The fault is not with sun but in power grid

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The fault is not with our sun but in our electricity grid. Pakistan is not short of energy. It is short of alignment between when power is produced and when it is needed. What appears as scarcity each evening is, in truth, a design failure playing out on a daily schedule.

The decision to impose approximately 2.25 hours of loadshedding during peak evening hours is not, in essence, about scarcity of capacity. Pakistan today stands with an installed generation capacity exceeding 40,000+MW, while peak demand rarely crosses 30,000MW. In classical economic terms, this is not a supply constraint but a coordination failure. The system has capacity in abundance, but not at the right time, not at the right price, and increasingly, not in the right form.

The official justification is familiar. By curtailing demand during peak hours, the government aims to avoid dispatching expensive thermal generation, particularly residual fuel oil (RFO)-based plants, where generation costs can exceed Rs45 per unit. Without such measures, authorities estimate that tariffs could have increased by Rs5–6 per unit. In that sense, loadshedding is being used as a price control instrument, a blunt but politically expedient tool.

Yet, as the old idiom goes, one cannot cure a chronic ailment with temporary bandages. What is unfolding is not merely a short-term response to a global oil shock triggered by geopolitical tensions in the Strait of Hormuz. It is the manifestation of a deeper paradox: Pakistan's energy transition is advancing faster at the household level than at the policy level.

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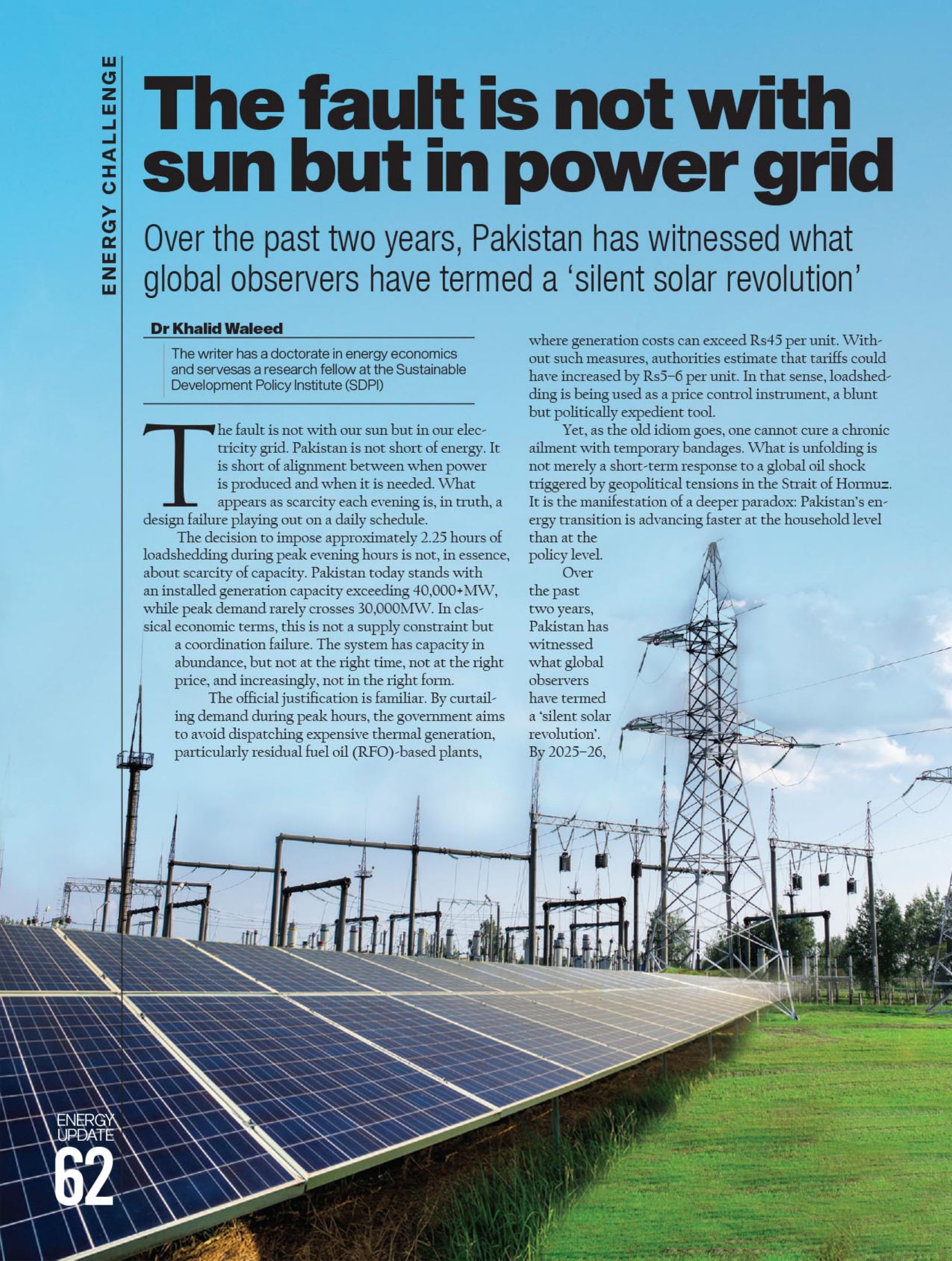

