



ON THE ROAD
TO CLEAN AIR

2016 Final Report

*Plug In
America.*



reach
STRATEGIES



RESULTS

During 2016, MASS DRIVE CLEAN (MDC) completed its second year. Once again the impact on consumers across Massachusetts was overwhelmingly positive. Through thirteen events conducted with eleven different site hosts, MASS DRIVE CLEAN:

- Delivered a safe and positive EV test drive experience to over 1,100 people;
- Provided the first EV test drive ever for the overwhelming majority of participants - at least 79% of those taking test drives reported it was their first ever experience driving a plug-in electric vehicle (PEV); and
- Reached at least another 50,000 or more residents with information about the campaign and Massachusetts PEV incentives via campaign-related outreach and handouts.

The campaign has proven beneficial for a range of Massachusetts businesses. Leading companies like Analog, Raytheon, National Grid, and educational institutions like Worcester Polytechnic Institute and UMass Amherst participated as site hosts. Quirk Chevrolet, a regular participant in MDC events, has become one of the leading Chevy Bolt dealers in the nation. A diverse array of other companies - from e-bike vendors to electric vehicle charging infrastructure and solar providers - participated in the campaign.

A detailed report about the 2016 campaign experience follows below.

BACKGROUND

Since its inception in 2015, the Commonwealth of Massachusetts has sponsored MASS DRIVE CLEAN - the nation's first annual state-sponsored electric vehicle test drive campaign.

MASS DRIVE CLEAN has introduced thousands of people to the benefits of driving electric and the latest generation of plug-in electric vehicles through professionally-produced test drive events held at strategic locales across the state. Each custom-tailored event is offered to hosts as a no-cost opportunity through the program. Event components include professional on-site staffing with trained EV specialists to ensure safety and a positive consumer experience, a range of vehicles from a variety of participating auto dealers and manufacturers, and pre- and post-event surveys to document changes in consumer attitudes towards EVs as a result of the test drive experience.

During 2016, MASS DRIVE CLEAN grew to include thirteen events, up from the eight-event campaign the prior year. Participating event hosts reflected an even more diverse array of locales across the state. Goals for the 2016 campaign included:

- Incorporating more Central and Western Massachusetts site locations in the campaign;
- Exploring prospects for garnering corporate support for the effort; and
- Conducting events at a mix of community, corporate/workplace, and thought leader locales to garner a greater comparative sample of the impact on conversion rates to sale/lease of different event types.

The expanded 2016 campaign was made possible due to a growing roster of contributors. Initial funding support provided by MassDEP was augmented with support from the John Merck Fund, corporate donations from National Grid and Kia Automotive Group, and the prospect of support from the US Department of Energy. The campaign production team includes the State of Massachusetts Executive Office of Energy and Environmental Affairs (EEA), Plug In America (PIA) as its nonprofit partner, and communications and event partner REACH Strategies as the executing agency.

MASS DRIVE CLEAN IN THE CONTEXT OF MASSACHUSETTS CLEAN AIR GOALS

Massachusetts has a long history of implementing programs to protect the state's air quality as part of its comprehensive strategy to reduce the impacts of air pollution and climate change. During 2014, the Massachusetts Executive Office of Energy and Environmental Affairs, the state's top environmental and energy agency, took the lead in working with the nonprofit Plug In America and its professional campaign design and implementation partner REACH Strategies to design MASS DRIVE CLEAN. The campaign complements commitments made by Massachusetts through its participation in the October 2013 8-state ZEV MOU and the related multi-state action plan (<http://www.zevstates.us/about-us/>). Given the low background awareness of PEV's in Massachusetts, a direct consumer engagement campaign was identified as a crucial additional strategy to help the state achieve its goal of having 300,000 or more ZEVs on the road by 2025.

MASS DRIVE CLEAN campaign events are designed to introduce Massachusetts residents to the fun and benefits of driving electric in a pressure-free, educational environment. Why a test drive campaign? Introducing potential consumers to electric vehicles through dynamic test drive experiences has proven to be the most effective mechanism for boosting consumer awareness and spurring adoption by individuals and fleet owners alike. Well-designed and professionally produced events overcome consumer confusion about ZEVs, help educate them about the specific attributes of the cars, and provide a launch point into adoption.

