

From Net-Metering to Net-Billing

An Illusion of Corrective Reforms

Policy Brief

The power sector in Pakistan continues to face persistent structural challenges, including inefficiencies in DISCOs, high generation costs, and rising circular debt, straining both consumers and utilities. Consequently, under the net-metering policy, consumers shifted toward rooftop solar, reshaping the energy landscape by providing an affordable and reliable alternative to expensive and unreliable grid electricity. However, the government's recent move to shift from net metering to net billing underscores a significant policy change. This policy brief examines the implications of this shift within the broader context of structural challenges, while outlining pathways for sustainable reforms.

Executive Summary

Pakistan's power sector is grappling with multiple longstanding challenges that are weakening both its performance and effective utility by consumers. These challenges primarily included IPP contracts and DISCOs' inefficiencies, leading to unaffordable power and ultimately forcing consumers to opt for solar as a cheaper alternative. Solar adoption was largely facilitated by the 2015 net-metering policy, which played an enabling role, resulting in a significant growth in solar's share of the generation mix. However, the abrupt policy shift from net-metering to net-billing will not only discourage investment in the sector, but also be only a temporary fiscal fix. To achieve sustainable growth of the power sector, the underlying issues must be addressed, including the IPP contracts, which keep adding to the rising circular debt, and overcome the losses sustained by utilities.

Solar Growth and Structural Challenges

Pakistan's power sector has remained persistently challenged with unaffordable electricity tariffs. Consequently, consumers faced with declining purchasing power turned to rooftop solar generation, which was facilitated by the 2015 net-metering policy.¹ This convergence of policy incentives with the drive for affordable power catalyzed the solar boom in the country, earning global recognition as a model for the adoption of distributed generation. In 2024 alone, Pakistan imported 17 GW of solar panels,² whereby in October 2025, the share of solar in the generation mix reportedly tripled to 14%,³ underscoring significant demand for cheaper power.

However, this rapid solarization, which positioned Pakistan as a global model, also exposed deep structural challenges that have been weakening the power sector for years. While multiple international examples suggest a transition from net-metering to net-billing, once a certain threshold is reached,

¹ NEPRA (Alternative & Renewable Energy) Distributed Generation and Net Metering Regulations, 2015, SRO 892(I)/2015 (Islamabad: National Electric Power Regulatory Authority, 2015), [https://nepra.org.pk/Legislation/3-Reg/3.13%20NEPRA%20\(Alternative%20&%20Renewable%20Energy\)%20Distributed%20Generation%20and%20Net%20Metering%20Regulations,%202015/NOTIFICATION%20SRO%20892%20-2015.pdf](https://nepra.org.pk/Legislation/3-Reg/3.13%20NEPRA%20(Alternative%20&%20Renewable%20Energy)%20Distributed%20Generation%20and%20Net%20Metering%20Regulations,%202015/NOTIFICATION%20SRO%20892%20-2015.pdf).

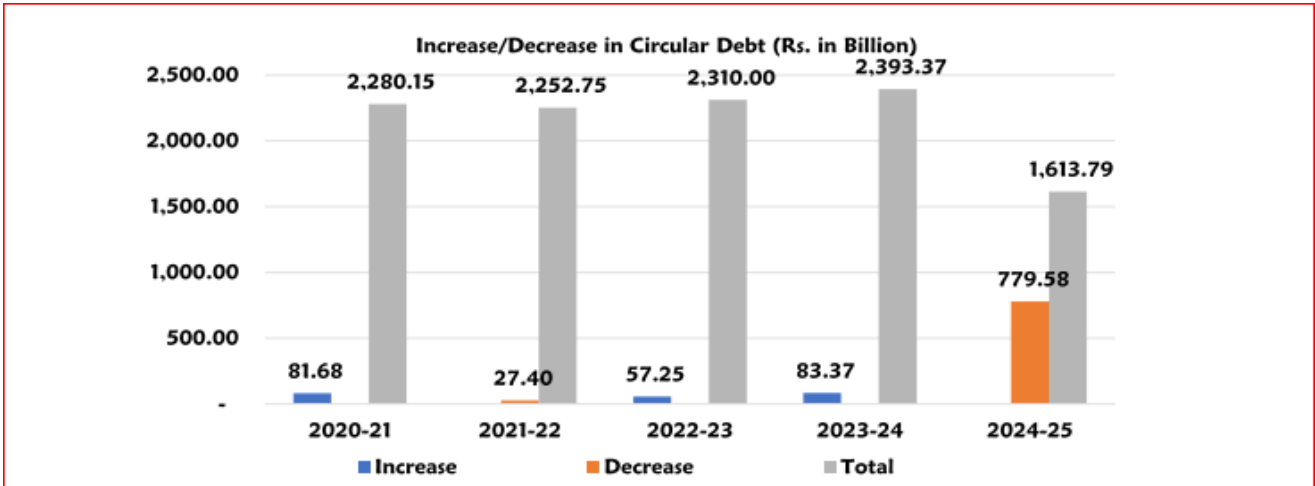
² Charles Bourgault and Sarah Moin, "How Pakistan's Energy Revolution Can Power Affordable, Reliable Electricity for All," World Economic Forum, August 19, 2025 <https://www.weforum.org/stories/2025/08/pakistan-energy-affordable-reliable-electricity/>.

