RENEWABLES FIRST

Pakistan's Power Market Insights

Apr 2025

Introduction

Our power market insights highlight important trends shaping Pakistan's power sector. This document focuses on long-term changes, such as the effects of fuel cost variations and shifts in the energy mix. The goal is to help businesses and consumers understand how the power sector is evolving.

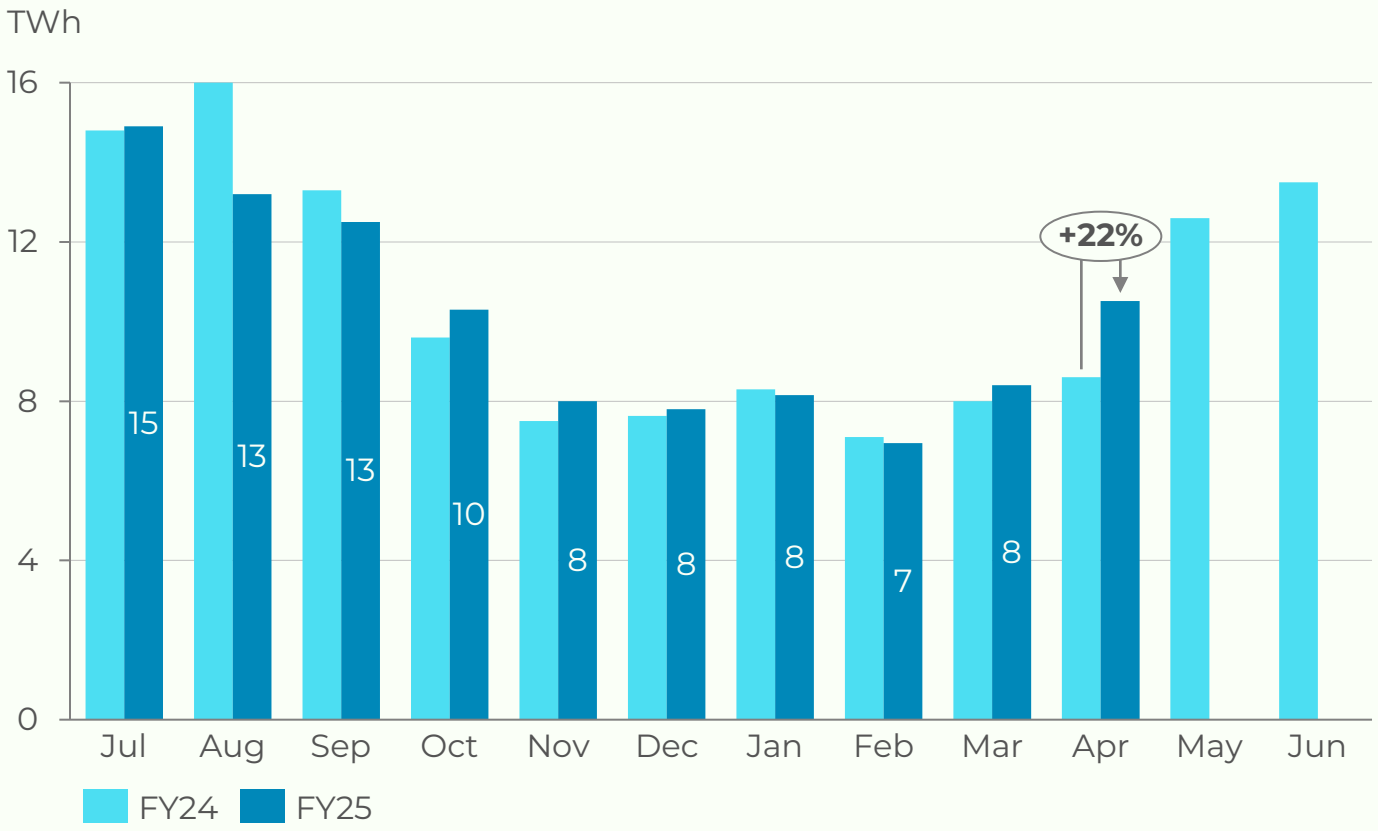
Key highlights

- In Apr 25, electricity generation stood at 10.5 TWh, marking an increase of 22% year-on-year (YoY) basis
- Hydel led the generation mix with a 22% share, driven by improved water flows at northern hydel plants
- Power sector circular debt drops to PKR 2.4 trillion(T) in Mar 25, down 14% YoY

