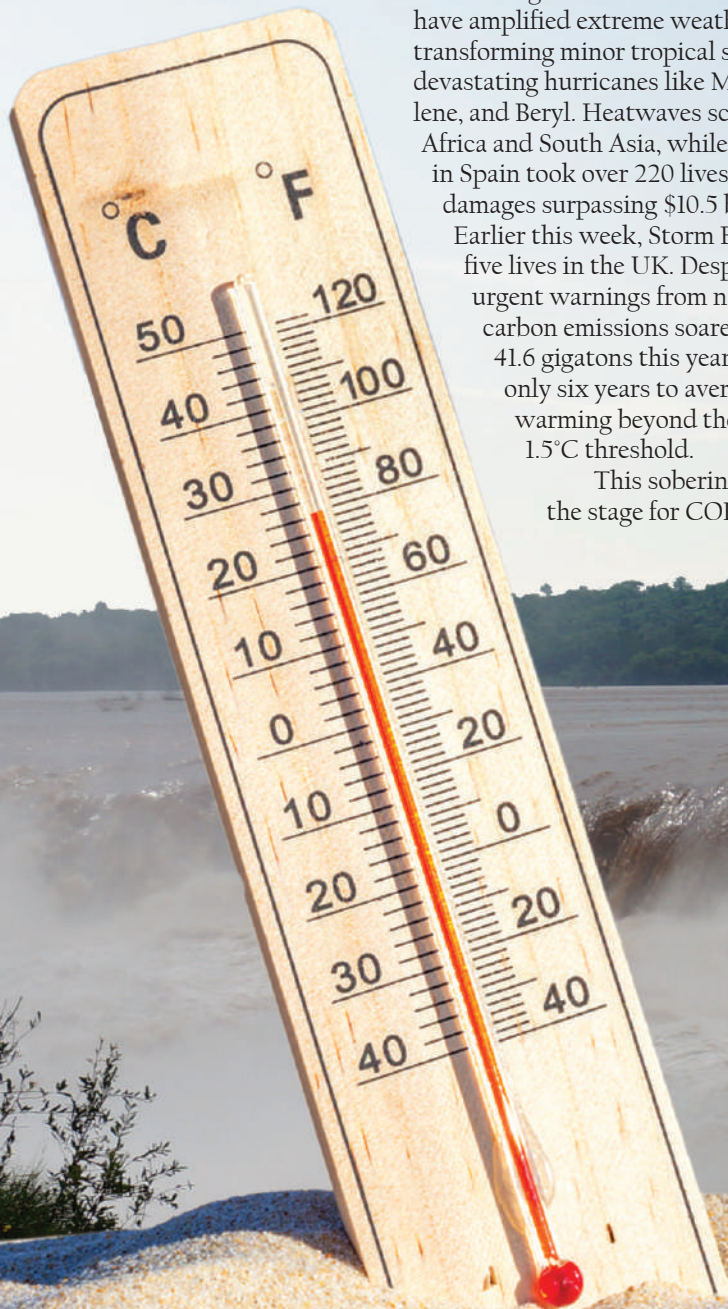
Rising air and ocean temperatures have amplified extreme weather events, transforming minor tropical storms into devastating hurricanes like Milton, Helene, and Beryl. Heatwaves scorched East Africa and South Asia, while flash floods in Spain took over 220 lives and caused damages surpassing \$10.5 billion.

Earlier this week, Storm Bert claimed five lives in the UK. Despite these urgent warnings from nature, global carbon emissions soared to a record 41.6 gigatons this year, leaving only six years to avert irreversible warming beyond the critical 1.5°C threshold.

This sobering reality set the stage for COP29 discus-

sions, focused on tackling unmet commitments from the Paris Agreement, adopted at COP21 in 2015. Key priorities included finalising UN rules under Article 6 to regulate carbon credit trading and advancing financial support from developed to developing nations as mandated by Article 9. Negotiations also aimed to conclude the 'New Collective Quantified Goal (NCQG)' on climate finance, as agreed at COP26 in Glasgow in 2021.

The discussion on the climate finance needs of developing countries took a new trajectory after the UN's Independent High-Level Expert Group on Climate Finance released its report on the third day of COP29. The report estimated that developing countries (excluding China) will require approximately \$1 trillion per year by 2030 and \$1.3 trillion annually by 2035 to deliver the Paris Agreement. This report confirmed that, without sufficient finance, the consequences of climate change would be catastrophic –



supporting the idea that climate finance is not charity but an investment in global stability and a liveable future.

Against this backdrop, the outcomes of COP29 are a mix of hope and frustration. The approval of rules for trading carbon credits under the Paris Agreement, including Internationally Transferred Mitigation Outcomes, on the opening day signalled progress towards operationalising long-awaited mechanisms.

However, this optimism is tempered by significant shortcomings. The approved rules lack clear timelines, robust transparency frameworks, and enforceable compliance mechanisms, leaving critical gaps in their implementation.

The frustrating reality, however, is that the pledged amount falls far short of what is actually needed and comes with significant limitations. The funding sources are vaguely defined, encompassing a broad range of options such as private investments and multilateral lenders. The agreement also lacks robust mechanisms for transparency and accountability, leaving it vulnerable to political backtracking.

Even if the commitment were adequate, its value is steadily diminishing. The \$300 billion pledge is already outdated; adjusted for inflation, its purchasing power will shrink significantly over the next decade. If the average US inflation rate of 2.38 per cent over the past 15 years persists, the pledge will lose 20 per cent of its value by 2035. This reflects a troubling pattern: the \$100 billion target set in 2009 for 2020 was not achieved until 2022, and

inflation rendered it grossly insufficient by the time it was met. Such financial erosion undermines the trust and urgency essential for effective climate action.

Equally troubling is the absence of clarity around key definitions. Negotiators jokingly remarked that reaching an agreement on what qualifies as 'appropriate' climate finance could take until 2100, underscoring the lack of consensus. Without clear guidelines, there is a real danger of misallocating funds, favouring projects that serve donor interests – whether geopolitical or commercial – rather than addressing the urgent needs of vulnerable communities.

Looking ahead to COP30 in Belem, Brazil, in 2025, negotiators must prioritise bridging the gaps exposed in Baku. First, the scale and structure of climate finance must be reimagined to address both current and future needs. Annual funding targets should account for inflation and the escalating costs of climate adaptation and mitigation. Without such adjustments, pledges like the \$300 billion commitment risk being rendered inadequate before they are even fulfilled.

Second, the quality of finance must improve significantly. COP29's reliance on complex financial instruments and private-sector mobilisation failed to provide equitable solutions. Developing nations need accessible funding mechanisms, with grants and low-interest loans forming most commitments. Public finance must play a central role, ensuring that resources reach the most vulnerable nations rather

than favouring those deemed 'market-friendly'.

Third, transparency and accountability mechanisms must be strengthened. The absence of robust tracking systems at COP29 leaves commitments vulnerable to misallocation and political backtracking. Funds must deliver measurable outcomes, and developing countries should have a decisive role in shaping how resources are allocated. This would align with the principle of 'common but differentiated responsibilities' enshrined in the Paris Agreement.

Finally, COP30 must address the root causes of the climate crisis, an area where COP29 faltered. The failure to secure a commitment to phase out fossil fuels was a glaring omission. Without a decisive shift away from fossil fuel dependence, no amount of climate financing will suffice to avert catastrophe. Belem offers an opportunity to correct this oversight by championing actionable strategies to transition toward renewable energy on a global scale.

By building on the momentum of COP29 while rectifying its shortcomings, COP30 and the following COPs can catalyse transformative change. The stakes are too high to settle for incremental progress. The world must move decisively toward a future that prioritises sustainability, equity, and accountability in the fight against climate change. Anything less would betray the urgency of the moment and the needs of the planet's most vulnerable inhabitants. ■



The rollercoaster journey of IPPs in Pakistan

Independent Power Producer's era seems to be nearing its end. Transition to Competitive Trading Bilateral Contract Market is reshaping energy landscape

Tauseef H Farooqi

The writer is the former Chairman of Nepra. Currently serving as CEO of ALTER Consulting Pvt. Ltd.

With Hubco launched in 1994 as the country's first greenfield Independent Power Producer (IPP) and the privatization of Kapco in 1996 to National Power UK, Pakistan positioned itself as a trailblazer in attracting private investments in the power sector. These milestones marked a promising beginning, creating a vision of energy self-reliance and economic growth.

Yet, three decades later, the narrative surrounding IPPs has shifted dramatically. Instead of being celebrated as a success story, the sector has been cast in a shadow of criticism, its image marred by controversies and inefficiencies. So, what went wrong? How did a promising beginning unravel into a cautionary tale?

A house built on shaky policies

The challenges facing Pakistan's IPP sector are deeply rooted in policy missteps. During the 1990s, as the country faced acute power shortages, the governments of the time prioritized quick fixes over long-term solutions. The emphasis was on building thermal plants running on imported fuel, which were faster to set up but came with significant risks.

These decisions exposed Pakistan's energy sector to global fuel price fluctuations and exchange rate volatility. Contracts pegged to the U.S. dollar exacerbated the problem, as rupee depreciation made electricity tariffs unsustainable. The rising costs crippled consumers and strained the economy, further compounded by systemic inefficiencies in transmission and distribution, such as energy losses and poor bill recovery.

The focus on thermal plants and imported fuel left the country ill-prepared for a future driven by renewable energy and self-sufficiency, creating a sector overly reliant on external factors and vulnerable to economic shocks.

Complacency and missed opportunities

While government policies bear a significant share of the blame, the IPPs themselves are not without fault. Many enjoyed guaranteed returns through "take-or-pay" agreements, fostering a sense of complacency. Despite their financial clout and decades of operation, innovation within the sector was notably absent.

For example, hybrid solutions like integrating solar with wind projects—especially in resource-rich southern regions—could have reduced costs and diversified energy production. Yet, such opportunities remained largely untapped.

Moreover, the IPPs fell short in their corporate social responsibilities (CSR). Despite operating for over 25 years, few IPPs invested meaningfully in local community development or initiatives like education,

healthcare, or women's empowerment. Public engagement was minimal, and positive steps taken in areas like Health, Safety, and Environment (HSE) were rarely publicized. This silence allowed negative narratives to dominate public perception.

Perhaps most critically, the IPPs failed to become vocal advocates for structural reforms in the energy sector. They remained silent on key issues such as the need for investment in transmission and distribution infrastructure. By failing to shape the public discourse or challenge misrepresentations, the IPPs found themselves cast as scapegoats for Pakistan's energy woes.

The end of an era

Today, the IPP era in Pakistan seems to be nearing its end. The transition to the Competitive Trading Bilateral Contract Market (CTBCM) is reshaping the energy landscape. By eliminating government-backed financial guarantees and placing risk on market participants, CTBCM aims to create a more competitive and sustainable energy framework.

Simultaneously, advancements in self-generation and energy storage are disrupting the traditional grid model. As solar panel prices fall and battery storage becomes more affordable, households, businesses, and industries are increasingly exploring off-grid solutions. Together, CTBCM and self-generation represent a significant departure from the conventional IPP model, signaling a paradigm shift in Pakistan's energy sector.

Lessons for Pakistan's energy sector

The rise and fall of IPPs offer valuable lessons for policymakers, investors, and energy players: The power sector is the backbone of the economy: Energy drives industrial growth, commerce, and public well-being. Mismanagement in this sector can have cascading effects across the entire economy. Governance is non-negotiable: Effective governance is critical to navigating the complexities of the energy sector. From policy formulation to regulation, putting the right people in the right roles is essential. An independent and competent regulator is central to maintaining balance and

ensuring long-term stability.

Innovation must lead the way: Energy markets worldwide are evolving toward renewables, hybrid solutions, and decentralized systems. Pakistan must adopt similar innovations to remain competitive and sustainable.

4- Community engagement builds trust: Companies operating in the energy sector must invest in their host communities. Transparent communication, CSR initiatives, and public engagement are vital for building goodwill and fostering long-term relationships.

The government's role should be facilitator, not operator: Governments should focus on creating robust policy frameworks and encouraging private-sector participation, avoiding direct operational control. 6- Stakeholder participation is key: From industry experts to community leaders, all stakeholders must contribute to the sector's governance. A collaborative approach ensures that diverse perspectives guide decision-making.

The story of IPPs in Pakistan is not just a tale of missteps—it is a blueprint for what must be avoided in the future. As the country pivots to a new energy era, it has the opportunity to learn from past mistakes and create a sustainable, resilient, and inclusive energy sector. Whether through CTBCM, self-generation, or innovative renewables, Pakistan can redefine its energy narrative and serve as a model for the region. The transition from IPPs is not the end—it is the beginning of a new chapter in Pakistan's energy journey. ■



Net metering system

Roof solar panel tariff may be cut to Rs7.5-11 per unit

Khalid Mustafa

The government is considering reducing the roof solar panel tariff to Rs7.5-11 per unit from the existing over Rs21 per unit at which the electricity is being given to the national grid through the net metering system.

Right now, two units generated through roof solar panels are equal to one unit of grid electricity.

The buyback tariff from solar consumers may be brought down to Rs7.5-11 per unit in view of the massive decline in solar panel prices. In return, consumers using roof solar panels would be provided with electricity from the national grid at Rs60 per unit during the night-time or peak hours.

“Under the new scenario, six units to be generated through roof solar panels would be equal to one unit of grid electricity. This would decrease the trend of installing solar panels on roofs by consumers as it is aggravating the capacity payments issue,” a senior official of the Energy Ministry told The News. The IMF in recent interaction with the government

functionaries also expressed reservations about the increasing usage of solarized electricity in the country and showed concern over the decreasing utilization of grid electricity. The Fund wants the government to increase the demand for utilization of the grid electricity.

