



Helpful Tools for Alternative Fuel Corridor Planning

Electric Vehicle Infrastructure Projection Tool (EVI-Pro) Lite, National Renewable Energy Lab (NREL) and California Energy Commission (CEC)

EVI-Pro Lite is an online tool for projecting consumer demand for electric vehicle (EV) charging infrastructure. The EVI-Pro Lite tool uses simulations to predict the type and quantity of charging infrastructure required to support different levels of EV adoption. Simulations use data on charging station characteristics, EV attributes, and personal vehicle travel patterns. The EVI-Pro Lite tool gives users the option to change assumptions about vehicle mix and electricity needs, and provides planners with suggested infrastructure priorities. The EVI-Pro Lite tool was developed through a collaboration between NREL and CEC, with support from the U.S. Department of Energy's (DOE) Vehicle Technologies Office.

Link: <https://www.afdc.energy.gov/evi-pro-lite>

Your Results

In the St. Joseph area, to support 1,000 plug-in electric vehicles you would need:

- 24 Workplace Level 2 Charging Plugs**
- 19 Public Level 2 Charging Plugs**
- 4 Public DC Fast Charging Plugs**

Where Do I Start?

Planners may want to prioritize installation of fast charging infrastructure above Level 2 charging.

Build DC Fast First: Establishing fast charging networks that enable long-distance travel are critical for supporting electric vehicles, and provide charging infrastructure without home charging is critical to support all-electric vehicles that have no other alternative for quickly extending their driving range.

Build Level 2 Second: EVI-Pro typically simulates the majority of Level 2 charging demand coming from plug-in hybrid electric vehicles, which have the ability to use gasoline as necessary for quickly extending driving range.

Charge Assumptions

Plug-in Electric Vehicles (as of 2016): 20
Light Duty Vehicles (as of 2015): 75,000
Number of vehicles to support: 1,000

Vehicle Mix	Plug-in Hybrids: 20 miles electric range: 10%
	Plugs-in: 50 miles electric range: 30%
	All Electric Vehicles: 100 miles electric range: 10%
	All Electric Vehicles: 200 miles electric range: 50%
	Total: 100%

How much support do you need to provide for plug-in hybrid electric vehicles (PHEV)?

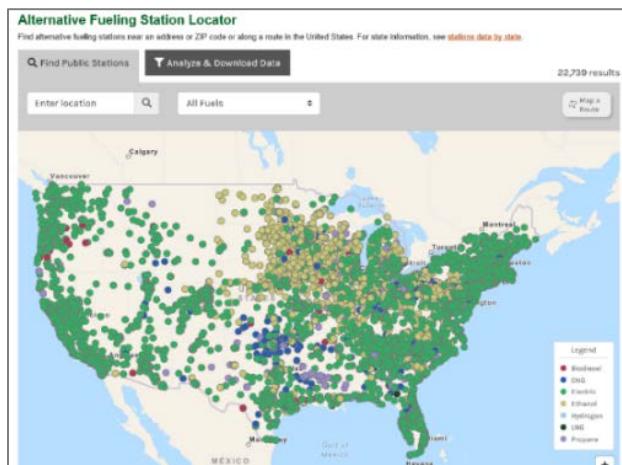
Most PHEVs wouldn't need to use gasoline on a daily basis.

Partial Support: EVs using half of all regular gasoline.

Do not expect PHEVs or charging demand estimates.

Percent of drivers with access to home charging:

See all assumptions.



Alternative Fuel Toolkit, Federal Highway Administration (FHWA)

The Alternative Fuel Toolkit is an online platform designed to help state Departments of Transportation (DOTs) learn more about alternative fuels, plan alternative fuel vehicle infrastructure and explore funding sources, and take action to deploy alternative fuels and vehicles using an online action guide, set of facilitation materials, and other resources. The website is the result of an effort led by the Oregon DOT and FHWA, and supported by nine other state DOTs.

Link: <http://altfueltoolkit.org/>

Alternative Fuels Data Center Station Locator, U.S. Department of Energy

The U.S. DOE Alternative Fuels Data Center hosts an Alternative Fueling Station Locator on its website that allows users to enter their postal code to find the nearest alternative fueling station. This tool also allows users to map a travel route, or to filter by fuel type. The Alternative Fueling Station Locator provides downloadable data and results.

