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Reform or Bust:
Strategic approaches to address the rickety electricity distribution system

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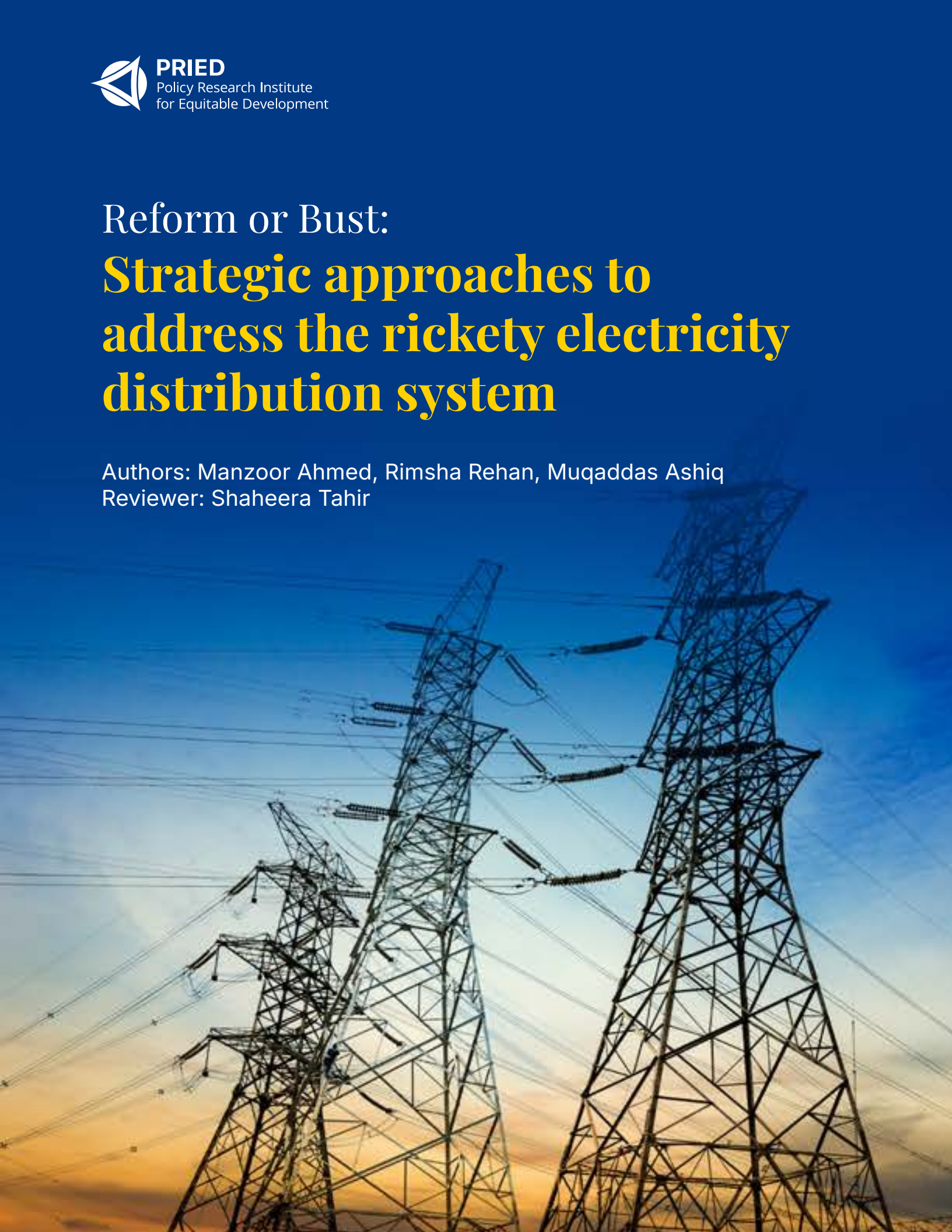

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1. Introduction

The electricity distribution sector is crucial in ensuring the reliable provision of power to end consumers in Pakistan. Currently, eleven state-owned Distribution Companies (DISCOs) operate across different provinces, alongside K-Electric (KE), the only privately managed entity serving Karachi. These companies are licensed and regulated by the National Electric Power Regulatory Authority (NEPRA) to manage and maintain distribution infrastructure at 132kV voltage levels and below. However, governance issues, inefficiencies, and financial losses of DISCOs have significantly hampered their performance, posing severe challenges to the entire power sector. As shown in Figure 1, the aggregated transmission and distribution (T&D) losses of DISCOs stand at 22.41 percent of all the electricity they receive from the national transmission system.

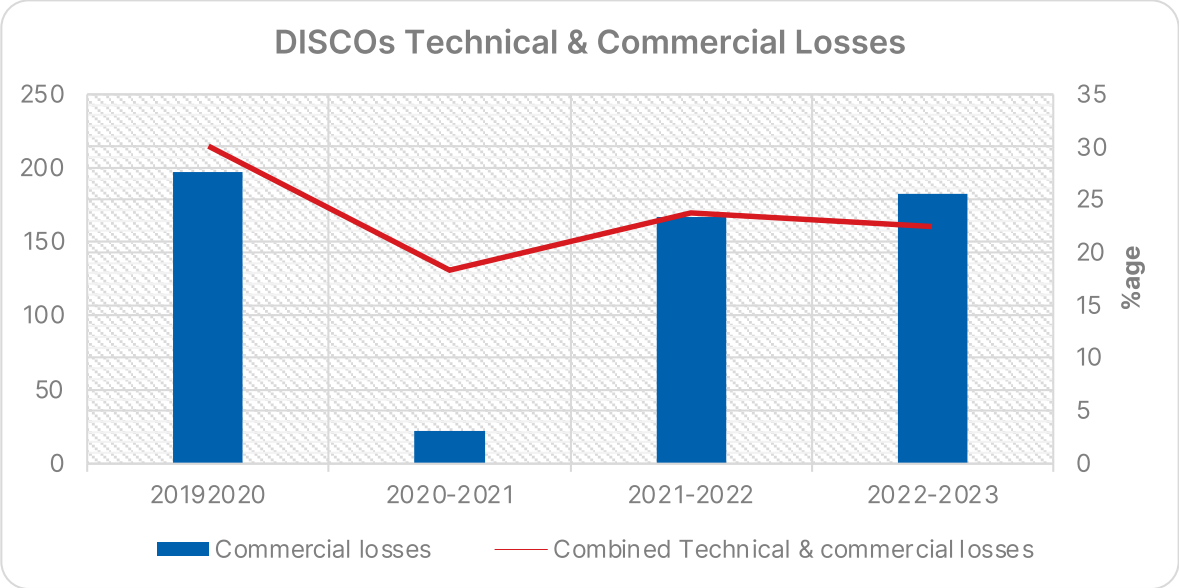


Figure 1: Understanding the Impact: Analyzing Technical and Commercial Losses in DISCOs Operations

(Source: State of Industry report 2023)

Pakistan's electricity distribution sector is characterized by high technical and non-technical losses, poor service quality, and frequent power outages. These issues are primarily attributed to T&D losses, low bill recoveries, and administrative inefficiencies within DISCOs' operations. The distribution network relies heavily on three key components: 11kV feeders, power transformers, and distribution transformers, however their aging, low maintenance, and mismanagement have led to recurrent outages in major parts of the country. These challenges coupled with an import-dependent energy mix, and unfavorable contractual obligations with Independent Power Producers (IPPs), have trapped the power sector in an unsustainable vicious cycle of rising costs, resulting in a stock of trillion of rupees of circular debt.

As these challenges intensify, there is a growing consensus on the need for power sector reforms, spanning the entire power supply chain. One potential solution, at the power distribution end, is the privatization of DISCOs' management to improve operational efficiency, reduce losses, and enhance service delivery. Pakistan has already experimented with privatization in its electricity sector through the KE model. KE, which

serves the country's largest city and its adjoining areas, Karachi, is the only privately owned, and vertically integrated distribution company in Pakistan. Since its privatization in 2005, KE has shown improvements in reducing losses and enhancing service delivery, but it has also faced criticism regarding pricing and service quality. The mixed results from KE's privatization highlight both the potential and the challenges of replicating this model across the country.

Another model under consideration is the provincialization of DISCOs, following India's approach to electricity distribution. In India, several states have taken control of their respective distribution companies, with varying degrees of success. Provincialization could allow for more localized governance and accountability, potentially addressing some of the inefficiencies inherent in the current centralized system. However, this model would require a substantial shift in governance structures and a careful balancing of provincial and federal roles.

A model frequently cited for its success is Turkey's concessionary privatization regime, which involved transferring the management of distribution companies to private entities while maintaining regulatory oversight. Turkey's reforms resulted in significant improvements in operational efficiency, customer service, and financial stability across its power distribution sector. Following the same model, the government of Pakistan has officially decided to implement this regime in Pakistan. In this context, the three DISCOs namely SEPCO, HESCO and PESCO are set to be offered on long term concessionary contracts next year whereas IESCO, FESCO, and GEPCO will be completely privatized this year following the KE model of privatization.[1]

While the KE model, provincialization model, and Turkish Model offer promising blueprints, any reforms in Pakistan must account for the country's unique domestic dynamics. The government submitting to the conditionalities of the International Monetary Fund (IMF) to avail bail-out finance, hastes in taking the critical actions such as hard power sector reforms including the privatization of DISCOs. However, any reform without careful assessment of the impacts on an average end consumer has the potential of worsening the existing power sector crisis and spurring unintended consequences.

In Phase-I(i.e. to be privatized in a period of 1 year), IESCO, GEPCO, and FESCO will be fully privatised, followed by LESCO, MEPCO, and HAZECO in Phase-II. SEPCO, HESCO, and PESCO will be offered long-term concession agreements to the private sector, while TESCO and QESCO will remain under government control due to their unique conditions[2]. For this purpose, the tariff guidelines will be updated to align with these DISCOs supply and distribution licenses, a plan will be prepared for treatment of existing employees of DISCOs, and a communication campaign will be designed to inform the public of governments' plans.

This energy monitor provides an in-depth analysis of the current state of Pakistan's power distribution sector, examining key challenges, and assessing the potential of privatizing DISCOs' management. By exploring various models—Turkey's concessionary privatization regime, KE's privatization experience, and the provincialization approach from India—this report aims to evaluate how these reforms might be adapted to the Pakistani context. The goal is to offer insights into the way forward for a more efficient, sustainable, and reliable electricity distribution system.

1 https://mettisglobal.news/govt-plans-long-term-concessions-for-hesco-pesco-sepco/
2 https://privatisation.gov.pk/Detail/ZWMwYTI3YzctMzBmNi00NTRkLTk2N2MtYzQwZDg3YWE5MTQy

2. State of Play

The fiscal year 2022-23 presented a complex landscape for Pakistan's electricity distribution sector. Despite the addition of 1,654,824 new consumers, electricity sales declined by 10%, dropping from 143,031 GWh in the previous year to 129,574 GWh[3]. This paradoxical situation highlights inefficiencies within the sector that, despite expanding its consumer base, continues to struggle with systemic challenges.

2.1. Economic Impact

The power sector regulator NEPRA has set benchmarks for T&D losses, taking into account variables like consumer mix, feeder lengths, and geographical challenges. However, most DISCOs continue to exceed these benchmarks as visible in figure 2. In FY 2022-2023 alone, the breach of T&d losses alone added to the stock of circular debt an amount of 160,486 million PKR.