rooftop solar installations, both net-metered and off-grid, are conservatively estimated in the range of 12-16 GW formally, with significantly higher effective penetration when informal installations are included. This expansion has been largely financed by households and small businesses, without sovereign guarantees or concessional finance. In effect, while the state was busy drafting plans, the market quietly rewrote the script.

The impact has been tangible. Pakistan's reliance on imported RLNG, which once accounted for nearly 30-40 per cent of power generation in 2022, is projected to decline to around 10-15 per cent in 2025-26. This is not merely a statistical shift; it represents a structural easing of external vulnerability. In a world where energy supply chains are increasingly weaponised, reducing dependence on imported fuels is not just an economic decision, it is a strategic necessity.

A closer reading of PSDP allocations reveals a persistent bias toward expansion over optimisation. Tarbela 5th Extension alone absorbs about Rs84 billion, with Dasu at Rs10.9 billion and Mohmand at Rs3.5 billion, alongside smaller hydropower schemes. These are sound long-term investments, but poorly aligned with today's peak-hour constraints. Hydropower is seasonal and offers little relief during evening demand surges, meaning current system stress remains unaddressed.

On the thermal side, allocations of roughly Rs500 million for conservation and Rs4.4 billion for Jamshoro coal further reflect legacy thinking. Grid upgrades exist but remain fragmented. More critically, there is no meaningful allocation for battery storage – the missing link in a renewable-heavy system. Distribution investments improve monitoring, not flexibility.

A modest reallocation within the PSDP could have changed the equation entirely. Redirecting even 10-15 per cent of large hydropower or coal-linked allocations toward distributed and grid-scale storage would have provided immediate relief. A national 'battery incentive scheme', aligned with rooftop solar, could have transformed millions of households into micro-storage units, effectively flattening the peak curve.

Instead, the budget seems to have doubled down on inertia.

This disconnect is further compounded by regulatory signals. The evolution of net metering regulations under National Electric Power Regulatory Authority, (Nepra) particularly the move toward lower buyback rates for new consumers, reflects an attempt to protect grid revenues rather than optimise system efficiency. While the concern over rising capacity payments, now exceeding Rs2 trillion annually, is valid, the response risks undermining the very transition that is reducing import dependence.

The contradiction becomes sharper when viewed through the lens of fiscal policy. A carbon levy on petroleum products, introduced under IMF-supported reforms, aims to discourage fossil fuel consumption. Yet, solar equipment faces taxation and storage, arguably the most critical enabler of renewable integration, remains largely unsupported. It is a policy mix that manages to chase two hares and catch neither.

From a political economy perspective, this is not accidental. Pakistan's power sector is bound by long-term power purchase agreements (PPAs), many of which are dollar-indexed and structured on a take-or-pay basis. These contracts create fixed cost obligations that do not adjust easily to declining grid demand. As more consumers adopt solar, the burden of these costs is redistributed among fewer users, leading to higher tariffs and accelerating the shift away from the grid, a classic utility death spiral.

Breaking out of this cycle requires a shift not just in policy, but in mindset. First, the PSDP must evolve from a generation-centric to a system-centric framework. Allocations should prioritise storage, flexibility and demand-side management over additional capacity.

Second, battery storage must be treated as critical infrastructure. Pakistan's indigenous sodium resources offer a unique opportunity to develop a localised battery ecosystem, reducing import dependence while creating industrial spillovers. Third, legacy thermal assets must be managed through a structured transition. Early retirement, repurposing or hybridisation can reduce fiscal burdens while maintaining grid stability.

Fourth, policy coherence must be restored. Fiscal measures, regulatory frameworks and climate commitments must move in tandem, rather than at cross purposes. Finally, consumers must be reimagined as active participants in the energy system. The rise of prosumers is not a threat; it is an opportunity to decentralise resilience and reduce systemic risk.

As the current crisis unfolds, it offers a valuable lesson. Loadshedding, in this context, is a symptom of insufficient foresight. The system has the resources, the technology and, increasingly, the public willingness to transition. What it lacks is alignment, between budget and reality, between planning and practice and between short-term expediency and long-term vision.

Because in the end, energy policy is not just about generating power. It is about generating confidence. And that, unlike electricity, cannot be load-managed. ■