According to the recently launched study titled ‘The Great Solar Rush in Pakistan’, the country imported around 15GW solar panels worth \$2.1 billion from China over the past fiscal year.

Contributing to this transition is the increased electricity tariffs — up by 155 percent over three years — driving high consumption households and industries to shift towards solar energy solutions, says the study.

The official said that K Electric got the bid of 3.1 cents per unit for its solar plant and the government is pondering to bring down the solar panel tariff at close to the bid for which the government would approach Nepra. “The people using solar panels will be provided with electricity at Rs60 per unit during night or peak hours. They are currently getting electricity from the grid at Rs42 per unit.”

The IMF at the time of talks for the loan program in 2023 had earlier been

sensitized that the country’s national grid was currently providing the service of storing electricity to rooftop solar consumers. If the consumer has roof solar system detached from the national grid, he would have to install huge batteries to store solar energy for consumption during night-time. The per unit cost he would brave will stand at 20 cents or Rs60 per unit.

Authorities earlier wanted the introduction of gross metering instead of net metering. Under the gross metering system, a consumer is compensated at a fixed feed-in-tariff for total units of solar energy generated and exported to the grid (as measured by a unidirectional gross meter).

One must pay retail supply tariff to the power distribution company for power consumed from the grid. Total solar generation is measured by bi-directional meter, while total power import by unidirectional meter. The Nepra has recently received many complaints from consumers across the country that DISCOS and K Electric are not entertaining the applications of installing net metering system. Nepra to this effect issued a show cause notice to the KE for net metering violations. ■

Courtesy: The News



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Iran-Pakistan gas pipeline best option to resolve energy crisis:

Mushahid Hussain



Says our gas reserves feared to be exhausted in next 10 to 15 years, advises govt should take advantage of the pipeline project offer

M. Naeem Qureshi

Pakistan should go for the Iran pipeline project to resolve its energy issues and get gas at cheaper rates.

This was stated by former federal minister, senior politician, analyst, and foreign affairs expert, Mushahid Hussain Syed in an exclusive interview with the Energy Update. In the interview, he talked about Pakistan's relations with China, the USA, African countries, and Iran. Following are the important excerpts from his interview for our readers:

Energy Update: Why did you establish the Pakistan-China Institute?

Mushahid Hussain : I visited China several times. I have been to China as a student, journalist, politician, and think

tank leader in the last many years. We have very strong ties with China. We have very close state, military, and government-level contacts with China.

But the same ties between the two friendly countries have been lacking in the areas of people-to-people, business-to-business, and cultural-level contacts. The Pakistan-China Institute was established some 16 years ago to fill this gap. Now it has emerged as a leading think tank on Pakistan-China relations that is fully open to people. We have been working to promote people-to-people contacts between the two countries. In addition to the institute's main website, we have a separate website to provide information on CPEC.

EU: Why have you lately established a separate think tank on ties between Pakistan and African countries?

Mr Hussain: Pakistan fully backed the

independence movements of the African nations in the 1950s and 1960s. The African continent has to play an important role in the 21st century in the political, economic, and energy sectors. All 55 African countries in the United Nations are our natural allies. They all experienced colonial rule while they are also developing countries. There is a vast potential to further promote business and educational ties between Pakistan and African countries. Some 800 students from African countries especially Somalia have been studying at the International Islamic University in Islamabad. We supported Morocco, Algeria, and Tunisia during their independence movements. We also supported Nigeria, Tanzania, Uganda, and Kenya soon after they gained independence. We sent our teachers and doctors to these countries to help them soon after their independence. Unfortunately, the focus of our government has so far been Pakistan's ties with the developed countries.

The African countries have been full of goodwill, respect, and love for Pakistan. Given this context, we established the Pakistan-Africa Institute for Development and Research.

EU: Have you got any support from the government for promoting Pakistan's ties with the African continent?

Mr Hussain: Many conferences were held on Pakistan-Africa ties at the government level but without any follow-up. It has been very unfortunate that none of our foreign ministers, prime ministers, and presidents undertook any bilateral visit to any African state in the last 40 years. Our top state dignitaries did visit an African country whenever it hosted any international conference including the OIC sessions but there hasn't been any bilateral visit by them in the last four decades. This is a very embarrassing situation. We have been completely ignoring this very important region of the world. Our governments sheerly lack focus on African states. The African countries haven't been on our government's radar. Some 20 African nations have embassies in Islamabad, whereas Pakistan has around 16 to 18 diplomatic missions in Africa. The lobbying effort and the campaign have been launched to improve Pakistan-Africa ties.

EU: What are your views on Donald Trump's recent victory in the US presidential election?

Mr Hussain: Donald Trump would be the first anti-establishment president in the USA after John F Kennedy. We should remember that he was also the first US president to offer mediation between Pakistan and India to resolve the Kashmir issue when the former prime minister Imran Khan met him during his first presidential term. He has announced to play his role as the new US President to end the war between Russia and Ukraine for restoring global peace. I am hopeful that he would also play a role in ending the massacre of Palestinians. I am optimistic that all these wars

around the world will come to an end because he is not belligerent in his conduct.

EU: What strategy we should adopt to improve Pakistan-US ties that haven't been ideal for the last couple of years?

Mr Hussain: We should first identify the potential areas where there is harmony between Pakistan and the USA to improve the relations between the two countries. It is unfortunate that we either didn't take a stand or else started fighting with the USA in the areas where we have differences with the American administration. Pakistani rulers should take into account the legitimate interests of their nation and countrymen while dealing with the USA in such problematic areas.

We could increase cooperation with the USA in the sectors of trade, education, economy, and war against terrorism. There could also be increased cooperation between the two countries to improve regional connectivity. We should consider our interests and policies while making decisions on such vital issues. Our decisions shouldn't be based on fear.

EU: Should Pakistan go for the option of Iran-Pakistan gas pipeline project?

Mr Hussain: We should go for the option of laying the Iran-Pakistan gas pipeline if it is a step towards fulfilling our energy needs while the natural gas obtained through this project will also be 40 per cent cheaper. Moreover, the proposed Iran-Pakistan pipeline will supply uninterrupted gas to Pakistan. We should remember that Pakistan's gas reserves have been diminishing fast. Our gas reserves would fear to be fully exhausted in the next 10 to 15 years. We should take advantage of the offer, especially if our next-door Islamic neighbour will supply us with gas on a long-term basis. I talked to the Iranian Foreign Minister, who told me that Iran is willing to mutually resolve the issues related to the proposed gas pipeline project through talks with Pakistan. ■

ELECTRIC VEHICLES

Experts back EV policy as game-changer



Jawwad Rizvi

Environmentalists and energy experts have lauded the government's New Energy Vehicle (NEV) Policy 2025-2030, describing it as both "timely" and "a step in the right direction". The policy aims to transition 30 per cent of all new vehicles -- both imported and locally manufactured -- to electric power by 2030. It includes a range of technologies such as battery-electric vehicles (BEVs), hybrid electric vehicles (HEVs) and hydrogen fuel cell vehicles.

To promote adoption, the government has announced subsidies of Rs50,000 for electric motorcycles and Rs200,000 for three-wheelers, with a total allocation of Rs4 billion. Thus far, two companies have been licensed under the policy, with 31 additional applications under review. "The vehicle policy is timely and addresses critical issues like the high oil import bill, underutilised power plants incurring capacity payments, and transportation-related smog and greenhouse gas emissions," said Dr Naveed Arshad, associate professor and co-director of the LUMS Energy Institute. He added, "Unlike the earlier policy (2019-20), this updated version is more robust, offering clear targets, tax breaks and government funding for EV projects." Dr Arshad also addressed concerns from the auto sector, noting that the policy is designed to benefit both new and existing players.

However, he added that traditional automakers must adapt to the evolving EV landscape. Current business models, which rely heavily on after-sales services like engine maintenance, are incompatible with EVs due to their minimal maintenance requirements. Automakers, he suggested, should pivot to areas like charging infrastructure, software development and other innovative revenue streams. "If existing players fail to adapt, they risk falling behind, much like Nokia did during the smartphone revolution," Dr Arshad warned. "As EVs achieve price parity with fuel-based vehicles in the coming years, consumer demand will naturally shift. Automakers need to evolve their business models and product lines now to remain competitive and avoid losing market share to newer, more agile competitors offering better, cheaper, and safer products." ■

Pakistan's climate loss tackling goals show dismal performance

COP29: Developing countries show disappointing fund pledges

Muhammad Naeem Qureshi

Billions not trillion of dollars needed to tackle climate change implications worldwide

At the recent COP29 held in Baku city of Azerbaijan, developed countries pledged to contribute at least \$300 billion annually to the fight against climate change by 2035. This is an increase from the \$100 billion a year pledged in 2009, but the pledged funds are too low to achieve desired goals. There is a need to do more. This amount seems very meagre as it could only meet the needs of three to four countries which are most devastated by the climate change, and Pakistan is one of them. The fact is that trillions of dollars are needed to tackle global climate disasters as billions will be tantamount to just an eyewash.

Pakistan's climate loss tackling goals show dismal performance as no performance

was shown in presentations delivered at the UN climate conference. There were only hollow slogans raised by Pakistan as usual. Pakistan has made no significant progress in view of its earlier pledges which include: Reducing greenhouse gas emissions by 50% till 2030, cutting emissions by 15% through its own resources, reducing emissions by 35% with the help of international grant finance, aiming to generate 60% of its electricity from renewable sources by 2030, having 30% electric vehicles by 2030.

Furthermore, Pakistan pledged to triple its nuclear capacity. There is no improvement in this regard. Pakistan is calling on developed nations to honor their pledge in annual climate finance, but it is disrespecting its own promises. Pakistan faces several challenges in achieving its climate tackling goals due to a combination of socio-economic, political, and infrastructural factors. Below is an overview of the key deficiencies hindering progress:



The country allocates insufficient funds for climate-related projects, relying heavily on international aid and grants. This is a major deficiency of the country. The country's financial constraints, exacerbated by external debt, restrict its ability to invest in sustainable development and climate resilience. Overlapping mandates among federal and provincial institutions lead to inefficiency and delays. Many institutions lack technical knowledge and skilled personnel to design and implement effective climate strategies.

Pakistan's energy sector relies significantly on fossil fuels, including coal, oil, and natural gas, leading to high carbon emissions. Efforts to transition to renewable energy sources are slow due to technological and investment barriers. Frequent floods, droughts, and heatwaves highlight the country's lack of effective disaster preparedness and mitigation strategies. The agricultural sector, a backbone of the economy, faces declining productivity due to water scarcity and changing climate patterns. Climate action plans often change with political regimes, reducing long-term effectiveness.

Weak implementation of environmental laws and policies undermines progress. This is a major lack of interest by the government. Rapid urbanization increases emissions, with cities lacking the infrastructure for sustainable waste management, energy efficiency, and public transport. Many infrastructure projects have failed to consider climate resilience, leaving them vulnerable to natural disasters. There is low public awareness about climate change and its implications, leading to limited grassroots support for climate action. Community involvement in decision-making is minimal, reducing the effectiveness of localized solutions.

Pakistan depends heavily on international funding, such as the Green Climate Fund, but faces challenges in meeting the prerequisites to access these funds efficiently. Persistent security issues divert resources and attention away from climate goals. Political instability undermines the continuity and consistency of climate initiatives.

Tackling climate change in Pakistan requires a combination of national and international efforts. Here are key strategies and recommendations:

Enforce and expand existing climate policies such as the National Climate Change Policy and align them with international commitments like the Paris

Agreement; enhance the capabilities of government institutions to implement, monitor, and enforce climate policies; Work with neighboring countries on shared climate issues, such as water resource management: invest in solar, wind, and hydropower projects to reduce dependence on fossil fuels; and mobilize funds from international climate finance mechanisms, such as the Green Climate Fund.

Addressing climate change in Pakistan requires a holistic approach that combines mitigation and adaptation. With strong governance, active community participation, and international collaboration, Pakistan can reduce its vulnerabilities and transition toward a sustainable future. Tackling climate change in Pakistan requires a combination of national and international efforts. The government needs to enforce and expand existing climate policies such as the National Climate Change Policy and align them with international commitments like the Paris Agreement.

Effective actions must be taken to enhance the capabilities of government institutions to implement, monitor, and enforce climate policies. The government should work with neighboring countries on shared climate issues, such as water resource management, greenhouse gases emission and energy transition. There is an urgent need to ensure huge investment in solar, wind, and hydropower projects to reduce dependence on fossil fuels besides implementing nationwide programs to promote energy-saving practices and energy-efficient appliances. Incorporating green spaces and sustainable urban planning in major cities is mandatory. There is also an urgent need to build flood defenses, and stormwater systems besides expanding affordable, energy-efficient public transportation systems.

Climate change is one of the most significant environmental challenges facing the world. Greenhouse gas (GHG) emissions resulting from human activities, particularly fossil fuel consumption and deforestation, have increased the concentration of these gases in the atmosphere, leading to irreversible damage to natural resources and ecosystems. Climate change is expected to devastate the world's poor, as they are both geographically and economically vulnerable, making it more difficult for them to adapt. Despite contributing the least to the problem, developing countries are expected to bear the brunt of the impact of climate change.

