

## The Top 10 Most Popular EV Myths

[According to Joanna Kasses, director of public affairs for clean energy Canada](#)

### Myth 1: EVs are useless in the cold

Myth Busting:

- Range Impact: While EVs do experience reduced range in freezing conditions, the average range of over 450 kilometers still ensures over 300 kilometers of driving, meeting daily needs.
- Gas Cars' Challenges: Gas vehicles also face cold weather challenges, with starting difficulties twice as frequent as EVs, according to a study from Norway.
- Winter Performance Optimization: Strategies like preconditioning the battery, using seat and steering wheel warmers, and eco mode can extend EV range and optimize performance in winter.
- Winter Driving Benefits: EVs offer benefits like remote cabin heating and window defrosting, with almost instant warmth compared to gas cars' lengthy warm-up times. Additionally, EVs have a lower center of gravity and enhanced tire grip, enhancing safety in winter conditions.

### Myth 2: EVs are unaffordable

Myth Busting:

- Initial Cost: While EVs may have higher upfront costs compared to gas models, there are currently 40 to 50 electric vehicle models available in Canada priced below the average new car cost of \$68,000.
- Long-Term Savings: Despite the initial cost difference, owning an EV is much cheaper in the long run due to lower fuel and maintenance expenses. This cost gap is often recouped within just a year or two of ownership, with savings continuing throughout the vehicle's lifespan.
- Examples: Comparisons between popular EV models and their gas equivalents demonstrate significant long-term savings. For instance, choosing a Chevy Bolt over a Toyota Corolla could save almost \$34,000 over 10 years, with the higher upfront cost paid back in just eight months. Similarly, the electric Ford F-150 Lightning could save over \$47,000 over a 10-year period compared to its gas counterpart, with a break-even point of just seven months.
- Future Affordability: Battery prices are declining, and the used EV market is expanding, indicating a trend towards increasing affordability of EVs in the future.

### Myth 3: Canada's EV charging network is inadequate

Myth Busting:

- Home Charging: The majority of EV charging occurs at home, offering a cheaper and more convenient option compared to gas cars. This aspect is often overlooked but contributes to a more convenient lifestyle for EV owners.
- Public Charging Network: While not everyone has access to home charging, Canada's public charging network is keeping pace with EV adoption. Data from the International

Energy Agency places Canada in the middle of the pack in terms of EVs per charge point ratio.

- **Government Investment:** Canada's federal government is competitively investing in charging infrastructure, with per capita spending surpassing that of the US. Over 25,000 publicly available charge points are already operational, with plans for significant expansion, including 100,000 new charge points in the queue.
- **Future Expansion:** Continued efforts are underway to enhance the public charging network, with priorities including installations in multi-unit residential buildings, along highways, and in rural and northern communities where longer daily driving distances are common.

#### **Myth 4: EVs will cause our electrical grids to fail or explode**

Myth Busting:

- **Electricity Usage:** EVs actually use less electricity than many common household appliances like air conditioning units, space heating units, and water heaters. The misconception that EVs draw excessive power from the grid is unfounded.
- **Grid Impact:** A study commissioned by the Government of Canada found that EVs are expected to represent only 3% of Canada's electrical power demand by 2030 and 23% by 2050. This gradual increase allows ample time for planning and investment in grid infrastructure.
- **Utility Preparedness:** Electric utilities are actively preparing for increased EV adoption, offering guidance on EV installations and investing in charging infrastructure. Some are even running pilot programs and building out public charging networks to meet future demand.
- **Government Regulations:** The recently finalized EV availability standard in Canada provides clear expectations for automakers to bring more EVs into the market, aiding utilities in integrating EV targets and trajectories into their demand projections.

#### **Myth 5: EVs are actually worse for the environment than internal combustion engine vehicles**

Myth Busting:

- **Emissions:** Contrary to popular belief, numerous studies have shown that EVs generally have lower life cycle emissions compared to gas cars, even when considering manufacturing and electricity generation. While some studies debate the impact of fully coal-powered grids, in most cases, EVs perform better due to their higher energy efficiency.
- **Canada's Clean Grid:** In Canada, with its 84% clean grid and a move towards Net Zero electricity by 2035, EVs unquestionably have lower life cycle emissions regardless of the province.
- **Battery Mining:** While mining for battery materials does have environmental impacts, it's significantly less than the mining done for fossil fuels. Additionally, clean energy

technologies, including EVs, require only a fraction of the mining compared to fossil fuel extraction.

