

CENTRAL VALLEY

Photovoltaic (PV) and Battery Energy Storage System (BESS) Project Facilities

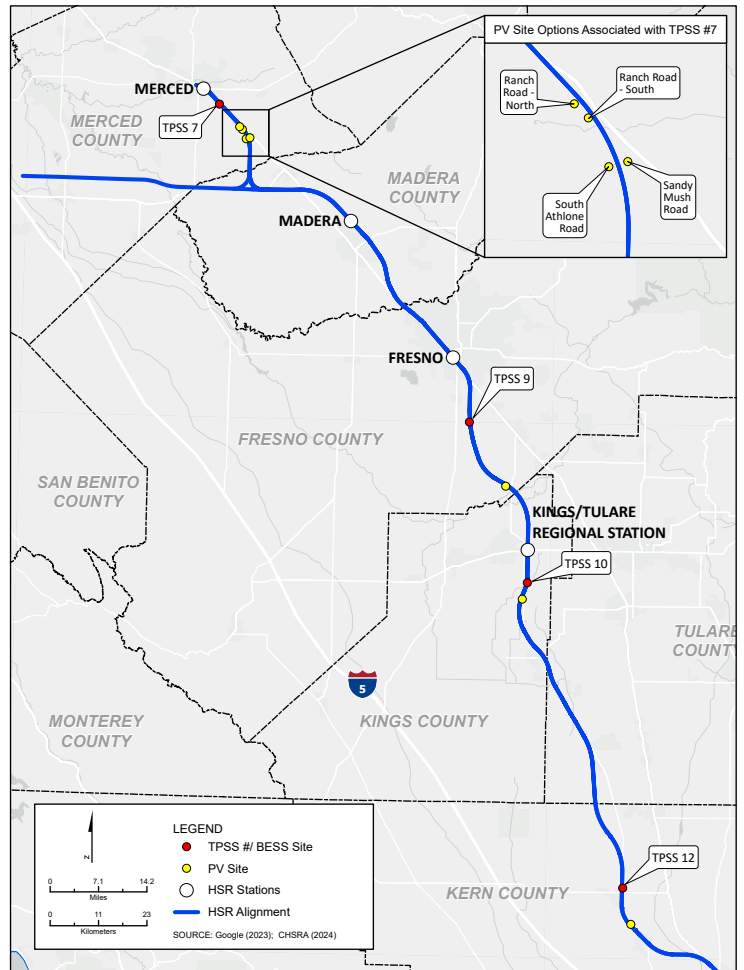
PROJECT OVERVIEW

To help implement its commitment to provide 100 percent renewable power for operating the high-speed rail system, the California High-Speed Rail Authority (Authority) intends to build a series of photovoltaic (PV) solar systems and battery energy storage system (BESS) facilities in the Central Valley.

In 2008, the Authority prepared a study indicating that the high-speed rail system would be supplied with energy from the California grid. In 2012 and 2014, the Authority approved construction of the Merced to Fresno project section and the Fresno to Bakersfield project section, respectively, as part of the statewide system.

To provide electric power to the system, traction-power substations (TPSS) were approved for construction at approximately 30-mile intervals along the alignment. To reduce dependency on third-party infrastructure improvements, optimize the project’s operational cost structure, and align with the goal to power the system with 100 percent renewable energy, the Authority intends to integrate PV solar fields and BESS units as part of the overall system.

CENTRAL VALLEY PV/BESS PROJECT MAP



WHAT ARE TRACTION-POWER SUBSTATIONS (TPSS)?

Traction-power substations (TPSS) are responsible for converting power from multiple resources, to ensure availability and quality of traction power supplied to the Overhead Contact System (OCS). The OCS delivers electricity directly to the trains via overhead wires, enabling their operation on the rail network.



Example of Solar Array Field



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PROJECT COMPONENTS

The PV sites will generate energy, which will be transmitted to the TPSS and stored in co-located BESS units. The BESS units will dispatch energy during peak demand periods to optimize costs and provide backup power, ensuring up to six hours of continuous operation during service disruptions. While PV sites will serve as the primary power source, each TPSS will remain connected to the grid to supplement energy during periods of limited solar production, ensuring uninterrupted service. This configuration enhances traction power reliability while enabling the Authority to (1) advance its sustainability commitments, (2) achieve greater energy resilience, and (3) minimize reliance on third-party led grid infrastructure upgrades.

ENVIRONMENTAL REVIEW

The Authority has issued a Notice of Preparation (NOP) to gather public and agency input on the scope of the EIR/EIS for the Central Valley PV/BESS Project. Comments are accepted from **Feb. 19 to Apr. 8, 2025**. Submit written comments to Stefan Galvez-Abadia at the California High-Speed Rail Authority or via email at **PV-BESS@hsr.ca.gov**. Oral comments can be given by phone at **(559) 425-4438** or during a public scoping meeting. Please check the Authority website: **hsr.ca.gov** for up-to-date information on the in-person scoping meeting.



Example of Battery Energy Storage System Unit

This information can be translated to other languages upon request.

CENTRAL VALLEY 2025



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