

EV

THE CLIMATE GROUP

Québec

This is part of
THE CLEAN REVOLUTION

ELECTRIC VEHICLE POLICY INITIATIVE

Summary | Sharing best practices on electric vehicle policy

The Climate Group has built a strong network of 22 state and regional government members and 40 affiliate members across 20 countries, who are committed at the highest political levels to take ambitious action on climate change. The States and Regions Alliance member governments work to identify and share best practices and to spread evidence on the benefits of accelerating a low carbon economy.

Alliance Members include: Baden-Württemberg, Basque Country, Bavaria, Brittany, California, Catalonia, Ile-de-France, KwaZulu-Natal, La Reunion, Manitoba, Ontario, Quebec, Rhone-Alpes, New York State, North Rhine Westphalia, Quintana Roo, Sao Paulo, Scotland, South Australia, Upper Austria, Wales, Wallonia.

Based on its own governance structure, the Alliance has formed member-led working groups focused on concrete solutions to core policy issues. Electric vehicle policy is one of the current topics covered by our working groups.

For a full list of States and Regions Alliance working groups visit theclimategroup.org/what-we-do/programs/States-and-Regions

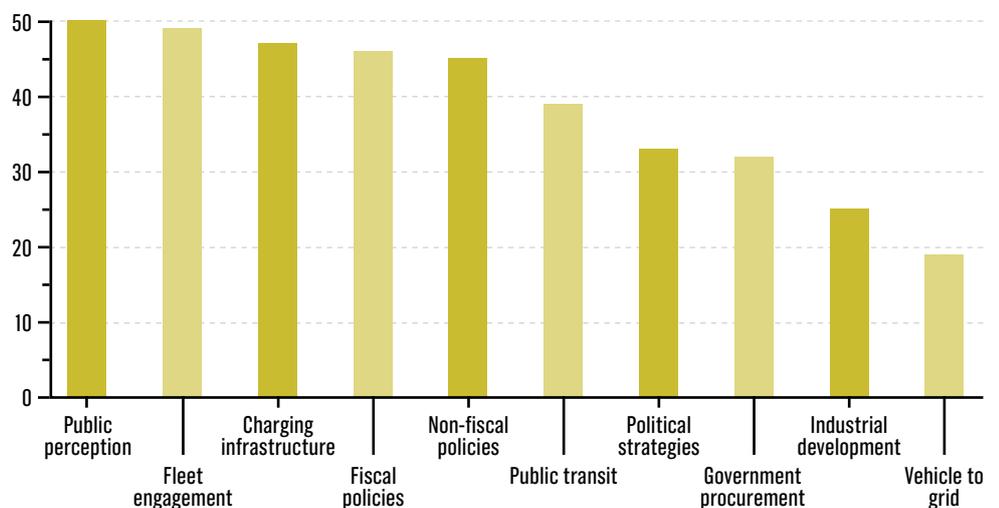
In September 2011, ahead of the anticipated surge in electric vehicle (EV) deployment, we created the Electric Vehicle Policy Initiative (EVPI)—a forum for leading sub-national governments to share experiences, lessons learned and best practices on the development of electric vehicle policies.

The Initiative functions as a working group of the States and Regions Alliance, and is led by the government of Quebec, with participation from the sub-national governments of the Basque Country, Bavaria, British Columbia, Brittany, California, Manitoba, New York, North Rhine-Westphalia, Ontario, Québec, São Paulo and Saxony.

KEY ISSUES

In May 2012, participants met virtually to identify the most critical issues facing their governments in regard to EV policy. In a custom survey, the group identified charging infrastructure and public perception as two of the most important issues.

SURVEY RESULTS—MAY 2012: WHAT ISSUES ARE MOST IMPORTANT TO YOUR GOVERNMENT?

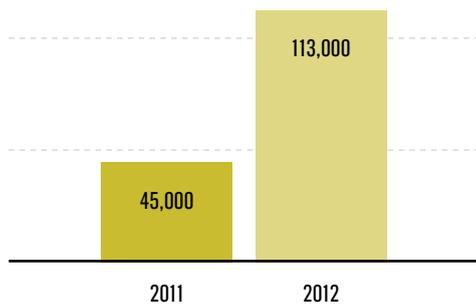


Source: EVPI Survey

Note: Scores are based on a points system in which issues ranked the most important received 10 points, issues ranked the second most important received 9 points, and so on.

Other key issues included fleet engagement, fiscal policies and non-fiscal policies for promoting EV deployment.