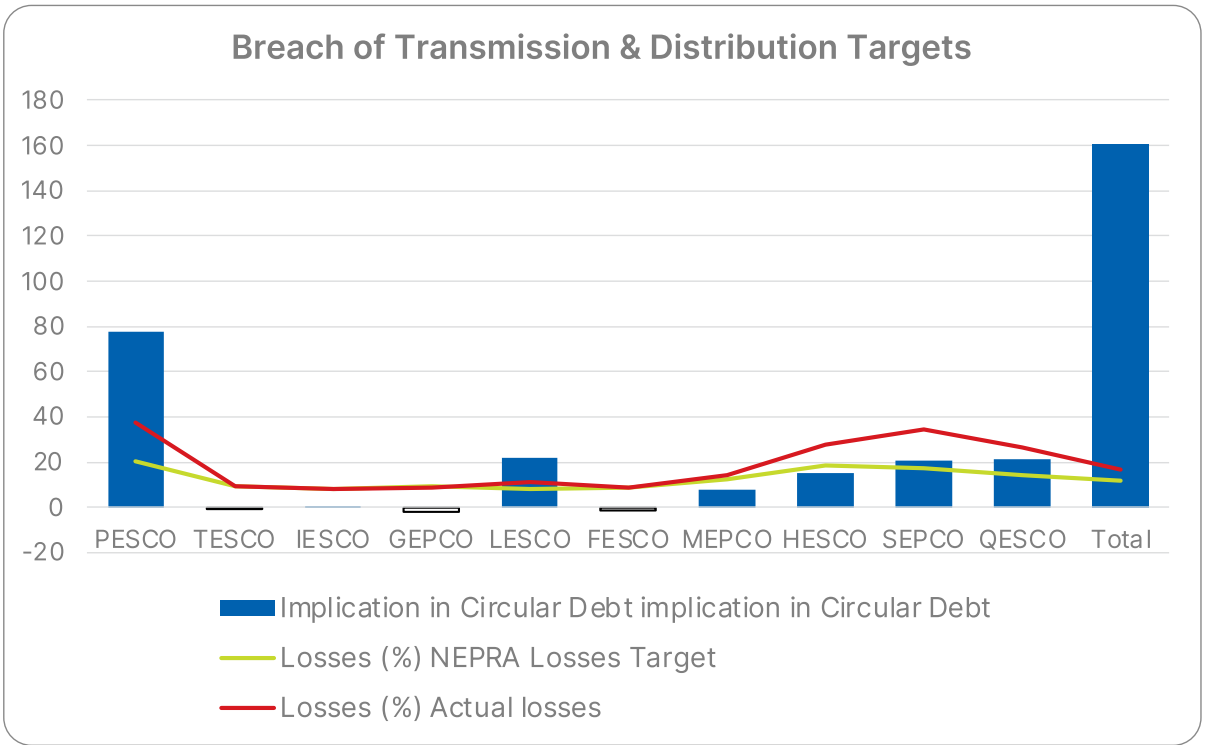


Figure 2: DISCOs and their implications in circular debt due to breach of targets (Source: NEPRA SOI Report 2023)

The recovery of billed amounts also fell short, with 211,795.04 million PKR in unrecovered dues, resulting in a recovery ratio of 92.76%. Total receivables for DISCOs surged to 1,916,590 million PKR, driven by their inefficient governance, faulty billing, and payment compliance issues[4].

3 https://nepra.org.pk/M&E/PER/Distribution/PER%202022-23%20-%20DSICOs.pdf
4 https://nepra.org.pk/publications/State%20of%20Industry%20Reports/State%20of%20Industry%20Report%202023.pdf

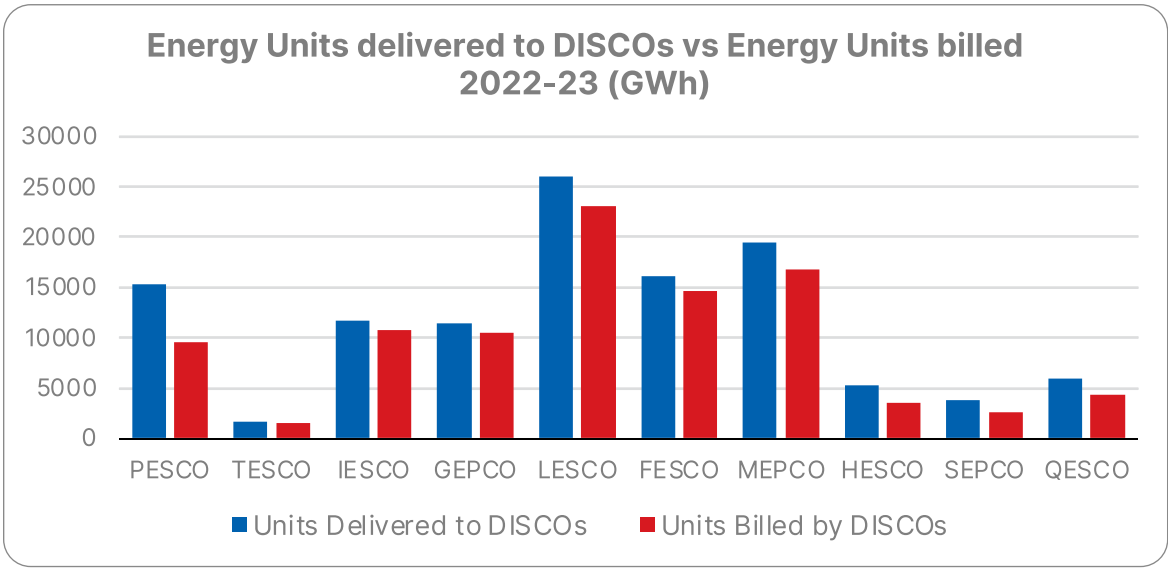
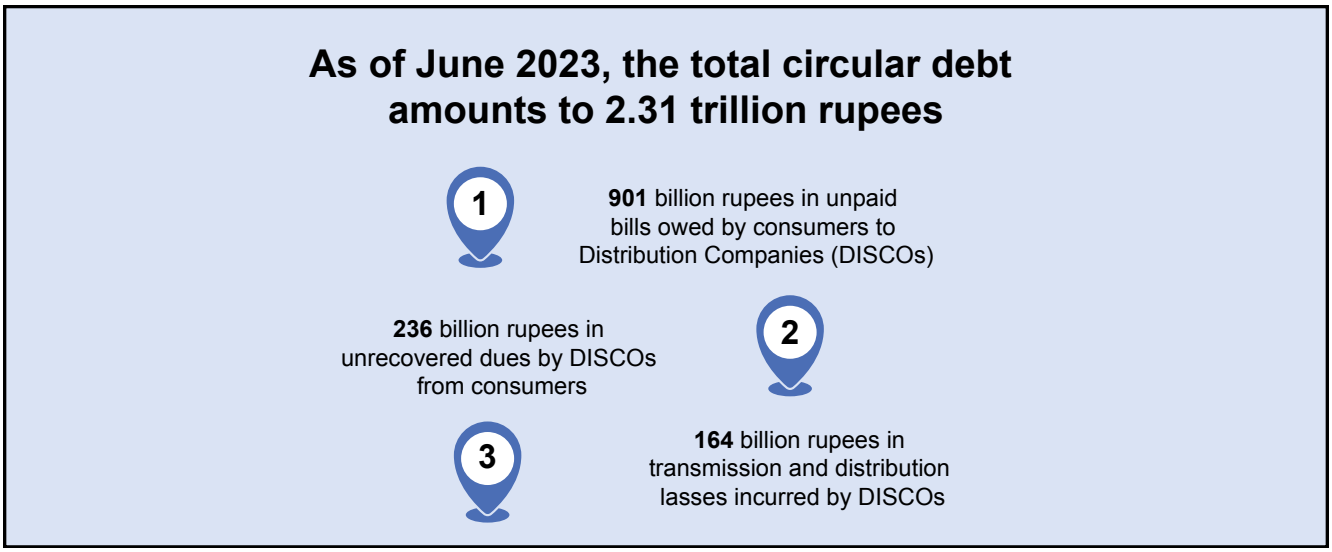


Figure 3: Low recoveries by DISCOs

(Source: Author's own Analysis drawn from performance evaluation report 2022-23 and state of industry 2023 Report



KE, the only privately managed distribution company, reported T&D losses of 15.27% in FY 2022-23, aligning with NEPRA's benchmarks. However, its recovery ratio also dropped to 92.76%, while receivables soared to 229.30 billion PKR, a significant increase from the prior year. This illustrates that while privatization has helped reduce some losses, challenges remain in areas like billing and customer service.

The current consumer tariff is based on slabs with different prices for protected and non-protected consumers. These slabs aim to discourage excessive consumption, which now threatens the overall sustainability of the distribution business of the DISCOs. Over the past four years, the number of consumers using less than 200 units has increased significantly, from 57% in 2020 to 89% in 2024 (as shown in the Table). Conversely, consumers using more than 400 units per month have decreased drastically, from 10% in 2020 to just 1% in 2024. Despite this decline in demand, the quantum of subsidies has surged significantly, from 239 billion rupees in 2020 to 378 billion rupees in 2024.

This indicates that the existing subsidy structure is inefficient and misaligned, failing to effectively target those who need it most. Moreover, consumer demand patterns have changed substantially, with higher electricity prices indirectly affecting poor, vulnerable, and middle-class households.[5]

	FY 20	FY 24
% share of consumers with demand		
<200 kWh	57	89
@tariff below avg. tariff	90	97
> 400 kWh	10	1
Residential subsidies (PKR billion)	239	378

Table1: Consumer Demand & Subsidy Expenditure

2.2. Technical Inefficiencies

The power delivery network of DISCOs, comprising 132/11kV power transformers, 11kV feeders, and distribution transformers, continues to experience overloading and wear and tear due to increasing demand and inadequate maintenance. However, in FY 2022-23, improvements were noted: power transformer overloading decreased to 16.9%, 11kV feeder overloading to 15.69%[6], and distribution transformer overloading to 4.96%. Despite these advances, frequent outages and technical breakdowns persist,(refer fig 4) particularly due to the aging infrastructure and poor planning, which prevents sustained improvements in service quality.

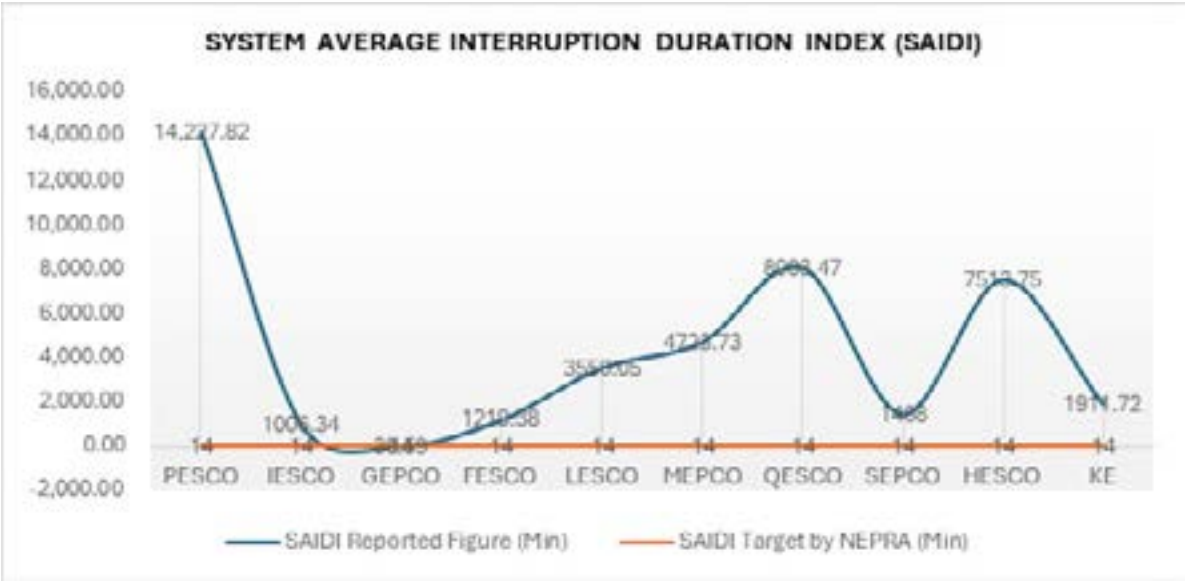


Figure 4: Breach of SAIDI Targets (Source: Performance Evaluation report 2022-23)

5 https://thedocs.worldbank.org/en/doc/7008031a15959f10bde28b6c56767d59-0310062024/original/Pakistan-Development-Update-The-Dynamics-of-Power-Sector-Distribution-Reforms-Oct-24-FINAL.pdf

6 Performance Evaluation report 2022-23

Another key area of concern remains safety. In FY 2022-23, fatalities across DISCOs and KE decreased from 196 to 163. NEPRA levied significant fines for safety violations, reflecting ongoing concerns about operational standards. DISCOs like SEPCO, HESCO, and IESCO faced heavy penalties for safety lapses, underscoring the need for better safety protocols. Furthermore, these safety concerns are compounded by the financial vulnerabilities of DISCOs, which is evident in their asset-liability profiles. The Figure below provides a snapshot of existing assets and liabilities of discos. Alarmingly, liabilities surpass assets for most DISCOs, with PESCO, QESCO, SEPCO, and HESCO being the most affected.