- Recyclability: EV batteries and their components are highly recyclable, unlike fossil fuels. This means that even though EVs may require more mining for metals and minerals, their environmental impact remains relatively low compared to gas cars.

### **Myth 6: There won't be enough batteries to meet the demand for EVs**

Myth Busting:

- Battery Capacity Projections: Reputable sources like the International Energy Agency and S&P Global Mobility agree that battery capacity will exceed demand by 2030. Global battery manufacturing capacity is expected to quadruple between 2022 and 2030, ensuring a surplus.
- Global Expansion of Gigafactories: Gigafactories, essential for battery production, are rapidly expanding worldwide. North America, which was previously not a significant player, now accounts for 15% of the world's capacity, with numerous gigafactories established and more in the pipeline.

### **Myth 7: EV batteries will pile up in landfills**

Myth Busting:

- Battery Recycling: The concern about EV batteries ending up in landfills is unfounded. Recycling will play a crucial role in managing battery materials, as they are expected to become increasingly valuable due to high demand. S&P Global Mobility projects that around a fifth of global cobalt and nickel demand in 2032 will be met through recycled batteries and production scrap.
- Automaker Initiatives: Automakers are actively investing in recycling initiatives. Partnerships with raw material suppliers and recyclers are being established, with companies like Volkswagen, Audi, Mercedes-Benz, and Tesla leading the way. Some, like Mercedes-Benz and Tesla, are even setting up in-house recycling operations.
- Recycling Capacity: The US, for example, has been criticized for having too much planned recycling capacity, indicating that the industry is preparing to manage end-of-life batteries effectively. Current announcements suggest that the US is already prepared to process all end-of-life batteries until 2044, demonstrating proactive planning and management.

### **Myth 8: EV battery replacements are prohibitively expensive**

Myth Busting:

- Longevity of EV Batteries: Contrary to the myth, most EV batteries have a service life of 15 to 20 years, often outliving the vehicles they power. Some batteries even have a second life, retaining around 80% of their capacity after being deemed unfit for the vehicle.
- Low Failure Rate: Studies, such as one from Recurrent Auto, show that the rate of battery failure among EV drivers is only 1.5%, excluding major recalls like the Chevy Bolt battery recall. Additionally, most replacements occur under warranty, with EVs typically offering a battery warranty of at least eight years or 160,000 kilometers.

- Cost of Replacement: While replacements outside of warranty can be costly (estimated between \$5,000 and \$20,000), such instances are rare. Moreover, as battery prices continue to decline, the cost of replacements will also decrease, ensuring affordability over time.

### **Myth 9: EVs are not safe and catch on fire**

#### Myth Busting:

- Lower Fire Risk: Contrary to popular belief, studies show that EVs are much safer than gas cars in terms of fire risk. A Swedish Public Safety agency found EVs to be 30 times less likely than gas cars to catch fire, while a US auto insurance company reported a 60 times lower likelihood.
- Expert Opinions: The Association of British Insurers states that the fire risk of EVs does not exceed that of traditional internal combustion engine (ICE) vehicles.
- Comparison: Hybrid vehicles are actually more likely to catch fire than EVs, followed by gas cars. EVs are significantly less prone to catching fire, making them relatively safe in terms of fire risk.
- Fire Suppression: While EV fires may pose challenges due to lithium-ion battery chemistry, it's worth noting that gas car fires occur frequently and often go unreported in the media.

### **Myth 10: Canada's EV targets are unrealistic and unachievable**

#### Myth Busting:

- Current Trajectory: Canada is already making significant progress towards its EV targets. In the most recent quarter of available data in 2023, 13% of Canadian car sales were electric, with provinces like BC and Quebec already reaching about a quarter of new car sales being electric.
- International Comparison: Canada's targets are in line with other jurisdictions like California, 16 US states following California's regulations, the UK aiming for 100% EV sales by 2035, and the EU. These regions represent a significant portion of the global car market.
- Data Comparison: Data comparing Canada's targets with those of other jurisdictions shows that Canada's targets are realistic and achievable, especially considering the current trajectory of EV sales and the global shift towards EV adoption.