RENEWABLES FIRST

Pakistan's Power Market Insights

Jan 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 Jan 25, cumulative electricity generation stood at 8.2 TWh, marking a decrease of 2% year-on-year (YoY) basis.

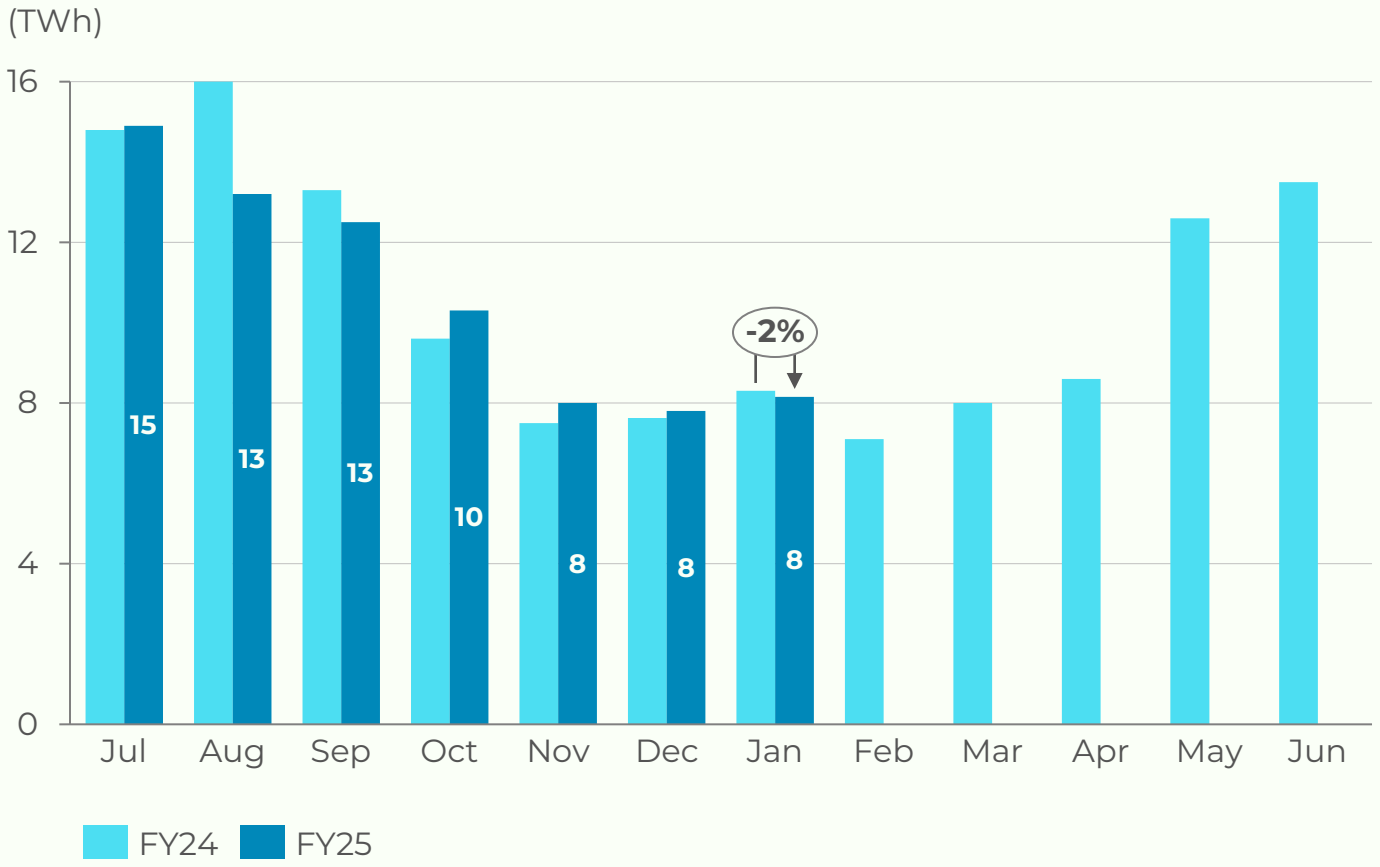
Wind power generation surged by 70% YoY, with 218 GWh generated in Jan 25.

