

What is Electric Vehicle Tourism?

Travelers using an electric vehicle (EV) as their method of transportation are engaging in “EV Tourism.”

Why should tourism be involved with EVs?

This emerging market of travelers either rent or own an EV, such as a Tesla Model S or Nissan LEAF, and is a target demographic with above-average household income. Benefits to destinations attracting EV travelers include:

- ✦ Economic: increased tourism spending due to lower fuel costs.
- ✦ Social: connecting communities, learning about new technology, and decreased dependency on fossil fuel.
- ✦ Environmental: zero tailpipe emissions, opportunity to use renewable energy sources like solar power, and decreased noise pollution.

Currently, charging infrastructure is concentrated in metro areas, which makes it difficult for EVs with a lower range (less than 100 miles on a full charge) to travel. However, as EV sales continue to increase, the tourism industry will play a large role in getting these potential visitors out of urban clusters and into rural communities for overnight and weekend excursions.

EVs: The Basics

There are a variety of electric vehicles on the market. Of the all-electric vehicles (EV), the Tesla Model S and Nissan LEAF are most prevalent. Below are EVs that tourism entities are most likely to assist along with their estimated range on a full charge. Keep in mind that temperature, wind, and elevation all effect actual driving range.

Vehicle	Range (miles)
2008 Tesla Roadster	245
2013 Tesla Model S	265*
2014 Chevrolet Spark	82
2014 Fiat 500e	87
2014 Ford Focus Electric	76
2014 Honda Fit EV	82
2014 Nissan LEAF	84
2014 Toyota RAV4 EV	103

Sources: Tesla Motors, US Dept of Energy

*Range with 85 kWh battery back. Range with a 60 kWh battery back is 208 miles.

As is evident by the table, most EVs are unable to go long distances per charge. A major goal of EV Tourism is to increase the quantity and quality of charging availability, particularly overnight charging at hotels and fast-chargers on major highways.

The first step to becoming EV-friendly is to offer charging. Though it will take many hours, an EV can be charged using a wall socket. For example, some hotels allow EVs to charge overnight by plugging their vehicle into a wall socket using an extension cord or dryer outlet using an adaptor. EV drivers travel with adaptors, so the tourism business simply needs to make a plug available. Below are the different “levels” of charging. See page five for a costs table.

Charging an Electric Vehicle		
	Volts	Example
Level I	120	Wall socket
Level II	240	Dryer outlet or charging station
DC Fast Charger	400+	Charging station

Source: U.S. Department of Energy - Alternative Fuels Data Center

Whether you are a bed and breakfast or museum, if you are interested in attracting EV travelers to your place of business you should consider allowing them to charge during their visit.

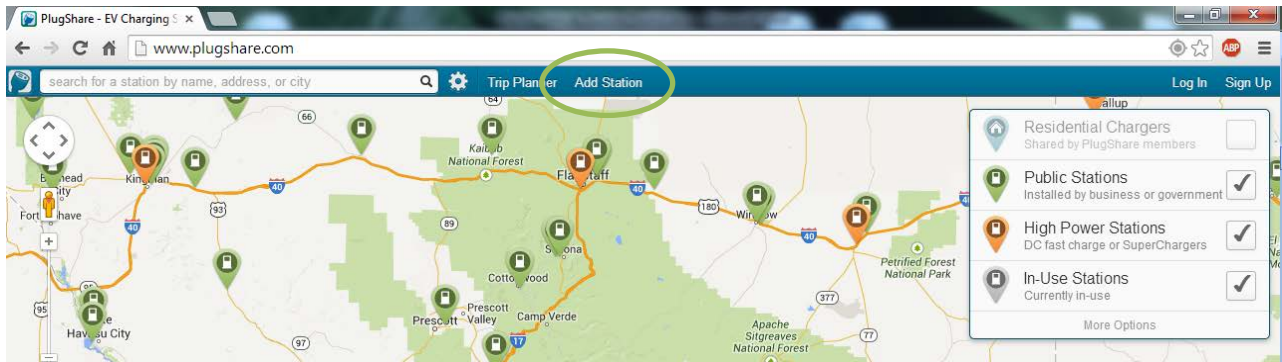
- ✦ Please consult your preferred electrician with any questions.
- ✦ For step-by-step instructions for planning and installing electric vehicle stations visit the Business Council on Climate Change website <http://www.bc3sfbay.org/assess.html>.
- ✦ Be sure to post charging information on PlugShare.