#RFPowerMarketInsights

Rise in temperature and reduced electricity tariff led to 22% increase in generation in Apr 25

Month-wise electricity generation in FY24 vs FY25



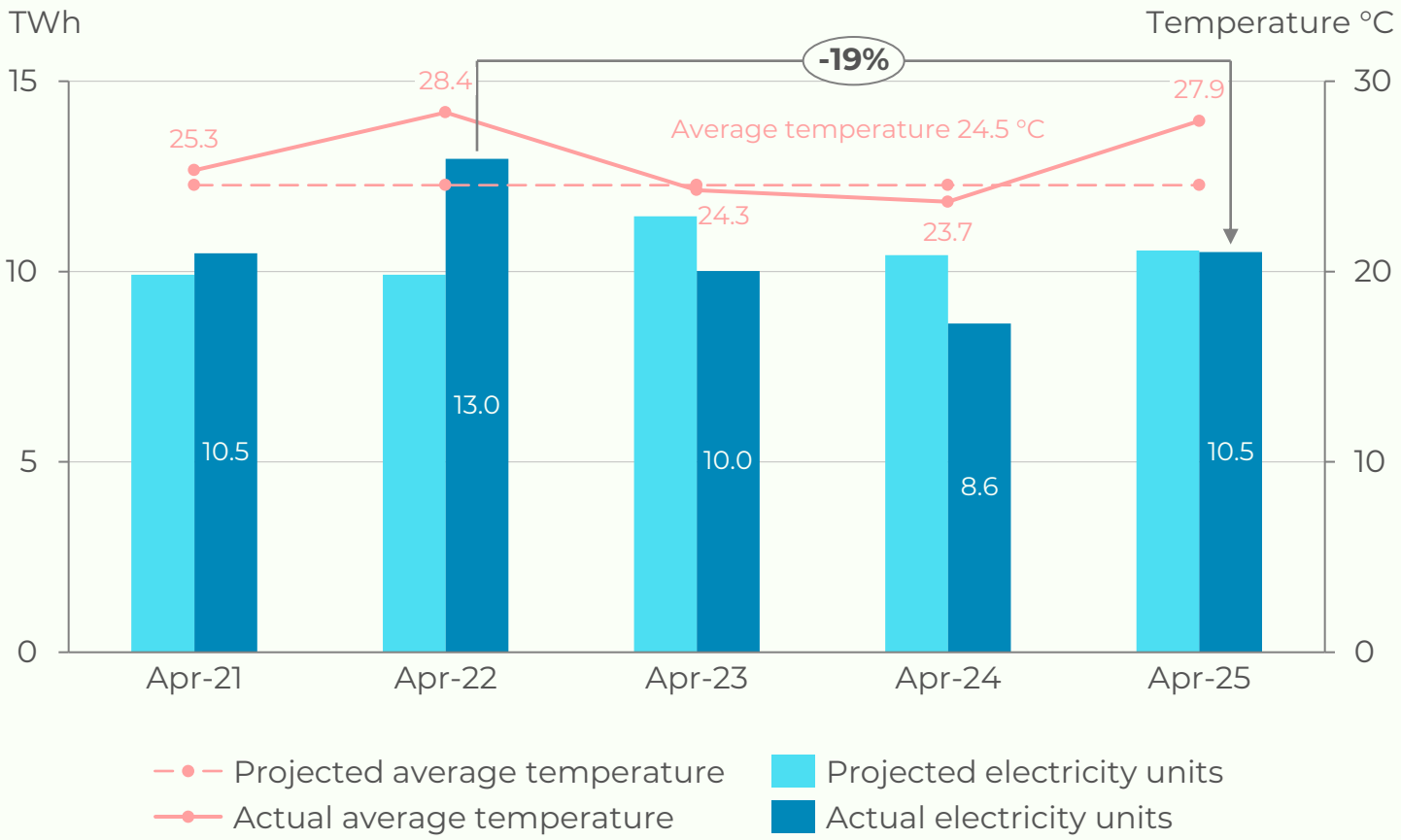
- In Apr 25, electricity generation reached 10.5 TWh, driven by a seasonal uptick in demand as the national mean temperature hit 27.9°C i.e. 3.4°C above the average (details on next slide).
- The combined effect of the Feb 25 FCA (PKR 0.46/kWh) and the second-quarter QTA (PKR 1.90/kWh) reduced the tariff by PKR 2.50 per kWh, stimulated electricity sales in Apr 25.
- Over the first ten months (10M) of FY25, the total electricity generation declined by 0.5% compared to the same period last year.