In the first half (1H) of FY25 (fiscal year), imported coal plant utilization dropped significantly to 3% in Dec 24.

#RFPowerMarketInsights

Falling grid electricity demand lowers generation despite winter package incentive

Month-wise electricity generation in FY24 vs FY25

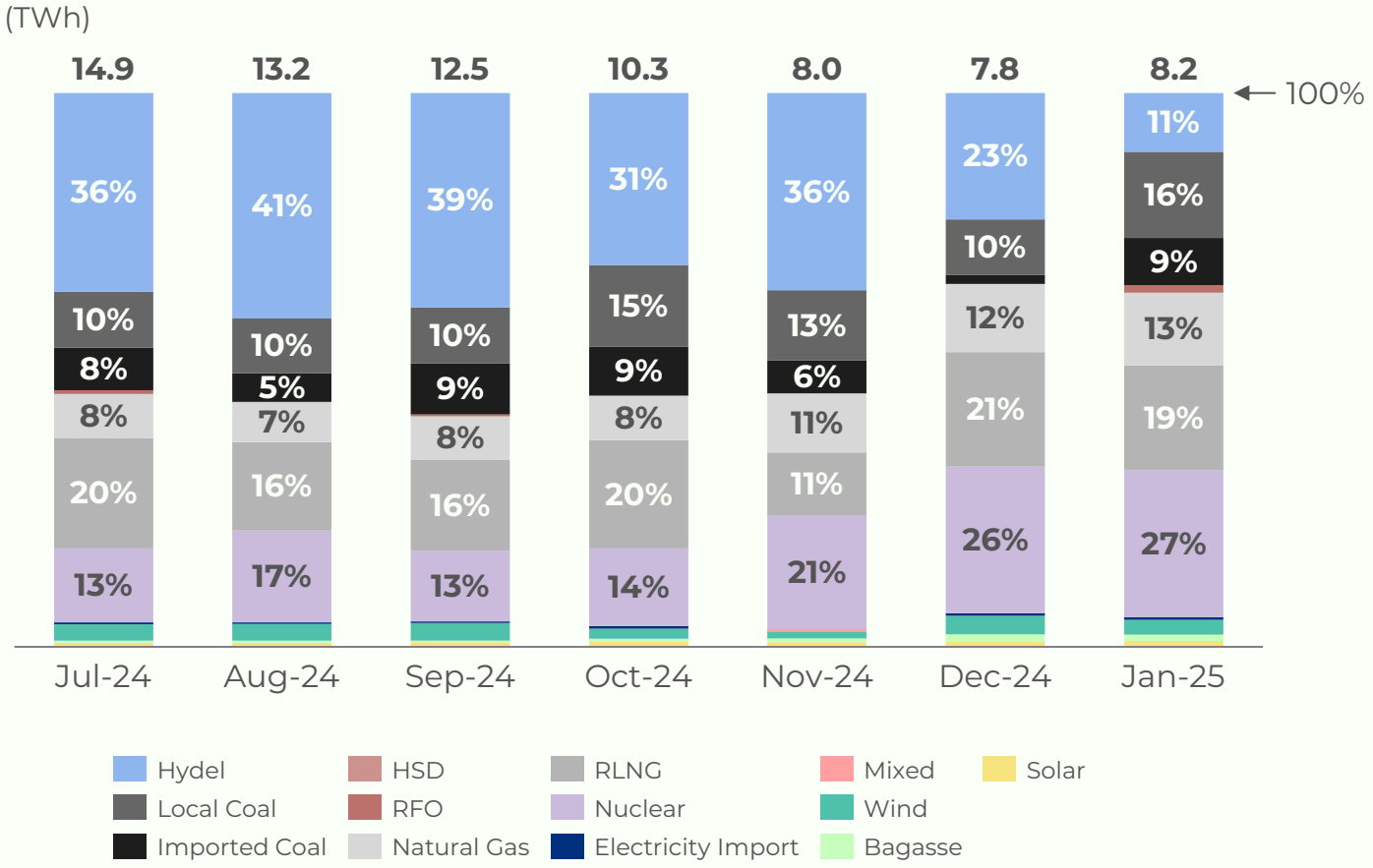


- In Jan 25, the second month of the 'Winter Demand Initiative', power generation declined by 2% on YoY basis.
- Despite the projected 3% growth in electricity demand for FY25, the first seven months of FY25 saw a 6.7% decline in generation, highlighting the pressing need for government intervention to stimulate electricity demand in the country.
- The increase in distributed energy resources (DERs) is also contributing towards demand reduction in the country.

Data Source: NEPRA & Renewables First Calculations

Nuclear led the generation mix for the second consecutive month, followed by RLNG