³ Connected but Still in the Dark," Dawn, October 13, 2025, <https://www.dawn.com/news/1951584>

Pakistan’s core issue differs fundamentally. The primary issue lies in the high cost of power due to capacity payments under power purchase agreements with independent power producers (IPPs), which keep adding to spiraling circular debt. Important to note that during the FY 2024-2025, circular debt decreased

considerably relative to previous years. However, this reduction is primarily attributed to the government securing commercial financing, which, although it lowered the circular debt in the short term, left the underlying issues unaddressed.⁴

IMAGE 1: CIRCULAR DEBT

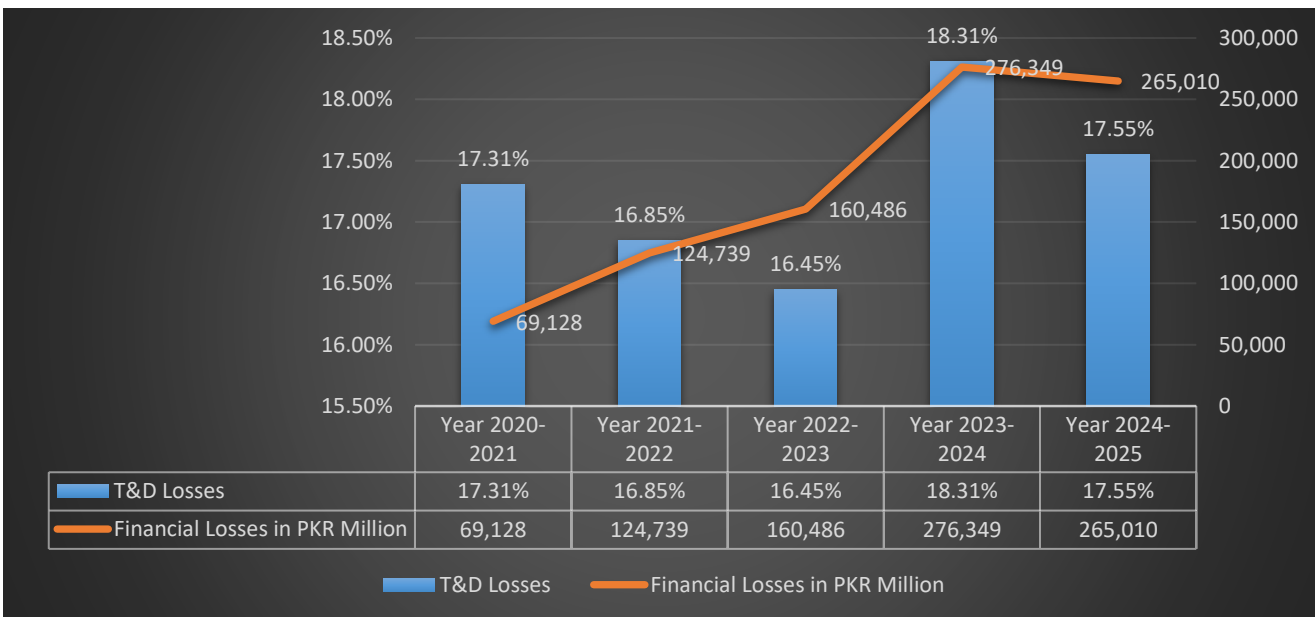


Source: NEPRA State of the Industry Report 2025.

Another major challenge lies in the persistent decline in the efficiency of DISCOs, including under-recoveries and transmission and distribution (T&D) losses, resulting in losses of millions of rupees.⁵ Any

policy reform not aimed at addressing these core issues will only provide temporary relief for consumers and the system, risking reinforcing even more financial strain on the sector.

IMAGE 2: DISCOs LOSSES



Source: Data from NEPRA State of the Industry Report 2025.

