

Show Me, Don't Tell Me.

First-hand Experience is the
Gatekeeper to Widespread EV
and EVSE Adoption



Electric Vehicle Servicing Equipment (EVSE) is critical to widespread adoption of EVs. The ILLUME Team had the pleasure of collaborating with ERS and Dunsky Energy Consulting to conduct an evaluation of National Grid Massachusetts's Electric Vehicle (EV) Charging Station program (Charging Program).¹ The program is designed to spur the development of Level 2 charging stations and Direct Current Fast Charging (DCFC) stations throughout National Grid's service territory in Massachusetts. ILLUME led market actor and consumer research and learned a thing or two about the attitudes, beliefs, and motivations of internal combustion engine (ICE) consumers and electric vehicle charging site hosts. Here, we share a few key learnings from their perspective.

NON-EV OWNERS (ICE CAR OWNERS)

ILLUME surveyed non-EV owners in Massachusetts, unearthing persistent barriers to EV adoption. Here is what is top-of-mind for them.

“I do not know much about EVs.”

Awareness does not equal knowledge when it comes to EVs.

- Over 70% of ICE car owners could name an EV brand.
- However, only about 10% of non-EV owners felt they knew a lot about EV attributes (driving range, makes/models, how or where to charge, and difference between battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs)).

“I do not know if this will work for my life.”

The most pressing question: Will this meet my daily need?

- Nearly half of customers (48%) answered “don't know” or “neutral” to whether EVs could meet their daily needs.
- Even more customers were unsure or neutral about whether EVs are more fun to drive than conventional vehicles (75%), as reliable (56%), more expensive to maintain (54%), or better for the environment (48%).

EASY WINS TO SUPPORT GREATER EV ADOPTION

1. Seeing is believing for would-be EV owners. Increase visibility of EVSEs using highway, city, and neighborhood signage.
2. Highway access to fast charging will be necessary to drive adoption for consumers who want to use their EV for regional and vacation travel.
3. To get customers over the fear of losing beloved features such as AWD, promote EV's “fun to drive” features and connect more customers to test drives.
4. Consumers will buy what they can try. Create neighborhood EV drive events. Invite current EV owners to discuss their cars with would-be EV owners.

“Can I afford it?” and “Can I get where I need to go, and how long will it take?”

Upfront cost and range anxiety have to be addressed simultaneously.

- Upfront price and driving range emerged as the biggest questions and concerns that non-EV owners have about EVs.
- Long trips—across Massachusetts and out-of-state—are top-of-mind for non-EV owners thinking about whether an EV could meet their needs. Nearly half (47%) of non-owners felt that the EVs on the market would not meet their needs for long trips.
- Range anxiety remains a limiting factor as well as range itself. Some customers mentioned a specific range that would meet their criteria, most commonly 300 miles (and some wanted 400 miles).

“EV’s do not have the features I like in my car.”

For many, EVs are not a one-to-one replacement with their existing ICE cars as EVs lack valued features.

- Some customers felt that the EVs on the market may not meet their needs due to drivetrain, towing, trailering, or cargo capacity.
- In particular, the drivetrain may be a short-term hurdle: nearly two thirds of respondents said their primary vehicle is all-wheel drive (AWD) or four-wheel drive (47% and 16%, respectively; 63% together).

“I see charging around, but it might not be where I need it, when I need it.”

Seeing may not equal believing.

- Nearly three quarters (72%) of non-EV owners reported seeing EV charging stations in Massachusetts, most commonly at retail locations (including restaurants, convenience stores, pharmacies, and malls) and paid public parking.
- Just under one quarter (24%) have seen one in a travel plaza or highway rest stop, and 12% at a gas station.
- Despite seeing charging stations in public locations around home or work, these personal experiences have not reduced customers’ anxiety about charging options and range.

When it comes to charging availability, some customers expressed an expectation that they should be as common as gas stations.

About 62% of non-EV owners felt that, “If I had an electric vehicle, I’d always worry about where to charge it,” and 61% felt that, “If I had an electric vehicle, I’d constantly worry about running out of battery.”

DCFC SITE HOSTS

ILLUME interviewed DCFC prospective site hosts, who were looking for particular business outcomes when installing DCFCs. This is what site hosts consider when looking to invest in fast charging.

“Tell me about my options.”

Prospective site hosts relied on vendor relationships for guidance.

- Prospective site hosts rely on EVSE vendors to steer them toward opportunities and guide them through station planning.
- Each prospective host we interviewed had a close relationship with at least one vendor who they considered a partner and who they relied on for information about available funding from states and/or other funding sources including utility programs.

“Where can I get the highest incentive?”

Site hosts think, and plan, across state lines.

- Funding differences between states drives locational decisions for multi-state businesses. DCFC prospective hosts that operate in multiple states are more likely to invest in states that have higher funding opportunities.

EASY WINS TO SUPPORT GREATER EVSE SITE HOST PARTICIPATION

1. Communicate the business cases for DCFC site hosting using both revenue and customer loyalty models.
2. Develop vendor-specific incentive programs, as most would-be site hosts are leaning on EVSE vendors to help them navigate the adoption of this new amenity.
3. Use industry specific case studies to communicate the value of EVSE site hosting, as potential site hosts are looking for more concrete “proof” of the benefits.
4. Consider incentive structures that entice potential site hosts to pilot DCFCs at select locations. This will help site hosts determine the business value of investing in DCFCs.

“What will I gain by installing these stations?”

Prospective site hosts we interviewed were interested in installing DCFC stations for different reasons.

- Some prospective hosts believed owning and operating DCFC stations could be profitable, especially as EV adoption increases; this perspective was held by gas station and convenience store representatives we interviewed.
- Others thought that hosting a station could provide a competitive advantage and improve their customers' experience. These prospective site hosts were not looking for a new revenue opportunity but, rather, were considering offering fast charging as an amenity that their competitors might not offer.

“Let us try it out and see how it goes.”

Prospective site hosts want to better understand whether their initial investments in DCFC stations would result in positive business cases that attracted more customers and increased revenue and profits.

- Prospective site hosts considered their planned DCFC installations as “test cases.” They were seeking and gathering data to analyze the business case for potential future investments and at what scale.
- All representatives interviewed saw the EV market as emerging, with an unknown growth trajectory. Representatives were uncertain about customer usage of the chargers and their potential revenue.
- Several interviewees acknowledged that operating costs (including charging behavior impacts of electric bill demand charges) are also challenging to forecast.