Energy source-wise generation share in 7M-FY25

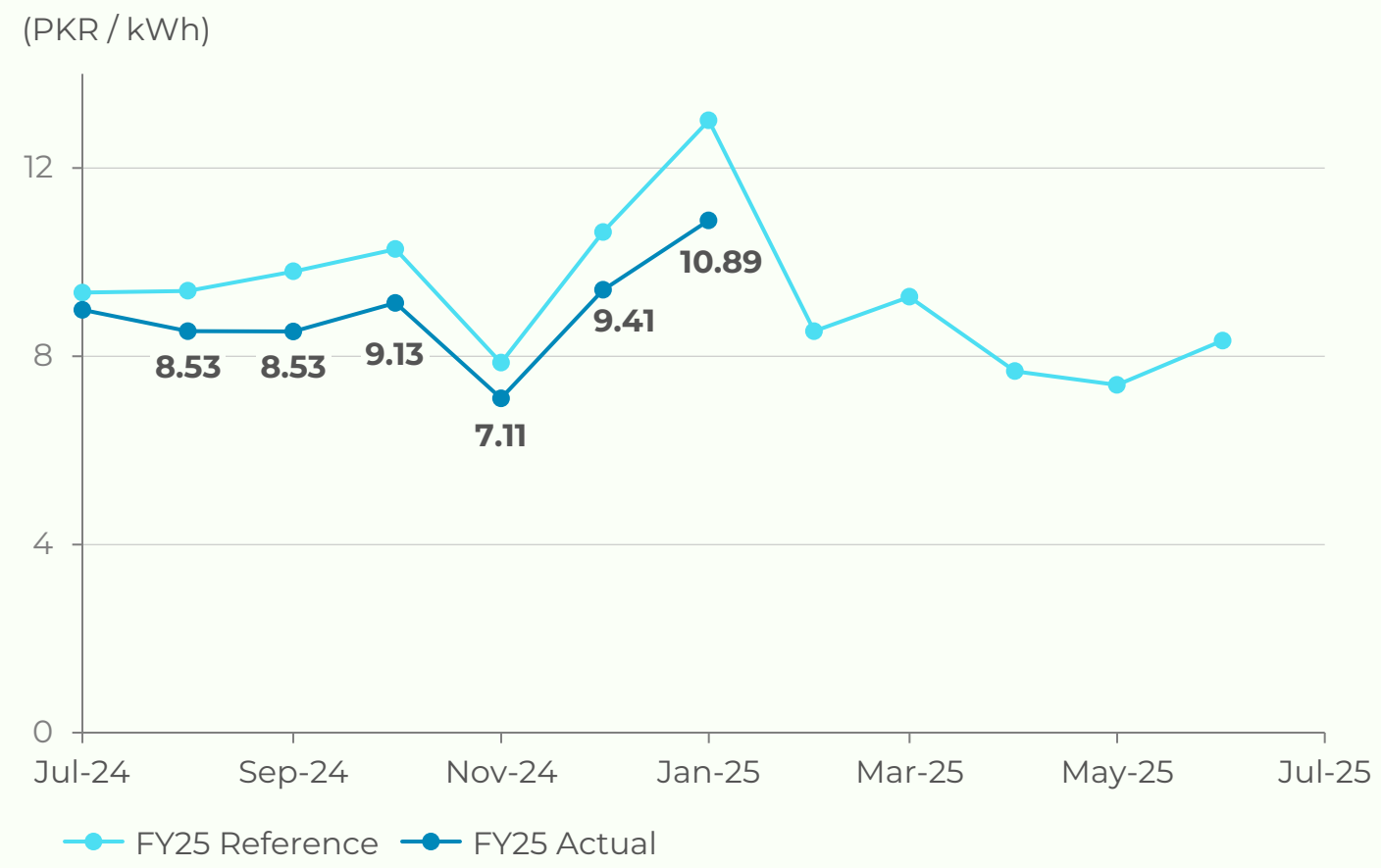


- With improved generation from Chashma unit I–IV, nuclear power share increased from 2 TWh in Dec to 2.16 TWh in Jan.
- Forced outages at natural gas-based plants (Uch, Uch II, Engro and Foundation Power) led to increased share of local coal as local coal plants are ranked higher in the economic merit order (EMO).