Link: <https://www.afdc.energy.gov/stations/#/find/nearest>

Alternative Fuel TOOLKIT

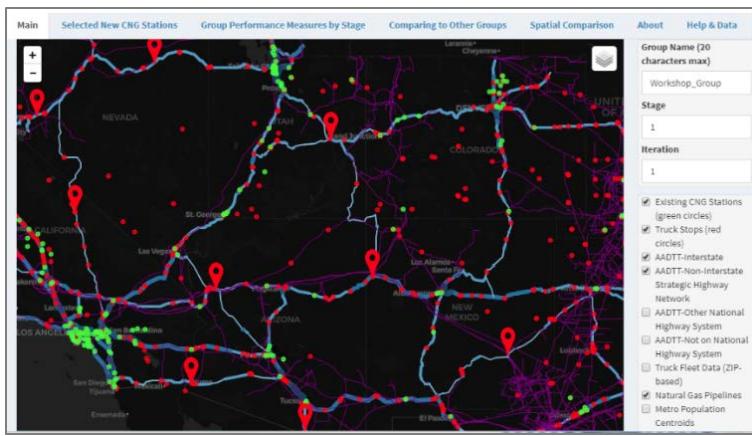
Learn Plan Act Workshop Toolkits

AFV Cost Calculator

The AFV Cost Calculator provides a quick way to compare the total cost of ownership in real dollars of AFVs. Click the image to launch the tool.

To use the dashboard, select a vehicle type, then a state. Total cost of ownership by category and vehicle drivetrain are presented below. The basic calculator assumes you are using a public refueling station (so infrastructure costs are not included). If no state is selected, results display the national average costs.

Visit the Advanced dashboard (Pg 2) to explore the effects of miles traveled, fuel economy, and fuel price on the cost effectiveness of alternative fuels. Assumptions and references are given in the About page (Pg 3). All results are from Argonne National Laboratory's AFLEET Tool 2016 rev1, which was released on May 12, 2016.



Collablocation, University of Arizona and Arizona State University

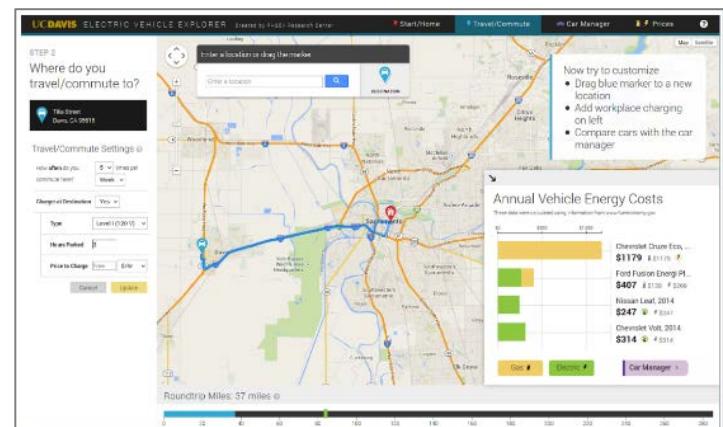
Rolling out alternative fuel stations is never a “one-size-fits-all” exercise. Acknowledging this reality, Collablocation is an online, open-source “geodesign” platform that allows multiple stakeholders (e.g., workshop attendees) to collaboratively and iteratively design a refueling station network. Developed by Arizona State University and the University of Arizona, this tool is currently only available for the Southwest United States, but developers have plans for enlarging the platform to a nation-level.

[Link: https://collablocation.shinyapps.io/home/](https://collablocation.shinyapps.io/home/)

EV Explorer, University of California Davis (UC Davis)

The EV Explorer is an online program designed by UC Davis to help users compare fuel costs of any type of gasoline or plug-in EV. The primary inputs for this tool are a vehicle’s destination and frequency of travel, with annual costs produced as an output. The tool allows commuters to compare annual fuel costs based on their own specific geographic location, and allows for customization based on user preferences, with several other input options including regional prices of gasoline and electricity, duration of charging, and the level of charging power, among others.

[Link: https://phev.ucdavis.edu/project/ev-explorer/](https://phev.ucdavis.edu/project/ev-explorer/)



user's zip code, and the make, model, and year of the user's car.

[Link: https://www.ucsusa.org/clean-vehicles/electric-vehicles/ev-emissions-tool#.WwVvgO4vtQ](https://www.ucsusa.org/clean-vehicles/electric-vehicles/ev-emissions-tool#.WwVvgO4vtQ)

EV Emissions Tool, Union of Concerned Scientists

This EV Emissions Tool, developed by the Union of Concerned Scientists, is designed to allow users to compare greenhouse gas emissions from gasoline-only vehicles to those of plug-in hybrid electric vehicles and battery electric vehicles. This simple tool calculates grams of carbon dioxide (CO₂)-equivalent per mile of travel, comparing across the vehicle types using four inputs: a