







Canada's Questionnaire Response

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Policy Structure

Federal

 Responsible for importation, greenhouse gas regulation, safety standards and fuel economy regulation

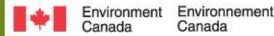
Provincial

- 10 Provinces & 3 Territories
- 86% of Canada Population live in 4 provinces
 - Ontario (38%), Quebec (24%), British Columbia (13%), Alberta (11%)
- Vehicle Registration and Incentives

Municipal

Local Incentives







Canada's Questionnaire

- There are many parties involved with vehicle regulation and policy in Canada, especially for electric vehicles.
- Not all parties were contacted for questionnaire completion due to time constraints, so the responses are a Draft of what we believe to be accurate.



Q1 & Q2: Electric Vehicle Range/ Energy Efficiency

- In Canada, Electric Vehicle Range & Efficiency are measured using industry test procedures. Similar procedures are used in the USA.
 - SAE J1711: Recommended Practice for Measuring the Exhaust Emissions and Fuel Economy of Hybrid-Electric Vehicles, Including Plug-in Hybrid Vehicles
 - SAE J1634: Battery Electric Vehicle Energy Consumption and Range Test Procedure





Q3: Electrified Vehicle driver-user information

- Regulations are designed with safety in mind and use symbols to accommodate a multi-lingual population
 - Enforced at the Federal level by Transport Canada
 - Amendments are currently underway to update the standards





Q4: : Electrified Vehicle recycling and re-use (excluding the battery)

- Vehicle recycling in Canada is influenced by many regulations as it is enforced at the Federal, Provincial and Municipal levels of government
- Electric Vehicles are understood to fall under the same restrictions for recycling and re-use as conventional vehicles



Q5: Vehicle Labeling

- Vehicle Labeling in Canada is very similar to that in the United States
- Labelling is enforced at the Federal level by Natural Resources Canada, Transport Canada and Environment Canada
 - Also, there are additional provisions at the Provincial level in select provinces
- Fuel economy labeling uses information from questionnaire Q1/Q2, EV range and efficiency





Q7: Battery durability

 It is our understanding that the US EPA durability standards for in-use deterioration of HEV and PHEV batteries are also applicable in Canada



Q8: Battery recycling

 Battery recycling is understood to have intensive requirements, as this procedure would have the same restrictions as those imposed on regular vehicle recycling, but with additional provisions

Enforced by Federal, Provincial and Municipal authorities



Q9: Battery re-use (post-mobility)

- In Canada, the electrical grid is primarily controlled at the Provincial Level
- Provincial pilot projects are believed to be underway
- Understood to involve Industry technical standards:
 IEC 15118 and 61850-7-420 and SAE 2836/2847/2931



Q10: On-board charging system

- On-board charging systems are understood to comply with the Canadian Electric Code as given by the Canadian Standards Association (CSA)
 - Similar to the US National Electrical code in many cases
- Federal, Provincial and Municipal governments have authority
- For example, the City of Vancouver has adopted building codes requiring that new buildings contain "PEV-ready" electrical infrastructure.





Q11: Off-board Charging

- Off-board charging falls under Provincial jurisdiction, which is specified by utilities
 - most are leading towards SAE J1772 Standard



Q12: Wireless charging

- Nothing specific to electric vehicles is currently in use, however this would likely fall under frequency and electro-radiation emission restrictions
- SAE standard (J2954) would establish minimum performance and safety criteria



Q13: Vehicle as electricity supply

- Requirements are not yet in place, however this would likely fall under Provincial jurisdiction
- Expected standards are IEC 15118 and 61850-7-420 and SAE 2836/2847/2931



Q14: Regulatory incentives

- Regulatory incentives are currently in place at the Federal level by Environment Canada
 - Under the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations by way of Credit multipliers for electric vehicles which are considered to have no Greenhouse Gas Emissions



Q15: Financial incentives

- Are offered by Provincial governments, for example:
 - Ontario: Up to \$8,500 + HOV lane sticker
 - Quebec: Up to \$8,500
 - British Columbia: Up to \$5,000
- Also, various other incentives for charging equipment





Q16: Consumer awareness

 Natural Resources Canada in collaboration with industry and other government agencies released a technological roadmap to map out EV development, as well as provide consumers promotional material



Q17: Government Operations

- We are not aware of EV incentives at the Federal or Provincial levels of government
- Various incentives are given at the municipal levels