Data Source: NEPRA & Renewables First Calculations

FY25 sees negative FCA for the seventh month in a row

Fuel price adjustments in 7M-FY25

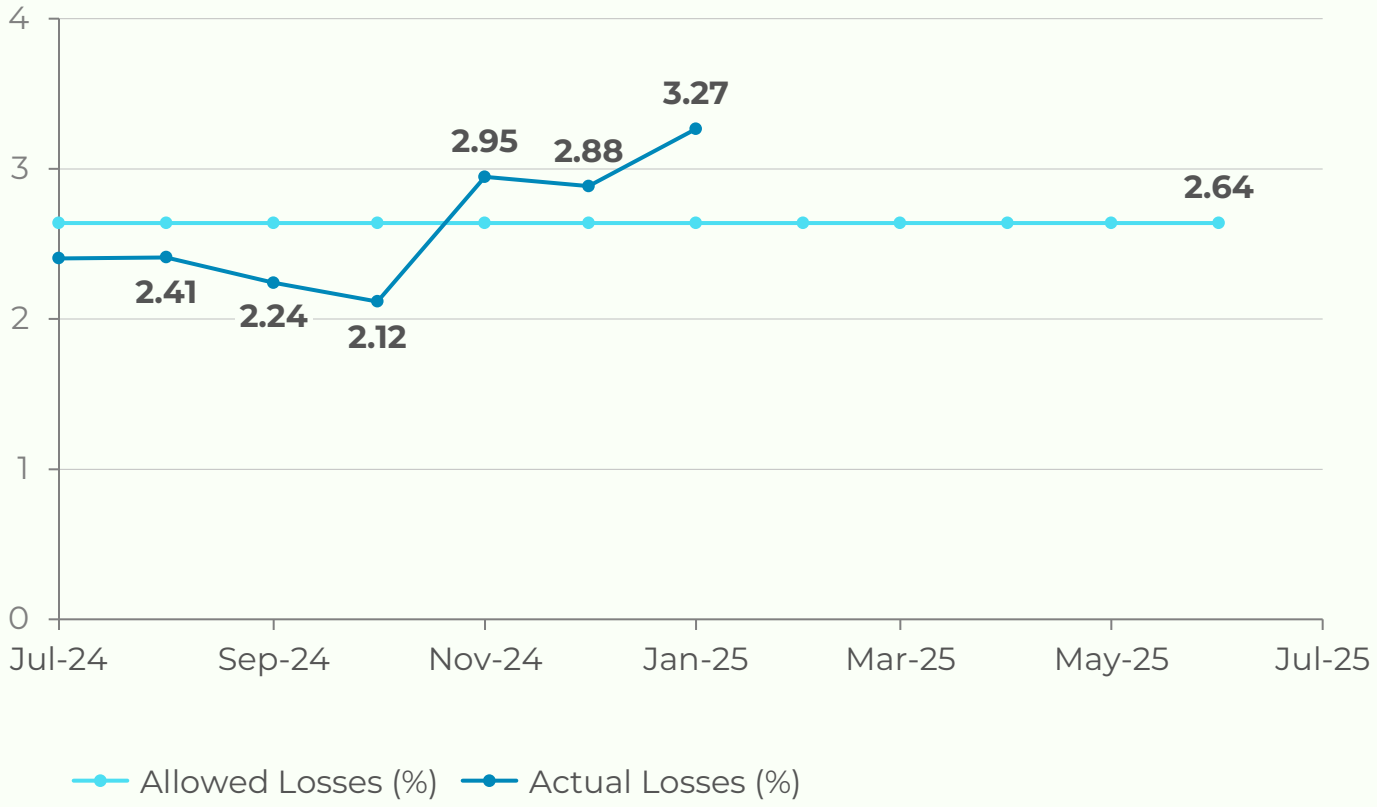


- In Jan 25, nuclear fuel cost stood at PKR 1.81 per kWh, lower than the projected PKR 1.85 per kWh, contributing to a negative fuel adjustment.
- While RLNG was projected at PKR 28.23 per kWh, the actual cost for Jan stood at PKR 22.47 per kWh.
- As nuclear and RLNG collectively accounted for 46% of the generation mix in Jan 25, fuel price variations led to a reduction in overall generation cost.

Data Source: NEPRA & Renewables First Calculations

Jan 25 saw transmission & transformation (T&T) losses exceed limits for the third month, driven by seasonal power shifts

T&T losses in 1H-FY25
(Losses %)