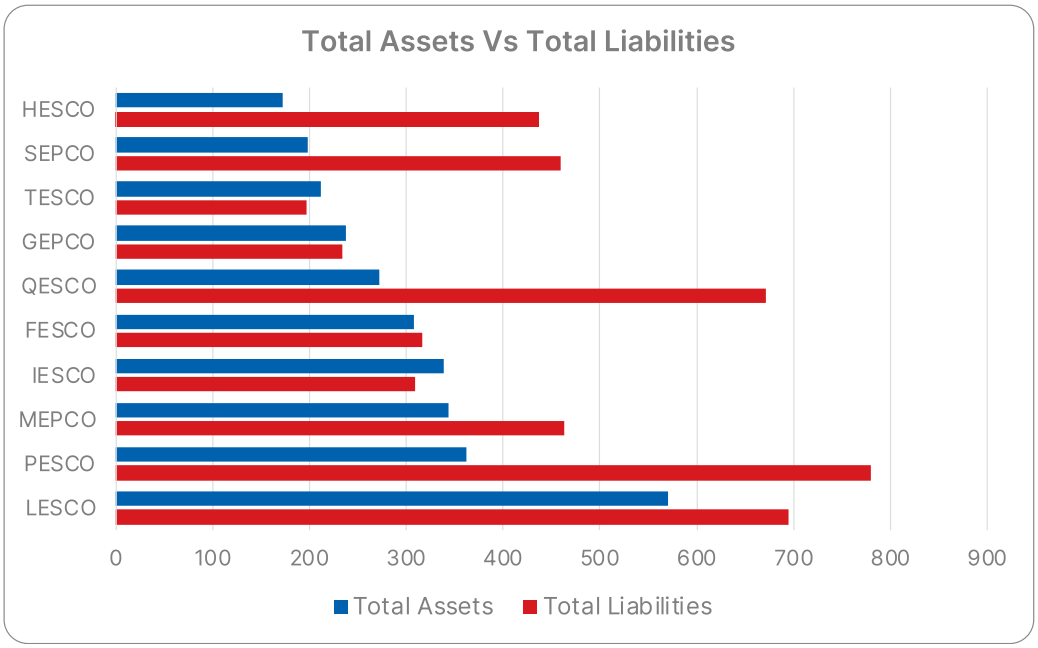


Figure 5: Discos financial position: Assets vs. liabilities

2.3. Need for Reforms

The inefficiencies within Pakistan's distribution sector require urgent attention towards comprehensive reforms. Load-shedding, often tied to Aggregate Technical and Commercial (AT&C) losses, continues to violate NEPRA's performance standards, calling for better governance and rigorous regulatory practices. Additionally, reforms in tariff structures, including the review of Multi-Year Tariffs (MYT) and cross-subsidies, are under consideration to ensure greater transparency in pricing and billing.

Efforts to enhance the infrastructure are underway, with NEPRA approving five-year investment plans for IESCO, LESCO, and FESCO, starting from FY 2023-24. These investments aim to modernize distribution infrastructure, reduce technical losses, and improve service quality. IESCO, LESCO, and FESCO are set to receive investments amounting to 143,351 million PKR, 107,307 million PKR, and 124,367 million PKR, respectively.[7]

7 https://nepra.org.pk/publications/State%20of%20Industry%20Reports/State%20of%20Industry%20Report%202023.pdf

A key reform initiative is the implementation of Advanced Metering Infrastructure (AMI[8]), which allows for real-time data monitoring. While KE has made significant strides in adopting AMI, public sector DISCOs lag behind, exacerbating issues of transparency in revenue collection. Other reforms like the Competitive Trading Bilateral Contracts Market (CTBCM) are also on the horizon, aimed at promoting competition and efficiency in the distribution sector.

International pressures, especially from institutions like the IMF, also drive the need for reform. The IMF, in its 2019 Article IV consultation, recommended bold structural reforms in Pakistan's power sector, including privatization and the outsourcing of management[9]. The IMF's emphasis on reducing fiscal deficits through structural adjustments has put solutions such as privatization and efficiency reforms at the forefront of policy discussions.

8 National Electricity Plan 2023
9 https://www.finance.gov.pk/mefp/Sixth_review_Feb_2022.pdf

3. Methodology

This energy monitor utilizes a combination of **desk research, secondary data analysis**, and **stakeholder interviews** to provide a comprehensive assessment of the current state of Pakistan's electricity distribution companies (DISCOs) and explore potential reform models.

3.1. Desk Research

Desk research involved reviewing the following key sources:

- **DISCOs' Performance Evaluation Reports**: Annual reports of DISCOs which NEPRA issues, were analyzed to evaluate operational efficiency, financial performance, and governance issues.
- **Previous Privatization Initiatives**: Detailed reviews of prior privatization efforts, particularly the privatization of K-Electric and failed attempts to privatize other DISCOs, were conducted to understand the challenges and lessons learned.
- **International Case Studies**: Models of electricity distribution reforms from other countries, including Turkey's concessionary privatization regime and India's provincialization approach, were thoroughly examined. These case studies provided insights into successful strategies for improving operational efficiency, service quality, and regulatory compliance within the power sector.

3.2. Secondary Data Collection & Analysis

Secondary data sources provided quantitative insights into the technical and financial performance of DISCOs, as well as the economic impacts of existing governance structures. These sources include:

- **NEPRA Reports**: Data on transmission and distribution (T&D) losses, recovery ratios, receivables, and other key performance indicators were sourced from NEPRA's annual State of Industry reports.
- **CTBCM Implementation Studies**: Research on the upcoming CTBCM mechanism and its potential role in enhancing competition and efficiency in the distribution sector formed a crucial part of the analysis.
- **International Power Sector Reforms' Reports**: International agencies such as the World Bank and the IMF have published several reports on power sector reforms. These reports offered valuable benchmarks and provided comparative performance data from countries undergoing similar transitions.

3.3. Primary Data Collection & Analysis

In addition to secondary research, primary data was gathered through stakeholder interviews with key

figures in Pakistan's power sector, including:

- **Government Officials**: Interviews with policy-makers and regulators, including NEPRA representatives, provided insights into the government's stance on privatization and ongoing reform initiatives.
- **Industry Experts**: Discussions with industry professionals offered expert opinions on the technical inefficiencies within the current distribution setup and the feasibility of different reform models.
- **Private Sector Investors**: Insights were gathered from potential investors and private sector stakeholders regarding their concerns, expectations, and perceived risks of participating in DISCOs privatization efforts.

Throughout the research process, inputs were solicited from various stakeholders, including DISCOs' management, consumer advocacy groups, and policy analysts. These stakeholders provided critical feedback on the practical challenges of implementing privatization reforms, the role of the CTBCM, and suggestions for safeguarding consumer interests during the transition to privatization or decentralized distribution models.

By integrating both qualitative and quantitative data from these diverse sources, this energy monitor aims to present a balanced, multi-dimensional view of the current state of play in Pakistan's electricity distribution sector and evaluate the most viable paths for future reform.

4. Proposed Models

To address the ongoing challenges in Pakistan's electricity distribution sector, several reform models have been proposed. These models aim to improve operational efficiency, reduce technical and financial losses, and ensure reliable service delivery. This section explores three key reform models—Privatization, Provincialization, and Management Contracts—each with its own set of benefits and challenges.

4.1. Privatization

The 1990s marked a significant shift in power sector reform, driven by the World Bank and IMF. They introduced a new paradigm that emphasized privatization, deregulation, and market-oriented policies to stimulate competition. This approach was encapsulated in structural and sectoral adjustment programs, which aimed to liberalize the power sector and promote macroeconomic and fiscal discipline. The World Bank explicitly conditioned its support on governments' commitment to market reforms. However, by the early 2000s, it became apparent that this reform model was not universally applicable in developing countries. Weak regulatory institutions and inconducive local conditions hindered effective oversight, leading to issues with accountability and standard enforcement. Additionally, reforms were often adopted selectively, resulting in inconsistent hybrid models that combined market-oriented elements with state dominance. While Latin America and Eastern Europe saw widespread adoption, implementation proved complex and often required secondary reforms, as seen in countries like Argentina, Brazil, and Turkey.

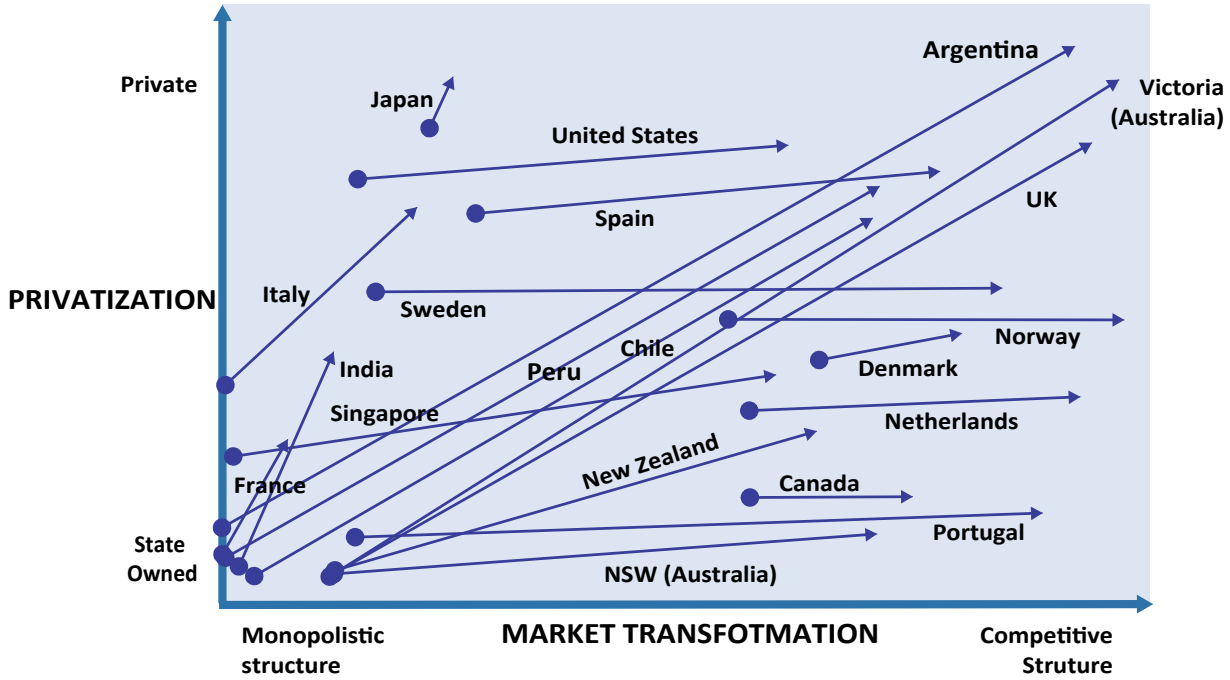


Figure 6: Global Power Market Transformation (Source: World Bank report)

4.1.1. Argentina- Case Study

Historical Transformation:

Argentina was the first Least Developed Country (LDC) to opt for Privatisation in its electricity sector. In the early 1990s, Argentina embarked on a comprehensive electricity sector reform — part of a broader economic liberalization under President Carlos Menem — learning lessons from its neighboring country, Chile. The key features of this reform included[10]:

- **Privatization**: The Argentine government privatized the state-owned electricity utilities such as SEGBA and Hidronor.**Unbundling**: The electricity sector was fully unbundled into three distinct components: generation, transmission, and distribution. This aimed to foster competition, particularly in the generation sector.
- **Liberalization and Competition**: Argentina introduced competitive market mechanisms in electricity generation, with the establishment of the **Mercado Eléctrico Mayorista (MEM)**, a wholesale electricity market managed by CAMMESA. CAMMESA operated with the goal of optimizing power generation and transmission to lower costs.
- **Foreign Investment**: Argentina welcomed foreign investors, and by the mid-1990s, most of the power companies were privately owned, with significant foreign capital, primarily from European and U.S. investors.
- **Regulation**: The **Ente Nacional Regulador de la Electricidad (ENRE)** was established as the national regulatory body overseeing the electricity sector, aiming to ensure transparent and fair competition.