FCA: Fuel cost adjustment
QTA: Quarterly tariff adjustment

Data Source: NEPRA & Renewables First calculations

Electricity demand in Apr 25 dropped by 19% from Apr 22, reflecting a trend towards adoption of more affordable energy sources

Actual vs projected units and average temperature for April, FY21 – FY25

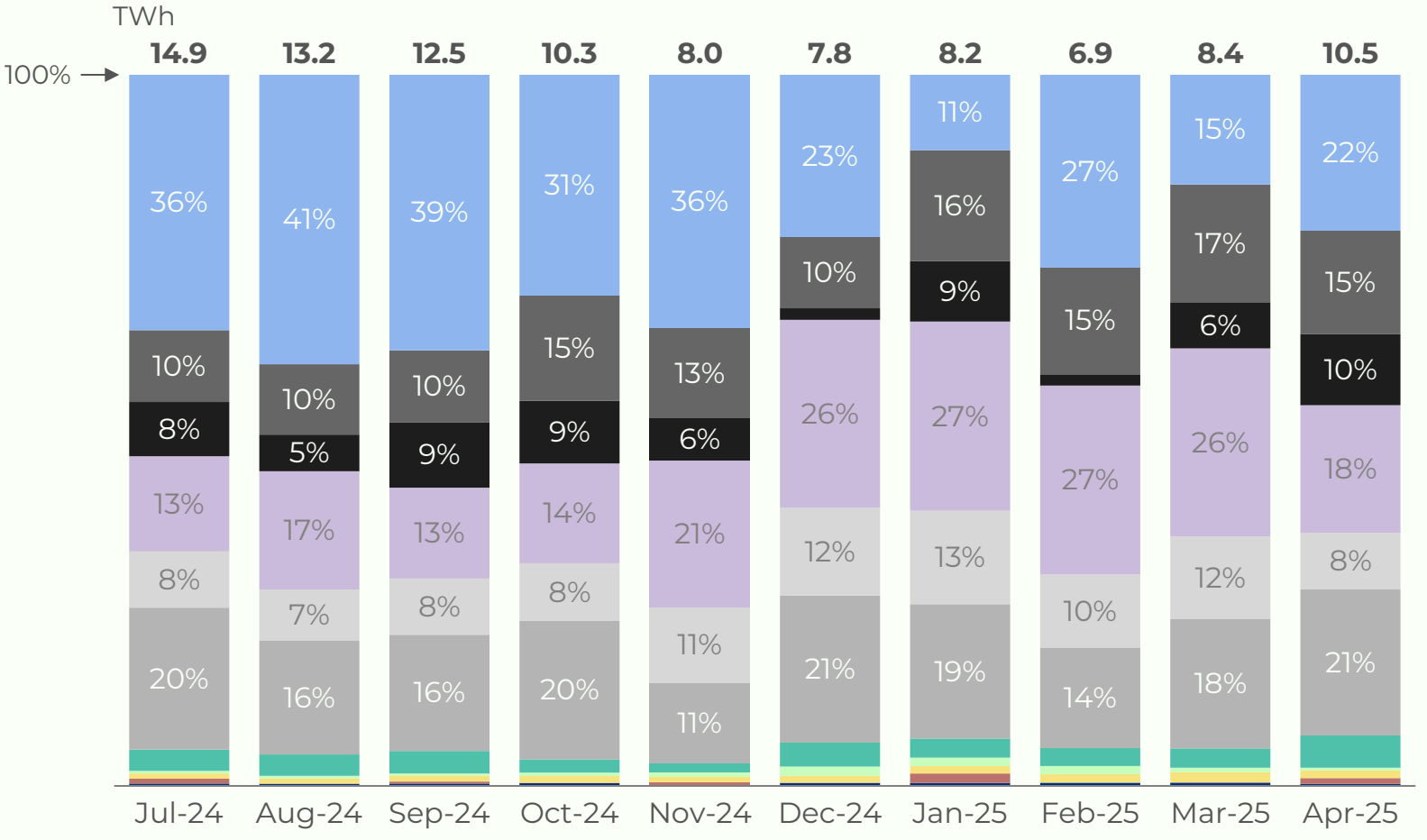


- Electricity demand in Apr 25 dropped by 19% compared to Apr 22, declining from 13 TWh to 10.5 TWh, despite similar temperature ranges. This indicates a growing reliance by consumers on more competitive energy sources to meet electricity needs.
- In Apr 25, actual generation fell short by 0.35% against the projected 10.6 TWh despite the high temperature recorded.

