

The Distribution Fiasco: A Call for Structural Reforms in Pakistan's Power Sector



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The power sector's cul-de-sac, simmering for years, has now been exacerbated by the vitriolic macro-economic milieu, impacting us all. Households are paying an exorbitant rate of around 21 cents per kWh, compared to approximately 9 cents in neighboring India. Moreover, even at this superlative pricing, the sector is financially distressed, plagued by poor service delivery, and continues to accumulate circular debt. Concurrently, the sector itself vehemently dominates the talk of the town and is also rightly underscored in the latest IMF Article IV Consultation report, which highlights that instead of religiously focusing on tariff adjustment, "resolving the energy sector's problems and restoring its viability urgently requires reforms to improve distribution and transmission efficiencies and lower generation costs, ultimately allowing for tariffs to fall."

The power sector has long been ensnared by operational inefficiencies, demand debilitation, governance failures, myopic policies, political maneuvering, and rent-seeking. In public discourse, the IPPs—particularly the private ones—are often demonized as the sole culprits. While the blame is not completely unearned, the focus on IPPs seems to be exploited to obscure other significant failures, particularly in transmission and distribution. This reflects our inability to properly ascertain causality (cause-effect relationships) (See: "Symptom vs. Cause," The News International, July 28, 2024) and points to a national broken nervous system (See: "Is Our Nervous System in Disarray?" The News International, August 31, 2024). This situation necessitates multifaceted reparations concerning generation, transmission, and distribution; nonetheless, our focus today is limited to the distribution side.

Overview of Discos

Pakistan's Distribution Companies (DISCOs) were established in the late 1990s after the unbundling of WAPDA to improve efficiency, governance, and service delivery in the power sector. However, they have faced persistent challenges, including governance issues, financial mismanagement, high transmission and distribution losses, and inadequate infrastructure upgrades. The following are the shortcomings of the distribution companies.

Operational Inefficiencies: SAIFI & SAIDI:

Under the Performance Standard (Distribution) Rules 2005, the System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) measure electricity supply reliability by assessing interruption frequency and duration.

SAIFI

Year	IESCO	PESCO	GEPCO	FESCO	LESCO	MEPCO	QESCO	SEPCO	HESCO	KE
Avg. (2019-2023)	7.7	184.2	23.8	34.9	32.0	257.8	95.7	388.9	143.8	27.2
Target	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Breach	-5.26	171.20	10.78	21.91	18.97	244.80	82.71	375.93	130.85	14.16

SAIFI tracks how often a consumer experiences interruptions. DISCOs like SEPCO (388.9 interruptions) and MEPCO (257.8 interruptions) significantly exceed the target of 13 interruptions, indicating severe service instability due to poor maintenance and inadequate outage response. PESCO (184.2 interruptions) also performs poorly, though IESCO, KE, and GEPCO report fewer interruptions but still fall short of the target.

SAIDI

Year	IESCO	PESCO	GEPCO	FESCO	LESCO	MEPCO	QESCO	SEPCO	HESCO	KE
Avg. (2019 -2023)	407.5	14,645.1	39.8	1,297.3	3,650.5	21,900.2	7,998.0	3,460.9	8,473.9	2,409.0
Target	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
Breach	393.48	14,631.08	25.82	1,283.32	3,636.48	21,886.18	7,984.04	3,446.86	8,459.94	2,394.98

SAIDI measures the total interruption duration. Companies like MEPCO (21,900.2 minutes) and SEPCO (3,460.9 minutes) show massive discrepancies from the 14-minute target, with MEPCO's 21,900 minutes representing nearly two weeks of outage time per consumer.

Similarly, QESCO (7,998 minutes) and HESCO (8,473.9 minutes) face prolonged outages, particularly in densely populated areas, highlighting chronic inefficiencies and a need for infrastructure upgrades and operational improvements.