Test drives present a range of available ZEVs in one place, providing consumers a variety of ways to experience the cars that would be virtually impossible to otherwise replicate. Events are oriented to providing important information, rather than subjecting participants to high pressure sales pitches. The campaign structure helps consumers feel more comfortable in experiencing the vehicles for the first time, ask a range of questions, and prepares them to successfully navigate a later sales/lease transaction at dealerships. Survey work conducted in conjunction with the events - offered pre-, post-, and in the months trailing the drive - provides important, ongoing data on evolving consumer perceptions and the positive impacts from directly experiencing the vehicles.

The campaign design also provides market proponents like government agencies, private entities aligned with the state's clean energy and greenhouse gas reduction goals, and supportive nonprofits important opportunities to engage with receptive audiences as part of the campaign's showcase events. The events provide an opportunity for the state to share information about consumer rebate programs, electric vehicle infrastructure grants (including workplace charging grants), and for a range of clean energy sector businesses and other stakeholders the chance to interact with and further educate receptive audiences.

CAMPAIGN ELEMENTS

Hosts

Criteria for evaluating potential hosts for the 2016 campaign events included:

- Size of the potential audience at the host's locale;
- Involvement in Massachusetts ZEV/clean energy programs;
- Geographic location; and
- Ability to provide onsite charging.

Campaign event hosts included:



Partners

A wide range of partner organizations - private companies, nonprofits, and government agencies - offering products and services that support PEV adoption and contribute to broader sustainability and climate objectives participated in MASS DRIVE CLEAN 2016. Partners are selected for participation in events based on their capacity to help educate consumers about PEVs and other sustainable lifestyle options that can be enhanced by driving electric. Sustainability options on display during the events included renewable energy and energy efficiency technologies, alternative commute options, bikes (and electric bikes), among others. Partners received display space at the events and contributed to a wide range of pre- and post-event communications activities.

Partners included:







CAMPAIGN OUTREACH

A diverse array of outreach efforts helped foster awareness of the 2016 campaign. Once confirmed as a campaign participant, event hosts receive a communications kit containing a range of promotional tools including a host-specific poster, language for email blasts and newsletter blurbs, and a variety of information resources about plug-in electric vehicles. When appropriate, the campaign team also provides press releases, social media content, and conducts outreach to community partners. Each host receives tailored content related to specific elements that are unique to their event. The majority of participating event hosts participated in the campaign's outreach efforts.

In addition to hosts and partners sharing events on their [websites](#) and with thousands of followers on [Twitter](#), [Facebook](#) and [Instagram](#), dealerships joined in to increase audience reach. For example, the [Mercedes-Benz of Natick](#) Facebook page, which is followed by over 11,750 people, posted about its participation in November's Raytheon event.

Local media created yet another channel for people to learn about the EV program. [Greenfield Reporter](#) included the EV Ride and Drive at the Garlic and Arts Festival as part of its "portal to the future" article (estimated reach of 32,000). The [Telegram](#) in Worcester covered the WPI event with interviews, photos, and video (an estimated reach of 180,000). Media outlets also shared stories via social media including [Edible Boston](#), a magazine followed by more than 9,600 people on Facebook. Social media combined with local news coverage offered multiple touch points for boosting participation in the MASS DRIVE CLEAN campaign and sparking greater awareness of EVs and statewide incentives.

WRSI - 93.9 The River
July 25, 2016

Do something cool this Saturday - check out an electric vehicle at our Mass Drive Clean Expo! No-sales-pressure test drives of lots of electric cars. Rain or shine in our station parking lot, 15 Hampton Ave. Northampton! Thanks to our sponsors Northeast Solar and UMassFive College Credit Union! 10-2, see you there!

**TEST
DRIVE
ELECTRIC VEHICLES!**

No sales pressure! Lots to try!
Mass Drive Clean Car Expo
10am-2pm, July 30th

Test drive electric cars at our Mass Drive Clean Expo! | 93.9 & 101.5 The River

Test drive electric cars at our Mass Drive Clean Expo! Curious about electric vehicles? Take some for a test drive during our FREE, no sales-pressure Mass Drive Clean Expo!

WRSI.COM

Edible Boston
September 19, 2016

18th Annual North Quabbin Garlic & Arts Festival is Sept 25-26, 10-5PM at Forster's Farm, in Orange. The festival emphasizes what is homegrown, handmade and high quality, as well as what helps preserve and support the environment and the community. You'll be able to test drive an electric vehicles with MASS DRIVE CLEAN. The ride and drives will be setup at the remote parking location prior to entering the festival. Admission: \$5 for adults, kids 12 and under free | Weekend pass \$8.
<http://ow.ly/4QHJ3043Gpq>

North Quabbin Garlic & Arts Festival

Two Days of Peace, Love and Garlic!

