RENEWABLES FIRST

# Pakistan's Power Market Insights

July 2025

# Introduction

Renewables First's power market insights highlight important trends shaping Pakistan's power sector. This analysis 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 in the country each month.

# Key highlights

In Jul 25, generation rose to 14.1 TWh (up 3% MoM) but was 5% lower YoY.

Hydel generation was the highest at 40% of the mix while generation from coal dropped from projected 3.3 TWh to 2.6 TWh in Jul 25.

Fuel costs (PKR 8.09 per kWh) fell 18% below reference (PKR 9.88 per kWh), giving a negative fuel cost adjustment (FCA) of PKR 1.79 per kWh, providing PKR 25.2 billion (B) in consumer relief.

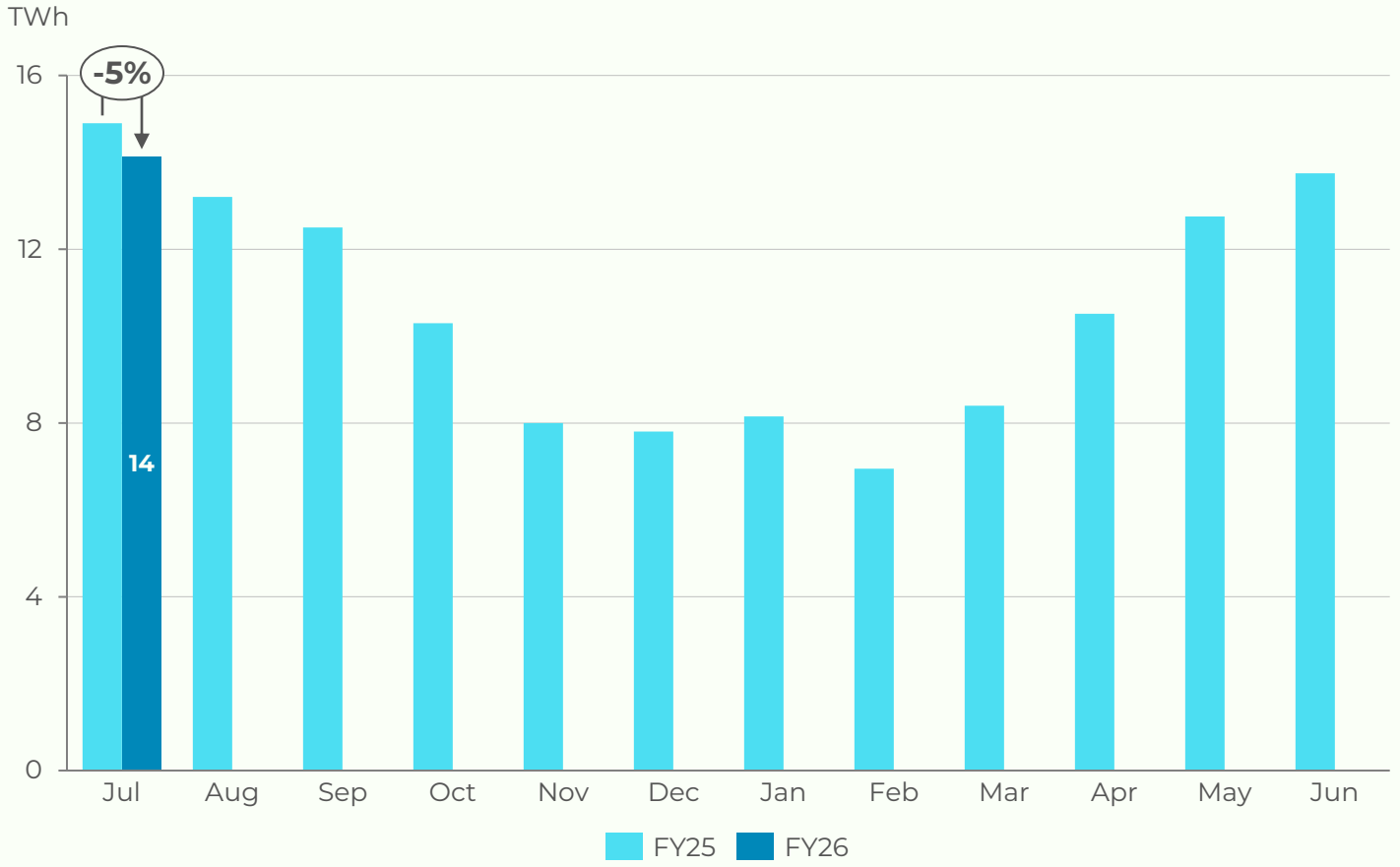
RLNG stayed among the costliest fuels at PKR 24.61 per kWh, burdened by long-term contracts, part-load charges, and oversupply that has slowed domestic gas and wind operations.

#RFPowerMarketInsights

Note: Fiscal year (FY) 26 refers to July 2025 – June 2026.