Addressing T&D Losses

DISCOS	Actual (%)	Target (%)	Breach (%)	T&D Loss (PKR 'bn)	Recovery Loss (PKR'bn)	AT&C Losses (PKR 'bn)
PESCO	37.4	20.24	17.17	77.35	24.67	102.02
TESCO	9.02	9.39	-	-0.16	8.39	8.23
IESCO	8.06	7.8	0.26	0.28	-	0.28
GEPCO	8.61	9.13	-	-1.86	0.47	-1.39
LESCO	11.29	8.07	3.22	21.79	31.83	53.62
FESCO	8.59	8.87	-	-1.45	-	-1.45
MEPCO	14.22	12.51	1.71	7.94	9.1	17.04
HESCO	27.49	18.63	8.86	26	26.46	52.46
SEPCO	34.39	17.12	17.27	20.38	25.19	45.57
QESCO	26.72	14.46	12.27	21.21	82.31	103.52
	16.45	**11.81**	**4.64**	**160.49**	**208.41**	**368.9**

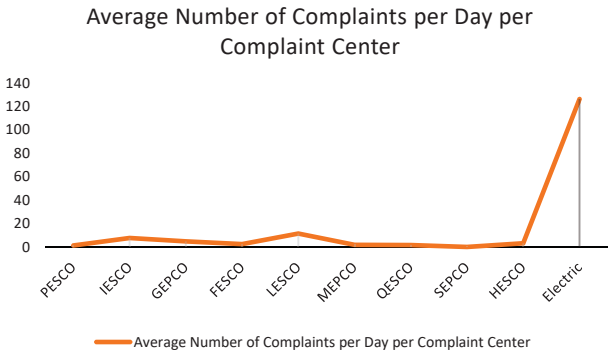
Source: NEPRA State of Industry Report, 2023

Transmission and Distribution (T&D) losses, along with commercial losses, are a major issue in Pakistan's power sector, severely impacting financial stability and exacerbating the circular debt crisis. These losses stem from technical inefficiencies in the grid and non-technical issues, such as theft and billing problems, which cause significant revenue shortfalls. Many DISCOs report T&D losses well above global standards, with SEPCO and HESCO at 34.4% and 27.5%, respectively, while commercial losses push their total AT&C losses to 56.4% and 46%. QESCO's total losses reach 72.9%, contributing a massive PKR 103.52 billion to the financial burden. Together, QESCO and SEPCO account for PKR 149.09 billion in AT&C losses, highlighting inefficiencies in underserved regions. These losses are not covered by the tariff differential subsidy, forcing power sector entities to borrow, further escalating circular debt, increasing consumer costs, and limiting investments in grid improvements.

Health & Safety Standards: an Under-examined Crisis

Health and safety performance is crucial in Pakistan's power sector, reflecting a company's commitment to employee and public welfare as well as operational sustainability. However, according to the HSE Performance Evaluation Report 2024 by NEPRA, significant disparities exist among DISCOs. Companies like SEPCO and HESCO scored just 44 and 23, respectively, in 2022-2023, indicating serious safety lapses. These shortcomings not only compromise safety but also heighten the risk of accidents, service disruptions, and reduced consumer trust. Poor safety records often point to deeper issues, such as insufficient training, safety investments, and regulatory enforcement, leading to higher incident rates and financial losses.

Consumer Complaints: Service Gaps



Source: NEPRA Performance Evaluation Report for FY 22-23

Consumer service complaints reveal disparities in responsiveness across DISCOs. LESCO and K-Electric stand out, with 978,393 and 1,382,155 reported complaints, respectively, averaging 11.5 complaints per day per center at LESCO and a staggering 126.22 per center at K-Electric. These numbers highlight a high demand for service resolution, especially in urban centers, where both population density and power issues converge.

Conversely, smaller DISCOs like SEPCO report only 2,961 complaints across 78 centers, or just 0.1 complaints per day per center, suggesting a potentially low complaint registration rate rather than smooth operations. In fact, Performance Evaluation Report (PER) observation that low complaint numbers in some DISCOs may indicate ineffective registration systems is likely accurate; limited reporting could mask consumer dissatisfaction, thereby hindering necessary improvements.

The Load Shedding Crisis

DISCO	Reported figures of average daily loadshedding hours	Actual load shedding monitore by NEPRA (202223)
PESCO	4.5	> 8
IESCO	1.5	2-3
GEPCO	0.85	2-3
LESCO	0.5	3-4
FESCO	0.56	2-3
MEPCO	1.15	4-5
HESCO	8.66	> 10
SEPCO	2.33	> 10
QESCO	10.25	> 10

