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

Utility Strategies to Support Increased EVs and 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 qualified vehicles, 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**

The U.S. Environmental Protection Agency (EPA) developed a specification to recognize the most energy efficient EV charging products. The two types of EV chargers covered under the ENERGY STAR Version 1.0 EV Chargers Specification—Level 1 and Level 2—provide alternating-current (AC) electricity to the vehicle. **ENERGY STAR certified EV chargers use 40 percent less energy than a standard EV charger** in standby (when the EV charger is not actively charging a vehicle). The **ENERGY STAR Product Finder** includes up-to-date information about energy efficient chargers.

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1. EEI/IEI, November 2018, *EV Sales Forecast and the Charging Infrastructure Required through 2030*.
2. 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.
By partnering with ENERGY STAR to encourage the use of ENERGY STAR EV chargers, utilities can realize benefits and satisfy customer needs.

- **ENERGY STAR EV Chargers Save Energy and Money.** Pointing residential and commercial customers to ENERGY STAR qualified products, including through the use of incentives, will result in energy savings compared to non-certified models. If the utility is installing chargers for workplace charging or public use, make sure those are ENERGY STAR certified. The average EV charger has an expected lifetime of 10 years, and there is no incremental cost or price differential between ENERGY STAR certified EV chargers and chargers that have not earned the ENERGY STAR.\(^3\)

- **ENERGY STAR EV Chargers Are Safety Certified.** Customers have access to a large 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. In addition, some ENERGY STAR 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 45% of U.S. households knowingly purchased an ENERGY STAR certified product in the past year. 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 Specification Version 1.1 is under development and includes DC fast chargers in its scope. Stay engaged and up to date on developments by visiting the [Version 1.1 website](#).

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**Learn from Others**

**Public Service Company of Oklahoma (PSO)** is partnering with ENERGY STAR to incentivize efficient EV chargers. PSO residential customers are eligible for a $250 rebate for ENERGY STAR EV chargers. PSO is also educating customers on the benefits of the connected ENERGY STAR Level 2 EV chargers, which can save over 100 kWh per vehicle by using less energy while in standby modes.

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\(^3\) 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.