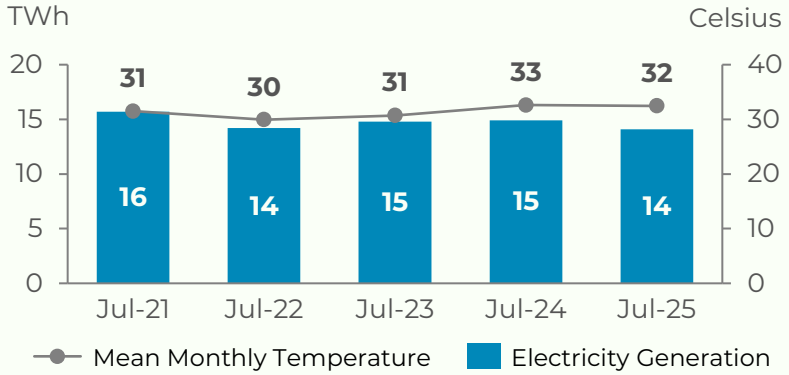
# Electricity generation increased from 13.7 TWh in Jun 25 to 14.1 TWh in Jul 25, driven by monsoon humidity and night-time heat off-setting cooler daytime temperatures

## Month-wise electricity generation in FY25 vs FY26




- Jul 25 generation reached 14.1 TWh, up 3% from Jun 25 (13.7 TWh), driven by higher demand. Despite slightly cooler days, monsoon humidity, warmer nights, and heat events sustained electricity use.
- Generation in Jul 25 was 5% lower than in Jul 24. Mean and maximum temperatures dropped 0.17°C and 1.7°C respectively nationwide, with Jul 24 being the second hottest month in 64 years and Jul 25 being closer to average.

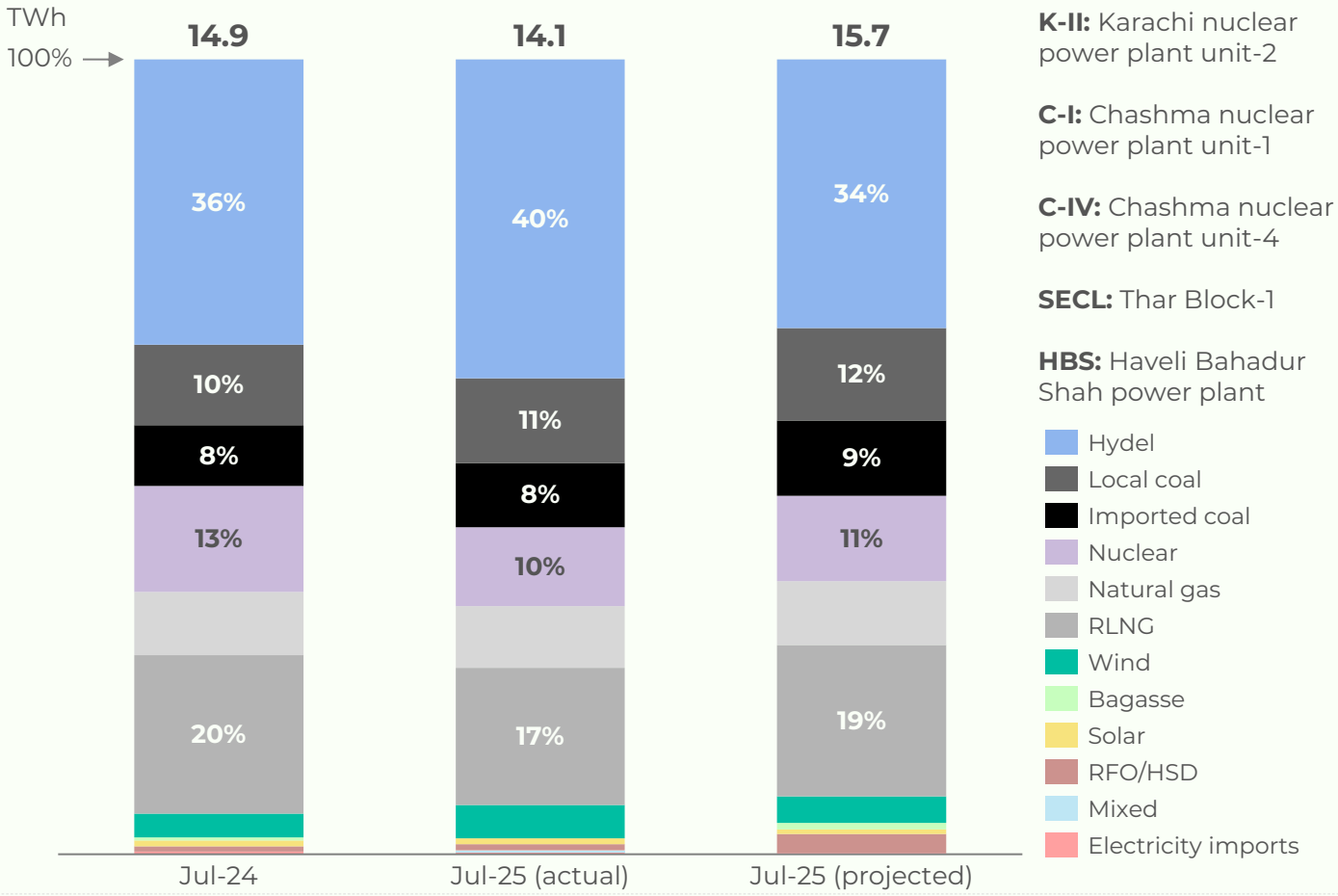
## Electricity generation & mean monthly temperatures in Jul 2021-2025




Data Source: NEPRA & Renewables First's calculations

# In Jul 25, hydel powered 40% of the grid, driven by monsoon seasonal water availability and transmission outages affecting coal generation