The most observed hazardous phenomena in Pakistan during 1980-2022 were floods, tropical cyclones, extreme temperatures, and occasional droughts. The floods of 2010 and 2022 and the earthquake of 2005 created substantial economic losses, casualties, infrastructure damages, and rehabilitation costs. It has been observed that the intensity of floods has been increasing over the years, which can be attributed to changes in global climate patterns (rising temperature and changing precipitation patterns), melting glaciers, deforestation, and urbanization. Climate change leads to prolonged droughts in specific regions of Pakistan. In 2018, insufficient rainfall and extended water scarcity caused drought conditions in Balochistan and Sindh. In September of that year, the Sindh government declared significant portions of Southern Sindh as "calamity areas" due to deficient rainfall during the monsoon season. Unlike other natural disasters, droughts build up gradually over time, and their impacts can persist for several years after they occur.

Pakistan has 4.51 million hectares (5.1 percent) of forest cover, with coniferous forests covering the most significant proportion at 37 percent, followed by Scrub Forests (22.2 percent), Mangroves (7.3 percent), Riverine Forests (7.8 percent), and Irrigated Plantations (6.3 percent). Despite this, the average annual deforestation rate stands at 11,000 hectares. To address this, MoCC & EC collaborate with provincial forestry departments to enhance forest cover. The Green Pakistan-Upscaling Programme, Phase-I, aims to revive forestry and wildlife resources nationwide, costing Rs. 125.1843 billion. The programme has achieved a plantation target of 2.12 billion plants nationally, monitored by a consortium of the International Union for Conservation of Nature (IUCN), the World Wildlife Fund (WWF), and the Food & Agriculture Organization (FAO), with a success rate of 75 percent to 95 percent. There is a need to raise forest cover.

Pakistan also urgently needs to expand initiatives like the "Ten Billion Tree Tsunami" to restore ecosystems in order to raise forest cover by 25 percent of its total land area to meet international forest. Addressing climate change in Pakistan requires a holistic approach that combines mitigation and adaptation. With strong governance, active community participation, and international collaboration, Pakistan can reduce its vulnerabilities and transition toward a sustainable future. ■

Hidden Costs of Pakistan's Solar Rush

Countries like Australia, Germany, and the United States have faced similar challenges but implemented innovative solutions; Ensuring Equity and Sustainability in a Rapidly Solarized Energy Landscape Mandatory; Pakistan's solar Energy Revolution Holds Immense Potential That Requires Careful Planning

Mustafa Tahir

Writer is Deputy Editor Energy Update

Pakistan is embracing solar energy at an unprecedented pace, with over 2,200 MW of installed solar capacity and a record-breaking 13 GW of solar panels imported in 2023 alone. Projections suggest an additional 10–15 GW will be added in 2024. While this transition to renewable energy promises reduced carbon emissions and energy security, it also brings unintended consequences that are straining the country's already fragile energy infrastructure.

A recent study by Arzachel sheds light on the economic and operational challenges posed by this rapid solar adoption, particularly the burden on non-solarized consumers. Net metering, while empowering prosumers, has inadvertently skewed grid costs toward the middle and lower classes, raising concerns about equity and sustainability in the energy ecosystem.

Solar Adoption and Burden on Non-Solar Consumers

The net metering system, which allows solar prosumers to sell surplus electricity to the grid, has grown exponentially. With 141,800 participants contributing 2,200 MW, the system has displaced an estimated 9,942 GWh of annual grid demand. While prosumers earn Rs 27/kWh for surplus energy and avoid Rs 20.93 per unit in fixed costs, the non-solar consumers bear the financial burden. In FY 2023-24 alone, approximately Rs 200 billion in grid fixed costs were redistributed to non-solar users, increasing tariffs by Rs 2/kWh.

Non-solar consumers also subsidized a staggering Rs 80 billion in unrecovered network costs and balancing losses due to net metering exports. This inequitable cost shift is eroding the financial stability of distribution companies (DISCOs), which are already grappling with revenue shortfalls as volumetric electricity sales decline.

Operational Challenges and Grid Sustainability

Beyond financial implications, the rise in solar penetration poses significant operational challenges. Reverse power

flows, voltage instability, and the demand for costly ancillary services strain an infrastructure that was not designed for decentralized generation. The study estimates that solar penetration could reduce grid demand by 10%, driving a 17% increase in base tariffs and resulting in a cost shift of Rs 261 billion annually to non-solar customers.

Learning from Global Experiences

Countries like Australia, Germany, and the United States have faced similar challenges but implemented innovative solutions. Feed-in tariffs, time-of-use pricing, and ancillary services markets have balanced the benefits and costs of solar energy integration. Pakistan must adopt similar reforms to ensure the long-term viability of its energy ecosystem.

A Path Forward: Policy Reforms and Collaboration

To address these challenges, a transition from net metering to net billing is imperative to distribute costs more equitably. Introducing minimum monthly charges for solar prosumers and incentivizing Battery Energy Storage Systems (BESS) can enhance grid stability. Additionally, locational marginal pricing (LMP) should be explored to optimize grid efficiency.

Regulatory authorities must lead the way in implementing these reforms, addressing equity concerns, and mitigating technical challenges. Collaboration among stakeholders—regulators, utilities, and consumers—is crucial to creating a fair and sustainable energy future.

Conclusion

Pakistan's solar energy revolution holds immense potential but requires careful planning to avoid exacerbating inequities and destabilizing the grid. By learning from international best practices and prioritizing equitable policies, Pakistan can achieve a balance between renewable energy adoption and the financial and operational sustainability of its energy sector.

As the nation navigates this complex transition, the focus must remain on ensuring that the benefits of clean energy are shared across all segments of society, fostering a resilient and inclusive energy ecosystem. ■



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Sindh's coal gasification dream

Sindh Coal Authority seeks to produce 200 million cubic feet per day

bitious Thar coal gasification project, proposes to produce syngas to convert it into urea fertilisers at integrated syngas-fertiliser plants along the mouth of the mine or into synthetic natural gas (SNG) at a much larger scale later on.

The Authority's advisor, Dr Farid Malik, claimed that he is already engaged with a couple of investors in this regard. "We intend to buy 20 gasifiers, small modular plants each with a capacity to produce 10 million British thermal units (mmBtu) of syngas, from a source in Europe for this project."

According to him, the project will cost \$10m. "We are bringing in 20-year-old coal gasification technology, which is being discarded in Europe. The new gasifiers would cost us double or triple this amount," he added. A larger planned integrated fertiliser plant by Fauji Fertiliser, he said, would cost the company \$1.6 billion for which the company is expecting funding from China.

Sindh Coal Authority battles critique and a hostile environment against fossil fuels to rally investments for its Thar syngas efforts. With domestic

Nasir Jamal

The Sindh Coal Authority is striving to woo private investment to finance the country's first coal-to-gas project to initially produce 100 million cubic feet per day (mmcf) to 200mmcf of synthetic gas (syngas) from coal in the Thar desert.

The project, part of Sindh's am-

natural gas resources running out and imported LNG having a high price tag that the local fertiliser industry cannot afford, Sindh is working on the Thar coal gasification project to produce cheaper urea to boost agricultural productivity and ensure food security.

Coal gasification and liquefaction technologies have been around since the 18th century. Their supporters argue that they are relatively less harmful to the environment than directly burning coal for energy. Their critics allege that these technologies have massive capital and operational costs and are too complex to operate smoothly.

Dr Malik says there are two ways of approaching coal gasification: either convert coal into synthetic gas and convert it into fertilisers directly in an integrated fertiliser plant at the mine mouth, or convert coal into syngas and then into SNG and put it in the large pipeline network.

He says the use of the Thar coal gasification project for fertiliser manufacturing by encouraging investors to set up integrated plants to manufacture urea is the major focus of the authorities. "We are facing 2-3m tonnes of urea shortage because gas supplies for fertiliser production are drying up and have to be imported. So it makes sense that we take the first route for food security," he argues.

There is no denying the theoretical and technical feasibility of coal gasification/liquefaction, says a study on the Thar coal gasification plans by a non-profit based in Islamabad. However, it says its commercial viability varies from region to region, depending upon the availability of state support and the quality of technology employed. It quotes several examples from across the world to illustrate this fact.

China — where gasified coal caters to 3-5pc of the country's total natural gas consumption — uses a variety of subsidies within its SNG value chain to make the end products competitive with other available alternatives. Studies indicate that China's coal production industry receives upwards of \$2 trillion in subsidies every year.

In the United States, the North Dakota coal gasification facility, the only large-scale operational coal gasification programme in that country, built at a cost of \$2bn in 1980 through a federal

construction loan, had consistently ran losses till 1986 when the US Department of Energy stepped in and bought it at a discounted price of \$1bn.

The gas pricing formula for the Thar coal gasification plans leaves a lot of conjecture. The Sindh Coal Authority claims that \$7-8 will be required to produce 1mmBtu of syngas from Thar coal. However, this claim cannot be cross-verified because it is based on several undisclosed assumptions and financial details.

Moreover, the estimated price for gasified Thar coal is certainly less than imported LNG — which varies between \$12 to \$25 per mmBtu — but Pakistan's fertiliser industry is used to consuming domestic natural gas at a much lower and highly subsidised rate. Only recently has this price been jacked up from \$1 to \$5 per mmBtu after several decades. This suggests that any price above \$5 per mmBtu will lead to a big increase in fertiliser prices.

Dr Malik also ruled out any state subsidy for coal gasification projects or its derivatives, urea or SNG. "Urea or SNG produced from Thar coal will not get any subsidies. Rather, existing subsidies for urea makers or gas consumers will be abolished."

Another concern over the coal gasification project relates to carbon dioxide emissions. Pakistan's coal gasification plans will certainly worsen its carbon emissions profile, effectively derailing its climate goals and ambitions. Coal gasification is costly and its carbon emissions are so high that they require additional expensive carbon capture, utilisation and storage (CCUS) technologies to become environmentally sustainable.

"I have told the government that we will not produce more than 30,000MW power from Thar coal. Coal gasification, too, is a cleaner technology than burning coal directly," contends Dr Malik.

Nonetheless, he admits it is hard to attract investment from local or foreign investors for the coal gasification schemes. "The business environment in the country is pretty hostile. Then, we have a big import lobby working against this project. Only the Chinese appear interested in the gasification plans. Fauji Fertiliser is talking to Chinese investors for its integrated urea plant," he says. ■

Courtesy Dawn

Japan approves grant for flood management project

EU Report

The Government of Japan has approved a grant amounting to 18.5 million dollars for the flood management project in Pakistan. A signing ceremony for exchange of notes and record of discussion between the governments of Japan and Pakistan was held here in Islamabad. Secretary Ministry of Economic Affairs Dr Kazim Niaz and Ambassador of Japan to Pakistan Wada Mitsuhiko signed the documents on behalf of their respective governments. The project is aimed at improving accuracy of flood forecasts and flood control functions, accumulate basic data that contributes to disaster risk reduction measures, and reducing the risk of loss to human and economy including infrastructure. The project titled "Flood Management Enhancement in the Indus Basin" will be materialized through Japan International Cooperation Agency (JICA).

Romina highlights mountain agenda at COP29

EU Report

Coordinator to the Prime Minister for Climate Change, Romina Khurshid Alam has expressed that it is a privilege for Pakistan to participate in the high-level dialogue on mountains and climate change, hosted by the Kyrgyz Republic, Mongolia, and Azerbaijan as part of COP29. She highlighted that this event represents a critical opportunity to advance the mountain agenda within the UNFCCC (United Nations Framework Convention on Climate Change) framework, focusing on the unique vulnerabilities faced by mountain regions and their dependent communities, according to an official statement. "Mountain ranges are vital to the global climate system, influencing weather patterns, water resources, and biodiversity well beyond their immediate surroundings," Romina stated. With over 13,000 glaciers, Pakistan's mountainous regions are a crucial water source for agriculture, energy, and daily needs across South Asia.

Is the economy improving?

Khurram Husain

The writer is a business and economy journalist

Yes, because the deficits that plagued it have been plugged. No, because growth remains a far-off dream

IT has now become a routine question. Every TV anchor and people I meet in any gathering all want to know: is it true that the economy is 'improving'?

The short, and best, answer here is 'yes and no'. Yes, because the deficits that plagued it have been plugged. No, because growth remains a far-off dream. The proper term to use is 'the economy is stabilising', but it is not yet, and will not be for a long time, ready to grow.

This presents a problem. Without growth, you don't get employment generation to absorb the new entrants to the labour force, of which there are an estimated two million every year. You also don't get income growth, meaning all the purchasing power that was destroyed in the inflationary fire of 2021 to 2024 will not be recovered. At least not in the near future.

But stability means the end of inflation, the plateauing out of prices which had begun to spiral out of control in early 2021 and reached an inferno by 2023. It means no shrill warnings of default, at least not for a few years, and no catastrophic devaluations, rationing of foreign exchange reserves, import controls, and so on. All that belongs to the past now, mercifully. Pakistan

dodged a bullet in the summer of 2022, when foreign exchange reserves ran so low that they brought the country to the very edge of a disorderly and potentially catastrophic default. Then it dodged the same bullet again, in the summer of 2023, when it returned to the same position one more time.

Until we see deep-rooted changes being implemented, we cannot say the economy is 'improving'.

Since July 2023, a set of policies have been implemented steadfastly that have finally averted the dire situation we faced back then. These policies included a very high interest rate and very high tax burden to be borne mostly by those already in the tax net. Between them, these measures extinguished economic growth and choked much of the otherwise routine economic activity. But the net result was that the pesky current account deficit, which returns every few years to drain our foreign exchange reserves, vanished and turned into a surplus. And the fiscal deficit came under manageable control, despite some issues below the surface with provincial surpluses and other line items.

These deficits were the main reason why the country's foreign exchange reserves had deplet-



ed and inflation reached historic highs. With both deficits under control, the reserves stabilised and prices plateaued. So far so good. We're in a good place.