Economic Crisis and the Aftermath: However, what initially seemed like a success, these reforms were challenged by the 2001–2002 economic crisis. Key events included:

- **Devaluation of the Peso**: The economic crisis led to the abandonment of the dollar peg, resulting in a sharp devaluation of the Argentine peso. Utilities that had dollar-denominated contracts or debts faced financial collapse as their revenues were in pesos.
- **Tariff Freeze**: In response to growing public discontent and inflation, the government imposed a tariff freeze on electricity prices. This led to a significant revenue gap for electricity companies, preventing them from making necessary investments in infrastructure.
- **Collapse of Investments**: The tariff freeze and economic instability discouraged both foreign and domestic investments in the electricity sector, leading to power outages and supply shortages.
- **Price Stabilization Fund**: The government created a Price Stabilization Fund to manage the gap between the market price of electricity and the frozen tariffs. However, this fund eventually collapsed, worsening the financial crisis in the sector.

Current Status:

10 https://sci-hub.se/https://www.sciencedirect.com/science/article/abs/pii/S0959652606001211

- Argentina still faces challenges in attracting investment to its electricity sector. While electricity demand has risen steadily, supply shortages and transmission constraints persist due to underinvestment.
- **Debt and IMF Support**: Argentina's financial instability continues to affect its electricity sector. The country has turned to the IMF for support several times (highest globally), most recently securing a loan to stabilize its economy. As part of IMF conditions, Argentina has been forced to gradually lift its tariff freeze, but this has been met with public resistance.

Model Followed:

- **Argentina's Reform Model** was based on lessons from Chile's successful power sector reform in the 1980s. However, Argentina's model went further by fully unbundling its utilities and opening the market to foreign ownership. Unlike Chile, which maintained some integration, Argentina ensured complete separation of generation, transmission, and distribution activities to prevent monopolistic control. The federal government has largely stepped back from commercial activities in the electricity market, focusing instead on policy and regulation. The Argentine model introduced a **competitive wholesale market (MEM)** where electricity prices were set by supply and demand.
- Apart from binational projects like the Yacyreta hydroelectric plant and national nuclear enterprises, the federal government has largely stepped back from commercial activities in the electricity market, focusing instead on policy and regulation. Separate agencies handle these functions. Many provincial governments in Argentina, within the federal system, have also shifted away from commercial roles and established their own regulatory bodies.
- The Ente Nacional Regulador de Electricidad (ENRE) oversees transmission regulation at the national level and distribution in the Greater Buenos Aires area. The Energy Secretariat (SE) monitors wholesale market competition with CAMMESA, the market's administrative body. While some provinces are still setting up their own regulatory agencies, both national and provincial bodies are working towards strengthening their regulatory frameworks.

Similarity to Pakistan's Economic Situation:

- **IMF Involvement**: Like Argentina, Pakistan has repeatedly sought financial assistance from the IMF to stabilize its economy. Both countries have faced economic crises fueled by currency devaluation, debt accumulation, and fiscal mismanagement, forcing them to accept **IMF conditions**.
- **Tariff Freeze and Political Resistance**: In both countries, electricity tariffs are politically sensitive. Governments in Argentina froze tariffs during periods of high inflation to protect consumers, but this had adverse consequences for the financial health of their power sectors. IMF conditions often push for rationalizing energy tariffs to reduce subsidies and balance budgets, a common point of public discontent in both countries.
- **Debt and Inflation**: Both countries have struggled with **foreign currency debt**, which becomes unsustainable during economic crises. The devaluation of their currencies (Argentine peso and

Pakistani rupee) makes it harder to repay debt, leading to **recurring IMF bailouts**.

4.1.2. K-Electric Model

K-Electric (KE), formerly Karachi Electric Supply Corporation, was privatized in 2005 to address its operational inefficiencies, financial mismanagement, and poor governance. The Government of Pakistan sold 73 percent of its shares to Hassan Associates, Saudi Al-Jomaih Group of Companies, and Kuwait's National Industries Group (NIG) for USD 264.90 million[11]. The privatization promised a new investment framework, technological advancements, and employment benefits. KE is the first and only privatized electricity distribution company in Pakistan, responsible for providing electricity to Karachi through a vertically integrated system of generation, transmission, and distribution.

Pre-Privatization Challenges:

- **Operational Inefficiencies**: Before privatization, KE was struggling with operational inefficiencies, poor financial management, and deteriorating infrastructure. The company's financial performance between FY 1998 and FY 2005 was marked by significant losses, with an average annual deficit of approximately PKR 12 billion, totaling PKR 95.4 billion over this period. Furthermore, to prevent financial collapse, the Government of Pakistan provided operational subsidies amounting to PKR 28.5 billion between FY 2003 and FY 2005.[12] The company's transmission and distribution losses were also notably high, standing at 34.2% at the time of privatization.[13]
- **Political Resistance**: The decision to privatize KE was met with political resistance due to concerns about job losses and tariff hikes, reflecting broader apprehensions about privatizing key public services.

Post-Privatization Performance:

- **Initial Struggles**: Despite the privatization, KE's performance did not immediately improve, leading to a resale in 2009. The company's operational performance improved after this second sale, but financial stability remained a concern. Tariffs for KE consumers have risen by over 200% since 2010[14], highlighting the price challenges faced by end-users.

11 https://pide.org.pk/research/privatisation-of-electricity-distribution-companies-a-way-forward/
12 https://www.ke.com.pk/assets/uploads/2020/07/Privatization-Turnaround.pdf
13 https://www.brecorder.com/news/40210787
14 https://pide.org.pk/research/privatisation-of-electricity-distribution-companies-a-way-forward/

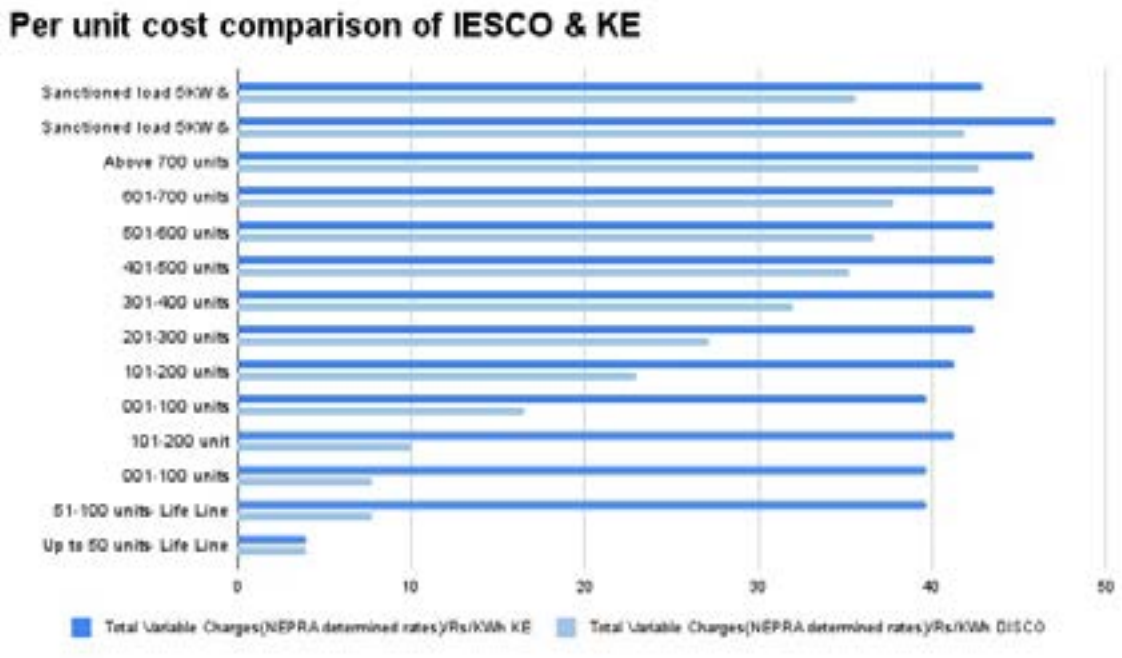
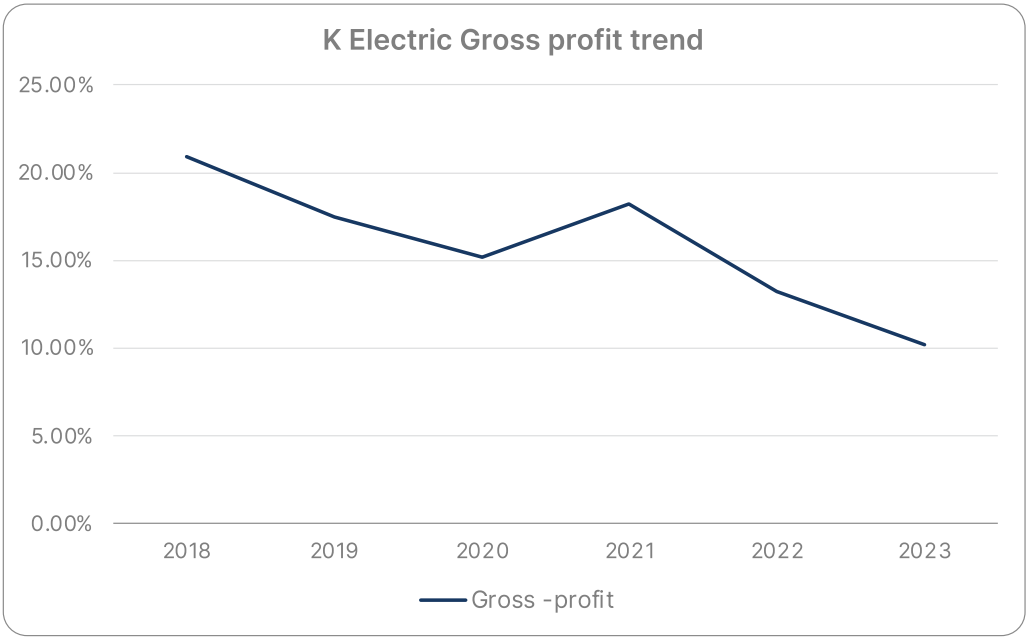


Figure 7: Tariff charged by KE vs other state owned DISCOs

- **Ongoing Financial Struggles**: KE continues to face financial difficulties despite its privatized status. In FY 2022-23, KE incurred a loss of over 30 billion rupees, even though consumers paid significantly higher per-unit costs than those charged by state-owned DISCOs[15]. The company's gross profit dropped from 21% in 2018 to 10.20% in FY 2022-23(Refer figure.6)



