

ELECTRIFICATION OF TRANSPORTATION

ELECTRIC VEHICLE (“EV”) FACTS & MYTHS



Hawaiian
Electric



MYTH

EVs are worse for the environment because they use electricity generated by dirty power plants, creating harmful emissions. *FALSE!*

FACT

EVs generally have a smaller carbon footprint than gasoline-powered cars, even when considering the electricity used for charging.

As we transition to a cleaner energy mix, the carbon footprint of EVs will continue to decrease. Hawaiian Electric is committed to increasing Hawai'i's use of clean energy, with a goal of achieving 100% renewable energy by 2045.

MYTH

EVs are worse for the environment due to battery manufacturing and the mining of precious metals involved. *FALSE!*

FACT

The greenhouse gas emissions from an EV over its entire lifecycle are generally lower than those from a typical gasoline-powered vehicle, even when considering the emissions from battery manufacturing.

While sourcing components for EV production, such as lithium, cobalt, and rare earth materials, remains a significant concern, new supply sources in countries like the United States and Australia offer much better environmental, social, and governance practices compared to some existing mining operations. Additionally, federal laws like the Inflation Reduction Act mandate that companies source metals from the United States.

Recycling EV batteries can further reduce the concerns associated with EV production by decreasing the need for new materials. Several companies are making significant progress in this circular economy industry. Furthermore, next-generation EV motors will not require rare earth elements.

MYTH

EV batteries are unreliable and need to be replaced every few years. *FALSE!*

FACT

EV batteries are engineered to last the entire lifespan of the vehicle, with data indicating very low failure rates. Unlike starter batteries in gasoline vehicles, EV battery replacements are rare.

MYTH	<p>Rapid EV growth will collapse the power grid. <i>FALSE!</i></p>
FACT	<p>EVs and their associated equipment come with charging features designed to prevent grid overload, such as managed charging and automated load management technology. Additionally, EVs can enhance grid reliability through vehicle-to-grid, vehicle-to-building, and vehicle-to-home applications.</p> <p>Hawaiian Electric has incorporated projected EV growth into its Integrated Grid Plan and is ready to supply the necessary electricity to support this transition.</p>
MYTH	<p>It is difficult to find EV chargers. <i>FALSE!</i></p>
FACT	<p>For drivers living in single-family homes, EVs can be plugged into standard household outlets, similar to most appliances.</p> <p>For those without access to home charging, public charging options are readily available. According to PlugShare.com, there are over 900 public EV chargers across O’ahu, Maui County, and Hawai’i Island. Hawaiian Electric operates more than 30 DC Fast Chargers at 26 locations and plans to expand this network further. Workplace charging options for employees are also growing in popularity.</p> <p>Additionally, various organizations, including the State Department of Transportation and local governments, are actively developing public EV charging infrastructure across the islands.</p>
MYTH	<p>EVs don’t have enough range to handle daily travel demands. <i>FALSE!</i></p>
FACT	<p>The range of EVs is more than sufficient for daily use in Hawai’i, where the average daily drive is typically around 30 miles. Most EV models can travel over 200 miles on a full charge. Additionally, many automakers have announced plans to release even more long-range models in the coming years.</p>
MYTH	<p>EVs are not as safe as comparable gasoline vehicles. <i>FALSE!</i></p>
FACT	<p>It is important to note that EVs must meet the same safety standards as conventional vehicles. Below are some common safety issues addressed:</p> <p><u>Driving Safety –</u></p> <ul style="list-style-type: none"> ◆ Weight and Crash Protection: EVs are generally heavier than gasoline vehicles due to their batteries, which can provide better crash protection compared to lighter conventional vehicles. ◆ Stability: The placement of the battery at the bottom of the frame gives EVs a lower center of gravity, making them more stable and less likely to roll over. ◆ Advanced Safety Features: EVs often come equipped with the latest safety technologies, such as collision warnings, autobraking, adaptive cruise control, and lane keep assist. <p><u>Fires and Explosions –</u></p> <ul style="list-style-type: none"> ◆ Fire Risk: Despite concerns, EVs are actually less likely to catch fire than gasoline vehicles and are highly rated for safety. ◆ Ignition Differences: Gasoline ignites immediately upon contact with a spark, while lithium-ion batteries in EVs require significant heat buildup (thermal runaway) to ignite, making EV fires less common. ◆ Media Coverage: EV fires receive more media attention due to the novelty and scrutiny of the technology. In May 2024, EV Fire Safe, an organization funded by Australia’s defense department, identified fewer than 500 EV fires globally since 2010.