But we cannot stay here for very long. This stabilisation is what happens every time in the first year of an IMF programme. There are no surprises here. This is precisely what the IMF medicine is supposed to do. Every government that has ever implemented an IMF programme in its first year in power has touted these achievements as its success. This history goes back to 1988, and even earlier. It has happened every single time. A new government enters office. The economy is nearly bankrupt. The new government signs onto an IMF programme. In the first year of the programme the deficits stabilise, growth plummets, reserves rise. The government claims victory.

But the hard-fought stability that comes as a result of the painful decisions made under IMF auspices is only the beginning. The real story is in securing the kind of changes in the structure of the economy that will enable it to grow without depleting its foreign exchange reserves and giving rise to inflationary pressures. The real game is in ensuring growth returns, but either without the deficits that destabilised it, or with the deficits but an accompanying, sustainable way to finance them.

What exactly are these changes? Consider for example, the fact that the state cannot operate a national airline

or a power sector without accumulating massive losses. Or consider that the country's exports remain wedded to the same commodity they were wedded to in the 1980s: cotton. How do we operate state-owned enterprises in a way that doesn't lead to the accumulation of such massive losses? How do we build an export base beyond cotton?

These are the kinds of questions that require answers urgently to make the transition from stabilisation to growth. But successive governments from 1988 onwards have failed to make this transition. This is the main reason we remain stuck in an endless loop of the same policies that first stabilise the economy, then pump it for growth which destabilises it again making another round of stabilisation necessary.

So if you want to know whether the economy is 'improving', ask yourself this question: are deep-rooted changes taking place? Or do you see even the beginnings of deep-rooted changes being brought about? The answer is a clear no. One feeble first step was just attempted in the privatisation of PIA, and we all saw how that ended in an embarrassing fiasco, so much so that various ministers in the government are now blaming each

other for the mess.

Until we can see deep-rooted changes being brought about to improve power sector efficiency, a reduction in the rate of accumulation of the circular debt, broadening of the export base as well as the base of revenues, expenditure management, plateauing in the rate of debt accumulation (both domestic and external), rising rate of investment driven by rising domestic savings, and so on, until we can see changes of this sort happening, we cannot say the economy is 'improving'. We can at best say the economy is 'stabilising'.

Here is the big problem with stability: it is temporary. Having found a fragile stability, after almost 18 months of hard and intense discipline in the management of the macroeconomic fundamentals, the government now faces the real challenge of transitioning from stability to growth. How well they manage this will decide whether or not we are seeing 'improvement'. ■



HUAWEI Fusionsolar

Launch Experience Center in Lahore



Huawei, a global leader in innovative energy solutions, in collaboration with its value-added partner Bahum Associates, proudly inaugurated its Experience Center in DHA Lahore. This landmark facility is designed to showcase Huawei's advanced solar technologies, including its renowned smart inverters, while serving as a dedicated hub for professional training and education in renewable energy solutions.

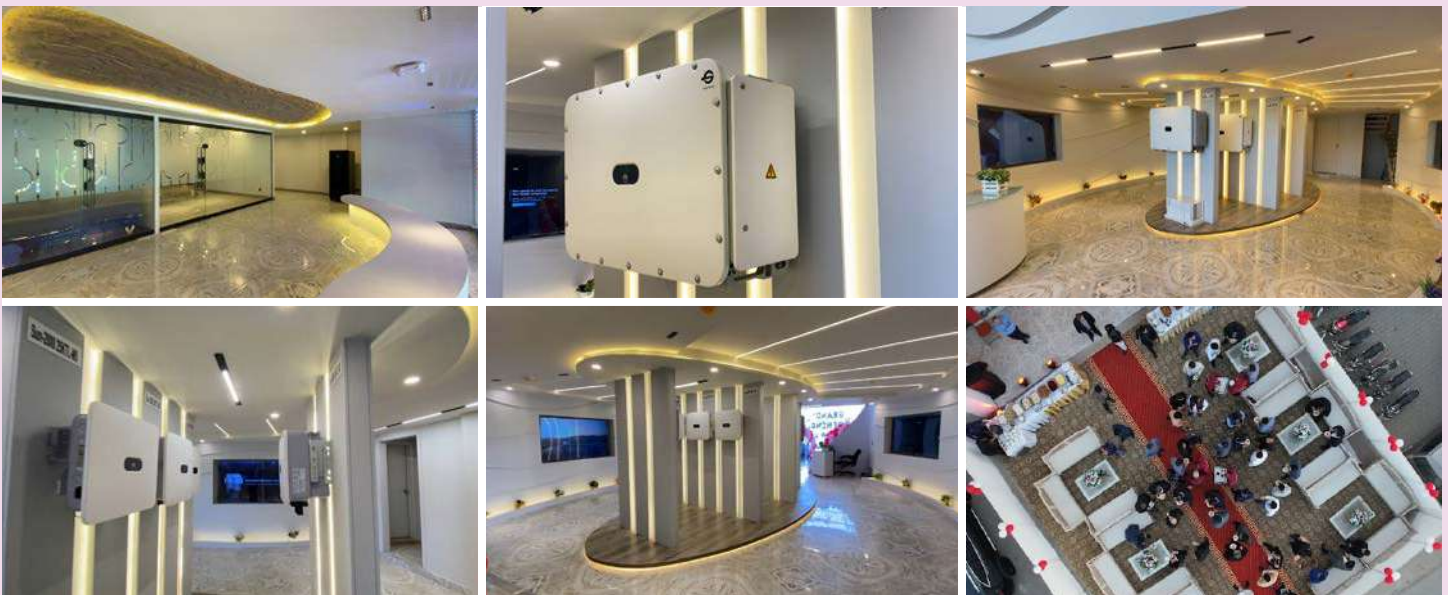
The Experience Center aims to em-

power professionals and businesses in Pakistan's energy sector, offering hands-on access to cutting-edge products and a state-of-the-art training facility. This initiative aligns with Huawei's commitment to accelerating the adoption of sustainable energy systems in the region.

The Experience Center features Huawei's latest solar inverters, known for their efficiency, reliability, and intelligent management capabilities. The facility also includes a training center, offering specialized programs to develop

the technical skills of engineers, technicians, and industry professionals.

The launch event was praised as it's the initiative milestone in advancing renewable energy adoption in Pakistan. This Experience Center is poised to play a key role in supporting Pakistan's energy transition by providing accessible solutions for residential, commercial, and industrial applications while fostering a skilled workforce to support the growing demand for renewable energy systems.



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Cool the Earth initiative launched with Thari people

The programme aims to combat climate change through community-led tree plantations

The Participatory Village Development Programme (PVDP) Sindh launched the "Cool the Earth" initiative at a ceremony here at a local hotel. The first phase of the tree plantation drive is being rolled out in Tharparkar, involving the local people who will be incentivised to grow trees. This ambitious programme aims to combat climate change and foster environmental sustainability through community-led tree plantations.

The "Cool the Earth" initiative will be implemented across Sindh, with a particular focus on Tharparkar. This large-scale project will involve citizens, corporations, and communities in planting and nurturing trees, contributing to a greener Pakistan.

The Cool the Earth Programme is a massive participatory tree plantation initiative, launched by the PVDP with support from the corporate sector, local communities, technical institutions and the Sindh government. The plantation drive will begin from Tharparkar and will cover the entire Sindh in the later stages.

In this programme, citizens and corporate entities will pledge and sponsor trees, the community will water and nurture them and PVDP will manage the nurseries, training, tree plantation and maintenance operations. The target is to plant and nurture one million trees in two years. The launching event opened with a warm welcome and introductory remarks by Dominic Stephen, Executive Director of PVDP, who emphasised the programme's vital role in climate action and community empowerment. Consultant of the Cool the Earth Programme, Tanveer Arif, led the ceremony as moderator, providing an insightful overview of the programme's goals and



its significance for local communities.

He said the severe smog situation in central Punjab and recent devastating floods in southern parts of the country had shown that the climate emergency had started adversely impacting Pakistan with massive damages. He said the unchecked expansion of urban areas at the cost of green cover and farmlands in the city suburbs had also seriously harmed the environment.

Naeem Qureshi, President of the National Forum for Environment and Health (NFEH), announced that NFEH would extend its fullest support to the Cool the Earth initiative in the province.

He appealed to the concerned philanthropists, donors, and corporate organisa-

tions to fully support such drives to restore tree cover in the country with the active involvement of the local communities. He informed the audience that the initiative aimed at increasing the green cover would help mitigate climate change, reduce air pollution, and conserve biodiversity.

Fawad Soomro from the Engro Foundation emphasised the importance of corporate partnerships in driving sustainable development.

Renowned experts, including Dr Attaullah Khan from the Arid Zone Research Centre (AZRC), and Dr Zakir Hussain Dahri, Director of the Pakistan Agricultural Research Council (PARC), shared insights at the ceremony on climate change, adaptation, and sustainable agriculture. ■



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COP29

Pakistan's delegation raises questions on priorities

Dr Basharat Hasan Bashir

Writer is Executive Director, NAMF-USA a 501(C)(3) Organization Alternative Energy & Climate Change (Mitigation and Adaptation) Specialist

Pakistan is facing a severe environmental crisis, with pollution problems worsening by the day. The country's cities, particularly Lahore, are among the most polluted in the world, with air quality levels posing serious health risks to residents.

The increasing number of vehicles on the road, particularly in urban areas, is a significant contributor to air pollution in Pakistan. The rapid growth of industries, such as textiles, cement, and steel, has led to an increase in air and water pollution.

The practice of burning crop residue, particularly in the Punjab province, contributes to air pollution and smog. The lack of proper waste management systems in Pakistan leads to the burning

of trash, releasing toxic pollutants into the air. Pakistan's reliance on fossil fuels for energy generation contributes to air pollution and greenhouse gas emissions.

Smog, a type of air pollution caused by a combination of smoke and fog, has become a significant problem in Pakistan, particularly in the Punjab province. The smog season brings with it a host of health problems, including respiratory issues, eye irritation, and cardiovascular disease.

The health impacts of pollution in Pakistan are severe and far-reaching. Air pollution causes a significant number of premature deaths, as well as cases of respiratory problems, chronic bronchitis, and other health issues.

Economic Impacts of Pollution in Pakistan

The economic impacts of pollution in Pakistan are also significant. The cost of air pollution is substantial, and the country's economy suffers as a result of pollution-related health problems and lost productivity.

To address Pakistan's pollution

problems, it is essential for the government to take a multi-faceted approach. Implementing emissions standards for vehicles and industries, promoting renewable energy sources such as solar and wind power, and improving waste management systems are critical steps towards reducing air pollution. Additionally, increasing public awareness about the impacts of pollution and promoting behavioural change can also play a significant role in reducing pollution. Ultimately, revising the climate change policy that addresses the root causes of pollution and promotes sustainable development is crucial for creating a more sustainable future for Pakistan.

Pakistan's COP29 Commitments: Addressing the Root Causes of Pollution and Climate Change

Controversy has surrounded Pakistan's attendance at the 29th Conference of the Parties (COP29) in Baku, Azerbaijan. Reports have emerged that over three dozen officials from Pakistan's Ministry of Climate Change attended the conference with expenses covered by loaned

funds. International agencies have also financed numerous women and men from private sector to attend the 10 days long event. American, European, Japanese, Korean and Chinese tax payers' money has been utilised to finance these tours by international agencies.

This development has raised concerns about the mismanagement of funds and the government's and international agencies' commitment to addressing climate change. A Pakistan government-owned fund established through loans from the World Bank and other multilateral institutions, appears to be financing officials to go on trip to Baku.

Furthermore, the government's seriousness in addressing climate issues can be questioned, as many of the ministry's officials lack the necessary experience to engage effectively at an international level. This lack of expertise could hinder Pakistan's ability to secure favourable outcomes or make meaningful contributions to global climate discussions. However one must appreciate Madam Rumina Khurshid Alam, Coordinator to PM on Climate Change at Ministry of Climate Change and Environmental Coordination and Ms. Sherry Rahman former minister for climate change for their extra ordinary performance at the event.

In light of these concerns, it is essential to re-examine Pakistan's priorities in addressing its environmental challenges. As a climate and energy expert, I believe that it is crucial to prioritize the hiring of qualified and experienced climate and renewable energy experts. International agencies, such as the World Bank, United Nations, and Asian Development Bank, must focus on hiring experts who can provide technical assistance and support to the Pakistani government.

In addition, it is vital to ensure that the hiring process is inclusive and merit-based, providing opportunities for all qualified candidates, regardless of their background. This includes members of the LGBTQ community, minorities, and women, who should be considered for these critical roles based on their qualifications and experience.

However, it is equally important to avoid tokenism by INTERNATIONAL AGENCIES including United Nations, World Bank, ADB etc., and ensure that these experts are hired based on their merit, rather than their sex or sexual preferences or their minority status. The focus should be on finding the best candidates to address Pakistan's environmental crisis, rather than fulfilling quotas

or preferences.

In conclusion, while international cooperation on climate change is essential, Pakistan's attendance at COP29 with a large delegation raises questions about the country's priorities. The focus should be on addressing Pakistan's pressing environmental issues, rather than indulging in costly conferences and seminars. By prioritizing the hiring of qualified experts and addressing the root causes of pollution, Pakistan can create a more sustainable future for its people.

The impact of pollution on human health is devastating. According to the World Bank, climate change could reduce Pakistan's GDP by 18-20% by 2050, with significant consequences for the country's development and poverty reduction goals. The effects of pollution are already being felt, with increased heat, drought, and extreme weather events affecting millions of people. The 2022 floods, which had a direct impact on over 30 million people, are a stark reminder of the devastating consequences of climate change.