**Energy source-wise generation mix, Jul 24 vs Jul 25 (actual) vs Jul 25 (projected)**

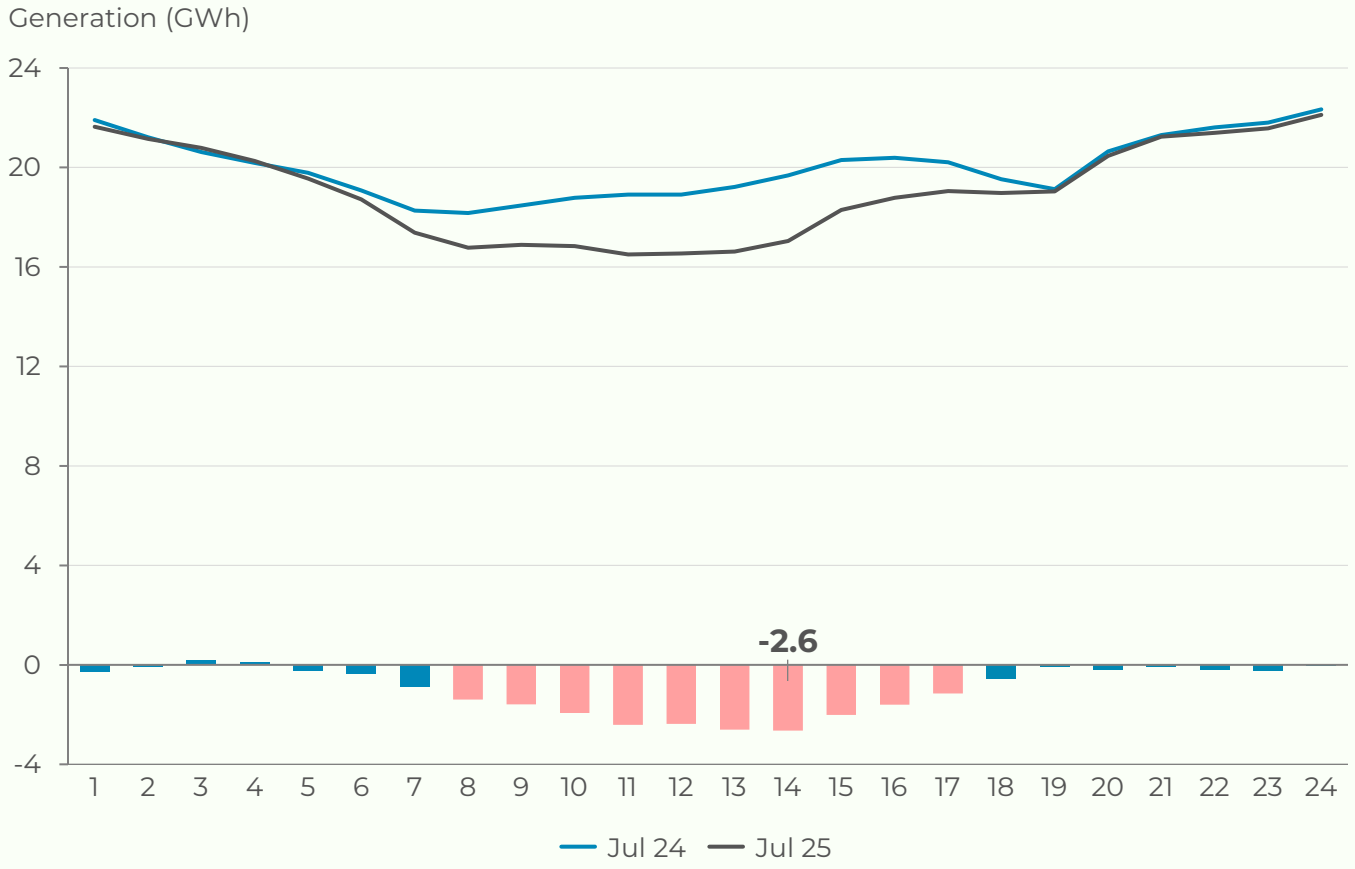



- Hydel generation increased to 5.7 TWh in Jul 25 (as opposed to 5.4 TWh in Jun 25) owing to higher water availability in the monsoon season.
- There was lower than projected generation from coal (projected 3.3 TWh vs actual 2.6 TWh) due to forced outage of China Hubco and SECL complexes, collapse of towers in the Dadu Matiari line, as well as shutdown in transmission at Port Qasim Matiari and KKI Jamshoro lines.
- Nuclear generation stood at 1.4 TWh compared to the projected 1.7 TWh due to re-fueling in K-II, C-I, and C-IV plants, and forced outages in K-II and C-I plants.
- Generation from RLNG was 18.6% lower than projections and 17.9% lower than Jul 24 owing to increased hydel generation and outages at Bhikki, Balloki, and HBS power plants.
- While solar and wind generation (0.1 TWh and 0.6 TWh respectively) was under 5% of the mix, it was still 12.4% higher than projected for Jul 25.

