

Utilizing Highway Rest Areas for Electric Vehicle Charging: Economics and Impacts of Renewable Energy Penetration in California Dataset

Dataset available at: <https://doi.org/10.25338/B8402G>

(This dataset supports report **Utilizing Highway Rest Areas for Electric Vehicle Charging: Economics and Impacts on Renewable Energy Penetration in California**, <https://doi.org/10.7922/G2N29V6B>)

This U.S. Department of Transportation-funded dataset is preserved by the University of California in the digital repository Dryad (<https://datadryad.org>), and is available at <https://doi.org/10.25338/B8402G>.

The related final report **Utilizing Highway Rest Areas for Electric Vehicle Charging: Economics and Impacts on Renewable Energy Penetration in California**, is available from the National Transportation Library's Digital Repository at <https://rosap.ntl.bts.gov/view/dot/55538>.

Metadata from the Dryad Repository record:

Publication Date: April 20, 2020

Abstract:

California policy is incentivizing rapid adoption of zero emission electric vehicles for light duty and freight applications. In this project, we explored how locating charging facilities at California's highway rest stops, might impact electricity demand, grid operation, and integration of renewables like solar and wind into California's energy mix. Assuming a growing population of electric vehicles to meet state goals, we estimated state-wide growth of electricity demand, and identified the most attractive rest stop locations for siting chargers. Using a California-specific electricity dispatch model developed at ITS, we estimated how charging vehicles at these stations would impact renewable energy curtailment in California. We estimated the impacts of charging infrastructures on California's electricity system and how they can be utilized to decrease the duck curve effect resulting from a large amount of solar energy penetration by 2050.

Funding:

National Center for Sustainable Transportation / Caltrans, Award: USDOT Grant 69A3551747114

Recommended citation:

Kiani, Behdad; Ogden, Joan; Sheldon, F. Alex; Cordano, Lauren (2020), Utilizing Highway Rest Areas for Electric Vehicle Charging: Economics and Impacts of Renewable Energy Penetration in California, Dryad, Dataset, <https://doi.org/10.25338/B8402G>

Dataset description:

This dataset contains 1 .zip file collection described below.

doi_10.25338_B8402G_v2.zip:

This collection contains 1 .csv file and 4 .xlsx files listed below.

- CA_Rest_Area_with_Installed_Capacity_updated_.csv
- CA_Rest_Areas_-_Master_Copy.xlsx
- Power_plant_capacity.xlsx
- Regional_Load_Data.xlsx
- Transmission_data.xlsx

The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit <https://www.file-extensions.org/csv-file-extension>).

The .xlsx file type is a Microsoft Excel file, which can be opened with Excel, and other free available software, such as OpenRefine.

National Transportation Library (NTL) Curation Note:

As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (<https://doi.org/10.21949/1503647>) Section 7.4.2 Data, the NTL staff has performed *NO* additional curation actions on this dataset.

NTL staff last accessed this dataset at <https://doi.org/10.25338/B8402G>. on 2021-07-12

If, in the future, you have trouble accessing this dataset at the host repository, please email NTLDataCurator@dot.gov describing your problem. NTL staff will do its best to assist you at that time.