A Lack of Expertise

To address Pakistan's environmental crisis, it is essential to have experts in climate change mitigation and adaptation. Unfortunately, the Climate Ministry and international agencies operating in the country lack experts in these fields. This lack of expertise is a significant impediment to addressing Pakistan's environmental challenges.

To address Pakistan's environmental crisis, it is essential to prioritize the hiring of qualified and experienced climate and renewable energy experts. International agencies, such as the World Bank, United Nations, and Asian Development Bank, must focus on hiring experts who can provide technical assistance and support to the Pakistani government.

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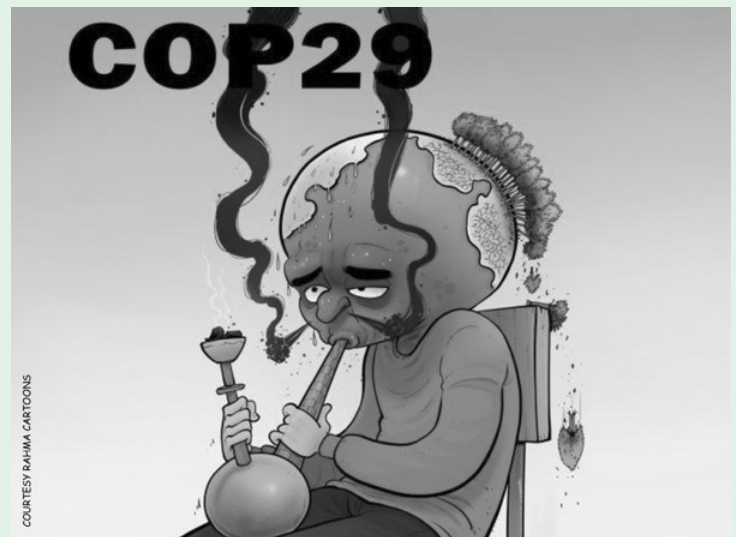
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Recommendations

Prioritize the hiring of qualified and experienced climate and renewable energy experts in Pakistan's Climate Ministry and international agencies operating in the country. Ensure that international agencies, such as the World Bank, United Nations, and Asian Development Bank, focus on hiring experts who can provide technical assistance and support to the Pakistani government.

Allocate funds towards addressing Pakistan's environmental crisis, rather than indulging in costly conferences and seminars. Encourage the Pakistani government to revise the climate change policy in consultation with Climate and Energy specialists, with clear goals and objectives for reducing greenhouse gas emissions and promoting sustainable development. ■



Decentralising power: A provincial pathway for energy future

Pakistan's energy sector is at a crossroads, with a decades-long struggle to privatise Discos

Abubakar Ismail

The writer is an expert in the energy sector. With a passion for energy, sustainability, and emerging technologies

Pakistan's energy sector is at a crossroads, with a decades-long struggle to privatise its Distribution Companies (Discos) coming up against structural challenges and political realities. Privatisation alone may not be the answer to improving efficiency, reducing theft, or solving the complexities of regional demands and discrepancies in power usage.

An alternative, more sustainable approach involves decentralising control by transferring DISCOs to the provinces and ending the Uniform Tariff structure, a strategy that aligns financial responsibility and regulatory power with local needs.

This model, if implemented with careful policy design and a staged transition, has the potential to reshape Pakistan's energy landscape, offering provinces the autonomy to determine electricity rates,

enforce better theft prevention, allocate subsidies from provincial budgets, and even provide tailored industrial incentives to attract investment.

Following examples from countries with successful models, like India and the United States, Pakistan could transition to a decentralized system that gives Nepra oversight over wholesale and high-voltage transmission networks, while empowering provincial regulatory bodies to manage distribution, retail tariffs, and local demand-side management.

Transferring ownership and regulatory control of Discos to provincial governments, coupled with individualized tariff structures, would provide much-needed flexibility and encourage provinces to address specific local challenges.

Pakistan's regions differ considerably in energy needs and economic makeup, and provincial regulators could tailor tariffs to match the economic realities and policy priorities of their provinces. This shift would also address pressing issues like power theft more effectively, allowing for enforcement measures that align with local

legal and administrative structures.

In this model, provincial regulatory bodies would set distribution and retail tariffs, control energy theft measures, and implement power purchase agreements. Such a decentralised structure would also enable provinces to make their own budgetary allocations for subsidies and design incentive packages for sectors they aim to prioritise. For example, provinces with industrial development goals could use electricity rate adjustments to attract investments in manufacturing or renewable energy, supporting their own economic goals and creating localized, demand-driven solutions.

This province-driven approach redefines the role of Nepra, Pakistan's central regulatory authority, by limiting its focus to the wholesale electricity market and high-voltage interstate transmission networks that connect provinces. Under this system, Nepra would regulate the System Operator (SO) and Market Operator (MO) functions of the National Grid, managed by the National Transmission and Dispatch Company (NTDC), which would continue



to facilitate the stability of Pakistan's interconnected grid.

This setup would allow Nepra to develop policies that encourage market competition and improve national grid reliability, while provincial regulators oversee DISCOs and manage local distribution. Each provincial regulatory body would be empowered to make decisions on energy sourcing, billing structures, and theft mitigation measures, addressing energy issues at a local level with greater accountability and transparency.

A similar decentralized model has already been implemented in India, where the Central Electricity Regulatory Commission (CERC) regulates the wholesale market and interstate transmission, while state regulatory commissions handle tariffs for local distribution and consumption.

The United States has also adopted a state-centered model for its power market, where the Federal Energy Regulatory Commission (FERC) regulates interstate transmission and wholesale markets, while individual state Public Utility Commissions (PUCs) control electricity rates and retail policies within each state.

This decentralised approach allows US states to set their own renewable energy targets, incentivize local energy projects, and create tailored pricing structures based on regional demand and resource availability. Drawing on these examples, Pakistan's energy sector could benefit from a similar regulatory balance, where the central authority, Nepra, remains responsible for interprovincial matters, and local bodies manage day-to-day distribution concerns. To maintain stability during the initial phase of decentralisation, central power plants and long-term power purchase agreements could remain under NTDC's control, with centralized financial transactions managed through the Central Power Purchasing Agency (CPPAG).

Higher-voltage connections or

cross-provincial transmission lines would still require Nepra's approval to ensure grid stability and continuity, which is crucial for maintaining a national energy strategy. Allowing for provincial discretion in energy sourcing and distribution while retaining Nepra's authority for interprovincial matters creates a policy environment conducive to regional innovation and accountability. A key challenge in implementing this model lies in building the regulatory and administrative capacity of provincial governments and establishing competent provincial regulatory bodies. Regulation in the power sector demands specialized skills and a deep understanding of market dynamics, technical infrastructure, and policy implications.

Simply rotating bureaucrats and technocrats through these roles may not provide the consistency and expertise needed for effective governance. Instead, provinces will need to invest in specialized training, capacity-building initiatives, and long-term appointments for energy professionals.

This will require dedicated funding and technical support from the central government during the initial years, potentially with assistance from international partners. These capacity-building efforts will not only help the provinces manage DISCOs more effectively but also ensure that regional policies are aligned with broader national goals of energy efficiency, sustainable growth, and reliable supply.

Decentralising Pakistan's energy sector by transferring control of Discos to provincial authorities, ending the Uniform Tariff, and redefining NEPRA's regulatory scope presents a promising alternative to privatization. By tailoring tariffs and incentives to meet local needs, provinces can improve financial viability, reduce energy losses, and offer targeted support to vulnerable populations or emerging industries. ■

PM calls for honouring financial pledges to tackle climate change



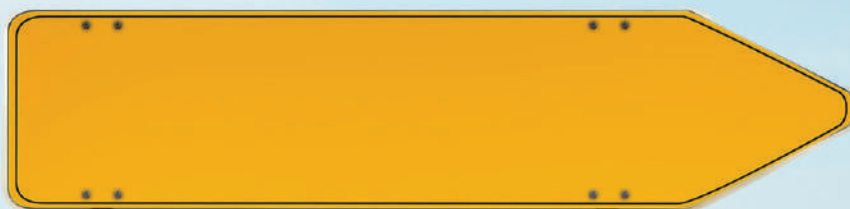
EU Report

Prime Minister (PM) Shehbaz Sharif has called on the global community to honour its financial pledges to deal with the issue of climate change. Addressing the Climate Action Summit COP29 in Baku, he regretted that the financial commitments made at previous summits were yet to be fulfilled.

The Prime Minister emphasized that climate finance must be grant based and not add to the debt burden of vulnerable developing countries. He stressed that without climate justice, there can be no real resilience.

Highlighting the devastation caused by the 2022 floods in Pakistan, the Prime Minister pointed out that Pakistan is one of the countries that contributes less than half a percent of global emissions, yet it remains vulnerable to the impacts of climate change.

Shehbaz Sharif said Pakistan is a resilient, hardworking and responsible nation and that it is fully committed to be part of global climate solutions. He said his government has taken concrete actions to deliver on its commitment of producing sixty percent of all energy from clean sources and shifting of thirty percent of its vehicles to Electric Vehicles (EVs) by the end of this decade. He said Pakistan is to go through a renewable energy revolution. Last year, Pakistan presented a comprehensive national adaptation plan and this year, it has developed a national carbon market framework. He, however, emphasized that Pakistan needs international support to deliver on its climate ambitions. ■





IMF's Stance on Pakistan's Solar Shift

Balancing Sustainability with Economic Stability

Mustafa Tahir

Writer is Deputy Editor Energy Update

As Pakistan accelerates its transition toward renewable energy, particularly solar, recent feedback from the International Monetary Fund (IMF) has cast a spotlight on potential challenges that come with this green ambition. Pakistan has been aiming to reduce its dependency on expensive, imported fossil fuels while meeting climate goals. However, the IMF has voiced concerns, specifically around the financial viability of a swift transition to solar energy given Pakistan's existing power sector structure and financial challenges.

Pakistan's energy sector has long grappled with circular debt, which, by some estimates, has swelled to around Rs 5.7 trillion as of late 2024.

This debt primarily arises from the country's reliance on independent power producers (IPPs), who require high "capacity payments." These payments are obligations the government owes to power producers regardless of whether the generated electricity is consumed. The IMF warns that widespread adoption of solar energy at the consumer level could decrease demand for grid electricity, leaving Pakistan with unsustainable capacity payments for underused thermal and hydroelectric power.

The IMF's perspective is that such an imbalance could exacerbate financial losses in the sector, necessitating additional subsidies or steep tariff increases.

Both solutions pose significant risks: additional subsidies would place a further strain on the federal budget, while tariff increases could alienate an already financially burdened population, thereby risking further economic instability.

While solar energy offers relief from escalating fuel costs, the IMF has raised concerns over grid stability. Rapid growth in distributed solar, particularly rooftop solar systems for residential and commercial use, may lead to an inconsistent power draw from the grid. This instability could heighten the risk of blackouts and inefficiencies in the energy distribution system, a scenario Pakistan can ill afford. The IMF recommends Pakistan strengthen grid management protocols and address issues like theft and transmission line losses before a large-scale rollout of solar systems.

The IMF is not opposed to renewable energy in principle; instead, it advises a phased and financially stable approach to solar integration. This includes prioritizing targeted subsidies for low-income households only, thereby preserving fiscal space for other pressing needs. Additionally, the IMF urges Pakistan to focus on comprehensive structural reforms, such as privatizing inefficient power distribution companies and reducing reliance on subsidized fossil fuels for energy generation.

Further, the IMF has encouraged Pakistan to enhance the governance and operational efficiency of its distribution companies (DISCOs) and gradually phase out subsidies for non-essential users. These measures aim to create a sustainable, diversified energy strategy that could

support Pakistan's solar ambitions while maintaining fiscal discipline.

As the interim government of Pakistan navigates this complex landscape, officials have signaled a willingness to balance solar expansion with economic pragmatism. The country's leaders are reportedly in continuous dialogue with the IMF to align on mutually acceptable solutions for reducing circular debt and advancing renewable energy. The goal is to create a more sustainable power sector that can support Pakistan's energy demands without jeopardizing its financial stability.

For stakeholders in Pakistan's solar industry, the IMF's concerns represent a crucial inflection point. The government, solar advocates, and international bodies must collaborate to address the IMF's points without slowing down Pakistan's renewable energy goals. The consensus appears to lean toward gradual and structured solar adoption, where infrastructural resilience and grid stability are strengthened concurrently.

While the IMF's stance may appear as a roadblock to Pakistan's solar ambitions, it underscores the importance of a balanced approach that considers both environmental sustainability and economic stability. For Pakistan, the path to a solar-powered future may not be straightforward, but with strategic planning and reform, it remains achievable. As the country moves toward this greener horizon, the collaboration between financial institutions, energy experts, and policymakers will be essential in crafting a sustainable, resilient energy framework for Pakistan's future. ■

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SCAN FOR MORE

Delivering clean air in Pakistan

100 million people inhaling polluted air — 10 times more toxic than WHO standards; air quality reduced life expectancy by up to 2.7 years across Pakistan; 18th Amendment has not clearly delineated all environmental issues

Ali Tauqeer Sheikh

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

In recent days, we saw economic and social life in almost all of Punjab and KP come to a standstill. The air quality in Punjab, the most populous and most urbanised province of the country and parts of KP endowed with pristine mountains has become a more serious climate crisis than the magnitude of the 2022 floods.

With almost 100 million people inhaling polluted air — 10 times more toxic than WHO standards — the scale of this crisis has become a health emergency. The rain will provide temporary respite as it will help improve visibility but not permanently bring pollution levels down to healthy standards.

