Northern cyprus utility-scale energy storage

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The typical volume of excess clean power wasted daily on the island has rocketed since last year. With a fossil fuel industry veteran heading the energy department after February"s presidential election, what prospect is there of a green transition?

Developing plans to connect the Cypriot grid to both the European mainland and countries in the Middle East and North Africa region will help the country boost its share of renewable energy. More local solutions - in the form of energy storage - are also needed, however.

The data relating to the curtailment of renewable energy in Cyprus during last year and this make for stark reading. The nation"s grid operator curtailed a daily average of 21% of the clean power generated during the first four months of this year, up from a daily average of 3.35% during the same period in 2022.

State-owned utility the Electricity Authority of Cyprus (EAC) has published curtailment data for both years, providing dates, starting and ending times for when curtailment took place, and the total volume of energy generated in the days when excess power was curtailed. pv magazine has used EAC"s data to create the chart below, which depicts the power generation curtailed.

Cypriot renewable energy expert Andreas Procopiou confirmed the validity of pv magazine"s figures and attempted to explain the reasons behind the steep year-on-year increase in curtailment.

"The increase in solar photovoltaic installations, from 342 MW of installed solar photovoltaic capacity in April last year to 476 MW of solar capacity in April 2023 is significant for a small, island country like ours," says Procopiou - who has previously explored how to increase solar generation in the UK and Australia.

"To provide a deeper understanding, I have graphically represented the data obtained from the Cypriot transmission system operator, illustrating the extent to which renewable energy sources have contributed to the island"s electricity demand during each month," he says, referring to the chart below.

"The graph shows that the contribution of solar power to the electricity needs of the island grew in the first months of 2023 compared to last year. Still, the penetration of renewable energy in the Cypriot power mix remains relatively low and doesn"t justify, alone, the skyrocketing of power curtailment."

The main reason, says Procopiou, is that the Cypriot grid today is a reflection of the past and lacks investment in modern infrastructure such as new electricity lines and energy storage. "The government is actively promoting the use of liquefied natural gas (LNG) as a mid-term solution to lower electricity costs," he adds.

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"However, the implementation of these plans, whether through domestic LNG resources or imports, is unlikely to occur before 2028, under the most favourable circumstances. By that time, the EU will already be in the process of gradually transitioning away from gas for electrification. Considering these factors, it"s unlikely that there will be a significant drop in costs."

"The government is also putting faith in the upcoming electricity interconnection between Greece, Cyprus, and Israel, which is, of course, a very positive development and one that will boost the renewable energy penetration in our island. But the, so-called EuroAsia Interconnector is still a few years away and Cyprus needs to also enable local energy management solutions, especially energy storage.”

To date, Cyprus does not have any utility scale energy storage installations. In January last year, the government said it was considering running auctions for the installation of systems combining renewable energy and storage.