Caracas california solar energy

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,??, 2030 60%, 2045 100%??

California is generating more solar electricity than ever, a significant accomplishment that will lower costs and emissions while making the grid more resilient and secure. The California Independent System Operator (CAISO), which manages the state grid, is reporting record-setting solar electricity generation in both absolute and relative terms. CAISO"s solar generation success has been due to several factors, including expanding generation while limiting curtailment. But the key to California"s solar revolution is batteries.

Solar and batteries go together like peas and carrots. CAISO"s solar generation continues to grow as a share of its total in-state load, with the trailing 12-month share rising from 13.8 percent in January 2021 to 22 percent in August 2024. California overlaps almost entirely with, but is distinct from, CAISO, which serves 80 percent of the state plus a small portion of Nevada.

Solar"s growing share of California"s in-state electricity consumption is greening the grid. Coal electricity generation declined from 303 gigawatt hours (GWh) in 2021 to 257 GWh in 2023, while natural gas generation fell from 97,431 GWh to 94,192 GWh over the same period.

Solar production has increased along with battery deployments. From January 2021 to August 2024, CAISO deployed 9.5 gigawatts (GW) of batteries. As batteries became relatively more significant on CAISO"s grid, cumulative installed battery capacity reached almost 50 percent of total installed solar capacity in August 2024. Without substantial battery deployment, solar curtailment likely would have exploded.

This trend of pairing solar with batteries is set to continue. Indeed, within CAISO, 98 percent of prospective solar projects include battery storage.

To meet ambitious climate targets while maintaining grid resiliency, CAISO will need more solar, more storage--and more transmission. A follow-on article will examine how CAISO"s transmission expansion is unlocking solar generation.

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This article represents their own personal opinion.

In response to Beijing"s attempts to cement its dominant position across the "new three" technologies of solar photovoltaics (PVs), electric vehicles (EVs), and batteries, the Biden administration is poised to issue tariffs

on key Chinese products. A look at China"s battery exports, and its associated battery complex, reveals both opportunities and risks for US and allied […]

The state"s large-scale deployment of lithium-ion storage batteries is leading to lower solar "curtailment," or when electricity generation is suppressed due to price signals or physical oversupply.

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