15 https://www.priedpk.org/wp-content/uploads/2024/07/Discussion-paper-Reform-or-Bust-DISCOs-R08.pdf

Figure 8: KE's declining gross profit over years (Data Source: KE Annual reports 2018-2023)

- **Subsidies and Tariff Issues**: In the fiscal year 2023-24, KE received approximately 298 billion rupees in subsidies from the government, reflecting its ongoing reliance on public funds. Despite this, KE faces constraints in capital investments due to regulated tariffs, limiting its ability to improve infrastructure and service delivery. Furthermore, the regulator has not set clear reliability targets for KE, making it difficult to monitor or enforce performance standards effectively. Despite receiving consumer subsidies and being privatized for nearly two decades, KE continues to incur significant losses.(Refer figure 7)

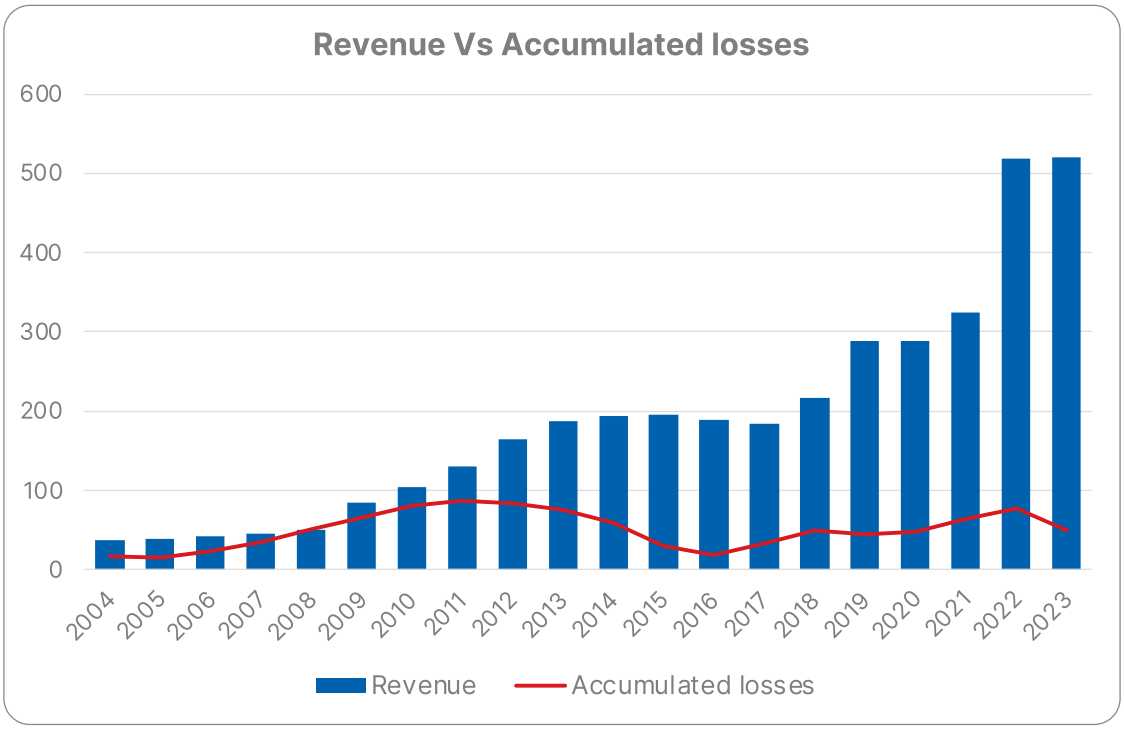


Figure 9: KE revenue vs Losses over years after privatization (Source: KE annual reports 2005-2023)

4.2. Provincialization (The Case Study of India)

India's electricity market provides a valuable example of **provincialization**—the transfer of electricity distribution responsibilities to state-level entities. The provincialization of electricity distribution companies (DISCOMs) in India has played a crucial role in reducing inefficiencies and enhancing operational performance, providing a model for localized management that Pakistan could potentially adopt.

4.2.1. Key Features of India's Electricity Market:

1. **Provincialization of DISCOMs**: In India, many states have taken control of their DISCOMs, shifting away from centralized federal management. This model allows state governments to manage

and oversee local electricity distribution, enabling better proximity to consumers, stronger bill enforcement, and improved responsiveness to operational issues. Currently, 28 State Regulatory Bodies (SERs)[16] oversee electricity distribution, with each state having the autonomy to choose its preferred ownership and management model.

2. **Ownership Models**: India employs a variety of ownership models for its DISCOMs, at the province & state level allowing for flexibility and experimentation:

    - **Privatization**: In regions like Delhi, DISCOMs have been fully privatized, resulting in significant reductions in AT&C losses—from 55% in 2002 to just 9% in 2019[17]—along with decreased government subsidies.
    - **State-owned Models**: In other states, DISCOMs remain under government control but operated with enhanced regulatory oversight to ensure operational efficiency.
    - **Public-Private Partnerships**: Many states opt for hybrid models that blend public ownership with private sector management expertise.
    - **Franchisee Models**: Some DISCOMs operate under management contracts or franchisee models, delegating operational control to private firms while retaining public ownership.

3. **Efficiency Improvements**: India's electricity sector reforms, particularly the privatization and performance-based management models, have resulted in enhanced operational efficiencies. This has led to more reliable electricity supply, reduced technical and non-technical losses, better bill recovery rates, and minimized circular debt accumulation.
4. **Regulation and Tariffs**: India's regulatory system is decentralized, with each state setting its electricity tariffs based on the performance and efficiency of its local DISCOMs. This performance-based approach allows for tariff variability across states, ensuring that more efficient regions benefit from lower rates, while less efficient areas face higher costs as an incentive for improvement.

4.2.1. Similarities to Pakistan:

- **Provincialization Debate**: Much like ongoing discussions in Pakistan about transferring the management of DISCOs to provincial governments, India's state-led model of provincialization has proven successful in addressing inefficiencies, theft, and long-distance management issues.
- **Financial and Operational Challenges**: Pakistan and India both face significant financial and operational challenges in their power distribution sectors, particularly with regards to circular debt and operational inefficiencies. However, India's state-led model has demonstrated how localized

16 https://documents1.worldbank.org/curated/en/815021468042283537/pdf/More-power-to-India-the-challenge-of-electricity-distribution.pdf
17 https://www.niti.gov.in/sites/default/files/2021-08/Electricity-Distribution-Report_030821.pdf

oversight can drive operational improvements. For instance, India reduced its aggregate technical and commercial losses to 15.41% in FY 2022-23, down from 25.72% in 2015, resulting in enhanced financial performance and a 33% decrease in financial losses, from $5.6 billion in 2020-21 to $3.7 billion in 2021-22.[18]

- India's debt restructuring plans have also alleviated the debt burden on state discoms. The 2012 financial restructuring plan restructured Rs 1.39 lakh crores of debt owed by SEBs to banks, while the Ujjawal DISCOM Assurance Yojana (UDAY) enabled state governments to take over Rs. 2.69 lakh crores of DISCOM debt by issuing bonds[19]
- In contrast, Pakistan is struggling with a surge in provincial receivables, which increased to PKR 25.8 billion in FY2023 from PKR 17.4 billion in FY2021 as shown in figure below[20] Adopting a provincialized model, similar to India's state-led approach, could help Pakistan tackle this issue and enhance provincial accountability.

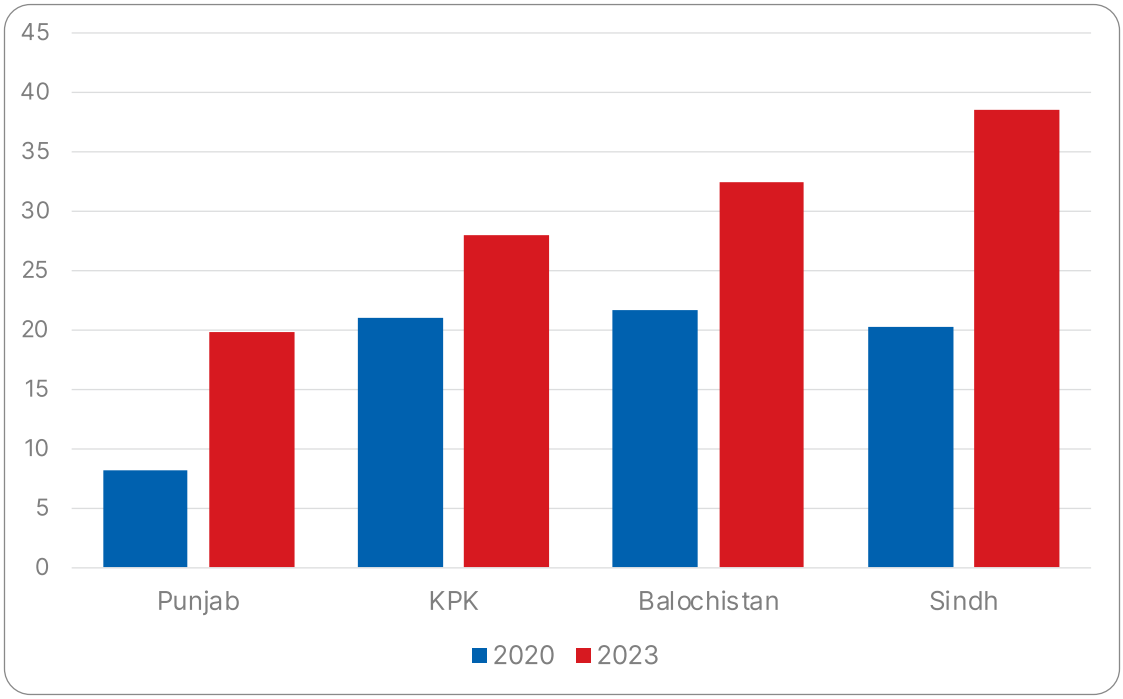


Figure 10: DISCOs Receivables from Provinces

(Source: PAKISTAN DEVELOPMENT UPDATE The Dynamics of Power Sector Distribution Reforms World Bank)

18 https://www.smart-energy.com/regional-news/indian-subcontinent/indian-power-sector-reforms-increasing-power-supply-and-reducing-losses/

19 https://www.nipfp.org.in/media/medialibrary/2024/07/DISCOM_Finance_Working_Paper_Prayas_090724.pdf

20 https://thedocs.worldbank.org/en/doc/7008031a15959f10bde28b6c56767d59-0310062024/original/Pakistan-Development-Update-The-Dynamics-of-Power-Sector-Distribution-Reforms-Oct-24-FINAL.pdf

4.3. Management Contracts – Turkish Model

Turkey's privatization journey in the electricity distribution sector provides a unique model for private sector participation (PSP), utilizing both privatization and operational rights transfer under the Transfer of Operational Rights (TOOR) model. This framework balances private sector efficiency with state ownership of core infrastructure assets, offering a useful reference for countries considering sector reform.

Historical Transformation:

PSP in the Turkish power sector was started almost from the beginning of electricity generation within the country in the first decade of 20th century[21]. Since then, depending on the macroeconomic policies and models preferred by the governments, there have been several distinct periods in which different models are used and for each period, the degree of participation of the private sector to T&D activities and investments varied. Until the mid 1930s, the electricity generation and distribution activities were carried out by private concessionary companies (mostly foreign companies). The Turkish power system and PSP models can be overviewed historically in 3 distinct periods:

- Zero point to 1984: From a fragmented system to country-wide vertically integrated system.
- 1984 - 2001: First liberalization and restructuring efforts and new models for PSP.
- 2001 - Today: Competitive Electricity Market.