Data Source: NEPRA & Renewables First's calculations

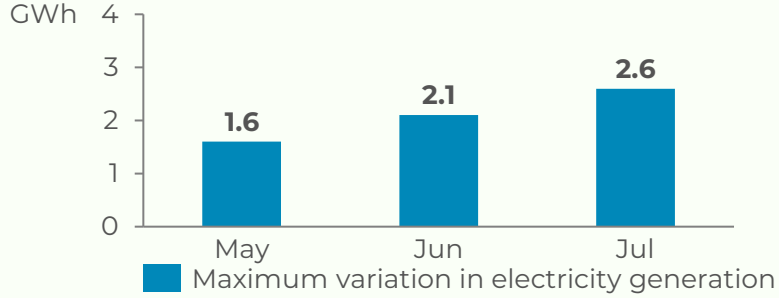
# A 2.6 GWh variation in electricity generation was observed during daylight hours in Jul 25, exceeding the Jun YoY difference

**Avg. monthly hourly generation profiles, Jul 24 vs Jul 25**




- Overall electricity generation decreased in Jul 25 compared to Jul 24. The hourly generation profiles revealed a sharp midday dip of 2.6 GWh, reflecting an increased solar uptake and shifting grid reliance during daylight hours in Jul 25 compared to Jul 24. This difference is even higher than the one observed in May and Jun YoY.
- In Jul 25, peak electricity demand reached 24.9 GW, up 3.8% from last year's peak of 24 GW, while the minimum demand rose to 13.5 GW, a 3.9% increase from 13 GW in Jul 24. This broader rise in demand suggests sustained economic activity.

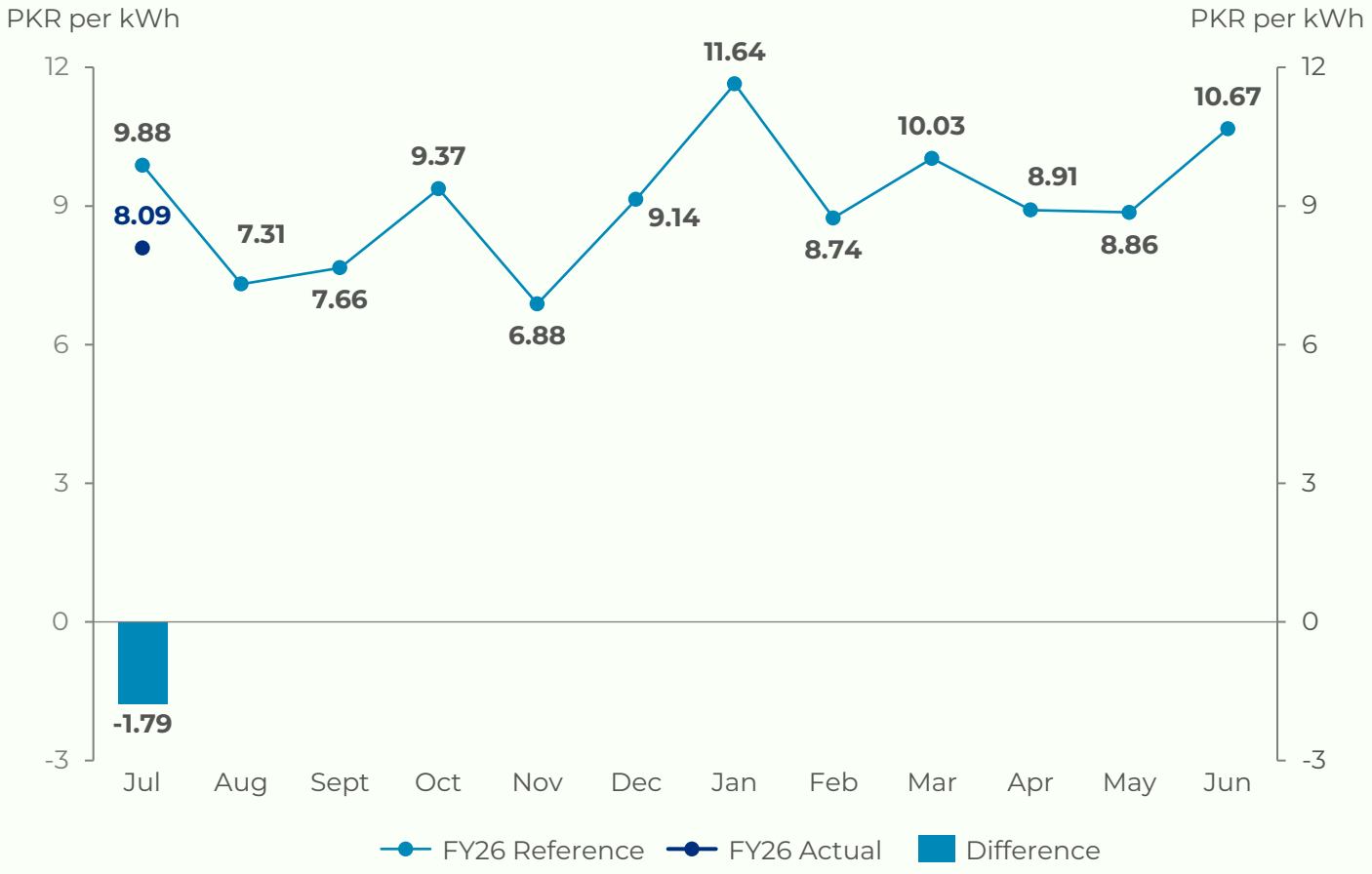
**Mapping peak variation in electricity generation, May–Jul 2024 vs 2025**




Data Source: NEPRA & Renewables First's calculations

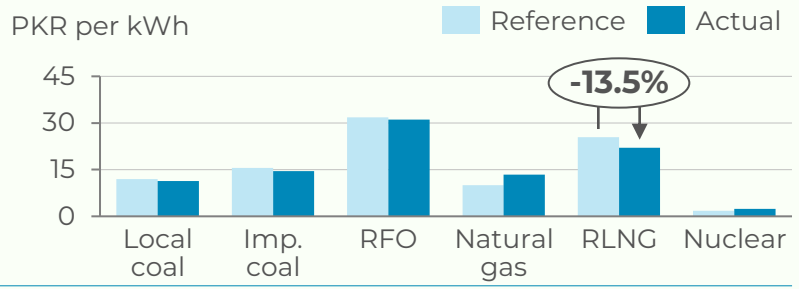
# Fuel costs in Jul 25 were 18% below reference, with a negative adjustment of PKR 1.79 per kWh providing PKR 25.2 B in consumer relief