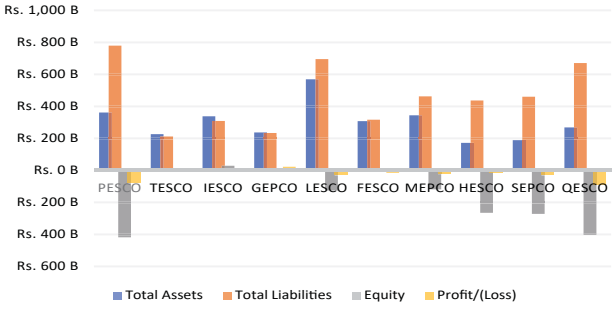
Source: NEPRA Performance Evaluation Report for FY 22-23

Load shedding remains a persistent issue in Pakistan's power distribution sector, with significant discrepancies between reported and actual hours. While DISCOs report fluctuating figures, NEPRA's monitoring reveals a grimmer reality. For example, PESCO reported 4.5 hours of daily load shedding in 2022-23, but NEPRA recorded over 8 hours, exposing underreporting or transparency issues. Similarly, IESCO's reported 1.5 hours was higher in reality, and GEPCO, despite improvements, faced 2-3 hours of daily disruption. In HESCO, SEPCO, and QESCO,

load shedding remains severe, with HESCO and SEPCO reporting over 8 and 10 hours, respectively.

NEPRA regulations allow load shedding only due to generation shortages or transmission constraints. However, these ongoing discrepancies point to management inefficiencies, inadequate infrastructure, and a potential failure to report accurately, undermining public trust and highlighting the urgent need for reform.

Financial Instability & Governance Failures



Source: Aggregate Annual Report Federal State-Owned Enterprises (SOEs), FY 2023

The financial health of DISCOs remains dire, with liabilities and losses continuing to mount. In FY 2023, DISCOs reported assets of Rs. 3,015 billion, liabilities of Rs. 4,579 billion, and accumulated losses of Rs. 1,564 billion, reflecting systemic inefficiencies and weak governance. PESCO, for instance, has liabilities of Rs. 780 billion, far exceeding its assets, leading to negative equity of Rs. 418 billion and a loss of Rs. 81 billion. Similarly, LESCO and MEPCO face substantial financial instability, while TESCO and GEPCO, though relatively healthier, still struggle with liabilities.

The root causes of these financial issues include circular debt, unfunded liabilities, and limited access to capital, which hinder necessary investments in infrastructure and technology. Despite NEPRA's approval of investments, these funds often remain underutilized, exacerbating inefficiencies. Governance failures further deepen the crisis, with DISCO boards often lacking the necessary expertise or facing conflicts of interest, undermining performance oversight. The absence of penalties for poor performance, coupled with a system based on seniority rather than merit, has entrenched a culture of complacency, hindering improvement and accountability in the sector.

Privatization & Competitive Trading Bilateral Contracts Market (CTBCM): A Path Forward Or A Double-edged Sword?

The introduction of the Competitive Trading Bilateral Contracts Market (CTBCM) marks a pivotal shift in Pakistan's energy sector, allowing power generators to sell electricity directly to consumers and reducing government intervention. This is expected to foster competition, improve services, and lower prices. However, it also presents concerns, especially regarding the financial stability of DISCOs and the broader impact of privatization.

The CTBCM will exert additional pressure on DISCOs, as large consumers shift to buying electricity directly from generators, reducing the cross-subsidies that currently help maintain low prices for domestic consumers. This could exacerbate the financial challenges of DISCOs, which are already struggling with high losses and inefficiencies, potentially leading to a crisis in electricity supply.

Privatization, recommended by the IMF, aims to enhance efficiency by fostering market competition. If well-executed, it could result in better resource allocation, investment in infrastructure, and the adoption of advanced technologies, leading to lower costs, improved services, and GDP growth. However, without a robust regulatory framework, privatization may create private monopolies, counteracting the intended benefits of competition and potentially replacing one inefficient system with another.

For the CTBCM to succeed, both existing DISCOs and new entrants must be able to compete fairly. If privatized DISCOs are unable to thrive, their role as the Supplier of Last Resort (SOLR) could be jeopardized, undermining the overall effectiveness of privatization and limiting business growth and service quality.

The Solar Effect:

Pakistan's electricity crisis has worsened due to an imprudent energy mix, international supply disruptions, and binding "take or pay" contracts, causing a 155% tariff surge over the past three years. This has led to a 17.4% drop in national grid demand in August 2024, driving up per-kWh costs and creating a cycle of rising prices and declining demand.