The process began in 1993 when the state-owned Turkish Electricity Authority (TEK) was split into two entities: TEAS and TEDAS[22]. TEAS was responsible for generation, transmission, and wholesale activities, while TEDAS focused on distribution. In 2001, further restructuring took place as TEAS was subdivided into three specialized entities: EUAS for generation, TEIAS for transmission, TETAS for wholesale. This separation aimed to streamline operations and allow each entity to focus on its core functions. Finally, in 2008, TEDAS Distribution underwent a significant transformation. It was converted into multiple entities, creating TEDAS Companies and several Private Companies responsible for distribution. This marked a critical step towards increased privatization and the involvement of private sector players in Turkey's electricity distribution market. (Refer Figure:8[23])

21 https://documents1.worldbank.org/curated/ru/846621467997641404/pdf/101754-WP-P146042-Box393265B-PUBLIC-Private-Sector-Participation-in-Power-Grids-Turkey.pdf

22 https://ideas.repec.org/a/eee/enepol/v63y2013icp614-621.html

23 https://www-pub.iaea.org/MTCD/Publications/PDF/cnpp2018/countryprofiles/Turkey/Turkey.html

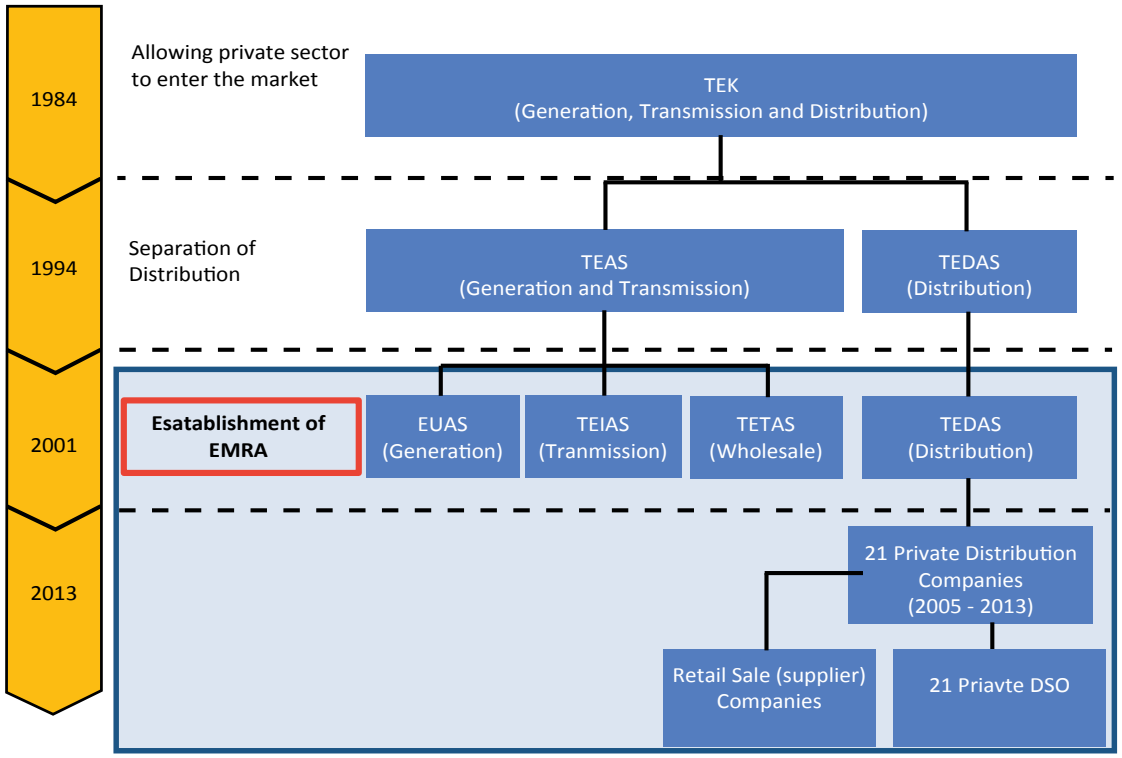


Figure 11: The evolution of Turkish electricity market

4.3.1. Private Sector Participation in Distribution Sector - Turkey

Turkey's privatization in the distribution sector was intended to create a competitive and liberal electricity market. Private sector participation is governed under two primary regimes:

1. **Concessionaire Regime (Assignment Model)**:

    - Within their designated service areas, distribution companies maintain exclusive supply rights, with consumers having no choice but to purchase electricity from the designated distribution company.
    - No separation of distribution and retail activities.

2. **Non-Concessionaire Regime**:

    - Activities are unbundled and distribution companies do not have exclusive rights to serve all consumers.
    - Eligible consumers are allowed to choose their electricity suppliers, fostering competition in the market.
    - Distribution companies focus on grid investments, operations, and maintenance.

The transition from the concessionary regime to the non-concessionary regime involved several key pillars:

- **Service Quality Enhancement**: Ensuring timely and adequate grid investments.
- **Cost-Reflective Pricing**: Introducing tariffs that reflect actual costs to improve efficiency.
- **Reduction of Loss/Theft Ratios**: Minimizing cross-subsidization and curbing electricity theft.
- **Strengthening Regulatory Oversight**: Empowering the Energy Market Regulatory Authority (EMRA) to autonomously set tariffs and minimize political influence.

4.3.2. Transfer of Operational Rights (TOOR) Model

The TOOR model, also referred to as the TOOR-backed Share Sale (TSS) model, plays a crucial role in the privatization of distribution companies. Under this model, the **Turkish Electricity Distribution Corporation (TEDAS)** retains ownership of assets, but operating rights are transferred to private entities through a share sale. The key features of the TOOR model include:

- **Operating Rights Without Asset Ownership**: Private investors gain operational control of distribution companies, but the state continues to own the physical infrastructure. Investors manage grid operations and are responsible for necessary investments.
- **Regulatory Oversight**: EMRA governs tariff structures and ensures that consumers are protected from arbitrary price hikes. Eligible consumers can switch suppliers if they find more competitive options.
- **Investment Recovery**: Private companies fund grid improvements, which are recovered through regulated tariffs. If investors fail to recover costs within the tariff structure, TEDAS compensates them upon the contract's expiry or termination.

4.3.3. Impact of Privatization and Tariff Trends

Turkey's privatization efforts have led to mixed results in terms of tariff trends and overall market stability:

- **Wholesale Tariffs**: A 10% reduction in wholesale rates has been seen, which suggests some positive effects of liberalization.
- **Retail Tariffs**: Retail prices increased by 5.9%, indicating that the benefits of wholesale cost reductions did not fully pass on to the end consumers.[24]

24 https://ideas.repec.org/a/eee/enepol/v63y2013icp614-621.html

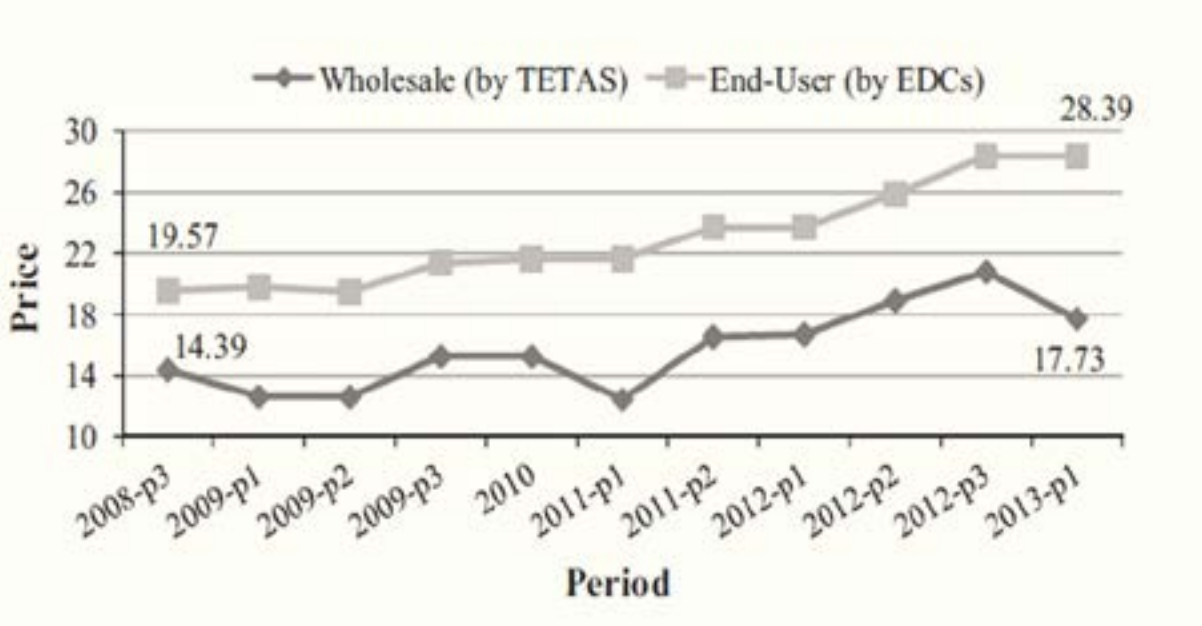


Figure 12: Nominal electricity prices in Turkey (TLcent/kWh).

The disparity (refer figure 9) between wholesale and retail tariff changes raises questions about market readiness. End-user tariffs increased by 45.1% over four years, while wholesale tariffs rose by only 23.3%[25]. This suggests that the retail market may not have been adequately prepared for full liberalization, contributing to consumer end price volatility.

4.3.4. Similarities to Pakistan

Turkey's model provides important lessons for countries like Pakistan that are considering similar reforms:

- **Operational Efficiency Without Full Privatization**: Turkey's TOOR model demonstrates how private sector efficiency can be leveraged without transferring asset ownership. This could help Pakistan improve its DISCOs' performance while maintaining state control over key infrastructure.
- **Investment Incentives**: The success of the Turkish model depends on a robust regulatory environment where tariffs are adjusted to allow investors to recover their costs. For Pakistan, strengthening the regulatory oversight of NEPRA will be critical to creating an investment-friendly environment.
- **Market Preparedness**: As observed in Turkey, liberalization can lead to market instability if pricing mechanisms are not fully functional. Pakistan must ensure that its electricity market, especially in terms of tariffs, is prepared for privatization and private sector participation to avoid negative impacts on consumers.

25 https://ideas.repec.org/a/eee/enepol/v63y2013icp614-621.html

5. Primary Data Analysis and Discussion - a dive into stakeholder's perspectives

In addressing the complex challenges faced by the energy sector in Pakistan, it is essential to involve relevant stakeholders in the process and finalize the reforms taking into consideration their views and concerns. Although it is not known if any such participatory process has been undertaken by the government, particularly in finalizing the way forward for the DISCOs — we consider the inputs of stakeholders as indispensable. Considering this, we carried out a multi-stakeholder dialogue on DISCOs' reforms, and received inputs have been discussed in this section.

5.1 Stakeholder Concerns and Discussions

During the dialogue, stakeholders collectively addressed the severe impacts of the energy and economic crises on the nation, noting that these issues have persisted for two generations. They criticized the energy crisis for stifling economic growth, leading to business closures, and causing job losses. The discussions highlighted the need for parliamentary oversight, public participation, and experts' consultations in policy making.

Historical difficulties with Independent Power Producers (IPPs) contracts and investment challenges were acknowledged, with suggestions for the government to focus on its role as a regulator rather than a direct participant in the energy sector. Several energy experts pointed to the poor performance of DISCOs, citing significant financial losses and operational inefficiencies. They recommended immediate actions to curb power theft, improve billing recovery, and strengthen infrastructure, emphasizing the importance of investing in advanced metering infrastructure and better management of existing resources.

In contrast, discussions among power sector representatives included various reform options, such as privatization, provincialization, and long-term management concessionary contracts. Key takeaways from different stakeholders discussion are as following:

- Long-term management concessions were suggested as a viable option that would allow national control of assets while improving management practices.
- Policymakers expressed concerns about the potential monopolistic outcomes of privatization and the effectiveness of regulatory frameworks.
- The need for transparency and accessibility in utility management and suggested exploring community-based energy solutions was emphasized.
- Further Recommendations included enhancing management practices within existing DISCO structures and conducting forensic audits to reduce tariffs and improve efficiency.
- Provincialization of DISCOs, establishing a separate regulator for each province.