## Fuel cost adjustments in FY26




- The actual cost for Jul 25 was PKR 8.09 per kWh, 18% lower than the reference cost of PKR 9.88. Continuing the FY25 trend, NEPRA has set a negative fuel cost adjustment of PKR 1.7856 per kWh, to be applied in Sep 25 bills for DISCOs and K-Electric consumers.
- The negative FCA resulted from higher hydel generation reducing overall costs, lower per unit RLNG costs (actual PKR 22.03 vs. reference 25.48 per kWh), and the absence of bagasse generation projected at PKR 1.3 B. Additionally, higher use of local coal plants over imported ones further lowered costs, contributing to the adjustment.

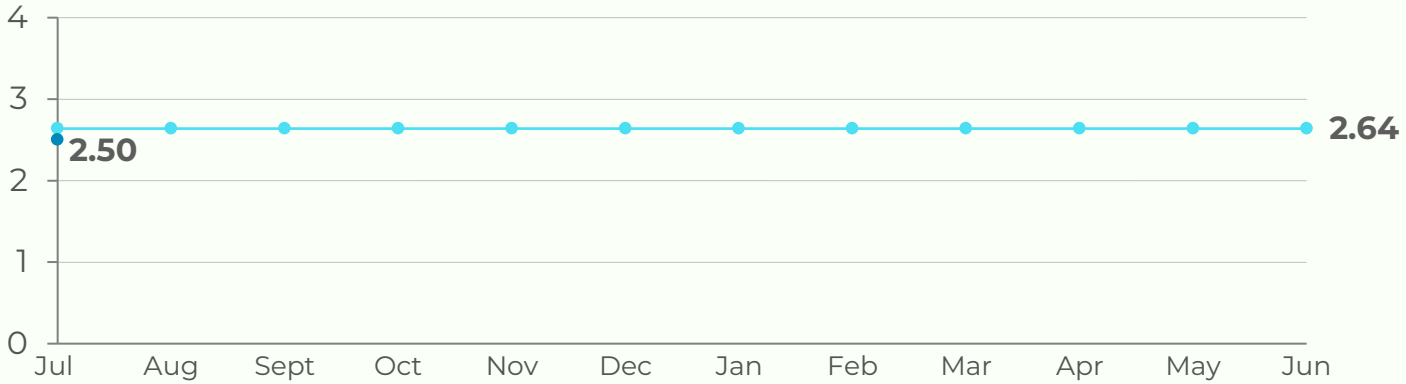
## Per unit fuel cost comparison for Jul 25, reference vs. actual



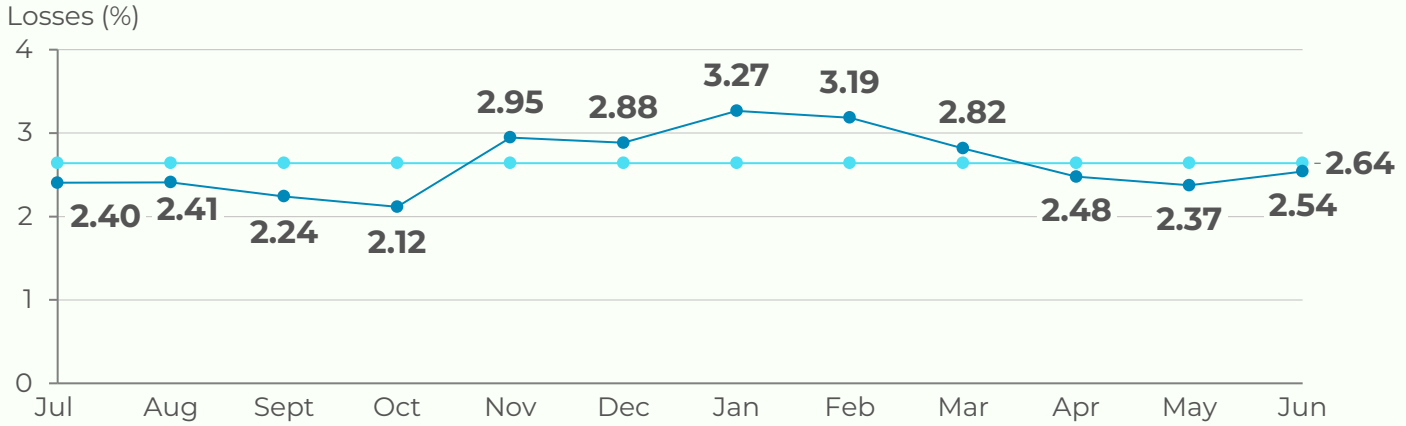

Data Source: NEPRA & Renewables First's calculations

# Average transmission & transformation (T&T) losses in FY25 met the 2.64% threshold; FY26 began with a similar performance