Data Source: NEPRA & Renewables First calculations

Hydel dominated the generation mix, with a 78% month-on-month (MoM) increase in generation driven by seasonal variation

Energy source-wise generation share in 10M FY25



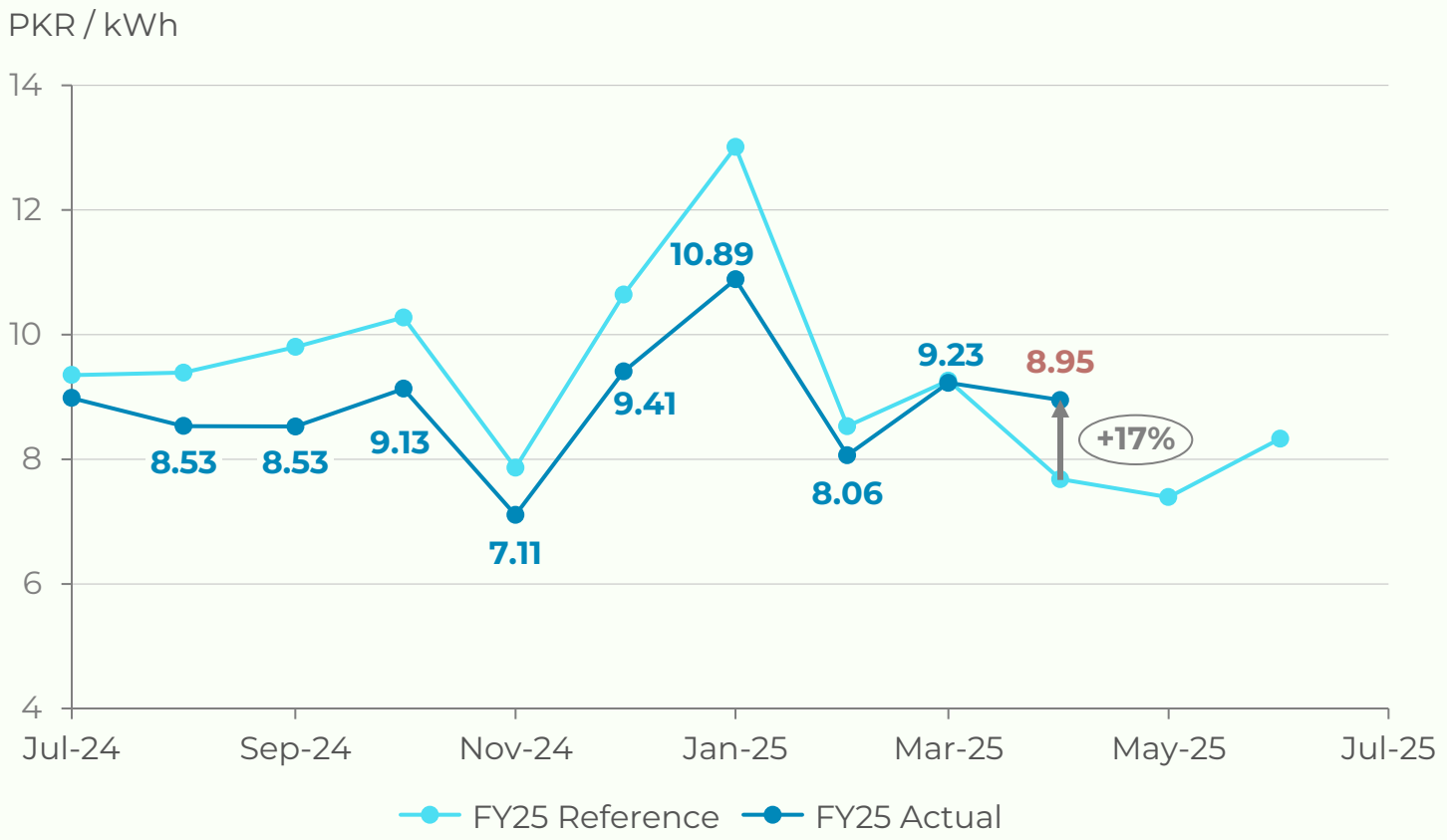
- In Apr 25, hydel generation rose to 2.3 TWh, 78% higher than Mar 25's 1.3 TWh driven by spring thaw boosting flows to northern run-of-river plants. Spring thaw refers to the melting of snow caused by rising temperatures during the spring season.
- On MoM basis, K3's forced outage reduced nuclear generation from 5.6 TWh in Mar 25 to 2.7 TWh in Apr 25.