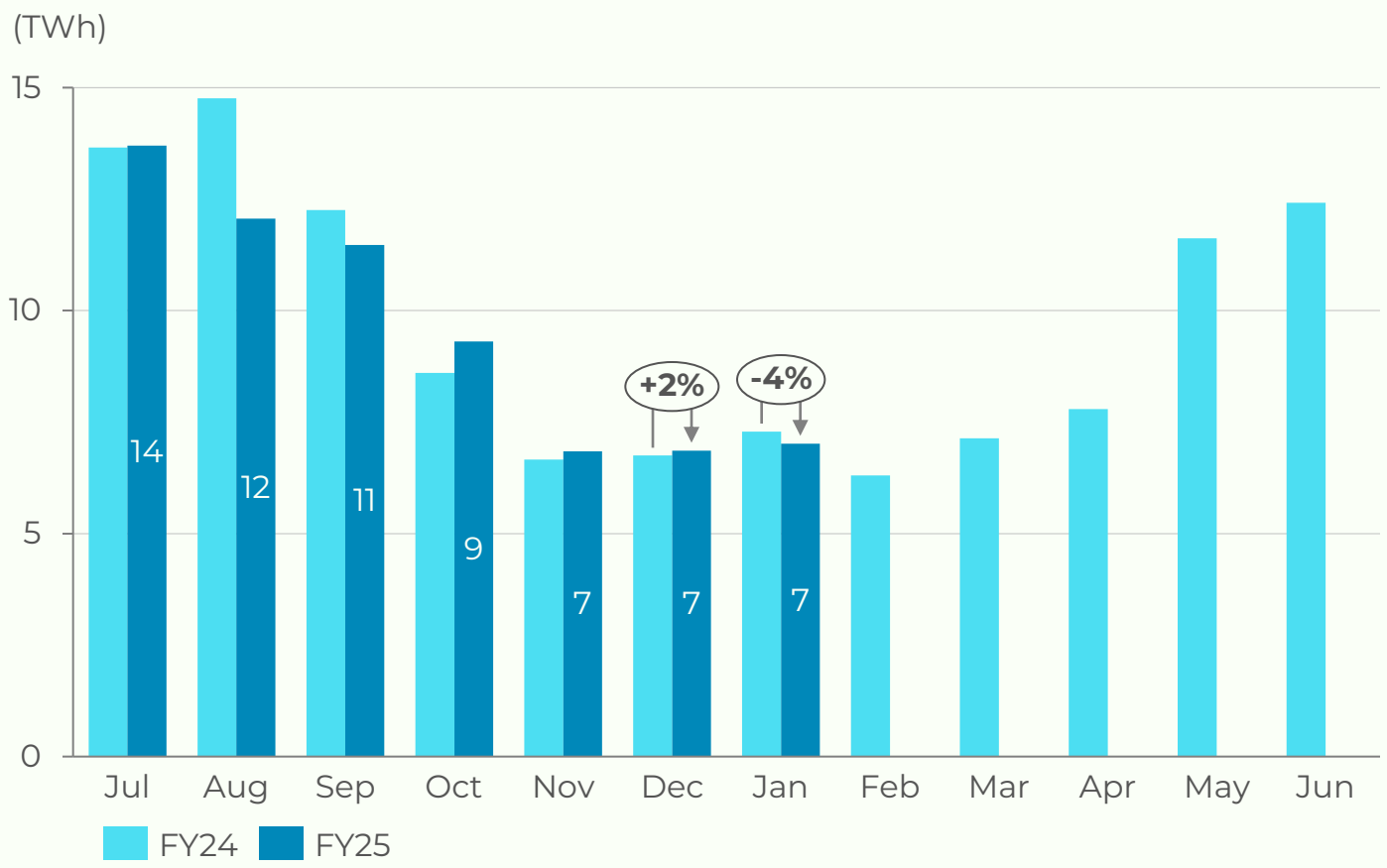


- Most of the hydel plants lie in the north of the country. During winter months, due to low generation from hydel plants, load centres in the middle of the country depend on generation from thermal plants in the south. This leads to higher transmission losses as more electricity is transmitted from the south to the load centres.
- In summer, as hydel generation is higher, load centres receive electricity from both, the north and the south of the country, thus lowering T&T losses. Annually, when losses are averaged, they remain within the permissible limits.