**T&T losses in FY26**




**T&T losses in FY25**



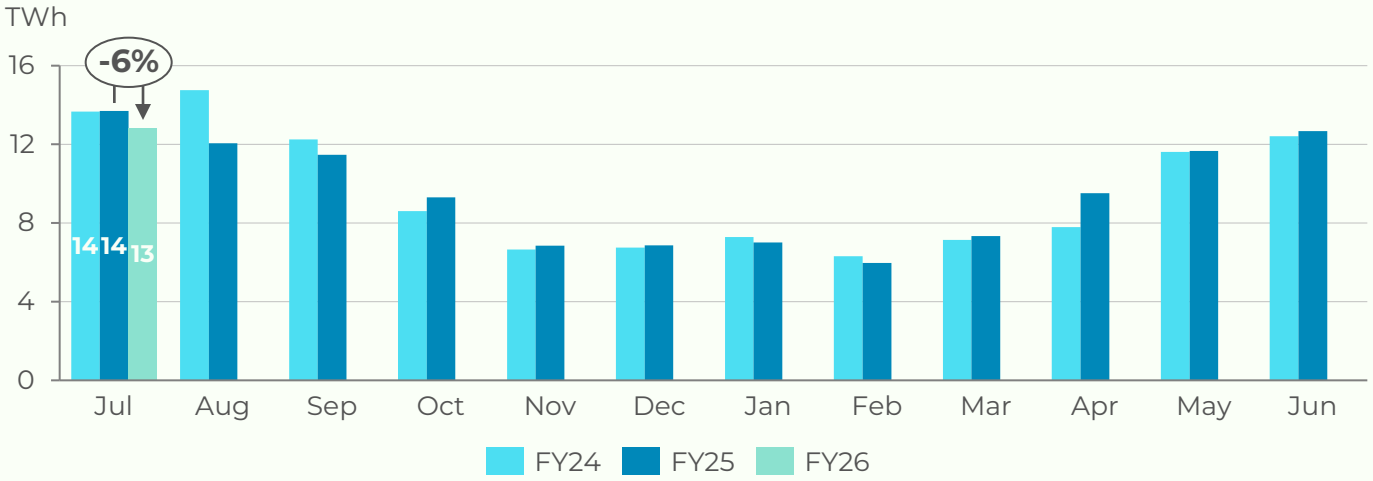

- In FY25, T&T losses fluctuated across the year, rising above the threshold in winter when southern thermal plants supplied demand in northern load centers and falling in summer with higher hydel generation. On average, however, the 12-month losses aligned with the allowed level of 2.64%.
- The first month of FY26 being a summer month also experienced lower T&T losses of 2.5% against the allowed threshold of 2.64%.

Allowed losses (%)
Actual losses (%)

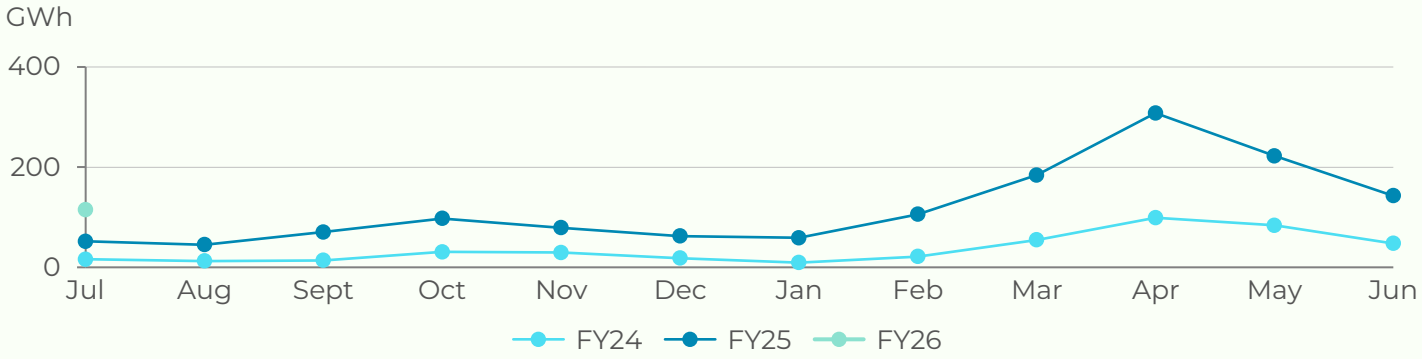
Data Source: NEPRA & Renewables First's calculations

# Solar net-metering surges 227% YoY between FY24 and FY25, but remains at only 0.89% of the total 13 TWh units procured by DISCOs as FY26 begins

### Total units procured by DISCOs (FY24, FY25 & FY26)




### Comparison of DISCOs' net-metering units procured, FY24, FY25. FY26




- In FY25, DISCOs procured nearly the same total units as FY24, but net-metering rose by over 200%, reflecting rapid solar uptake. Yet the 1.4 TWh of net-metering in FY25 was only 1.2% of 114 TWh.
- In Jul 25, total procurement fell 6% YoY, and net-metering grew 121.5%, with solar power reaching 0.89% of the total, keeping the share of solar power still relatively low.

