



Solar Fuel Stations for Plug-In Electric Vehicles *Fact Sheet*

What is a solar fuel station?

Solar fuel stations charge plug-in electric vehicles with solar energy generated via photovoltaic panels mounted on carports or adjacent building roofs. Both system designs can be outfitted so that electricity is fed back to the grid or the onsite host building if cars are not charging.



*Kyocera Headquarters, San Diego, CA
(Image Courtesy of Envision Solar)*



*Google Headquarters, Mountain View, CA
(Image Courtesy of J.C. Winnie)*

What are the benefits of a solar fuel station?

Reduces GHG Emissions and Criteria Pollutants: Solar fuel stations reduce emissions associated with producing electricity from power plants. In comparison to driving a conventional car, a vehicle powered by the sun avoids 5.29 tons of CO₂ equivalent emissions annually.

Builds California's Economy & Generates Green Jobs: Solar fuel stations generate cutting-edge green jobs, from designers to engineers, installers, and cement and steel workers. Currently, there is a high concentration of solar power and advanced technology companies (770 solar firms alone) in California with the capacity to install solar-fuel stations.

Promotes Local Energy Independence: When not fueling cars, solar fuel stations act as distributed generation facilities (or "mini-grids") that feed the larger grid, decreasing the need for peaker plants and transmission lines. In the future, electricity can also be stored in vehicle batteries and fed back to the grid (Vehicle-to-Grid or V2G) to avoid brown and black-outs.

Reduces Petroleum Use: Driving a plug-in with a 40 mile battery range will displace most, if not all, of the average American's petroleum use of 500 gallons of gasoline per year.

Generates Renewable Energy: One station with 10 charging spaces generates 30,000 kWh of electricity annually, powering approximately 120,000 miles of zero-emissions electric driving per year.

Supports the Adoption of Electric Vehicles: Highly visible solar fuel stations will boost consumer confidence, providing assurances that plug-in electric cars can be reliably and cleanly fueled while away from home, and at a free or substantially cheaper price than gasoline.

Promotes Infill Development: Solar fuel stations use built space, cutting down on the use of virgin land for electricity generation and providing valuable shade to parked cars.

What are some potential locations for solar fuel stations?



■ Public Administration



■ Main Thoroughfare



■ Zoo



■ Shopping Center



■ Train Station



■ Amusement Park



■ Trolley Station



■ Park



■ Sports Arena

(Image Courtesy of Envision Solar)

Likely spots for stations include parking garages, government & private company parking lots, transportation depots like BART and Amtrak, airports, hospitals, malls, restaurants and college campuses. The blue areas pictured above represent potential station sites.



For More Information on Solar Fuel Stations:

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