Data Source: NEPRA & Renewables First Calculations

DISCOs procured 67 TWh of electricity in 7M-FY25, recording a 3.8% drop YoY

Units procured by DISCOs in FY24 vs. FY25

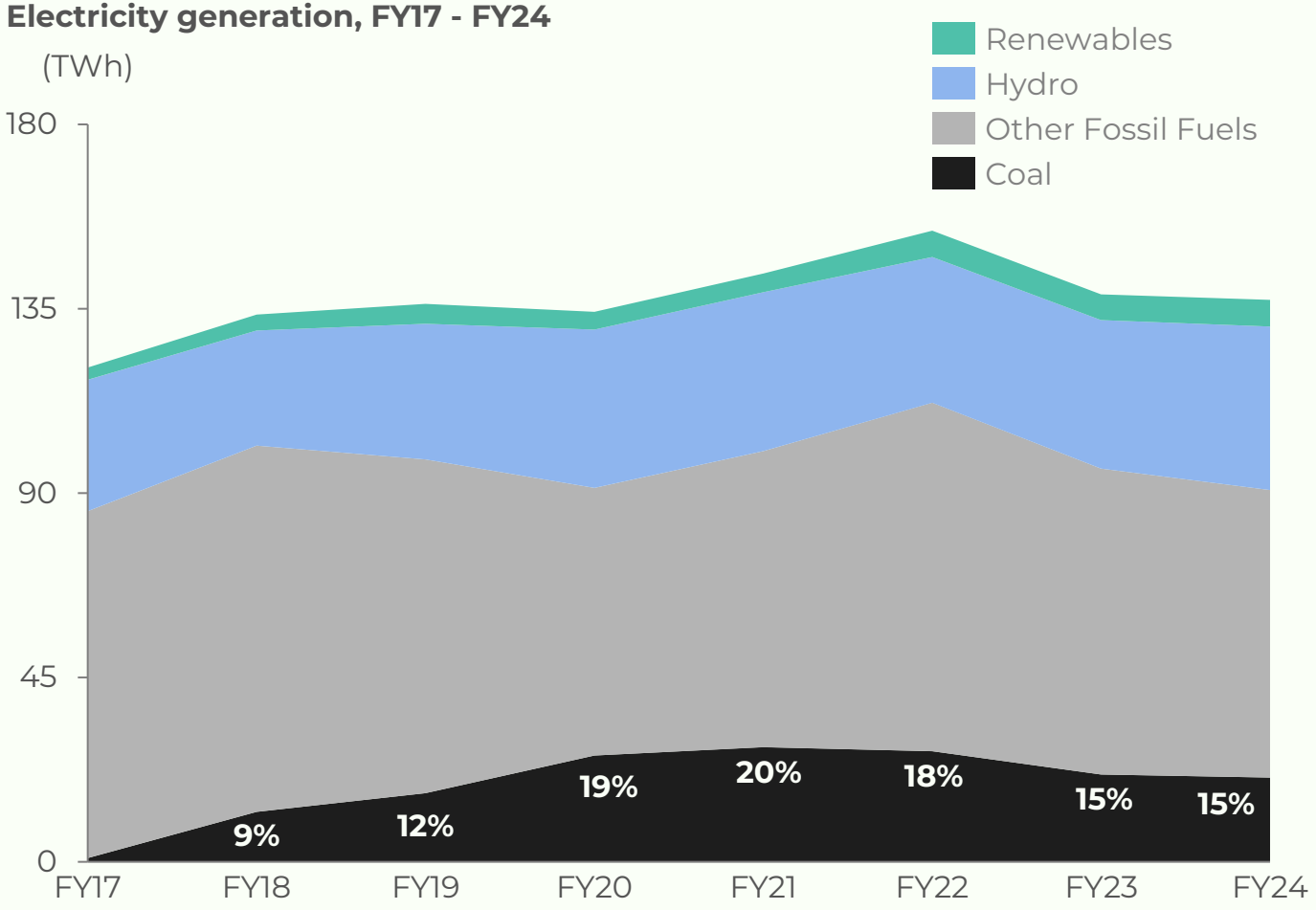


- Dec 24 saw a slight boost from increased incremental unit sales YoY, under the winter package. Prominent sales increase was observed in IESCO, with an additional 83 GWh in sales compared to the previous year, followed by LESCO, which recorded an additional 71 GWh in purchases.
- However, in Jan 25, electricity sales declined again, resulting in a 3.8% decrease in the first seven months of FY25.