⁴ State of the Industry Report 2025 (Islamabad: NEPRA, 2025), page 26, <https://nepra.org.pk/publications/State%20of%20Industry%20Reports/State%20of%20Industry%20Report%202025.pdf>.

⁵ State of the Industry Report 2025 (Islamabad: NEPRA, 2025), pages 76-78, <https://nepra.org.pk/publications/State%20of%20Industry%20Reports/State%20of%20Industry%20Report%202025.pdf>.



While the shift to net billing was certain to occur sooner or later, the current haste in its implementation is largely justified on the basis of declining revenues of DISCOs, raising some legitimate concerns. The framing of a policy shift to net billing attributes the sole responsibility for creating financial stress to net-metered consumers, which risks oversimplifying the main problems of capacity payments and DISCOs' inefficiencies. For instance, the financial losses incurred annually due to distribution losses far exceed the financial impact from prosumers. In FY2025, DISCOs faced more than PKR 265 billion in losses,⁶ a figure far greater than the impact sustained from 466,000 net-metered consumers as per the power division's figures.⁷ Presenting net-metering as the main cause of the financial strain faced by the DISCOs diverts attention from the burden created by capacity payments and governance inefficiencies within utilities.

Moreover, with incentives under net-metering withdrawn and tariffs remaining unaffordable, the economics of the transition will dictate that consumers invest in batteries, gradually reducing their dependence on the grid. Such consequences, if not properly addressed, risk accelerating the 'utility death spiral', further weakening DISCOs by eroding demand and increasing the per-unit cost for remaining consumers. This consequence further underscores the illusion of *net billing as a corrective reform* to address the fiscal constraints of utilities. It must be noted that the financial stability of DISCOs warrants internal reforms, including reducing distribution losses, enhancing bill recoveries, and improving overall governance, among others.

On the other hand, the way this policy shift is being implemented is unsettling for prosumers. Global examples cited to justify the transition to net-billing included transition periods and a clear grandfathering provision. For instance, California NEM 3.0 provided 20-year protection for old agreements. More importantly, these transitions occurred in a phased manner in an environment where the grid remains reliable, affordable, and modern, aligned with consumers' purchasing power and needs. In contrast, Pakistan's reality, characterized primarily by unaffordable grid and fiscal constraints, is completely different. In this regard, abrupt and selective policy shifts with myopic vision risk discouraging private investment and adding to sectoral uncertainties.

A Sustainable Roadmap for Right Reforms

A viable roadmap for sustainable reforms must aim at addressing the core issues, particularly the problem of capacity payments rooted in IPP contracts. While contracts of six IPPs have been terminated in the last year, arguably saving PKR 411 billion over the remaining contract period,^{8,9} many remain operational under a "Take or Pay" rather than a "Take and Pay" arrangement, underlining the crucial need for revision. Regarding the issue of revisions to agreements with IPPs, the government often argues that such revisions raise concerns about contractual sanctity and undermine investor confidence.¹⁰ While these concerns may be valid for internationally financed projects such as the Chinese IPPs, it must be noted that more than half of these IPPs are owned by Pakistanis¹¹ who are not liable for the same justification. If revising contracts with IPPs owned by Pakistani investors is

⁶ *State of the Industry Report 2025* (Islamabad: NEPRA, 2025), page 24, <https://nepra.org.pk/publications/State%20of%20Industry%20Reports/State%20of%20Industry%20Report%202025.pdf>.

⁷ Abdullah Niazi, "How Will Existing Solar Net Metering Users Be Affected by NEPRA's New Regulations?" Profit by Pakistan Today, February 11, 2026, <https://profit.pakistantoday.com.pk/2026/02/11/how-will-existing-solar-net-metering-users-be-affected-by-nepras-new-regulations/>; Afia Malik, "Energy Policy Beyond Firefighting," Geo.tv, January 20, 2026, <https://www.geo.tv/latest/646116-energy-policy-beyond-firefighting>.

⁸ "Revised IPP Contracts to Save Rs3.5 Trillion over 3–20 Years: Power Division," Energy Update, March 27, 2025, <https://www.energyupdate.com.pk/2025/03/27/revised-ipp-contracts-to-save-rs3-5-trillion-over-3-20-years-power-division/>.

⁹ IPPs whose contracts were terminated over the last year included: Hub Power Company Limited (1,292 MW), Atlas Power Limited (224 MW), Lalpir Power Limited (362 MW), PakGen Power Limited (365 MW), Saba Power Company Limited (136 MW), and Rousch (Pakistan) Power Limited (450 MW).