GARLICANDARTS.ORG



TEST DRIVE BREAKDOWN

Once at the event, an onsite registration process for attendees to receive specific test drive spots facilitated an efficient ongoing test drive process.

Event	Total Test Drives	Passengers	Unique Waivers
Analog Devices, Wilmington	209	18	180
Northhampton MDC	103	13	41
Farm Fresh Festival (x2)	19	21	30
MassDEP	44	32	---
WPI	40	31	---
Reebok	110	37	---
Garlic & Arts	70	4	18
UMass Amherst	25	13	34
National Grid	155	14	60
Analog Devices, Norwood	54	15	43
Raytheon Civil Communications	64	12	19
Corcoran Management	0	17	23
Total Drivers	893	227	448
Total Passengers	227		
Totals	1120		



DEALER/VEHICLE PARTICIPATION AND REPRESENTATION

The 2016 campaign saw an increase in manufacturer and dealer participation over the 2015 effort. Twenty-six (26) dealers participated across events. Of those, eleven dealers attended multiple events - nine participated in more than two events and two participated in two events. A wider variety of vehicles were also featured - sixteen (16) models in 2016 from twelve (12) manufacturers, up from ten (10) models in 2015. Models included the Audi A3 etron, BMW i3, BMW i8, BMW X5 xDrive40e, Chevrolet Volt, Cadillac ELR, Ford C-Max Energi, Ford Fusion Energi, Kia Soul EV, Mercedes-Benz B-Class, Mercedes-Benz GLE550e, Nissan LEAF, Porsche Cayenne E-Hybrid, Tesla Model S, Volvo XC90T8, and the Volkswagen e-Golf.

Though MASS DRIVE CLEAN campaign staff ultimately succeeded in securing a diverse array of vehicles that represented different use cases and price points at every event, the campaign continued to encounter the ongoing challenge of garnering participation from a wide variety of vehicles. Identifying a diverse range of vehicles to include in events was particularly challenging in Western Massachusetts given that many dealerships there do not maintain an inventory of EVs. Nevertheless, garnering improved electric vehicle availability across the state will be crucial for ensuring that Massachusetts residents have adequate access to the cars.



2016 CAMPAIGN FEEDBACK

Survey findings and host/participant feedback underscores the capacity of MASS DRIVE CLEAN to improve consumer perceptions of driving electric.

- **75%** had never before driven a PEV*
- **83%** had a more favorable view of PEVs after their test drive
- **73%** had never before been a passenger in a PEV
- **68%** stated they were more likely to purchase a PEV post-test drive

2015 IMPACT

Survey feedback from the 2016 campaign found that among participants:

- **79%** had never before driven a PEV*
- **84%** had a more favorable view of PEVs after their test drive
- **72%** stated they were more likely to purchase a PEV post-test drive
- **12.5%** of follow-up survey respondents leased/purchased vehicles within six months of their experience
- **74%** stated that they would probably make an EV their next vehicle purchase
- **82%** of participants had spoken with family or associates about electric vehicles and **70%** looked online for information about electric vehicles after the event
- **52%** drove another electric vehicle and **28%** had visited an electric vehicle dealership in person in the months following the event

2016 IMPACT

*Confusion among consumers regarding hybrid technology vs. plug-in vehicle technology may mean that an even higher percent of participants were first-time EV drivers.

Pre-Test Drive Surveys = 504; Post Test Drive Surveys = 335

"Event went over very well with employees. Lots of good feedback." - David Chamberlain, Raytheon Civil Communications

"The REACH team was excellent to work with." - Marc Hauman, Wagner BMW of Shrewsbury

"Overall, this was a very good event, well organized and effective at exposing employees to new EV cars. We received a lot of positive feedback from those who attended. It helped Reebok employees to see the value of EV cars and reduce vehicle cost concerns." - Bob Rich, Reebok

"A very well run event and our employees enjoyed seeing and test driving the Electric Vehicles. The REACH team was a pleasure to work with. They had lots of information and made it easy to organize this event for our employees. The event was a success." - Colleen Donham, Analog Devices Norwood

FINDINGS

Consumer response to MASS DRIVE CLEAN over its first two years remains overwhelmingly positive. MASS DRIVE CLEAN events offer a fun and engaging opportunity for consumers to learn about the latest electric vehicle technology, charging infrastructure options, and vehicle incentives in an educational environment absent any sales pressure. Ensuring that campaign events are staffed with trained PEV specialists provides an opportunity for event staff to backstop specific dealer and auto company representatives with a range information about the broader PEV market that often goes beyond the expertise of traditional car company employees.