Data Source: NEPRA & Renewables First Calculations

The decline of coal in Pakistan's electricity generation mix

Electricity generation, FY17 - FY24

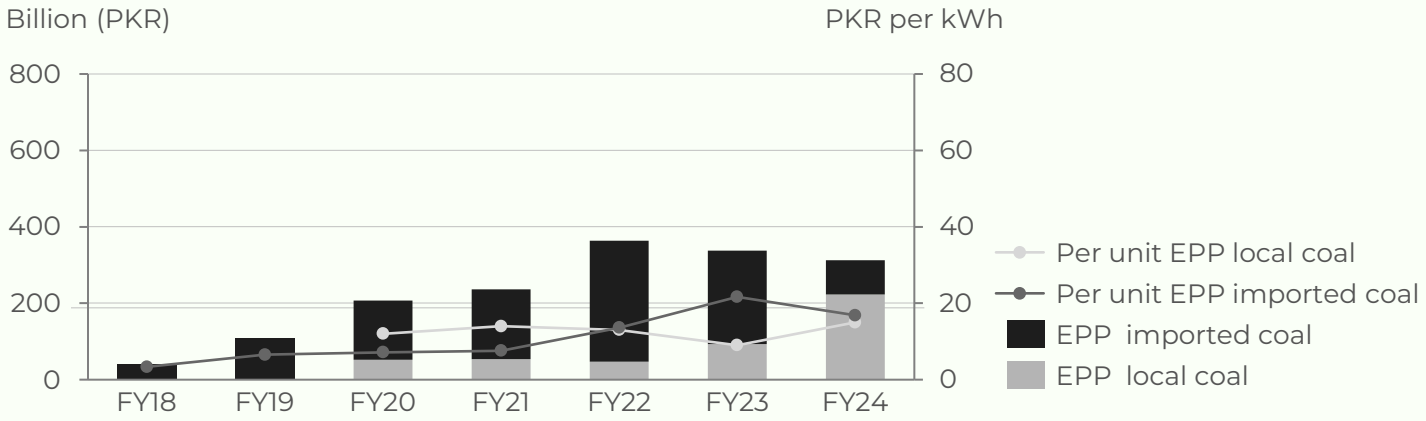


- Electricity demand in the country has been declining since FY22, gradually reducing dependence on imported coal plants. These plants rank lower in the economic merit order (EMO) and operate at lower utilization levels in the absence of surplus demand.
- The lower utilization of these plants led to a decline in the country's coal import bill. Reduced coal consumption also decreases carbon emissions and air pollution, aligning with global climate goals.