The problem has not emerged suddenly, nor can it be resolved quickly. How can Pakistan reverse the rapidly deteriorating situation? We need to set realistic targets for 2047 to commemorate our first 100 years as a nation.

The brewing challenge was recognised in 2014, by a World Bank-compiled study Air Quality in Pakistan: A Review of the Evidence, revealing that Pakistan's urban air pollution ranked among the worst globally, and significantly exceeded international limits.

The report showed that air pollution contributed to approximately 235,000 premature deaths and over 80,000 hospital admissions annually. The air quality reduced life expectancy by up to 2.7 years across Pakistan. It seems that the report in 2014 was predicting the newspaper headlines of November 2024.

The problem of pollution has not emerged suddenly, nor can it be resolved quickly.

The warnings were ignored by policymakers, even though the study also pointed out that air pollution was costing up to 6.5 per cent of GDP annually. Healthcare expenditures amount to \$47.7 billion (about 5.8pc of GDP), while lost labour output reaches \$6.6bn. The cost of environ-

mental degradation at the time was estimated at Rs365bn annually.

Given the gravity of the challenge, the study set a target of 70pc reduction in air pollutants by 2030 and 81pc by 2040. These goals required coordinated interventions across transportation, industry, agriculture, and waste management sectors, supported by strengthened institutional capacity and regulatory frameworks.

The Lahore High Court's Smog Commission (2017) and the Judicial Water & Environment Commission (2019), could not persuade the provincial government to bring the issue to the forefront.

Ironically, it was only in March last year that the National Clean Air Policy was approved. Within a month, it was followed by the Punjab's Clean Air Plan. Both NCAP and PCAP have shifted the signposts: achieving a 38pc reduction in PM2.5 emissions by 2030, compared to baseline levels, and to 81pc by 2040. In reality, a credible scientific baseline still does not exist. The policies' effectiveness is further compromised by limited air quality monitoring infrastructure. While Punjab has begun to install such infrastructure, Balochistan, KP, Sindh, and Gilgit-Baltistan lack monitoring networks entirely.

Several complex factors drive this crisis. Some developing countries have used the following five framework principles to orient their policy on clean air:

First: adaptation and mitigation are intrinsically linked. We need to bust the myth that as a developing country, emissions reduction or mitigation is not our priority, and only adaptation is. The present air pollution crisis is proof that it is perilous for Pakistan to ignore mitigation measures.

Second: policies are for implementation. Starting with the National Environment Policy (2005), a stack of policies have highlighted the need for ambient air quality. Despite several trillion rupees worth of PSDP, air quality hardly received any investments.

Further, the policies beg implementation, not a downward revision of targets. NCAP and PCAP have both relaxed air quality parameters that fall behind the WHO's 2021 guidelines. No reasons are offered for lowering standards. By reverting to pre-2021 WHO interim targets, Pakistan has effectively loosened the existing National Environmental Quality Standards from 2013. Some experts believe that it will potentially raise PM2.5 levels by more than 50pc.

Regrettably, some functionaries are now also arguing for reducing the ambitions of

Nationally Determined Contributions (2021). Instead of assessing the barriers for its slow implementation, an important thought leader has recently stated that NDC 2.0 has "unrealistically high ambition". In reality, the NDCs still lack an implementation plan, costing, or a secretariat to monitor its progress. Far from scaling down its sovereign commitments, Pakistan needs to scale up climate action for a convincing narrative for greater access to climate finance.

Third: align with global trends. The present crisis provides Pakistan an opportunity to join the global drive for decarbonisation, now gaining new momentum after Donald Trump's announcement of exiting the Paris Agreement. This is the right time for Pakistan to commit to net zero. At this time, about 75pc of states have set net-zero targets accounting for 98pc of global GDP and 88pc of greenhouse gas emissions. The list includes our neighbours Bangladesh, China, India and the Maldives. This decision can serve as a compass for the direction of our journey.

Fourth: decentralised clean air plans and engaging stakeholders. Technical capacities as well as willingness exists in academia, think tanks, start-ups, and the private sector to engage in data generation, map emissions hotspots, deliver research analytics and carry out advocacy campaigns. This is particularly important as the data generated by the government is expensive, delayed, and unusable. The Punjab government can give legitimacy to independent datasets and spearhead their environmental data generation.

Fifth: formally engage with the government of Indian Punjab. Air quality is a trans-boundary issue, even if crop-burning is a small contributory factor. A dialogue is needed for cleaner air on both sides of the border, and for early closure of two coal-fired power plants closer to the border: Guru Hargobind Thermal Plant and Guru Gobind Singh Super Thermal Power Plant. The agenda and purpose, however, has to be collaborative rather than accusatory.

Finally, the 18th Amendment has not clearly delineated all environmental issues. The provinces can agree with the federal government to firewall Rs1.28tr to be collected as petroleum levy for urban transportation, pre-agree on the quality of imported fuel and vehicles, agree on subsidies and incentives for energy transition for two and three-wheelers away from combustion engines, and fast-track the phasing out of rickshaws. After all, 2047 is only 23 years away. ■

Infrastructure: The Solar Conundrum In Pakistan

Fahim Zaman

Writer is a former administrator of Karachi and a freelance journalist

There are lots of rumours floating around in the country regarding alleged drastic changes in the government's policy on solar energy, especially the power-buyback agreements, commonly known as 'solar net-metering contracts.' Such rumours are apparently causing severe stress to many, amid a race among affluent households as well as commercial and industrial units to install rooftop solar systems.

The ever-snowballing power tariffs, rapidly falling prices of solar equipment — the cost of solar panels and their accessories have dropped between 12-25 percent in less than a year — and the inability of the national grid to supply uninterrupted or cost-effective electricity is what's fuelling this mad dash.

Already, in a very short span of time, the solar power generation in the country has reportedly exceeded 2,000 megawatts, with another 4,000 megawatts in the pipeline. Needless to say, the current solarisation trends appear set to continue in the foreseeable future. Pakistan's energy crisis has resulted in a surge of solar use, but the government's dithering on its solar energy policy means both consumers and power distribution companies lack clarity on how best to proceed...

Power-buyback agreements

Unfortunately, our sun can only help us generate electricity during daylight hours. That too, equivalent to 5.5-6 hours in a day, a fraction of the per-hour installed capacity of solar systems. The installed electricity generation capacity of power companies (more than 41,000 megawatt) already stands in excess of

the national power demand. Yet, as per the existing power policy, power distribution companies (Discos) are legally bound to buy back excess electricity produced by the rooftop solar systems of their customers. But the same Discos have to restart supplying electricity to the very customers after sunset, ie during peak demand hours.

This fluctuation is proving to be a technical disaster for their generators. Clubbed with 'capacity payments' to independent power producers (IPPs), these anomalies are creating an impossible challenge for an already troubled energy sector of the country. The federal minister for energy, Awais Leghari, and his ministry recently came under fire amid reports that the government was planning to terminate net-metering contracts or replacing them with 'gross-metering.' The minister clarified that the government had no plans to annul existing net-metering contracts, signed with 113,000 plus consumers nationwide. However, he remained vague and non-committal about the ministry's future policy, especially for fresh contracts.

The load of tariff subsidies

The country's power tariff subsidises the marginalised, low electricity-consuming population segments at the cost of high-end, well-heeled consumers. The general electricity supply tariff for residential consumers ranges from Rs4.73 per unit for consumers logging up to 50 units in a month to an effective rate of Rs74 per unit for those consuming more than 700 units.

While consumers who have opted for net-metering may be responsible for around five percent of national consumption, the Discos are concerned that these consumers were their premium customers, who were previously absorbing the cost of the subsidy for the 'protected' consumers from low-income

groups.

As more and more premium customers move out of the system, they leave ever fewer customers to absorb the average cost of power supply. Power companies also complain that, instead of offering relief, every time the National Electric Power Regulatory Authority (Nepra) revises the unit cost of electricity, the Federal Board of Revenue (FBR) reaps a windfall of indirect tax revenues — without any effort of its own. An ever-increasing number of consumers have already started complaining that Discos are refusing net-metering contracts by claiming that their pole-mounted transformers (PMTs) lack the capacity for additional loads.

Policy pitfalls

Because of these developments, consumers seem sceptical about the energy minister's recent statements and clarifications. So, what are the options available to the energy ministry and what will be their consequences? Except for waiving the import duty, the government has withdrawn all subsidies and concessions on renewable energies, including solar. While the government may not be able to stop ordinary consumers or commercial and industrial units from switching to clean renewable energy, it can deny future contracts or even renege on current net-metering contracts.

According to one source, Nepra is also considering reducing net-metering buyback from Rs22.32 per unit to Rs11 per unit — a loss of about 50 percent adjustment in the electricity bills of those with net-metering. Alternatively, the energy ministry may try to replace net-metering with gross-metering contracts.

Gross-Metering Vs Net-Metering

In net-metering, consumers first use the self-generated electricity, which

costs them about Rs17 per unit — a fraction of the cost of purchasing it from the grid. The remaining surplus units are sold back to the national grid at a cost that is nearly 25 percent more than what it takes consumers to produce it.

In gross-metering, all solar power generated by the consumers is exported to the grid. The same grid will supply them electricity to fulfil their needs. Even if the rate of buyback is the same as offered to the consumers as in the current net-metering agreements, it will be less than the rate (to be decided by Nepra) they pay to get power from the grid. Because of this tariff difference, consumers will be able to partially lower their bills, but in no case will they get the highly reduced electricity bills that they might be getting today.

For example, if the current electricity unit rate was Rs74 and Nepra maintains Rs22.32 per unit for export in case of gross-metering, let's compare gross-metering with net-metering contracts:

This means that it would take less than two and a half years for someone with a solar ESS to recoup the cost through savings in electricity cost. With the lithium-ion batteries of the ESS guaranteed a life cycle of over 10 years, getting a storage system seems like a no-brainer. This leaves the energy sector in a catch-22 situation. More and more consumers are likely to transition to renewable energy, which is a global trend and also cheaper for consumers in the long run. Even if the government annuls net-metering contracts and moves to gross-metering, consumers will shift to ESS.

What is required, it seems, is for the government to prepare for this transition and develop an energy mix that relies more on renewable energy sources, such as solar, hydel and wind, and consider the decommissioning of traditional energy plants, which are based on environmentally disastrous fossil fuels. The situation is akin to people being forced to opt for motorbikes in the absence of green public transport. However, that's neither good for the economy nor for citizens scrambling to save their skins. ■

Schneider Electric teams up with NFEH to Energize Off-Grid Communities



Humayun Akhlaq, Country GM of Schneider Electric, says we are thrilled to join forces with NFEH to address pressing energy needs of rural communities

In a groundbreaking initiative aimed at transforming the lives of underserved rural communities in Pakistan, Schneider Electric has announced a strategic partnership with the National Forum for Environment and Health (NFEH) to provide sustainable energy solutions to off-grid areas, significantly improving access to electricity for thousands of families.

A ceremony was held for signing of the Letter of Intent (LoI) between Schneider Electric and Services and NFEH to formalise this partnership, which will leverage Schneider Electric's expertise in energy solutions and NFEH's deep-rooted community engagement to implement innovative projects that will not only provide electricity but also empower local populations through Pakistan's vast clean energy potential.

"We are thrilled to join forces with the NFEH to address the pressing energy needs of rural communities in Pakistan," said Humayun Akhlaq, Country GM of Schneider Electric, who was present at the signing of the MoU. "This collaboration reflects our commitment to sustainable development and our belief that access to energy is a fundamental right that can drive economic growth and improve quality of life," he said.

The NFEH has been at the forefront of community development in Pakistan, and this partnership will enhance its efforts to



create lasting change. "Together with the Schneider Electric, we aim to bring light and opportunity to those who need it most," said NFEH President Naeem Qureshi.

"This initiative will not only provide energy but also foster education, health, and economic development in these communities." The project is set to begin in the underserved rural areas of Pakistan, with plans to expand based on the success of initial implementations. Both organizations are committed to transparency and community involvement throughout the process, ensuring that the voices of residents are heard and prioritized.

Engr Nadeem Ashraf, SG NFEH Ruqiya Naeem, Faizan Sarwar Business Manager SE and BD Sadaf Waqar Ambassador also attended this ceremony. ■



Hosts Successful Power Day Sukkur in Collaboration with Huawei Fusion Solar and Jinko Solar

Diwan International Pvt. Ltd., in partnership with Huawei Fusion Solar and Jinko Solar, proudly hosted the highly anticipated Power Day Sukkur, bringing together leading industry professionals, dealers, and distributors for a day dedicated to advancing solar innovation and fostering meaningful connections.

The event featured:

Interactive Training Sessions on the latest solar technologies.



Expert Insights from representatives of Huawei Fusion Solar and Jinko Solar. Networking Opportunities with key industry leaders. The day concluded with a grand dinner, celebrating partnerships and shared commitment to sustainable energy solutions.

Diwan International extends heartfelt gratitude to all attendees for contributing to the success of Power Day Sukkur, marking another milestone in driving innovation and sustainability in the solar industry.

Neelum-Jhelum's troubled portion to get Rs23bn repairs

The government has decided to repair the faulty portion of the Headrace Tunnel (HRT) of the 969-megawatt Neelum-Jhelum Hydropower Project (NJHP) at an estimated cost of Rs23 billion, which would keep the plant unavailable to the national grid for another eight months.

A meeting, presided over by Planning Minister Ahsan Iqbal on the orders of the prime minister, was told by international consultant James Stevenson that reconstruction of the entire HRT would cost more than Rs222bn and may take a couple of years to complete.