### DISCO-wise total and net-metering units procured, FY24 vs FY25

| | FY24 | FY25 | YoY Change |
|---|---|---|---|
| Total Units Procured by DISCOs (TWh) | 115.2 | 114.4 | -1% |
| Net-Metering Units (TWh) | 0.44 | 1.43 | 227% |

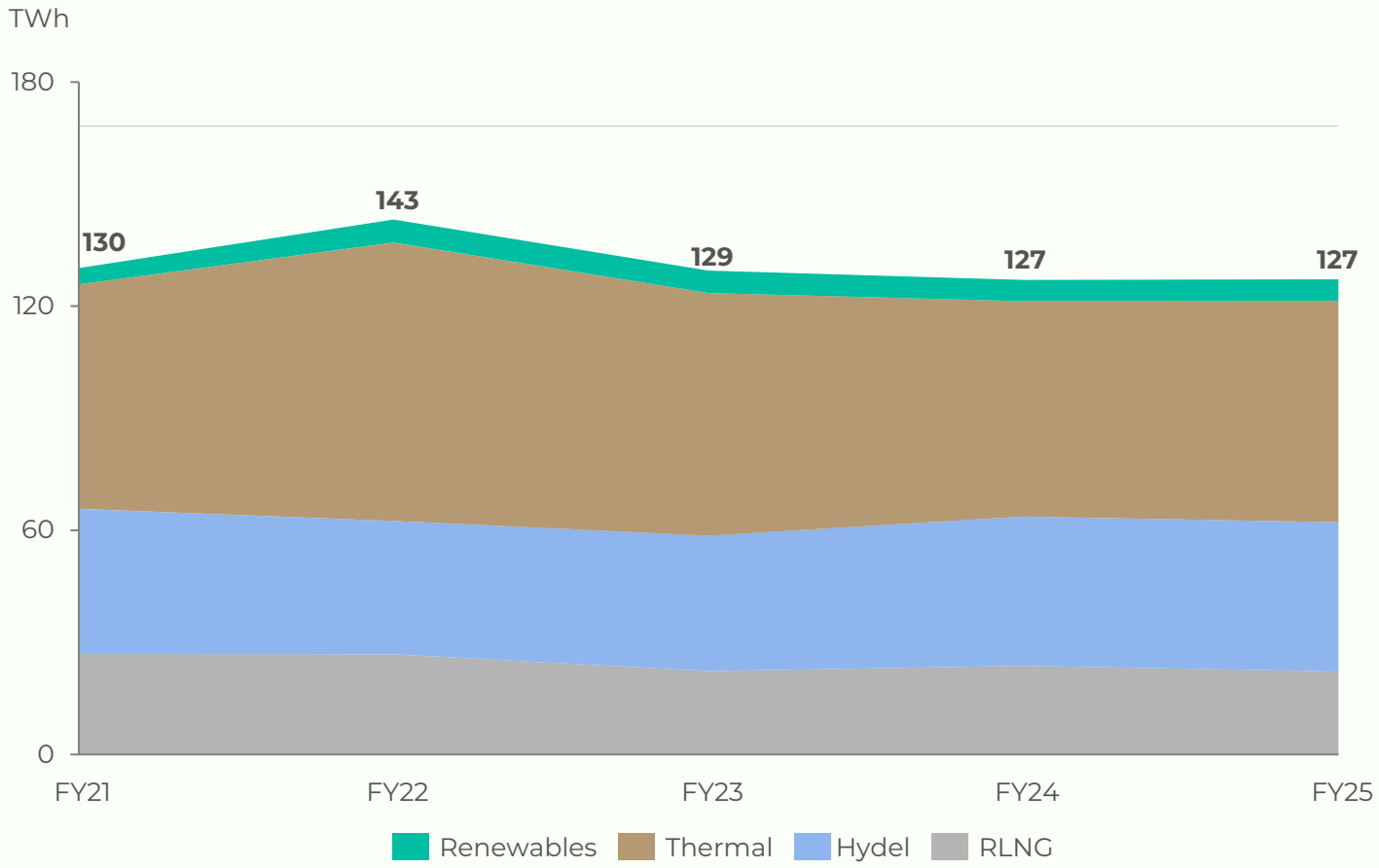
Data Source: NEPRA & Renewables First's calculations

# Special Insights:

## RLNG in Pakistan’s generation mix - a costly dilemma

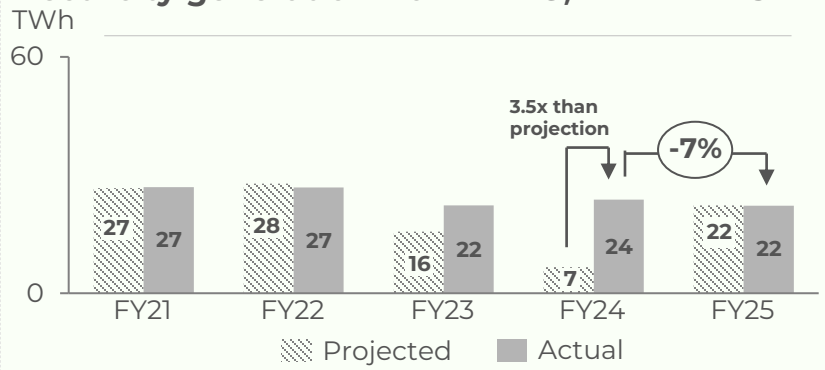
# RLNG maintains ~20% share of Pakistan's electricity generation mix over the past 5 years, even as Pakistan remains tied to costly long-term contracts amid weakening demand