At the same time, solar panel prices dropped by 42% in 2023, prompting businesses and rural households to adopt solar energy, reducing reliance on expensive grid electricity. For industries, especially those in global supply chains, switching to solar has become essential for competitiveness, with payback periods as short as 2-4 years.

This shift threatens financially stressed DISCOs, as a shrinking consumer base and rising generation costs from reduced demand will further erode their already slim profit margins.

Conclusion & Recommendations

Pakistan's power distribution sector faces deep-rooted systemic failures, extending beyond inefficiency and financial instability, requiring urgent reforms. While privatization and market-driven solutions like the CTBCM offer potential, they must be carefully regulated to protect consumers and ensure competition.

The focus should shift to improving governance, transparency, and operational efficiency within DISCOs, addressing inefficiencies across generation, transmission, and distribution. Upgrading infrastructure and workforce management is key to restoring the sector's viability, reducing circular debt, and providing reliable, affordable electricity. This crisis presents an opportunity for meaningful reforms to build a future-ready power sector.

a) Governance and Strategic Oversight:

- Overhaul DISCOs' Boards of Directors (BOD) with independent and professional members to enhance governance and accountability.
- Establish autonomous boards with term continuity and implement a monitoring matrix for regular board evaluation and performance.
- Focus board efforts on hiring key management professionals on market-based contracts with performance-linked incentives while avoiding deputation or additional charges.
- Develop a multi-year strategic business plan and a Board-approved Statement of Corporate Intent (SCI) aligned with Central Monitoring Unit (CMU) regulations, covering operational, financial, and governance strategies, including audit, risk management, and internal controls.
- Advance privatization efforts where feasible, considering Public-Private Partnerships (PPP) to reduce the financial burden on public resources while ensuring operational efficiency and customer satisfaction.

b) Human Resources and Organizational Efficiency:

- Conduct a staffing review to identify redundancies and implement transition plans, including cost estimations for schemes like **Voluntary Separation.**
- Design a customer-centric organizational structure that integrates digital tools like AI and data analytics to drive innovation and efficiency.
- Introduce competitive compensation and benefits packages to attract and retain top talent, supported by performance management systems and career progression planning.
- Transition to **Contributory Pension Schemes (CPS)** for new hires while freezing and funding existing liabilities.

c) Operational and Technological Enhancements:

- Upgrade grid infrastructure, including feeders and transformer capacities, to handle higher loads and ensure reliability using technologies like **Advanced Distribution Management Systems (ADMS).**
- Implement smart metering across PTMs and feeders, and explore outsourcing meter reading and revenue collection to improve accuracy and efficiency.
- Roll out process automation initiatives to streamline operations, minimize human error, and enhance efficiency.
- Develop load management strategies, including demand-side management and renewable energy integration, to reduce load shedding.
- Strengthen **Health, Safety, and Environment (HSE)** protocols to prevent accidents, improve workplace conditions, and ensure environmental sustainability.

d) Policy and Market Reforms:

- Ensure NEPRA-compliant performance standards for SAIFI and SAIDI to improve service reliability.
- Revise tariff structures, get riddance from the evil of uniform tariff, incorporating seasonal adjustments to optimize capacity utilization and encourage grid stability.
- Strengthen the **Market Implementation and Regulatory Affairs Department (MIRAD)** to build capacity under the **Competitive Trading Bilateral Contract Market (CTBCM**) framework.
- Develop a **Use of System Charges (UoSC)** methodology to reward performance and penalize underperformance.

e) Renewable Energy and Decarbonization:

- Integrate the **Carbon Border Adjustment Mechanism (CBAM)** into energy policies and promote the inclusion of renewable energy sources into the grid.
- Support climate change adaptation strategies to mitigate infrastructure risks from extreme weather.
- Rationalize policies like net metering to encourage PV solar system adoption while maintaining grid stability and financial sustainability.
- Promote energy conservation and demand-side management by incentivizing energy-efficient practices and appliances.
- Invest in energy storage systems and smart grid technologies to manage fluctuations, particularly with increased renewable energy integration.

f) Customer and Stakeholder Engagement:

- Enhance customer engagement programs to foster energy-saving behaviors and integrate feedback into planning.
- Leverage **Public-Private Partnerships (PPP)** to drive innovation and efficiency while reducing the public sector's financial burden.

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