Regulatory authorities highlighted the need for improvements on the retail side and better collection efficiency, noting that power purchase prices have reached 138 billion while per capita consumption remains low. They recommended promoting competition and liberalization, advocating for a controlled privatization of DISCOs with strong regulatory oversight to ensure safety and efficiency.

A senator proposed focusing on governance rather than immediate privatization, suggesting that DISCOs be listed on the stock exchange and that private investors be involved as potential solutions. Decision-making should address asset division and consider uniform tariffs. Some parliamentarians argued that historical privatization efforts in Pakistan have faced challenges and proposed a combined model of provincialization and public-private partnerships, emphasizing the need for strong regulation and rigorous implementation.

5.2. Competitive Trading Bilateral Contract Market (CTBCM)

The CTBCM plays a critical role in the oversight and management of the national electricity grid in Pakistan. From the dialogue with multi stakeholders it was assessed that some of the stakeholders are of the opinion that it is not the government's job to do business henceforth, a liberalized market is a better option. With the status quo of existing state owned DISCOs, CTBCM is considered as one of the viable options as stated earlier. Key points regarding their involvement include:

- **Market Structure**: Pakistan's power sector follows a single buyer model market structure, with the Central Power Purchasing Agency (CPPA-G) responsible for electricity procurement on behalf of the DISCOs. Over the years, the government has been subsidizing both state-owned DISCOs and KE, contributing significantly to the circular debt. In FY 2023-24 alone, the breach of targets contributed around Rs. 276 billion[26] to this debt. This poor performance of DISCOs has been a key driver of stress on the development of the CTBCM.

26 https://www.brecorder.com/news/40317468

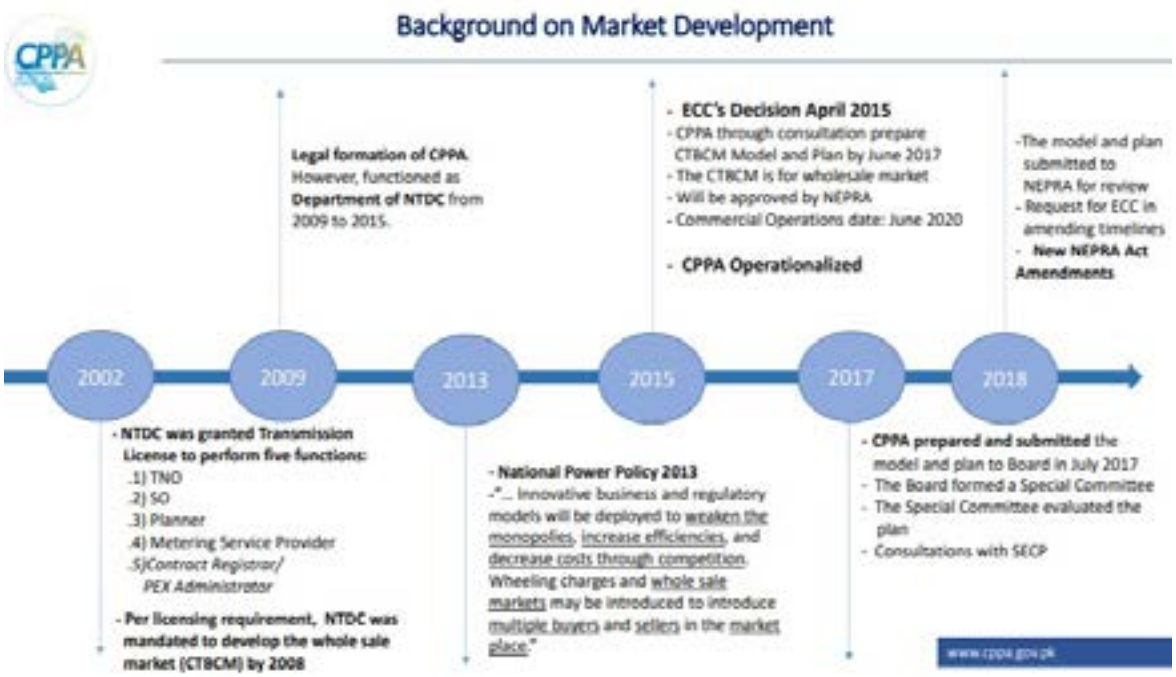


Figure 13: Pakistan Power market Development (Source: CPPA)

- **CTBCM Development**: In November 2020, NEPRA approved a Competitive Trading Bilateral Contract Market (CTBCM) model aimed at opening the Wholesale Electricity Market of Pakistan, providing bulk power consumers (with loads of 1 MW or above) the choice to purchase electricity from either DISCOs or competitive suppliers.

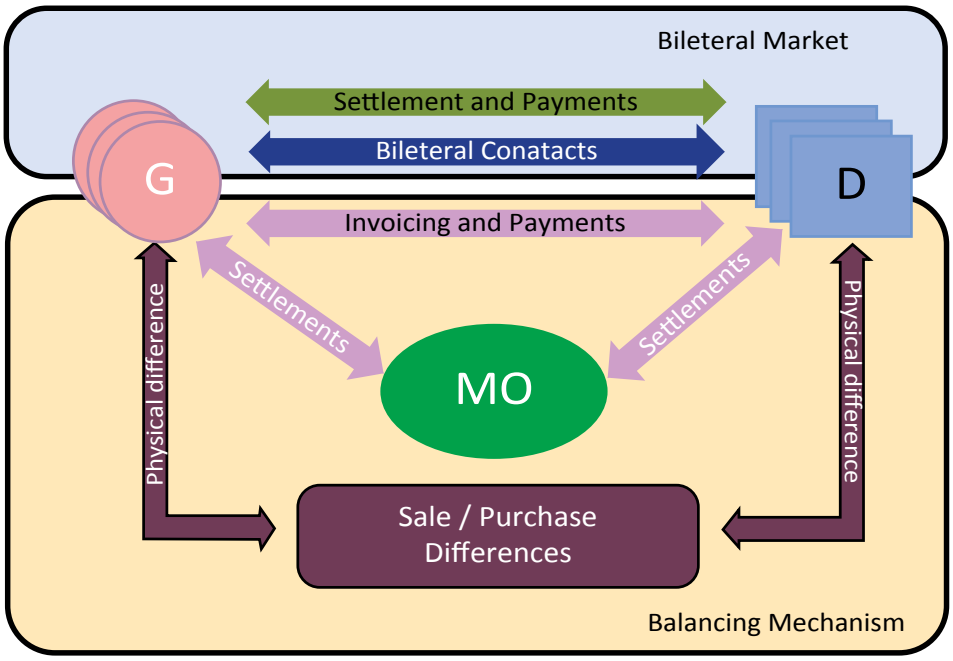


Figure 14:Decentralized market Structure

- **Implementation Steps**: In May 2022, NEPRA granted a market operator license and approved the Market Commercial Code (MCC). Key components of the MCC include:

    - Phasing out the single buyer regime, requiring DISCOs to procure power through centrally organized auctions managed by the Independent Auction Administrator (IAA).
    - Allowing bulk power consumers to source power from their DISCO or competitive suppliers.
    - Permitting merchant sales for interested generation plants.

- **Governance Enhancements**: The government believes that the Competitive Trading Bilateral Contract Market (CTBCM) will significantly enhance governance through institutional reforms, restructuring, automation of business processes, and extensive capacity building for professionals.

Under this model:

- DISCOs will be responsible for their own procurements based on their own demand projections and capacity obligations.
- The new capacity procurement for DISCOs will be done through centralized competitive tenders or auctions
- PPAs will be signed by DISCO**s**

- **Regulatory Changes**: NEPRA has issued directives to establish the Market Operator as a separate entity from the legacy role of CPPA-G and directed NTDC to obtain a separate System Operator license. Additionally, various IT interventions, including the implementation of a Market Management System (MMS) and the automation of the dispatch process, are underway, alongside the creation of the Power Sector Centre of Excellence (PSCE).

The Market Participants are:

- Generators (above certain threshold)
- DISCOs
- Bulk Power Consumers (BPC)
- Wholesalers

Service Providers are:

- Market operator
- System Operator
- Transmission Service Providers
- Metering Service Providers

Figure 15: Market Participants and Service Providers under CTBCM

5.3. Precedent Analysis: Public-Private Partnership in Telecom Sector

While the proposed DISCOs privatization aims to replicate the successes of liberalized electricity markets, the country's experience with telecom sector privatization serves as a cautionary tale. In the multi-stakeholder dialogue, a suggestion emerged that the retail operations of Distribution Companies (DISCOs) in Pakistan could transition to a prepaid model similar to that of PTCL.

The proposed privatization of Distribution Companies (DISCOs) through management contracts shares parallels with the country's experience with the PTCL. Firstly, The telecom sector's public-private partnership experience provides valuable insights into the challenges and opportunities associated with privatization, regulatory frameworks, and service delivery improvements. Secondly, understanding the factors that contributed to the mixed outcomes in the telecom sector can inform strategies to mitigate potential risks and optimize benefits in the electricity sector. By examining the telecom sector's experience, we can identify transferable lessons and best practices to enhance the effectiveness of DISCOs privatization.

Pakistan Telecommunication Company Limited (PTCL)

By 2005, PTCL was recognized as a telecom giant in Asia, significantly impacting Pakistan's economic growth as a prominent monopoly. The company was privatized in 2006, with 26%[27] of its shares sold to UAE-based Etisalat. This privatization led to the transfer of management rights to the multinational tycoon. Before its privatization, in 2004, PTCL's total revenue reached 79 billion rupees, with a net profit of 44 billion rupees[28]. Unlike Pakistan International Airlines (PIA), PTCL was a profit-making firm; however, the then head of state, General Pervaiz Musharraf, proceeded with the privatization despite widespread condemnation from PTCL workers. Protests ensued as employees feared large-scale downsizing, leading to numerous sackings and terminations.

In March 2006, a new agreement was signed with Etisalat behind closed doors, lacking transparency and knowledge from other stakeholders. Etisalat committed to paying over USD 2.6 billion to the government at the time of privatization, but by 2022, it still withheld $800 million[29], arguing that Pakistan had not transferred all properties as promised in the agreement.

The aftermath of privatization saw a sharp decline in PTCL's financial performance. Revenues dropped from 90 billion rupees to 55 billion rupees in the first year after privatization, resulting in a net margin decline from 31% to 15%[30], which has not recovered since. Additionally, PTCL's Return on Equity (ROE) fell from 25% before privatization to 12.5% in 2013. The net profit trend over the years indicates no significant profit increase, highlighting the challenges faced by the company post-privatization. Notably, despite being privatized, the

27 https://pu.edu.pk/images/journal/HistoryPStudies/PDF_Files/2_V-30-No2-Dec17.pdf
28 https://www.dawn.com/news/1711872
29 https://www.arabnews.pk/node/2270951/pakistan
30 https://pu.edu.pk/images/journal/HistoryPStudies/PDF_Files/2_V-30-No2-Dec17.pdf

majority of shares (297,468,002[31] shares as of 2023) still remain under the ownership of the President of Pakistan, demonstrating the enduring impact of historical governance and regulatory challenges.