Plugging in to PlugShare

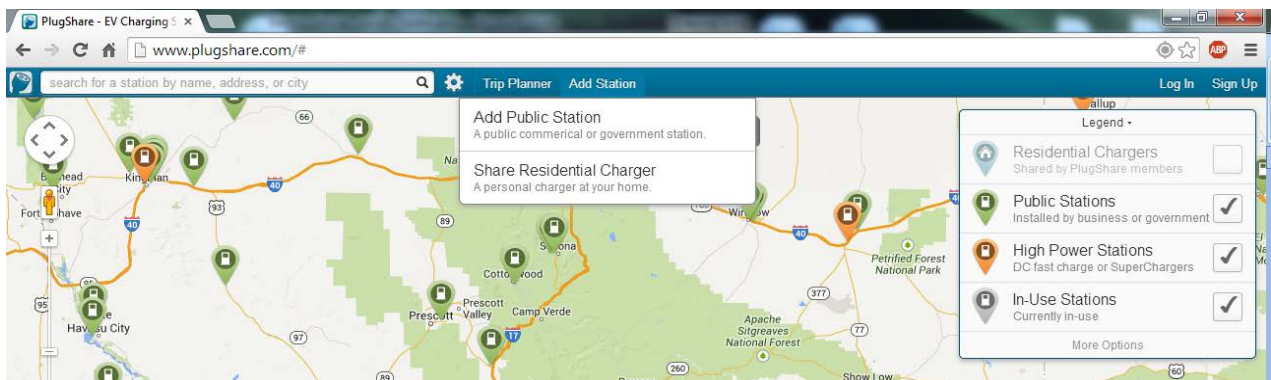
First, what is PlugShare? With 11,000 locations and growing, it is the largest electric vehicle charging network in the U.S. and Canada. Available online and as a free smart phone application, PlugShare is used by EV drivers to find public charging stations. For more frequently asked questions and answers visit <http://faq.plugshare.com/category/23-plugshare-for-web>.

As a tourism business that has an available plug or has just installed a charging station, it is easy to let the world know that you are now EV-friendly. Simply visit the PlugShare website (<http://www.plugshare.com/>) and follow three easy steps, as demonstrated on page two.