¹⁰ Seminar on Change in Solar Net Metering & Rooftop Policy by Government Organized by FPCCI, YouTube video, (2:03:17), Energy Updates, January 6, 2026, <https://www.youtube.com/watch?v=Vd2mJyaic38>; Mushtaq Ghumman, "Owners of Some IPPs Summoned as Probe Continues," *Business Recorder*, September 1, 2024, <https://www.brecorder.com/news/40320280>.

¹¹ Gul Muhammad and Aziz Ur Rahman, "Independent Power Producers (IPPs) in Pakistan: An Elite Capture," *The Journal of Research Review* 2, no. 1 (2025): 105–118, <https://www.thejrr.com/index.php/39/article/view/88/110> ; https://x.com/Gohar_Ejaz1/status/1814917761841127722?; Fawad Yousafzai, "Most of IPPs Owned by 40 Pakistani



considered a risk to investor confidence, then the same logic should apply to local solar investors.

An abrupt shift to net billing with no transition period carries the same implications for solar investors as it does for IPPs’ investors, who remain crucial for national economic growth, as solar not only contributes to easing foreign exchange pressure¹² but also has the potential to drive industrial growth.¹³ In comparison, IPPs’ contribution to the national economy remains constrained due to the burden of capacity payments and tax breaks, resulting in high electricity costs and cuts in budgets of vital sectors

such as health and education.¹⁴ For instance, both foreign and domestic IPPs have been enjoying corporate tax exemption on profits since 1988.¹⁵ This leads to a rational argument: solar investments merit similar protections and policy stability to those of IPP contracts. Moreover, while policy reforms are needed in net-metering to reflect emerging realities, similar structural reforms are much more needed to address the longstanding issue of IPPs.

A fair transition to net-billing should include the following:

Recommended Policy Measure	Description
Renegotiate and revise IPP contracts to the “Take and Pay” model	Revise burdensome contracts with IPPs under the ‘Take or Pay’ arrangement. This will significantly help reduce fiscal constraints on the ailing power sector and make power more affordable. It will also help revive industrial growth, as power becomes more affordable.
Improve DISCOs’ efficiency	Improving DISCOs’ governance and performance, and addressing distribution losses, will alleviate significant fiscal pressure, directly contributing to reduced tariffs and increased demand. This can be done by corporatizing DISCOs and incorporating performance-based incentives with third-party audits.
Increase demand	Expand demand through industrial revival, electrification of transport (e.g., EVs), and improved reliability of the system by reducing outages and losses; improve grid attractiveness by enhancing service quality and recovery to boost power utilization.
Introduce transparent fixed charges for unavoidable system costs	Instead of implicitly recovering unavoidable fixed system charges (system maintenance, capacity payments, T&D Losses, etc.), a clearly defined and reasonable fixed charge should be introduced for prosumers. Charging these costs transparently rather than implicitly through suppressed export prices will enhance trust, improve compliance, and ensure equity between prosumers and non-prosumers.
Encourage battery adoption	Battery adoption must be encouraged at the utility scale to reduce the export of excessive units to the grid. Moreover, it will help maintain the grid during the night, rather than relying on expensive power plants that remain operational during the night to support the load.

Families, Groups.” *The Nation*, July 22, 2024, <https://www.nation.com.pk/22-Jul-2024/most-of-ipps-owned-by-40-pakistani-families-groups>.

¹² Nabil Tahir, “Shining a Light on Pakistan’s Solar Boom,” *The Express Tribune*, April 20, 2025, <https://tribune.com.pk/story/2541061/shining-a-light-on-pakistans-solar-boom>.

¹³ Najam-uz-Zaman and Saima Bano, “The Economic Impact of Solar Energy Adoption on Industrial Growth in Pakistan,” *Journal of Media Horizons* 7, no. 2 (2026), <https://jmhorizons.com/index.php/journal/article/view/875/734>.

¹⁴ Gul Muhammad and Aziz Ur Rahman, “Independent Power Producers (IPPs) in Pakistan: An Elite Capture,” *The Journal of Research Review* 2, no. 1 (2025): 105–118, <https://www.thejrr.com/index.php/39/article/view/88/110>.

¹⁵ Ibid.



Conclusion

Addressing inefficiencies in DISCOs and the IPPs' contracts promises a sustainable path to financial stability and growth for the power sector. Any reform endeavor that ignores these core issues risks reinforcing the cycle of financial strain and failing to

achieve its proclaimed benefits. In the case of net-billing, which is largely a financial fix with short-term benefits, the core issues are undermined, and the responsibility of financial strain is solely attributed to prosumers, which is just half the picture.



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