K3: Karachi nuclear power plant unit-3

Data Source: NEPRA & Renewables First calculations

In Apr 25, expensive generation mix caused the fuel cost adjustment to rise for the first time in FY 25

Fuel price adjustments in 10M FY25



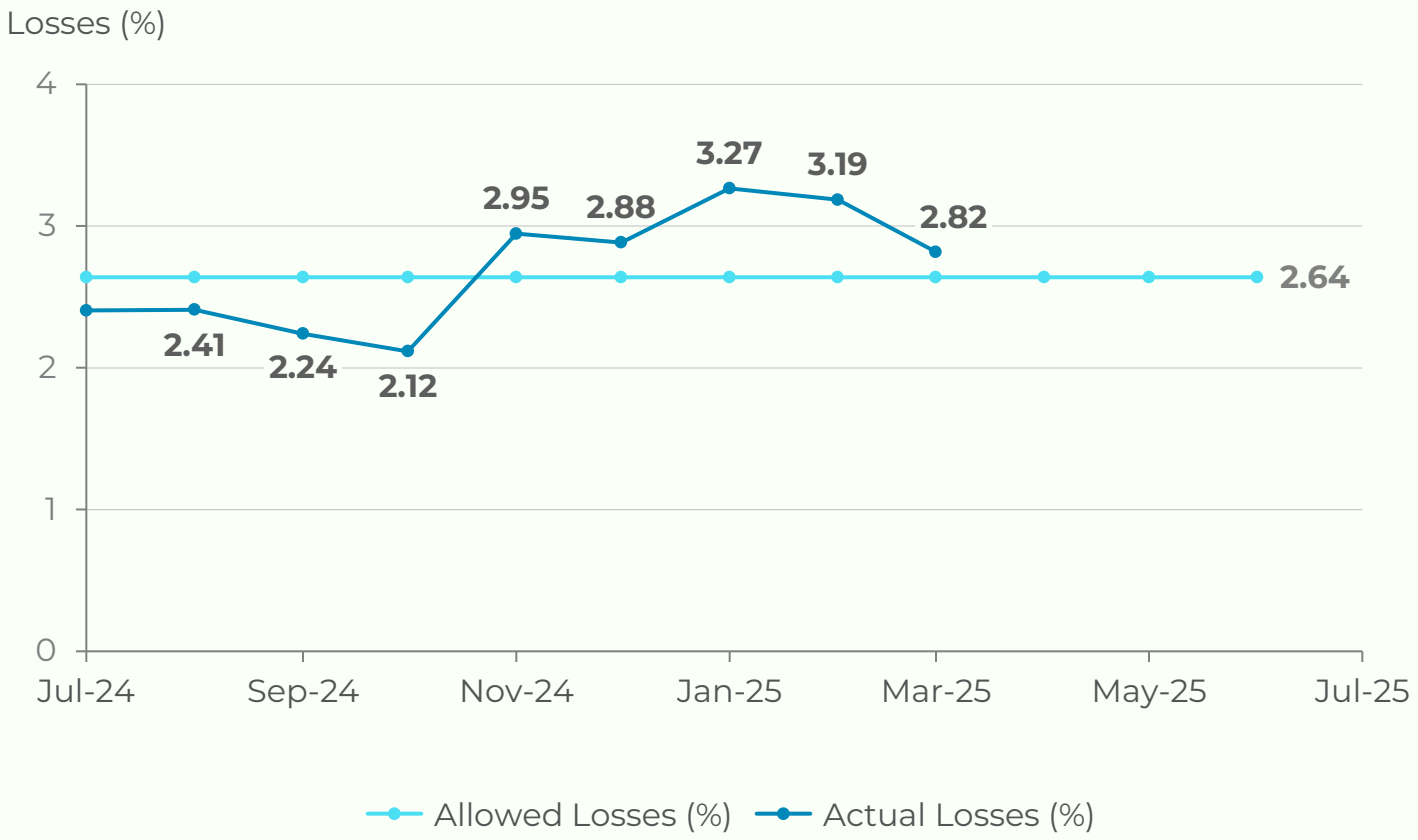
* Provisional number

- Apr 25, reliance on expensive fuels RLNG, RFO, and coal, driven by increased electricity demand, resulted in 17% higher generation costs against the reference cost.
- RLNG-based generation was projected at PKR 22.99 per kWh, but the actual cost came in at PKR 24.26 per kWh. RFO, not included in the projection, entered generation fleet contributing at PKR 28.77 per kWh.
- The overall fuel cost of generation was above the projections, with the actual cost recorded at PKR 8.95 per kWh compared to a projected PKR 7.48 per kWh for Apr 25.
- A positive fuel cost adjustment of approximately PKR 1.27 per kWh is expected to align the variance to recover PKR 12.9 billion (B).

Data Source: NEPRA & Renewables First calculations

From Nov 24 to Mar 25, transmission & transformation (T&T) losses exceeded allowed limits, driven by seasonal power shifts