1. Click on “Add Station” at the top of your screen.

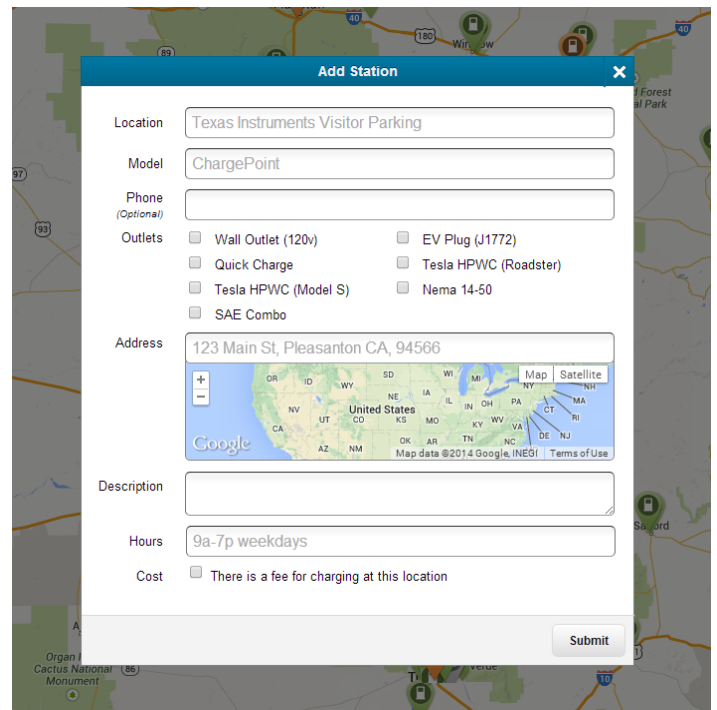


2. Click on “Add Public Station.”



3. Type in as much information as you can and click “Submit.” Fields include:

- Location (such as hotel name)
- Model (for charging stations such as ChargePoint or Blink)
- Phone number
- Outlet type (check the appropriate box)
- Address
- Description (such as location in parking lot, contact person, etc.)
- Hours of operation
- Fees (check box opens space for details)



PlugShare Charging Station Example:

As stations are added and used, EV drivers are able to write reviews and post photos. Knowledge is power, so the more information about charging the better, as shown in the example below:

The screenshot displays the PlugShare app interface. At the top, there is a search bar with 'picacho peak arizona' and navigation options like 'Trip Planner' and 'Add Station'. The main view is a map of the Picacho area in Arizona, with a pop-up window for a specific charging station. The pop-up window, titled 'Picacho QuickCharger - Bowlin Travel Center', provides the following details:

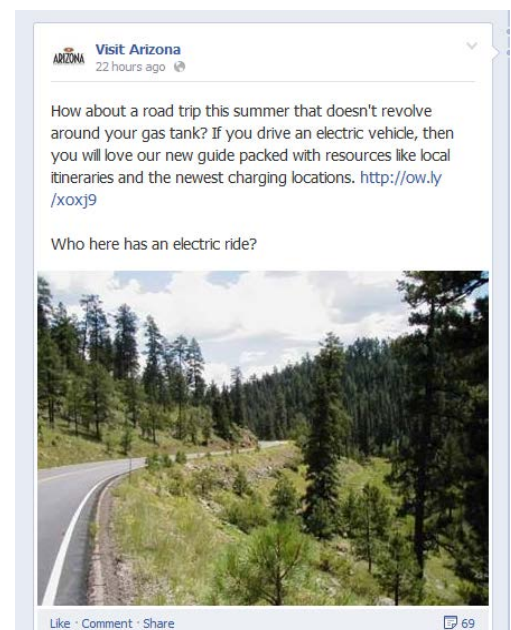
- PlugScore:** 8.3
- Ports:** 2 EV Plug (J1772)s, Quick Charge, SAE Combo
- Stations:** ChargePoint EV Plug (J1772), ChargePoint Quick Charge, ChargePoint EV Plug (J1772)
- Custom Ports:** 70A J1772
- Address:** 16543 E Camino Adelante Rd, Picacho, Arizona
- Phone:** (520) 466-0049
- Cost:** \$5 to fast-charge a Nissan Leaf or similar; \$13 to charge a Tesla. Level 2 charging is \$2 per hour.
- Hours:** 24/7
- Description:** I-10 exit 219. On the south side of the gas station. GoE3 with a Level 3 CHAdeMO and SAE Combo. Ribbon Cutting and opening of the CHAdeMO and CCS Fast Charging Stations - bit.ly/1jAyy5l
- Photos:** A gallery of five photos showing the charging station and the surrounding area.
- Last Check In:** as of a month ago
- Actions:** Check In, Directions, Share

At the bottom of the app, there is a navigation bar with options: Plan a trip, SuperChargers, CHAdeMO, Blink, SemaCharge, GE, SF, LA, DC, NY.