## Energy source-wise electricity generation, FY21 – FY25




Note: K- Electric numbers are not reflected here

## Electricity generation from RLNG, FY21 – FY25

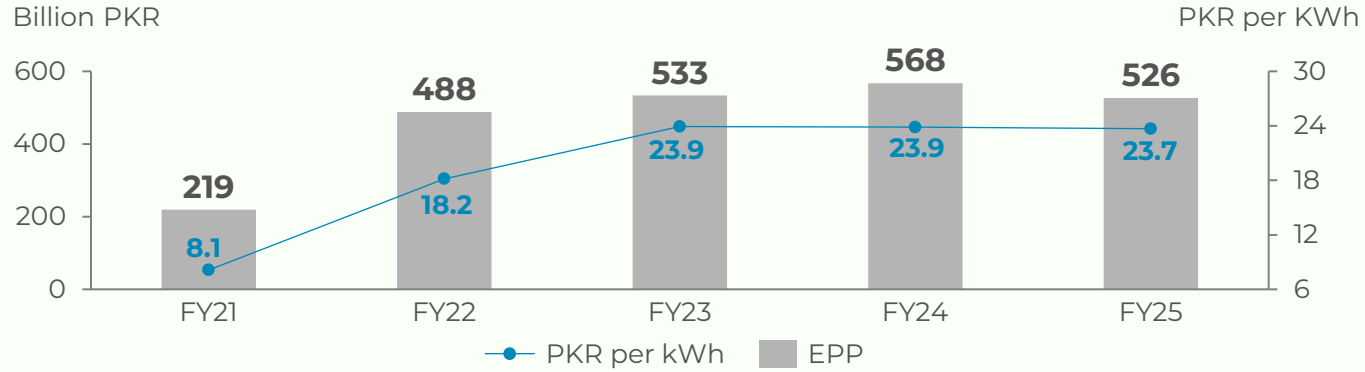



- In FY24, electricity generation from RLNG spiked from a projected 7 TWh to 24 TWh, making it the second-largest source after hydel. The use of RLNG over other sources despite it being in the Economic Merit Order was primarily driven by gas pipeline constraints and long-term RLNG supply agreements. These factors often forced RLNG plants to run, even when they were not the most economical option.
- But in FY25, output fell by 7%, reflecting the fact that RLNG generation was replaced by more cost-effective energy sources.
- Despite this, Pakistan remains locked into long-term contracts with Qatar, as well as Azerbaijan and Italy, even as IMF-driven tariff increases reduce demand.

Data Source: NEPRA & Renewables First's calculations

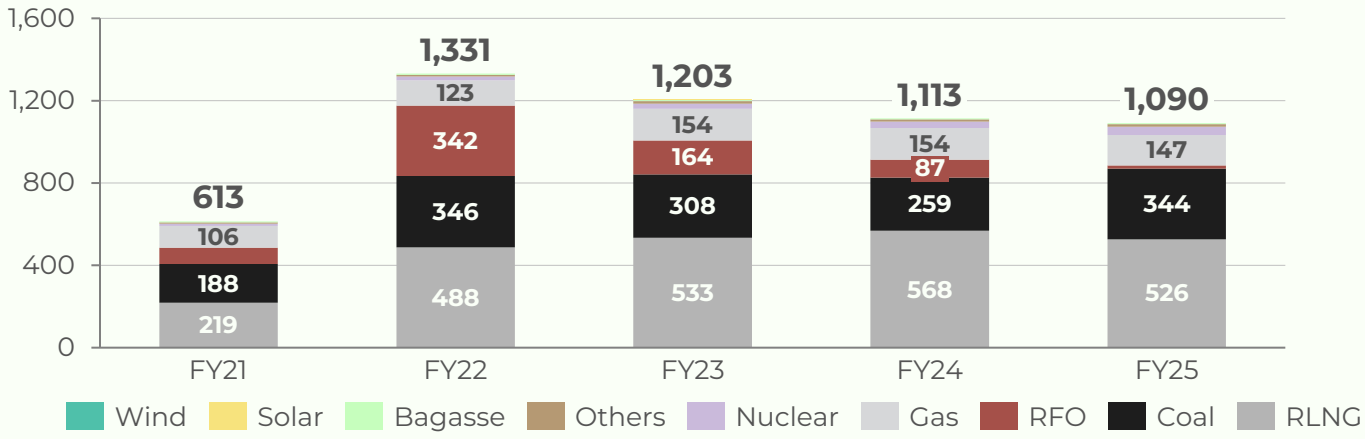
# Once a reliable fallback, RLNG is now a costly liability, driving up tariffs and risking stranded capacity without contract realignment

**RLNG EPP vs per unit RLNG fuel cost, FY21-FY25**




**Energy source wise EPP, FY21 – FY25**

Billion PKR



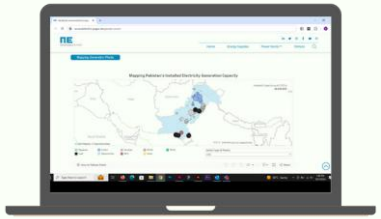

- At PKR 24.61 per kWh in PPP FY26, RLNG is one of the costliest fuels, more than double domestic gas (PKR 10.15/kWh) and second only to RFO (<1% of generation). This pushes up consumer tariffs, while indigenous wind and natural gas are curtailed to make space for expensive RLNG. Brent-linked pricing exposes Pakistan to oil volatility, while OGRA's provisional pricing defers arrears into future bills, compounding costs.
- While RLNG might have provided security of supply in 2016 and 2021, it now risks becoming an expensive, underutilized liability. Without realignment, Pakistan faces stranded capacity and rising tariffs.
- As contract renegotiations loom, the task is to realign RLNG commitments with shifting electricity demand through a forward-looking approach while balancing availability, affordability, and cost.

EPP: Energy Purchase Price
Note: K- Electric numbers are not reflected here

Data Source: NEPRA & Renewables First's calculations

For more power sector-related insights, visit:

## Pakistan Energy and Climate Insights Dashboard



www.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 a 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 fair and inclusive.

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