



CALIFORNIA HIGH-SPEED RAIL: GRID-OPTIMAL INFRASTRUCTURE PROJECT

The California High-Speed Rail Authority (Authority) has applied for grant funding from the **United States Department of Energy (DOE) Grid Resilience and Innovation Partnerships (GRIP) Program**, specifically under the Grid Innovation Program. This application is for the **California High-Speed Rail Grid-Optimal Infrastructure Project (Project)**. The Project will deploy behind-the-meter solar photovoltaic (PV) energy generation to:

- Serve four Traction Power Substations (TPSS);
- a battery energy storage system (BESS); and
- controls to form a resilient, clean energy Microgrid around each TPSS and station-adjacent district.



These Microgrid systems can reduce peak demands and energy intensity on the transmission grid and enable community resilience to members of the district and adjacent communities.

Is the Authority is requesting \$60.2 million, in addition to proposed state matching funds from the Authority's Cap-and-Trade funds of \$60.2 million, for a total project cost of \$120.4 million.

Since 2008, the Authority has been committed to operate on 100-percent renewable energy. Using on-site power generation from connected solar and battery fulfills this commitment and maintains a steady supply of power to the rail system and station facilities in the event of grid outages. Project benefits would include:

- Significantly reduced peak demand with a balanced load profile that improves grid reliability;
- improved reliability for the rail system;
- reduced operating costs through lower electricity bills; and
- electrical skills and photovoltaic installation and maintenance training apprenticeship programs.

The Project elements are modular and will be replicated over time as the high-speed rail system expands statewide. These solutions also can be applied to local and commuter railroads in California and nationwide, including any future electrification of existing corridors, further benefiting utility providers, and reducing burdens on rate payers. The Project provides a field test for creating facilities that deeply decarbonize transportation. The Authority is collaborating with Pacific Gas & Electric (PG&E) and the California Energy Commission (on the Project). The Authority also is consulting with the California Independent System Operator to ensure the Project conforms to its requirements.

This requested funding will improve the health, safety, access, connectivity and economic vitality of underserved communities in California's Central Valley.