Creating an EV Visitor's Guide

In 2014, the Arizona Office of Tourism created the first Electric Vehicle Visitor's Guide. To view the guide and itineraries visit <http://arizonaguide.com/electricvehicles>. Below are steps to take if you would like to put a guide and itineraries together for your destination:

1. Consider creating a brief survey that seeks input from local electric vehicle (EV) drivers. Tailor these questions to the needs of your area (region/county/city). Ask for suggestions on attractions and hotels that offer charging. Email the survey to EV owners and stakeholders. For additional responses try posting the survey to EV forums such as members of your local Electric Auto Association organization (<http://www.electriconline.org/>).
2. These suggestions will come together for the "resources" section of your guide. Begin compiling the information that was requested by your survey respondents including:
 - a. Average temperatures by season and region.
 - b. Elevation by city.
 - c. Emergency contact information, including roadside assistance for EVs if it is available in your area (try contacting your local AAA office).
 - d. Mileage map (miles between cities).
3. Using PlugShare, zoom in on the area you want to make an itinerary for. If you have a route in mind, make sure that there are charging stations available to get your visitors from point to point. Alternatively, you can choose charging stations and build a route around them using local activities, attractions, and lodging to add fun and excitement to the trip. As you design the route, test out distance using [EVTripper](#). This tool is built for the Tesla Model S, but is useful in providing mileage and net elevation information between two points on a map. When spacing out activities make sure to keep range and the availability of charging in mind.
4. Now that you have a route that has charging and fun stops along the way, write your itinerary and include some photos. This is your chance to be creative and show EV visitors how much fun they can have in your area. Be sure to include links to websites of visitor's centers, attractions, lodging, and so on. Including links to online maps (such as Google) and PlugShare is also helpful.
5. Send the draft around your office to get feedback and any suggestions for improvement.
6. Once your guide's resources and itinerary are complete, save it as a PDF – or use an online viewing program – to post the file on your website. Having the document available online will allow EV travelers to find your booklet and use it on the road.
7. Publicize your guide! Create a press release and let local EV owners know that the guide is ready. You can also include a link to the guide in your newsletter and post on your social media websites.



Want to learn more? Resources:

There are a number of resources available to businesses interested in becoming EV-friendly. Below are related resources.

Alternative Fuels Data Center	http://www.afdc.energy.gov/
Arizona Office of Tourism	http://arizonaguide.com/electricvehicles
Auto Rental News	http://www.autorentalnews.com/channel/green-fleet.aspx
Business Council on Climate Change	http://www.bc3sfbay.org/
Clean Cities – Coalition Locator	http://www1.eere.energy.gov/cleancities/
Driving Futures (by Enterprise)	http://www.drivingfutures.com/sustainability-report/
Electric Drive Transportation Association	http://www.electricdrive.org/
Electrification Coalition	http://www.electrificationcoalition.org/
EVTrippler	http://evtripper.com/index.php
Fleet Answers	http://fleetanswers.com/
Green Car Reports	http://www.greencarreports.com/news/electric-cars
Green Lodging News	http://www.greenlodgingnews.com/
LEED – U.S. Green Building Council	http://www.usgbc.org/leed
Navigant Research	http://www.navigantresearch.com/
PlugShare	http://www.plugshare.com/
Sierra Club	http://www.sierraclub.org/
Sustainable Brands	http://www.sustainablebrands.com/
Sustainable Travel International	http://sustainabletravel.org/
Sustaining Forward	http://sustainingforward.com/
Tesla Supercharger	http://www.teslamotors.com/supercharger

Energy Cost Comparison

	Full Charge	APS (Minimum)	APS (Maximum)	SRP (Minimum)	SRP (Maximum)	Miles per charge	APS Maximum Cost per mile	SRP Maximum Cost per mile	Average Gas Cost per mile**
Standard Plans Per KW*		\$0.09417	\$0.17257	\$0.05130	\$0.20640				
Tesla Model S	99Kw	\$9.32	\$17.08	\$5.08	\$20.43	265	\$0.06	\$0.08	
Nissan Leaf	24Kw	\$2.26	\$4.14	\$1.23	\$4.95	85	\$0.05	\$0.06	
Average (gas-powered) Sedan									\$0.14

* Rates shown are residential and vary by season and time of day. ** AAA based their fuel costs on \$3.486 per gallon as used in their late-2012 Fuel Gauge Report. Fuel mileage is based on the EPA's fuel economy ratings weighted at 60% city and 40% highway. AAA selected the top-selling 2012 models in the following categories: small sedan, medium sedan, and large sedan. Sources: APS, SRP, Tesla, Nissan, and AAA