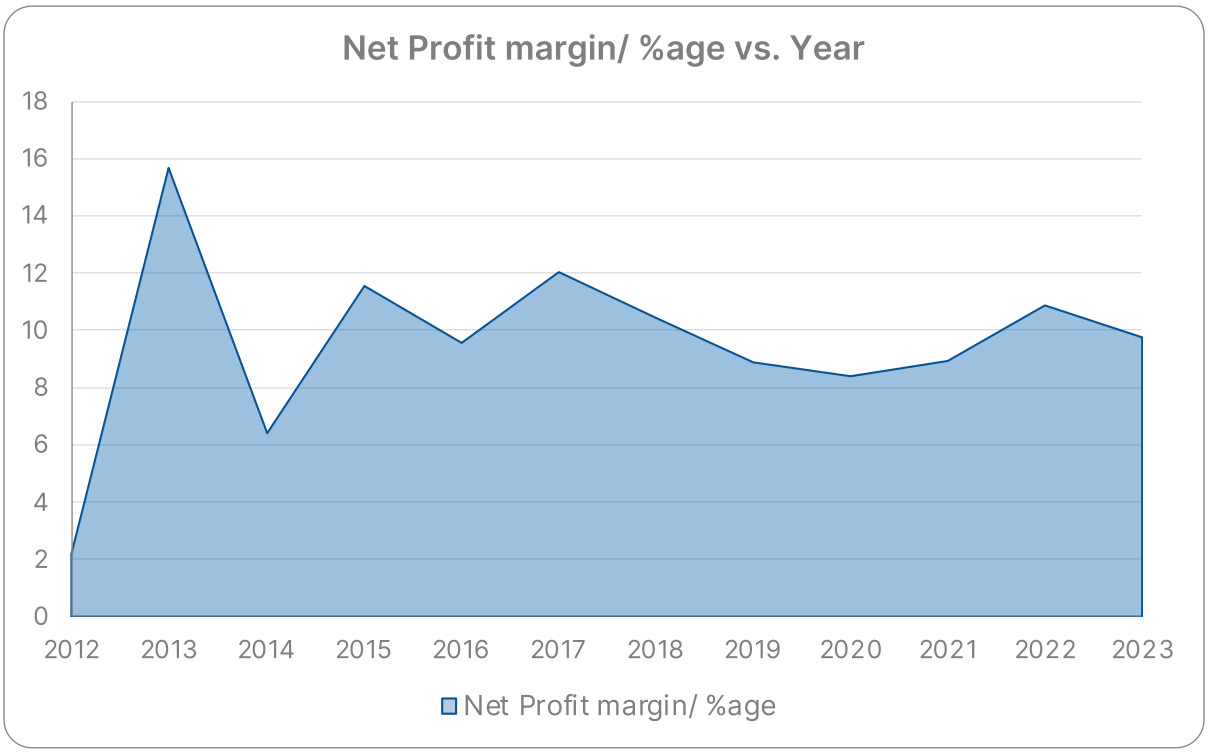


Figure 16: PTCL net profit trend 2012-2023 (Source: KE Annual Reports)

In the context of the energy sector, PTCL's involvement is increasingly relevant as it can leverage its telecommunications infrastructure to support the operations of DISCOs and the CTBCM. Reliable communication systems are essential for real-time monitoring and management of electricity distribution and transmission. PTCL's expertise in telecommunications can facilitate the implementation of advanced metering infrastructure (AMI) and data management systems, enabling better energy consumption tracking, billing accuracy, and customer engagement. Furthermore, PTCL can play a crucial role in public outreach initiatives to promote energy conservation and efficient usage among consumers, enhancing awareness and participation in energy-saving programs.

To effectively apply this model to DISCOs, the following strategies can be implemented: DISCOs can introduce prepaid electricity meters, allowing consumers to pay for electricity in advance. This would give customers greater control over their usage and expenses, while also improving cash flow for the companies by reducing outstanding bills.Furthermore, this can help DISCOs manage their finances more effectively by reducing the risks of default on payments, ultimately improving their financial stability. The DISCOs can invest in modern metering and billing technology, akin to PTCL's technological advancements. Smart meters can facilitate accurate billing and usage tracking, making the transition to a prepaid system smoother.By adopting a prepaid model, DISCOs can enhance consumer engagement and satisfaction. Customers can monitor their usage in real-time, leading to more informed consumption decisions.

31 https://ptcl.com.pk/uploads/Annual%20Report%202023.pd

6. Conclusion

Studies have shown that while privatization, competition, and regulation are important, implementing them simultaneously does not guarantee positive results. Both theory and empirical research highlight the need for competition to increase economic efficiency during privatization. Nobel laureate Joseph Stiglitz emphasizes that reforms' success depends on the proper sequencing of these changes. Recent studies on developing countries support a gradual approach, first establishing institutional infrastructure, competitive market structures, and regulatory systems before moving to privatization.

One study covering 25 developing countries from 1981 to 2001 found that setting up independent regulatory authorities and promoting competition before privatization led to higher electricity generation and better capital utilization. Another study involving 51 developing countries (1985-2000)[32] concluded that competition is more critical than privatization for improving electricity sector performance. Evidence from industrialized countries like the UK also suggests that privatization alone is insufficient for improving performance, particularly in sectors with natural monopolies like utilities.[33]

One of the major overlooked factors in the distribution business is that it is not profitable. KE being a vertically integrated company gets most of its profitability from its generation business and not from distribution. Another questionable condition for privatization of DISCOs is that the debt on their balance sheets must reach the zero mark and that the government would take on all or most of the existing debt. Privatization seems like an accessible approach, but it's tricky and requires a stable market structure to implement the much-awaited wholesale electricity market i.e., CTBCM. Similarly, the transition of DISCOs ownership also involves resolving old contracts, paying off debts, and negotiating with labor unions. Take Pakistan Steel Mills, for example. They tried to privatize it, but 3,500 employees resisted. Now imagine doing the same with DISCOs, which have over 100,000 workers.

Moreover, if the government goes ahead with privatization of management, without addressing the overall structural issues in the DISCOs which currently facilitate rent seeking behaviors (not limited to upper management alone) instead of theft control, the effort might go in vain. Additionally the non-seriousness of DISCOs towards recovery targets, ill attention towards system strengthening measures despite allocation of funds, lack of fear of accountability that drives continuous breaches of NEPRA's directives, has to be addressed before any transition. NEPRA's Performance Evaluation Report of DISCOs 2022 – 2023 states:

> "NEPRA has provided substantial investment and Operation & Maintenance (O&M) funds to DISCOs annually, with the intention that these resources would be used to undertake necessary initiatives. This may include addressing the system constraints, reducing feeder lengths, implementing automated metering, and performing preventive maintenance. However, it is disappointing that many DISCOs have been reluctant to undertake such projects and activities, which are essential for reducing T&D losses and ensuring the efficiency of the power distribution system."

32 https://ideas.repec.org/p/ags/idpmcr/30599.html
33 https://www.orfonline.org/expert-speak/electricity-distribution-in-india-sequencing-of-reform-measures

Privatization of DISCOs is a complex and challenging task that requires careful consideration of various factors. The evaluation has to consider sensitivities of existing structures including market structure, debt resolution, labor negotiations, and a well-planned transition strategy to ensure a successful and sustainable reform.

If privatization of DISCOs is the final decision of the government , it has to be taken after a careful assessment of all the available alternatives to improve DISCOs performance. Historically, the sporadic and ill-planned decisions taken by the government in order to meet the conditions of the IMF have resulted in a financially unsustainable power sector carrying a hefty burden of capacity payments and trillion of rupees of circular debt. The government is again going forward with right away privatization of DISCOs and privatization of management without making public any cost benefit assessment of DISCOs betterment alternatives. Our demand is that the government, taking care of transparency, make public such assessments if they have been carried out or make disclosures in absence of such an assessment.

Meanwhile, through this energy monitor, we want to inform the relevant stakeholders of lessons that can be learned from various alternatives implemented around the globe. The following table represents the main factors and lessons for Pakistan that are integral for a successful privatization based reform in the electricity sector given the context of Argentina and Chile's privatization. [34]

Table 2: Lessons learned from Argentina and Chile Privatization

Theme	Case Studies: Argentina & Chile	Lessons for Developing Countries (e.g., Pakistan)
1. Privatisation Techniques for State-Owned Power Companies	**Argentina:** Implemented employee protection measures during privatization, offering financial benefits to retirees. - **Chile:** Pension funds owned significant shares in privatized companies, with up to 33% in key energy firms like Enersis by the late 1990s.	- **Employee Protection:** In transitioning to private ownership, it is crucial to safeguard employees by providing benefits and support to minimize resistance and delays in reforms. Given that Discos in Pakistan have thousands of workers, any pathway to their privatization will be fraught with possible protests and strikes as seen after the Pakistan steel mill partial privatization. - **Role of Capital Markets:** Pension funds and other local investment instruments can play a significant role in ownership transitions and promoting broad-based participation.

34 https://sci-hub.se/https://www.sciencedirect.com/science/article/abs/pii/S0959652606001211

2. Promoting Infrastructure Development		
2.1 Private-Sector Investment in Electricity Generation	- **Argentina:** Successfully operated competitive power markets and introduced merchant plants to meet electricity demand, reducing reliance on traditional state-guaranteed PPAs	- **Merchant Plants:** Encouraging private-sector investment through merchant power plants can diversify energy sources and reduce state dependency. - **Reduce PPA Dependence:** Transition from state-guaranteed Power Purchase Agreements (PPAs) to competitive market mechanisms to attract private investment. For Pakistan, the calls for renegotiation of contracts with IPPs underscore the need for a more sustainable and market-driven approach.
2.2 Investment in Power Transmission	- **Chile:** Lacked clarity on cost-sharing and transmission rules, leading to operational delays. - **Argentina:** Successfully used the "Public Contest" method to secure private investments with local consent for transmission expansion (e.g., Fourth Line).	- **Clear Regulations:** Establish clear guidelines for accountability and cost-sharing in transmission infrastructure expansion to avoid conflicts and delays. - **Local Consent:** Engage local communities through transparent methods to ensure public buy-in for transmission projects.
2.3 Attracting Foreign Capital	- **Argentina:** Introduced the Foreign Investment Law alongside electricity reforms, creating a legal environment conducive to foreign capital inflow.	- **Legal Frameworks:** Developing countries need strong legal frameworks that allow for the simultaneous privatization of state assets and encourage foreign direct investment (FDI) in infrastructure.

2.4 Stabilising Exchange Rates	**Argentina:** The 2002 power sector crisis stemmed from exchange rate instability after peso devaluation. A proposed solution was the creation of an Infrastructure Exchange Compensation Fund to manage exchange rate fluctuations.	**Exchange Rate Stability:** For energy projects dependent on foreign financing, stabilizing exchange rates is essential to prevent financial crises and cost escalations. - **Local Financing:** Developing domestic capital markets can help reduce reliance on foreign currency and mitigate exchange rate risks.
2.5 Electricity Price Setting	**Argentina:** In the aftermath of the 2002 economic crisis, tariffs were frozen, leading to financial challenges for utilities. However, electricity tariffs need to be gradually increased to reflect true costs and attract investments.	- **Balanced Tariff Setting:** Raising electricity tariffs is necessary to attract private investment but must be done in a way that balances economic growth and affordability. - **Cost Reflective Tariffs:** Passing costs to consumers transparently can ensure utility sustainability and incentivize investment.
3. Developing a Competitive Environment		
3.1 Unbundling of Vertically Integrated Utilities	- **Chile:** The lack of complete unbundling led to the concentration of market power in companies like Endesa, hindering competition. - **Argentina:** Successfully prevented market power concentration by fully unbundling utilities, ensuring a competitive environment.	- **Complete Unbundling:** To foster competition and prevent monopolistic practices, generation, transmission, and distribution must be unbundled. - **Prevention of Market Power:** Laws must restrict ownership of multiple segments of the supply chain by a single entity to avoid dominance and unfair competition.

3.2 Independence of Regulatory Institutions	- **Argentina:** Achieved higher transparency and independence in regulatory institutions and market operators, ensuring fairness. - **Chile:** Faced challenges with fairness and transparency due to limited participation in system operations, leading to questions about regulatory independence.	- **Regulatory Independence:** Regulatory bodies and system operators must remain independent of political and commercial influence to ensure fair and transparent market operations. - **Transparency:** Open access to operational and management data helps foster trust among market participants.