T&T losses in 9M-FY25

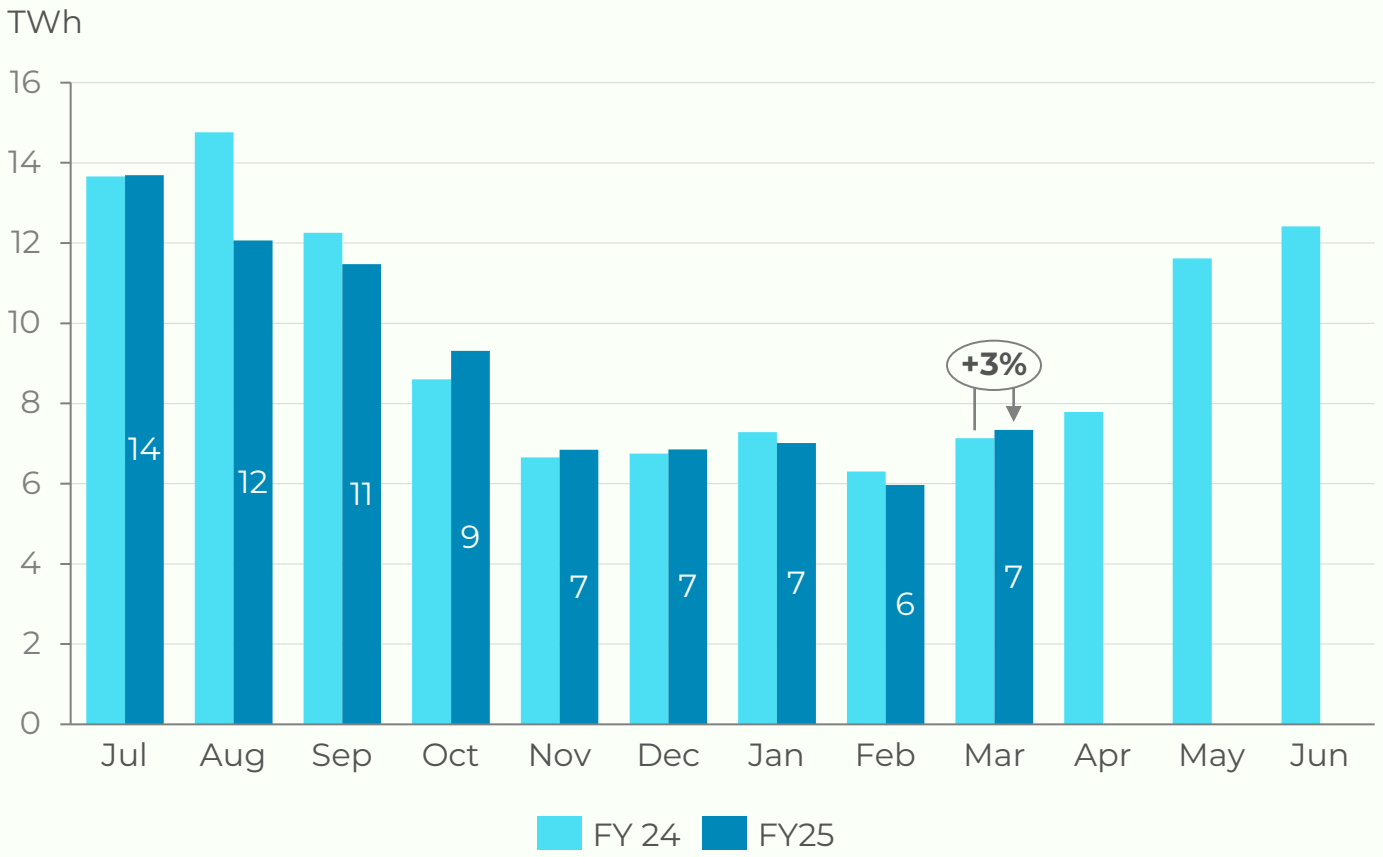


- In winter, reduced hydel generation in the north leads to increased reliance on southern thermal plants to meet the electricity demand of load centres in the north of the country, resulting in higher transmission losses
- In Mar 25, transmission and transformation (T&T) losses were recorded at 2.82%, leading to the loss of 242 GWh due to transmission and grid constraints, with an estimated financial impact of PKR 0.62 B.

Data Source: NEPRA & Renewables First calculations

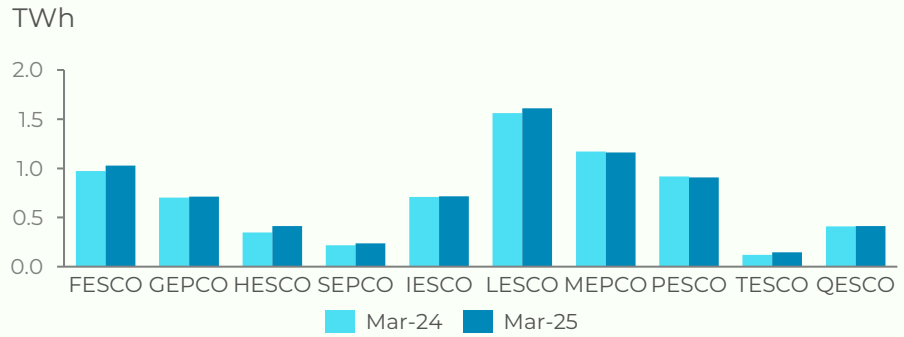
DISCOs procured 81 TWh in 9M FY25, marking a 3% YoY decline

Units procured by DISCOs in FY24 vs. FY25



- Electricity sales increased in Mar 25, driven by high temperatures and Ramzan-related routines.
- Net-metering procurement has significantly increased in DISCOs with higher solar penetration. For instance, LESCO procured 54 GWh through net metering in Mar 25 compared to 19 GWh in Mar 24. Similarly, MEPCO procured 40 GWh in Mar 25 , up from 10 GWh last year. This surge in solar generation is potentially contributing to lower grid electricity sales in such regions.
- Electricity procurement for 9M FY25 reached 80 TWh, 5% below the 85 TWh target.