However, the faults had been identified between kilometre 13 and 16 inside the tunnel, which could be reached through adits (horizontal access). The affected part would have to be reinforced through 'concrete lining' and will take eight months and about Rs23bn. Mr Ste-

venson said concrete lining of the troubled portion was advisable and techno-economically viable option.

According to officials, the shutdown of the Rs500bn worth of Neelum-Jhelum Hydropower Project, which officially ceased operations on May 2, is estimated to result in direct annual losses of over Rs55bn. Due to the need for expensive replacement fuel, indirect losses could range from Rs90bn to Rs150bn, depending on the fuel source. The project previously produced over 50 billion units of clean energy annually with zero fuel cost.

Informed sources said the water sector quarters were still trying to protect some officials who may have been responsible for the lapse, omission or commission or may have contributed to the problem during the construction phase 15 years ago. They were still involved in the project and provided technical assistance with the investigation.

"The experts recommended steps

to fix blockages and structural damages inside the tunnels," said an official statement issued after the meeting. It added that the minister "directed the concerned authorities to expedite repair work and develop a detailed plan based on scientific studies that could be able to justify the costs spent on the projects".

He stressed that the remedial work must provide a sustainable solution, ensuring long-term stability and value for the investment. The 969MW project near Muzaffarabad in Azad Jammu and Kashmir is of great importance to Pakistan's energy needs. Since its start in 2018, it has produced over 20,030 million units of electricity.

However, recent structural problems in the project's Head Race Tunnel have led to temporary power stoppages. To resolve these issues, an international panel of experts, including a prominent Pakistani geologist, was appointed to identify the causes and suggest solutions. ■

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Drafting new climate goals

Global South, including Pakistan demands money for the damage caused by the developed countries; all countries will need to deliver on finance goal; China provided \$4.5bn per year between 2013 and 2022

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Zaki Abbas

After a week of negotiations and disagreements, the delegates from across the world gathered in Baku for COP29, released a draft outlining the climate finance goal — New Collective Quantified Goal — but several revisions are expected before an agreement is reached, if any.

The bone of contention is where the finance will come from, as the Global South, including Pakistan, demands money from the developed countries for the damage they caused to the environment since the industrial age began.

In his speech at the World Leaders Climate Action Summit last week, Prime Minister Shehbaz Sharif highlighted the unmet pledges made at previous climate conferences and called out the loan-laden climate finance instead of aid to build resilience. In its stance at the ongoing negotiations, the G-77 Group, of which Pakistan is a part, and other blocks comprising developing countries, argued for easy access to climate finance and aid instead of loans.

These negotiations, after almost a week of efforts, seemingly resulted in a small win for the Global South as, for the first time, ‘aid’ made its way to the draft for the new climate finance.

The bone of contention is where the finance will come from, as the Global South demands money for the damage caused by the developed countries

This document has at least six options for the new climate goal, ranging from \$100 billion to \$2 trillion annually. The \$100bn target adds nothing to the equation, as it is similar to the fund announced at COP15 in Copenhagen and then reaffirmed in the 2015 Paris Agreement. More and more changes to these drafts are expected, especially after the ministers arrive in Baku in the second week of COP.

Arif Goheer, who is representing the Pakistan climate ministry at negotiations, said there is a “huge finance gap” since the overall spending in this regard is minimal, but the countries require trillions to cope with the vagaries of climate.

The new finance accord, or New Collective Quantified Goal (NCQG), is direly needed to

bridge this gap and address the needs of developing and most vulnerable countries, he said, adding that the Global South was not here to seek loans because it did not want another debt trap.

Dr Abid Sulehri, executive director of the Sustainable Development Policy Institute, underscored the urgency of the new climate goal, saying \$1 trillion was not just ambitious but an essential benchmark to meet the ballooning costs of mitigation and adaptation, especially in developing countries already facing the brunt of climate impacts.

He also agreed that debt should not be a part of this new goal as NCQG must be able to provide resources on favourable terms. “Ideas like reallocating Special Drawing Rights, issuing new SDRs, adjusting equity-to-loan ratios for multilateral banks, and redirecting fuel subsidies toward climate initiatives require the political will of wealthy nations,” he added.

As countries stand pole apart on new finance goals, Stephane Hallegatte, senior climate change adviser at World Bank, claimed there was “no silver bullet which will just fix everything”. In response to a question about low-income states, he said there was a need to increase the efficiency of spending and “mobilise domestic resources, especially in countries with high debt [like Pakistan]. You need cost of addition of finance, and part of that is to raise more resources”.

“Having a tax system that is efficient and can raise resources without killing economic growth is really important,” he said, adding that proposing more energy taxes is, he believed, “politically complicated”.

The World Bank official also dismissed the loan versus aid debate surrounding climate finance, saying it completely depended on the nature of the project. “If your project is power generation, which is a project that will raise revenue, a part of that revenue will pay back the loan.” However, if the project were, for instance, sanitation, that didn’t raise revenue, then such a project would add to the country’s debt since it did not have financial inflows, he said.

Pakistan and other developing countries, however, find this approach of ‘concessionary loans’ problematic and ask the Global North to cough up the funds. MrGoheer, representing the climate change ministry, said there was no

mechanism for climate funds and instead of going through red tape, money should come instantly in case of a climate disaster.

But where will the money — for loans or aid — come from? The developed world is in no mood to shoulder fiscal responsibility as they point to climate disasters in their own countries. The recent floods in Spain are an example, which has eaten up a chunk of their finance.

According to them, developing countries such as China also bear the responsibility for being one of the big emitters. Though developing countries have no obligation to contribute to climate funds, China provided \$4.5bn per year between 2013 and 2022, according to the World Resources Institute, in its study released ahead of COP29. Beijing is not historically responsible for emissions.

With Donald Trump, a climate denier, set to take charge as the US president, there is little hope that Washington will play its role in this finance. The White House Climate Adviser Ali Zaidi hoped that the US under the outgoing Biden administration would be able to meet its \$11bn climate finance target this year and also pinned hopes on the private sector and the state administration to take the lead if the federal government under Donald Trump takes a backseat.

Time is running out, however, and to reduce emissions and keep temperatures under 1.5 Celsius in line with the Paris Agreement, all countries will need to deliver on the finance goal before the COP curtains draw on Nov 22. It's one week to go, and lots needs to be done to evolve consensus.

This story was produced as part of the 2024 Climate Change Media Partnership, a journalism fellowship organised by Internews' Earth Journalism Network and the Stanley Center for Peace and Security. ■

ENERGY NEWS

Reon Energy, FrieslandCampina Engro sign solar partnership



EU Report

FrieslandCampina Engro Pakistan Limited, a leader in Pakistan's dairy industry, has announced a 3.4MW solar power project in a significant partnership with Reon Energy, a leading Intelligent Renewable Microgrids company, to strengthen sustainability across its operations. The plant will be installed at FrieslandCampina Engro Pakistan's manufacturing facility in Sahiwal. The system is designed to generate 5,013.6 MWh of clean energy annually, significantly reducing CO2 emissions by approximately 2,506 tonnes each year. This initiative underscores FrieslandCampina Engro Pakistan's dedication to environmental stewardship and represents a significant advancement in the dairy industry. While addressing the event, Kashan Hasan, CEO & Managing Director of FrieslandCampina Engro Pakistan Limited (FCEPL) emphasized how such partnerships serve as a defining moment in strengthening and promoting environmental sustainability in the dairy industry.

Significant Gas Reserves Discovered in Sindh

EU Report

Karachi: Sindh Energy Minister Syed Nasir Hussain Shah has announced the discovery of substantial gas and condensate reserves in the Shah Bandar Block's Pati-6 exploration well, located in Sujawal district. The well is producing 11.7 million standard cubic feet per day (MMSCFD) of high-quality gas and 198 barrels per day (BPD) of condensate.

Sindh Energy Holding Company (Private) Limited (SEHCL), a joint venture partner in the Shah Bandar Block, holds a 2.5% working interest. The block is operated by Pakistan Petroleum Limited (PPL) with a 63% majority share, while Mari Petroleum Company Limited (MPCL) and Government Holdings (Private) Limited (GHPL) have 32% and 2.5% shares, respectively. Shah shared that the Pati-6 well was spudded on October 11, 2024, reaching a depth of 2,475 meters to assess hydrocarbon potential in the Upper Sand of the Lower Goru Formation. The well's testing delivered promising results, yielding 11.7 MMSCFD of gas and 198 BPD of condensate under a wellhead flowing pressure (WHFP) of 2578 PSI with a choke size of 32/64 inches. ■

Global GHG Emissions BY SECTOR (2023)

This graphic breaks down the 57 gigatonnes (Gt) of GHG emissions produced in 2023.





COP29 Baku Azerbaijan

NOVEMBER 11-22
2024

From Paris to Baku: lessons from COP29

Dr Khalid Waleed

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

Rapid industrialization of nations blurred once-clear lines between developed and developing

The COP29 in Baku concluded with the 'Baku Breakthrough, setting the stage for COP30 in Belem, Brazil. Let me build a longish context starting from COP21, the Paris Agreement, adopted in December 2015, which represents a profound turning point in humanity's collective response to the existential challenge of climate change.

The Paris Agreement is more than just an agreement; it is a testament to the power of multilateralism, bringing together 196 parties to unite under a shared banner of ambition to limit global warming to well below 2 C and, ideally, to 1.5 C above pre-industrial levels. At the heart of this global compact lies the nuanced principle of "common but differentiated responsibilities and respective capabilities" (CBDR-RC). This principle, steeped in notions of justice and pragmatism, seeks to balance the universality of climate action with the inherent disparities among nations.

Emerging from the 1992 Rio Earth Summit, CBDR condenses the duality of the climate crisis: it is a shared problem, but one shaped and perpetuated unevenly across the globe. The historical context is indispensable here. Indus-

trialised nations, riding the crest of carbon-intensive growth since the Industrial Revolution, bear the lion's share of historical greenhouse gas emissions. In contrast, developing nations, many of which were still grappling with poverty and underdevelopment in the late 20th century, entered the climate dialogue with minimal emissions but significant vulnerabilities. CBDR initially reflected this dichotomy, casting developed nations as the primary actors for mitigation, while developing nations were granted leeway to prioritise economic growth.

At its core, the Paris Agreement affirms the shared nature of the climate crisis, emphasising that no nation is insulated from its impacts or absolved of responsibility. This universality is enshrined in its ambitious goals. The directive to limit global warming to 1.5 C above pre-industrial levels serves as an existential imperative. The pursuit of net-zero emissions by the second half of the century underscores the need for transformative systemic change, akin to rewiring the engines of modern civilisation. And the commitment to enhance resilience reflects a recognition that adaptation is not a luxury but a necessity, particularly for the most vulnerable.

The architecture of the Paris Agreement, built on nationally determined contributions (NDCs), epitomises inclusivity. Yet this inclusivity, while laudable, introduces challenges of consistency and accountability. The disparity

in the ambition of NDCs underscores a paradox: while the agreement demands unity, its execution often reflects the fragmented realities of geopolitics and domestic priorities.

Equity, the lifeblood of CBDR, finds expression in the Paris Agreement's differentiated approach. Climate Finace (now, New Collective Quantified Goal), planned as a conduit for this support, embodies this ethos. Yet its aspirations have faltered against the hard rock of financial shortfalls. The unfulfilled promise of \$100 billion annually in climate finance by 2020 has not only strained North-South relations but also cast a shadow over the broader commitments of the developed world. Now, the NCQG has set bar high as much as 300 billion USD at COP29. For nations on the frontlines of climate impacts, such as Small Island Developing States (SIDS) and Least Developed Countries (LDCs), the differentiation in responsibilities extends to addressing existential vulnerabilities. Provisions for loss and damage, while symbolically significant, remain underfunded and mired in procedural complexities. This dynamic is akin to a lifeboat that promises safety but arrives half-built, leaving the most vulnerable to fend for themselves in a storm not of their making.

The operationalisation of CBDR within the Paris framework is fraught with challenges, each revealing the tension between equity and efficacy. The voluntary nature of NDCs, while fostering inclusivity, often results in ambitions that fall short of the collective goals. The rise of emerging emitters and climate induced loss and damage in developed countries like Spain further complicates the narrative. Insufficient climate finance aggravates these tensions, undermining trust and limiting the capacity of vulnerable nations to implement meaningful action.

For nations like Pakistan, this could open new avenues for bilateral cooperation in green financing and technology transfers. However, the broader structural inefficiencies of the COP process were also evident. The hosting of the conference by Azerbaijan, a country heavily reliant on fossil fuels, though symbolized a disconnection between the COP's stated goals and the practical realities of its execution but at the same time stresses the importance of participatory approach.

One striking feature of COP29 was the growing assertiveness of environmental activists and NGOs, reflecting a palpable impatience with the slow pace of climate action. Their vocal presence served as a reminder of the urgency required to tackle

the climate crisis. This resonates with Pakistan's advocacy on global platforms, as the country has consistently emphasised the disproportionate impacts it faces despite contributing minimally to global emissions. Yet, the broader divide between developed and developing nations threatens the unity required to combat climate change collectively. Pakistan, being one of the most climate-vulnerable countries, must navigate these fractured dynamics while ensuring its voice is heard in subsequent negotiations.

The outcomes of COP29 underscore the need for Pakistan to adopt a comprehensive and forward-looking climate action plan. To address its vulnerability, Pakistan must focus on leveraging international climate finance effectively. Strengthening its institutional capacity to access funds such as the NCQG and competitive funds like Green Climate Fund and exploring bilateral green financing arrangements with nations like China are critical steps. Simultaneously, Pakistan must prioritise the transition to renewable energy, scaling up investments in solar and wind to reduce its dependence on fossil fuels through early retirement of coal initiatives. This shift is vital not only for reducing emissions but also for addressing the chronic energy shortages that hamper its development.