APPROXIMATE ANNUAL SALES OF EVS GLOBALLY



Source: International Energy Agency

PUBLIC PERCEPTION

Over the past two years, global EV sales have grown exponentially. According to the International Energy Agency, global EV sales more than doubled between 2011 and 2012, reaching over 180,000 vehicles by the end of 2012.

However, research shows that there are still a number of barriers that must be overcome before EVs can reach the mainstream market, including high upfront vehicle cost, misperceptions about performance, and a general lack of familiarity with the technology.

In August 2012, participants, along with the Fraunhofer Institute and the Transport and Climate Initiative, met virtually to share experiences and ideas for engaging consumers on EVs. The discussion focused on three core questions:

Who should be targeted?

- **Mainstream consumers** are still mostly out of reach due to high upfront vehicle costs. A study by the Fraunhofer Institute in Germany found that even among people who drove, and liked, EVs in a pilot program, only a small number said they would consider purchasing one, citing cost as the main barrier.
- Instead of mainstream consumers, governments could focus their near-term efforts on the most likely **next adopters** (i.e. people that already have a purchase intention) and addressing their last remaining concerns (e.g. safety, performance, etc.).
- Governments could also focus on **corporate and government fleets**, which are more likely than individuals to consider the “total cost of ownership” and take on the potential risks of EV ownership.
- Demand from next adopters and fleets could play a key role in driving greater scale in battery manufacturing—facilitating cost reductions for the broader consumer market and providing a bridge to mass-market adoption.

What is the right message?

- To date, most governments have focused on **providing objective information and dispelling myths**. For example, California’s Drive Clean website provides consumers with a sophisticated buying guide to research and compare the range of available low-emission vehicles before making a purchase. And Quebec’s consumer awareness campaign focuses on busting the most widely held EV myths.
- The group also discussed potential new messages, such as educating individual consumers about the “total cost of ownership” and appealing to subjective preferences (e.g. what kind of person drives an EV?) as opposed to objective reasoning.
- However, most governments agreed that **basic education** on the technology is the most urgent need, and could be much more effective going forward.

What is the best way to deliver the message?

- To date, most governments have employed some combination of live events, websites and advertisements to communicate their EV messages to consumers.
- The group also discussed using new platforms and making greater use of **social media**. For example, in a survey of more than 2,000 Quebecers in the market to purchase a vehicle, 21% said they learned about EVs from social media.



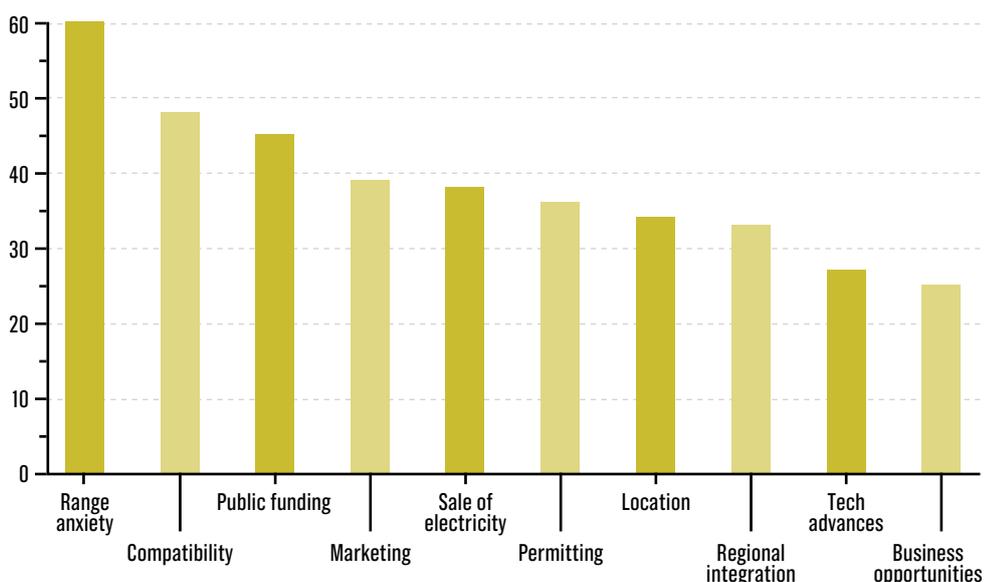


CHARGING INFRASTRUCTURE

While most charging is expected to take place in the home, a sufficient public charging network is necessary to extend travel distances and help alleviate consumers' "range anxiety." For example, Pike Research estimates that in 2015, a full 34% of all charging infrastructure will be either public or workplace charging.

