Air conditioners to push peak power demand beyond 7,000 MW by 2026-27

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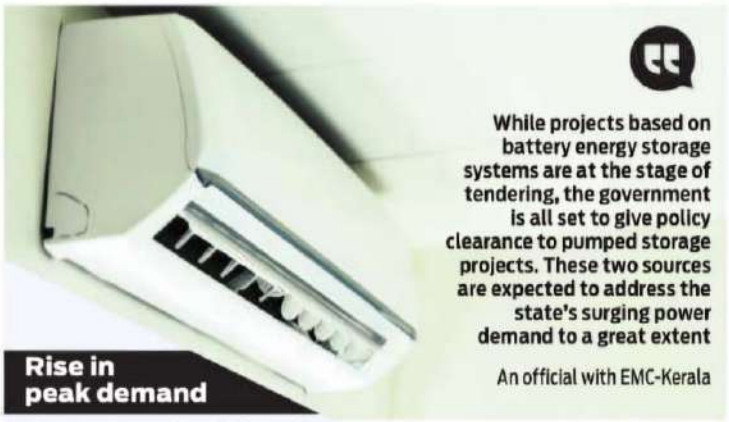
USE of air conditioners, induction cookers, and charging of electric vehicles will mainly contribute towards the state's peak electricity demand crossing 7,000 MW by 2026-27, according to a report by the Energy Management Centre (EMC)-Kerala, an agency under the state power department. In the just concluded fiscal, the peak demand was approximately 5,300 MW.

In the report titled 'Analysing Viability of Energy Storage Systems at the Sub-national Level', EMC has recommended that large-scale battery energy storage systems and pumped storage projects be deployed to handle the rising demand.

ACs will be the prime energy demand driver, registering an increase of 15% in consumption over the next three years, the report said. This at a time when the state's overall energy consumption is growing at a pace of just 5.1%. From 348 million units (MU) in 2024-25, ACs are projected to consume 400 MU in 2025-26 and 460 MU in 2026-27, registering a cumulative consumption of 1,208 MU over a three-year period.



While projects based on battery energy storage systems are at the stage of tendering, the government is all set to give policy clearance to pumped storage projects. These two sources are expected to address the state's surging power demand to a great extent

An official with EMC-Kerala

Rise in peak demand

- The state's total peak demand is expected to touch 7,164 MW by 2026-27
- Peak demand expected to increase by 1,800 MW by FY27 compared to FY24
- Rise of around 1,100 MW primarily due to increased use of ACs, EVs
- Another 750 MW attributed to normal growth in peak demand

Notably, induction cooktops are set to edge past EVs by a slight margin to claim the spot for the second major power demand driver by 2026-27. The report noted that the power consumption of induction cooktops is expected to rise by a whopping 80% over the next three years. A cumulative consumption of 340 MU is expected till 2026-27, the report said.

The EMC document noted that annual EV deployment in Kerala is expected to more than double during the period, reaching more than two lakh units in 2026-27. "The annual EV energy demand is estimated to increase by 29% over the next three years, contributing to an additional 339 MU by FY27," the report pointed out.

Possible solutions

While recommending pumped storage projects (PSP) and battery energy storage systems (BESS) as possible solutions to meet the rising demand, the EMC report has also carried out a comparative study of the two options. Pumped storage projects involve reuse of water from a higher elevation storage facility to generate power. These are beneficial for long-duration storage over extended lifespans.

On the other hand, battery systems that allows bulk electricity storage for later use, offer quicker deployment, and greater location flexibility. Also, PSPs have a cost advantage, especially for long-duration storage, but BESS costs are also decreasing rapidly, the report noted.