Units procured by DISCOs in Mar 24 vs. Mar 25

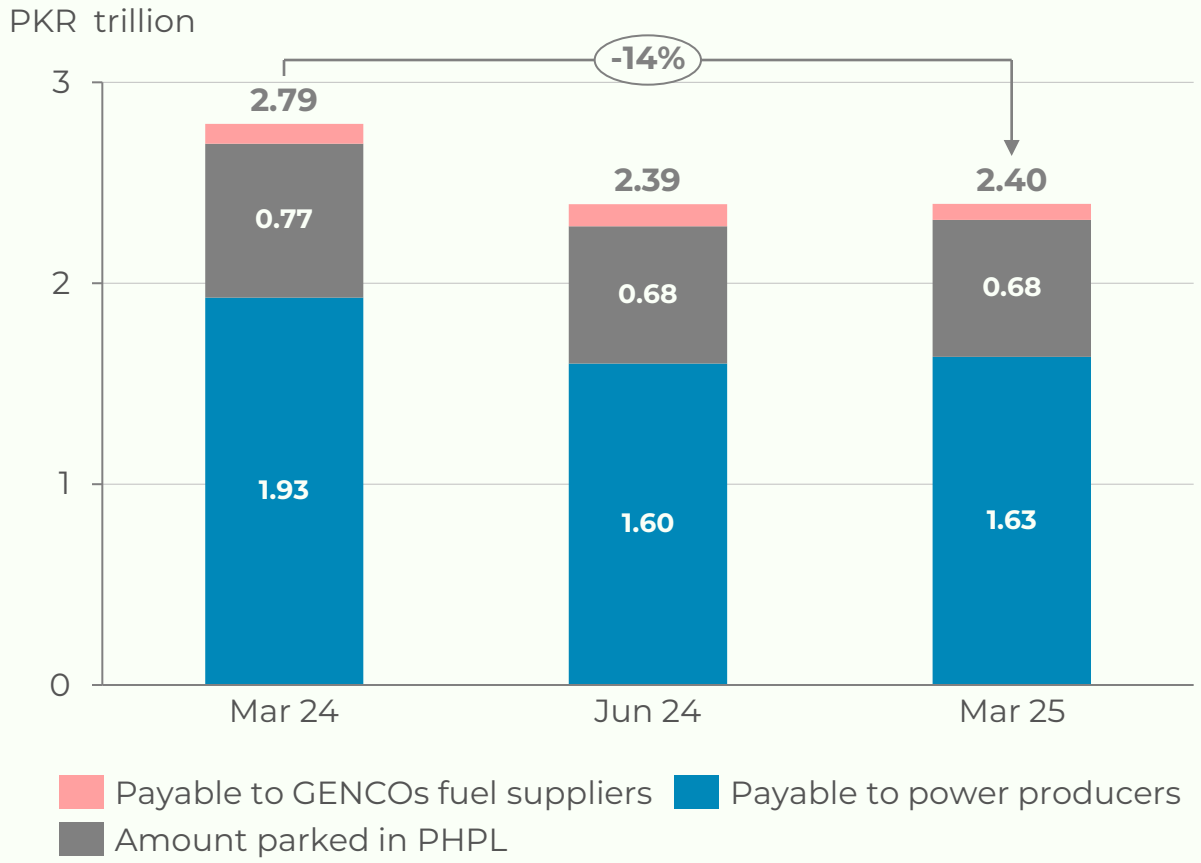


Data Source: NEPRA & Renewables First calculations

POWER SECTOR'S CIRCULAR DEBT

Power sector circular debt drops to PKR 2.4 trillion (T) in Mar 25, down 14% YoY, showing a modest sign of progress

Power sector circular debt in FY24 vs. FY25



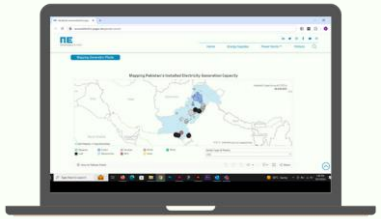
- Improved recovery of PKR 110 B in 9MFY25 for outstanding generation costs (QTA + FCA), compared to PKR 200 B by Mar 24, helped stabilize the circular debt.
- Payables to power producers declined by 15% YoY , falling from PKR 1.9 T in Mar 24 to PKR 1.6 T in Mar 25, now making up 68% of the total debt.
- As of Mar 25, the power sector's circular debt stood at PKR 2.4 T, showing a marginal increase of 0.13% since Jun 24.

PHPL: Power holding private limited

Data Source: NEPRA & Renewables First calculations

For more power sector-related insights, visit:

Pakistan Energy and Climate Insights Dashboard



https://peci.renewablesfirst.org

PECI, an initiative of Renewables First, is an innovative platform that consolidates fragmented energy data from various agencies, supporting informed decision-making across Pakistan's energy sector. By centralizing critical energy and climate data, PECI improves accessibility and clarifies environmental impacts and emissions for stakeholders. RF's collaboration with Herald Analytics led to the development of the PECI Dashboard, which drives insights and offers robust analytics for energy data.

Pakistan Electricity Review 2025

https://uploads.renewablesfirst.org/Pakistan_Electricity_Review_2025_80753f62aa.pdf

The Pakistan Electricity Review 2025 report aims to improve technical accessibility and awareness of critical aspects of power generation, transmission, and consumption. It presents a comprehensive analysis of key trends and challenges that shaped Pakistan’s power sector during the fiscal year 2024 (FY24). The report utilizes publicly available data for the power sector, with NEPRA’s state of industry report (SIR) serving as primary data source.

Renewables First (RF) is a think tank for energy and environment. Our work addresses critical energy and natural resource issues with the aim to make energy and climate transitions just and inclusive.

Disclaimer:
All the information and analysis provided in this document are accurate and to the best of our knowledge and understanding, in case you identify any error, please email: info@renewablesfirst.org

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