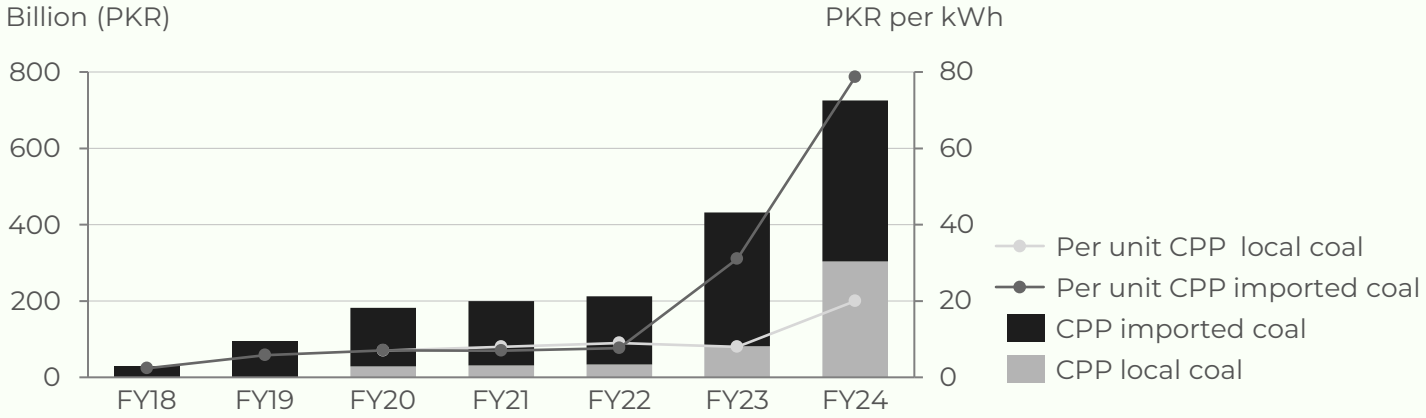
Data Source: NEPRA & Renewables First Calculations

Declining imported coal share reduces energy purchase price (EPP), but capacity purchase price (CPP) is still rising

EPP – local vs imported coal, FY18 - FY24



CPP – local vs imported coal, FY18 - FY24

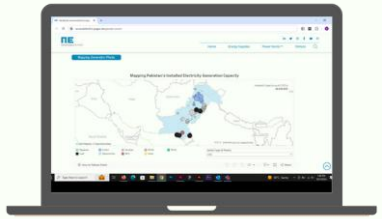


- In FY24, imported coal plants generated just 5.3 TWh, whereas local coal plants produced 15 TWh.
- The declining share of imported coal in the generation mix led to lower EPP; however, capacity payments for these plants still had to be made as per their contracts.
- In the first half of FY25, the utilization factor of imported coal plants declined significantly to 3% in Dec 24, further highlighting the ongoing trend.

Data Source: NEPRA & Renewables First Calculations

For more power sector-related insights, visit:

Pakistan Energy and Climate Insights Dashboard



Pakistan Energy & Climate Insights

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 stakeholder 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 2024

#Pakistan Electricity Review 2024

The Pakistan Electricity Review 2024 report aims to improve technical accessibility and awareness of critical aspects of power generation, transmission, and consumption. Focusing on the Fiscal Year 2022-23 (FY23), this thorough analysis also explores key aspects such as K-Electric (KE), Circular Debt, and China-Pakistan Economic Corridor (CPEC) projects. The report utilizes publicly available data for the power sector, with NEPRA's State of Industry Report (SIR) and Energy Yearbook serving as primary data sources.

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.

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