Building resilience to climate impacts is equally essential. Pakistan's recent experiences with devastating floods highlight the urgency of investing in climate-resilient infrastructure, such as advanced drainage systems and robust flood defenses. Promoting climate-smart agricultural practices and diversifying crop patterns can also mitigate food security risks exacerbated by changing weather patterns. Urban centres too require targeted interventions to manage heat-waves, water scarcity, and the unplanned expansion that compounds climate risks. These efforts must be supported by strong institutional frameworks, with data-driven policymaking and strict enforcement of environmental laws ensuring progress toward national climate goals.

Engaging communities and fostering public-private partnerships are crucial to the success of Pakistan's climate strategy. Large-scale awareness campaigns can promote energy conservation and sustainable practices, while local governments and communities should be empowered to design and implement adaptation plans tailored to their specific needs. On the international stage, Pakistan must strengthen its alliances with other vulnerable nations to advocate for equitable climate finance and loss-and-damage compensation. The lessons from COP29 underline the impor-

tance of unified, collective action and the need for reformed and inclusive processes in future climate negotiations.

The path forward for Pakistan lies in adopting a multidimensional approach that integrates mitigation, adaptation, and resilience-building efforts. By capitalising on global commitments, fostering domestic innovation, and empowering communities, Pakistan can address its climate challenges while setting a precedent for sustainable and equitable development. The urgency of the crisis demands that Pakistan act decisively, not only to safeguard its people and ecosystems but also to contribute meaningfully to the global fight against climate change. ■



Dr Irfan e-elected as WWEA president

EU Report

The World Wind Energy Association (WWEA) General Assembly has announced the election of its new board for a two-year term. Dr Irfan Afzal Mirza, who assumed the presidency from Hon. Peter Rae a year ago, has been unanimously re-elected as association president. The assembly also elected the following vice presidents which are Prof Dr Chuichi Arakawa (Japan), Zeeshan Ashfaq (Pakistan), Heinrich Bartelt (Germany), Khalid Benhamou (Morocco) Qin Haiyan (China), Dr. Karunamoorthy Neethimani (India), Monica Oliphant (Australia), Dr Ibrahim Togola (Mali), and Prof Dr Tanay Sidki Uyar (Turkey). Dr Irfan Mirza expressed gratitude for the trust placed in him by the General Assembly as saying: "I am deeply honored and humbled by this opportunity to continue serving as President of WWEA. It is a privilege and a responsibility I accept with utmost sincerity." ■

SUSTAINABLE CONFERENCE OF SDPI 2024 ISLAMABAD

PHOTO GLIMPSES



Mohammad Naeem Qureshi Managing Editor Energy Update presenting Flower Bouquet to Consul General of Oman Engr Sami A Al Khanjari on National Day of Oman



Al khidmat foundation organized a tree plantation conference in Karachi. A group photo of speakers, children and organiser was taken on this occasion

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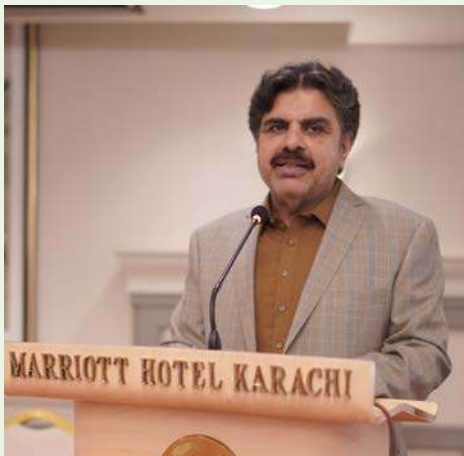
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Sindh Govt Pledges Collaboration with Civil Society on Climate-Responsive Energy Policies



Sindh Energy Minister Nasir Hussain Shah has called for increased collaboration between the government and civil society to craft a climate-responsive energy policy for the province. Speaking at the Sindh Energy Dialogue, organized by The Knowledge Forum and NED University of Engineering and Technology, the Minister outlined ambitious renewable energy initiatives, including solar parks and home solar systems for underserved areas.

He emphasized the need to connect



civil society with institutions to gather input on energy plans, ensuring inclusivity in policy development. Highlighting public sector efforts, Mahfooz Qazi, Director of Alternate Energy, shared the government's plans to solarize schools, hospitals, and other buildings.

Experts and participants urged a shift from fossil fuels, citing environmental and economic concerns. "Sindh's reliance on coal mining has significant climate impacts," noted Muhammad Badar Alam of PRIED, while MPA Marvi Rashdi

stressed integrating community concerns into policymaking.

Sessions addressed renewable energy's growing adoption, the need for decentralized energy systems, and the impact of rising electricity costs. Energy experts called for sustainable urban planning and efficient energy service delivery in rural areas to counter urban migration.

The dialogue concluded with a call to prioritize climate considerations in all energy policies to benefit local populations and the environment. ■



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Pakistan's judiciary on frontline in battle against climate change

As climate change wreaked havoc and government action stalled, the people turned to the judiciary, seeking urgent intervention through landmark environmental cases

Hawwa Fazal

The author is a KAS-Dawn.com media fellow, interested in development, governance and social issues.

A country under siege, not by war or strife, but by nature itself. Pakistan, ranked as the fifth most vulnerable country to climate change, stands on the frontline of climate catastrophe: glaciers are melting at an unprecedented rate, cities are choking in thick blankets of smog, and monsoons wreak havoc in urban and rural areas across the country.

Warnings of these disasters were long apparent. Yet, the legislative and executive bodies chose a different path — one paved with neglect, broken promises, and self-serving agendas. Laws meant to shield the nation from environmental damage were ignored or twisted, and the necessary action was shelved in the name of profit.

As nature's fury surged, the patience of the people wore thin. Tired of waiting for the legislative and administrative branches to take action, people turned to the judiciary seeking accountability and action.

Speaking about the role of judiciary in addressing these issues, Dr Parvez Hassan, senior advocate of the Supreme Court of Pakistan said:

“Judges mostly step in to solve problems that the governments and society have failed to resolve; it is the apathy in government responses to critical issues facing the common man that, in many cases, facilitated the ‘activism’ of our judiciary.”

It's a battle that began three decades ago, and is still far from over. Here's how Pakistan's courts have been laying down landmark “green precedents,” one ruling at a time, in a bid to protect the nation's future. This is by no means an exhaustive list, nor does it cover



every single litigation relating to the environment that has reached Pakistani courts. It simply provides an overview of the kinds of cases brought to the courts and how the judiciary has weighed in on some of these issues in recent years.

Shehla Zia vs Wapda

In 1994, a group of residents in Islamabad approached the Supreme Court with a Public Interest Litigation case — a class action constitutional law litigation through which individuals can sue to address an issue relating to the ‘public interest’ and can identify a class being affected by the issues raised.

The petitioners pleaded that the construction of a proposed electricity grid station by the Water and Power Development Authority (Wapda) should be stopped. They said that the authority had carried out inadequate assessments of the effects of the proposed grid station on human health and environment. The residents were also concerned about harm to the city’s much-prized green belt regulations due to construction of the grid.

Asghar Leghari vs Federation of Pakistan

In 2015, an agriculturist and member of the Lahore High Court Bar Association (LHC-BA), Asghar Leghari sued the federal government over its failure to implement the National Climate Change Policy of 2012 and the Framework for Implementation of Climate Change Policy (2014-2030).

Legari pleaded to the court that the government’s failure to meet its climate change adaptation targets had impacted Pakistan’s water, food, and energy security. Quoting from the policy, the farmer stated that climate change threats had led to “major survival concerns for Pakistan, particularly in relation to the country’s water security, food security and energy security”.

The commission worked with the provincial government to draft water policy and climate change policy. The court kept the case as a rolling mandamus — even in the last order which was passed in January 2018, the court consigned the matter to the record instead of closing it as a finally adjudicated matter.

The court set up a six member standing committee that can approach the court “for appropriate orders for enforcement of the fundamental rights of the people in the context of climate change, if and when required”.

Rabab Ali vs Federation of Pakistan

In 2016, a seven-year-old girl, Rabab Ali, sued the government for violation of her and her generation’s right to a healthy life. She and her father, an environmental lawyer, argued in court that exploiting lignite coal in Sindh’s Tharparkar district would significantly raise Pakistan’s carbon dioxide emissions, pollute the air, and pose a catastrophic threat to future generations while also contributing to global warming.

Sheikh Asim Farooq vs Federation of Pakistan

In 2019, members of civil society filed a suit against the Federation of Pakistan for failure to plant, protect, manage, preserve and conserve the trees and forests in Punjab. The petitioners pleaded that this was a violation of statutory obligations and petitioners’ constitutional rights.

The petitioners requested a judicial order to compel the authorities to give a timeline for the implementation of Forest Act, 1927 and the Punjab Plantation and Maintenance of Trees Act, 1974, plant trees and hold proceedings against officers who failed to discharge their duties.

The LHC allowed the writ of mandamus, ordering the government to fulfill its obligations under the law “to safely manage, conserve, sustain, maintain, protect and grow forests and plant trees in urban cities.”

In the judgement penned by Justice Jawad Hassan, the court directed the government to take its legal obligations seriously in implementing policies such as the National Climate Change Policy, 2012, the National Forest Policy, 2015, the Forest Policy Statement, 1999 and Punjab Environment Policy, 2015.

Public Interest Law Association of Pakistan vs Environmental Protection Agency

In 2022, a writ petition was filed by the Public Interest Law Association of Pakistan (PILAP) against the Environmental Protection Agency. The petitioners challenged the Ravi riverfront project undertaken by the Ravi Urban Development Authority (Ruda) on numerous grounds including its impact on socio-economic factors and the environment.

Ahmad Rafay Alam, Member Executive Committee of PILAP, wrote in a Dawn report: “Ruda describes the

Ravi project as in alignment with the government’s ‘clean and green’ objectives, and the key to securing water and food for all of Pakistan. Yet, it is hard to imagine how paving over nearly 80,000 acres of rich farmland can be conceived of as ecologically sustainable or socially responsible.”

Speaking to Dawn.com, Alam said: “The LHC put a stop to the project, however, it didn’t last long as the Government of Punjab filed an appeal in the Supreme Court.” Alam said granting the appeal, the SC suspended the order in 2022 and said that Ruda cannot acquire any more land than it already has but could work on the one taken over previously. He added that ever since, the work has been going on with destruction of prime agricultural land on both sides of the river.

Province of Sindh vs Sartaj Hyder

In 2023, Sindh’s Provincial Disaster Management Authority (PDMA) director general and other government departments moved the SC against a Sindh High Court order that directed the constitution of citizens committees headed by civil judges to oversee the relief work following the devastating 2022 floods.

Justice Aisha Malik penned the judgement, stating that the committees would not have direct control or directive power over operations. Instead, they would engage with the processes established by the District Disaster Management Authority (DDMA) to enhance their effectiveness and inclusivity. The order also emphasised the inclusion of women in these committees, recognising their heightened vulnerability to natural disasters.

In a separate note, Justice Mansoor Ali Shah, part of the three-judge bench hearing this case, acknowledged the vulnerability of Pakistan to climate change and observed that devastation caused by recent floods in 2022 is distressing proof. He said that the National Disaster Management Plan, 2012, does refer to increase in climate related natural disasters but falls short of devising any meaningful steps to suggest adaptation measures and guard against climate change.

Justice Shah observed that it was high time to develop a mechanism to ensure global funds were invested in building national climate resilience so that climate induced disasters could be minimised. ■



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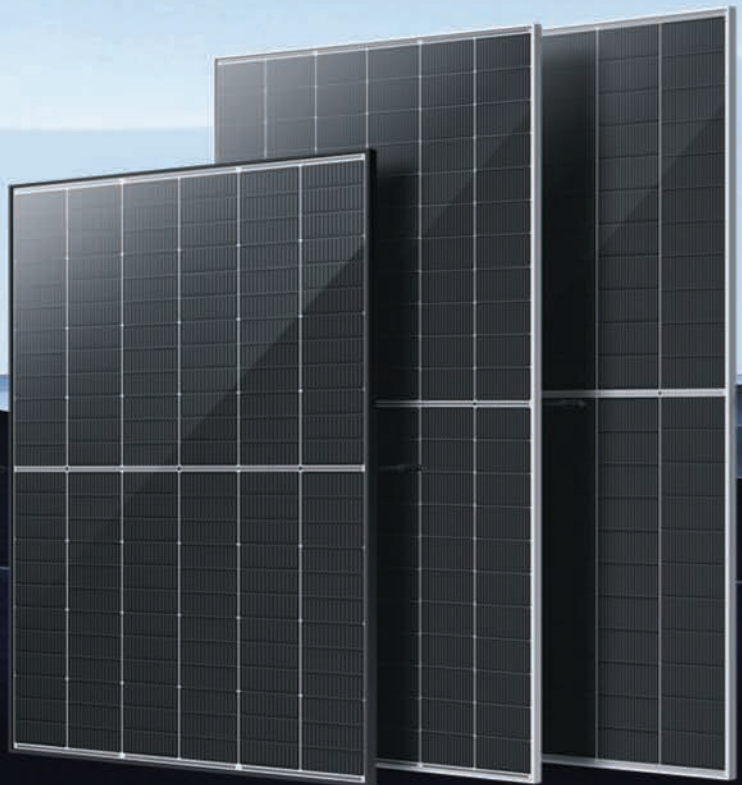
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