But when it comes to how best to design a public charging network, a number of key questions remain. In a custom poll, EVPI participants listed "How much public investment is needed?" and "Should governments invest in public infrastructure to address range anxiety?" among the most pressing questions.

SURVEY RESULTS—DECEMBER 2012: WHAT PUBLIC CHARGING ISSUES ARE MOST IMPORTANT TO YOUR GOVERNMENT?



“[FIGURING OUT PUBLIC CHARGING] IS THE TOP PRIORITY FOR US AT THE MOMENT’.”

Source: EVPI Survey

Note: Scores are based on a points system in which issues ranked the most important received 10 points, issues ranked the second most important received 9 points, and so on.

¹All quotes are taken from the virtual discussions that took place in 2012.

“WE’RE NOT SURE IF A LARGE-SCALE ROLL OUT IS SOMETHING WE NECESSARILY NEED TO DO RIGHT NOW.”



In December 2012, participants, along with the HYER Consortium in Belgium, met virtually to discuss these questions:

How much public investment is needed?

- Most governments reported a **range of charging activity** already being undertaken in their jurisdictions by federal governments, municipal governments and businesses—raising the question: How much further investment is needed by state and provincial governments?
- Some governments have decided to make an **initial investment** in basic public charging infrastructure, seeing it as “critical to [their] market transformation towards electrification.” For example, through its US\$2.7 million Community Charging Infrastructure Fund, British Columbia provided incentives (75% of the cost up to US\$4,000) for the planning and installation of 570 Level II charging stations across the province.
- Others are **waiting on the results** of commercial activity, pilot projects and studies to better assess the need for further public investment. For example, the US\$100 million rollout of 200 fast-charging stations and 10,000 Level II chargers in parts of California by NRG Energy, is expected to yield significant learnings in the coming years.

Where should chargers be located and at what level?

- For governments that have decided to invest, deciding where charging should be located can be difficult. Needs vary significantly from region to region. For example, most parking spots in Manitoba are already equipped with Level I outlets to accommodate block heaters. As such, most governments are engaged in some kind of **local-level planning** with key stakeholders to identify priority locations.
- Several governments have installed or are in the process of installing Level III **fast chargers on highways**, to enable continuous travel between major destinations. For example, both North Rhine-Westphalia and Saxony have installed Level III fast chargers at 90-100 kilometer intervals along the German Autobahn.

Who should pay for it?

- Funding for public charging can come from a **range of government budgets**. For example, the federal government provides the incentives in Germany, while the provincial government provides the incentives in British Columbia. In places like California, incentives come from a combination of federal, state and city budgets.
- Funding can also come from the **private sector**. For example, Tesla has built a network of fast chargers down the coast of California, while Hydro-Québec is piloting a network of over 225 charging stations throughout Québec. While such commercial models exist, most governments agreed they need to be developed further in the coming years. In some regions, such as Manitoba, doing so will require addressing legal restrictions around the resale of electricity.
- The existence of such a diverse range of charging programs also raises the need for a level of compatibility and **standardization**—an area for further sub-national government cooperation.



WORKPLACE CHARGING

Following the meeting on charging infrastructure, participants were joined by the U.S. Department of Energy (DOE) and Dell in April 2013 to discuss the DOE's Workplace Charging Challenge—a public-private partnership to increase the number of US employers offering workplace charging by tenfold over the next five years.

The Workplace Charging Challenge was launched in January 2013. Since then, over 48 US employers have joined the program, including Bloomberg, Coca-Cola, Dell, Duke Energy, Google and others.

Lessons shared from the Challenge included:

- DOE's motivation for creating the Challenge is to help **fill the infrastructure gap** between home and public charging, increase the visibility of EVs and help grow the EV market.
- Most companies' motivation for joining the program is to meet existing employee demand, **retain and attract employees**, and support sustainability goals.
- After conducting stakeholder outreach, DOE decided to follow a **voluntary partnership model** that: is open to employers of all sizes; encourages charging to meet employee demand instead of requiring a specific charging level or number of stations; utilizes existing stakeholder networks for marketing and promotion; and focuses on the sharing of experiences and best practices as opposed to heavy data collection.
- DOE sees its most important role as **providing technical assistance** to companies by collecting and sharing best practices.
- Governments can best **support companies** by helping them to understand available incentives and charging options; coordinating with contractors, property owners and utilities; and providing basic information, standardized employer-employee agreements and surveys to assess employee needs.



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NEXT STEPS

The Climate Group and Québec are assessing additional ways that the EVPI can support leading sub-national governments in their transition to electric transportation. If you would like to join the group, or have ideas for ways we could work together, please let us know.