



# ENERGY STAR®

## Electric Vehicle Chargers: How Utilities can Drive Energy Savings

The simple choice for energy efficiency.



February 2020

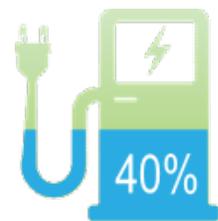
Over the next few decades, electric vehicles (EVs) are expected to replace traditional vehicles due to growing awareness of their environmental benefits and the availability of more EVs at reduced costs. Increasing numbers of EVs on the road is resulting in energy load growth and the need for additional charging infrastructure. More than 9.6 million EV charge ports are expected to be required to support nearly 19 million EVs in 2030 with an annual energy consumption of 93 terawatt-hours.<sup>1</sup> Utilities can help facilitate a smooth transition to EVs through customer education, planning, and investments that effectively support the deployment of efficient, reliable EV charging infrastructure.

### Utility Strategies to Support EVs and Efficient Charging Infrastructure

- 1. Education:** Utilities are in a unique position to serve as a trusted advisor and provide factual information about EV and charging technologies, benefits, and more.
- 2. Incentives:** Utilities may offer financial incentives to reduce the cost of EVs, charging equipment, and installation.
- 3. EV Rate Design:** Utilities can develop EV-specific rate structures (e.g., time-of-use rates) to shift load through managed EV charging.
- 4. Advanced Metering Infrastructure/Smart Charging:** Utilities that are interested in managed charging and demand response can offer incentives for “smart charging” or the installation of advanced meters to enable increased monitoring and control.
- 5. Fleet Investments/Demonstrations:** Utilities can also invest in their own EV fleets and charging infrastructure to demonstrate cutting edge technology (e.g., vehicle-to-grid).

### ENERGY STAR EV Chargers and Benefits

Two types of EV chargers—Level 1 and Level 2—are eligible to earn the ENERGY STAR label for superior energy efficiency. Multiple manufacturers in this rapidly growing industry currently offer a selection of certified models. **ENERGY STAR EV chargers use 40 percent less energy than a standard EV charger** in standby (when the EV charger is not actively charging a vehicle).<sup>2</sup> The [ENERGY STAR Product Finder](#) includes up-to-date information about certified chargers.



<sup>1</sup> EEI/IEI, November 2018, *EV Sales Forecast and the Charging Infrastructure Required through 2030*.

<sup>2</sup> An Idaho National Laboratory EV infrastructure report determined that an EV charger is in standby mode for about 85 percent or more of the lifetime of the charger. The savings estimates are based on data found in the [EVSE Version 1.0 Dataset](#), which indicates what models meet ENERGY STAR criteria, along with their standby mode power consumption. Note, the dataset was developed in 2016 and some products are no longer available in the market.

ENERGY STAR® is the simple choice for energy efficiency. For more than 20 years, EPA's ENERGY STAR program has been America's resource for saving energy and protecting the environment. Join the millions making a difference at [energystar.gov](http://energystar.gov).



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By leveraging ENERGY STAR to encourage the use of energy efficient EV chargers, utilities can realize benefits and satisfy customer needs.

- **ENERGY STAR EV Chargers Are Independently Certified to Save Energy and Money.** Pointing residential and commercial customers to ENERGY STAR certified products, including through the use of incentives, delivers added value to utility customers. Utilities can benefit directly by installing chargers for workplace charging or public use that have earned the ENERGY STAR label. There is no cost difference between ENERGY STAR certified EV chargers and standard chargers<sup>3</sup> so the payback from energy savings is immediate.
- **ENERGY STAR EV Chargers Are Safety Certified.** Customers are exposed to an increasing number of EV charger options, some of which, according to EPRI, are not properly tested for safety. All ENERGY STAR certified EV chargers must be listed by a Nationally Recognized Testing Laboratory for safety.
- **ENERGY STAR Certified EV Chargers Offer Connected Functionality.** These models may be capable of supporting participation in utility demand response programs through open communication protocols.
- **The ENERGY STAR Brand is Known and Recognized.** More than 90% of U.S. households recognize the ENERGY STAR label, and 74% of ENERGY STAR purchasers indicate the label influenced their purchase. Once a utility raises awareness about the availability of ENERGY STAR EV chargers, customers can make more informed and energy-efficient purchases.
- **ENERGY STAR Provides Educational Resources.** ENERGY STAR has a number of resources to help you educate customers. See the [ENERGY STAR EVSE website](#).

## The Future of EV Chargers: Direct Current (DC) Connection for Fast Charging

The ENERGY STAR program is currently in the process of expanding its requirements to cover DC fast chargers. Stay engaged and up to date on developments by visiting the [Version 1.1 website](#).

### Learn from Others

**Public Service Company of Oklahoma (PSO)** is leveraging ENERGY STAR to incentivize efficient EV chargers. PSO residential customers are eligible for a \$250 rebate towards the purchase of an ENERGY STAR EV charger. PSO is also educating customers on the benefits of ENERGY STAR Level 2 EV chargers, which can save over 100 kWh per vehicle by using less energy while in standby modes.<sup>4</sup>

<sup>3</sup> EPA identified models that had similar attributes such as amperage, cable length, and Wi-Fi capability. EPA compared ENERGY STAR certified models to standard ones, with the goal to exclude any factors besides ENERGY STAR that would have contributed to cost.

<sup>4</sup> Savings estimated for the purpose of PSO's filing to the Corporation Commission of Oklahoma, Cause No. PUD 201800073.

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