Comparing data collected over the first two years of MASS DRIVE CLEAN implementation provides an important snapshot of the relative progress of the PEV market in Massachusetts as well as additional insight in structuring the most impactful events for supporting crucial statewide clean air goals.

ONE: Vehicle Availability Remains Low and Most Massachusetts Residents Have Not Driven A PEV

Ongoing challenges securing an array of vehicles for campaign events were mirrored by the overwhelming percent of participants who were taking their first ever PEV test drive - the percentage of first-time PEV drivers increased from 75% in 2015 to 79% in 2016. When the likelihood that consumers confuse hybrids with PEVs in their survey responses is taken into account, it is possible that 85-90% of test drive participants are having their first ever PEV experience during a MASS DRIVE CLEAN event.

Though MASS DRIVE CLEAN events are intentionally structured to reach new PEV drivers, the extraordinarily low experience with the vehicles outside of the events, coupled with the relative dearth of vehicle supply across wide swaths of the state, underscores a crucial consumer exposure and vehicle availability gap that must be closed in coming years to ensure that Massachusetts reaches its ZEV deployment goals.

28% of participants visited an electric vehicle dealership in person in the months following the event

TWO: Test Drive Exposure Remains a Powerful Tool for Motivating Consumers, Garnering 12.5% or Greater Conversion Rates

Despite the low baseline awareness about the vehicles, PEVs continue to be viewed overwhelmingly positively by consumers after their drive experience. Improvements in favorable views towards the vehicles remained consistently high over both test drive seasons, with 83% and 84% of consumers reporting improved perceptions of the vehicles after the test drive during the respective campaigns. The 2016 participants who stated that they were more favorably inclined to purchase an EV as a result of their exposure to the vehicles (72%) translated into an 12.5%

conversion rate to vehicles leased or purchased within the six-month period directly following the events. This sale/lease conversion rate from test drives has now been born out in MASS DRIVE CLEAN over two years and mirrors campaign findings from other parts of the country.

CALCULATING THE MDC CONVERSION RATE

The over 72% of 2016 participants who stated that they were more favorably inclined to purchase an EV as a result of their exposure to the vehicles translated into an 12.5% conversion rate to vehicles leased or purchased within the six month period directly following the events.

THREE: Conversion Rates Suggest An Implementation Roadmap for Achieving State ZEV Deployment Goals Over the Coming Years

The capacity of the test drive campaign to translate roughly 80-90% first-time PEV drivers into a 10%+ sale/lease conversion rates provides an important clue about the viability of ZEV deployment goals set by the state. As more PEVs become available and ever greater numbers of Massachusetts residents are exposed to them, the prospect of garnering 10% or higher conversion rates from first-time drivers provides a path through which the state and other aligned actors can organize systematic efforts to introduce residents to the vehicles.

Extrapolating data over MDC's first two years suggests that 80-90% of the 5 million licensed drivers across the Commonwealth have yet to have yet to test drive in a PEV. Closing that exposure gap over the coming eight years, combined with the range of vehicle incentives and charging infrastructure investments that will continue to be offered in the state, will provide an ongoing stream of new PEV drivers that will put Massachusetts on the path to achieving its deployment goals. While MASS DRIVE CLEAN will not have to close that gap on its own, it can provide a crucial source of publicly available data about the best pathways for introducing residents to the vehicles and a running tally on improvements in background awareness.

FOUR: A Diverse Roster of Campaign Events Provides the Strongest Path for Achieving State Clean Air Goals

The larger 2016 campaign roadmap afforded an opportunity to target a wider variety of event locations and explore their relative impact in supporting a stronger PEV market across Massachusetts. MASS DRIVE CLEAN 2016 targeted three types of campaign events: workplace, community/public, and thought leader. The 2016 campaign data creates a picture of their respective roles in supporting the evolution of the broader ZEV market. Workplace events generate the highest participation from consumers most likely to purchase a vehicle and strong sales/lease conversion rates. Community/public events garner greater total exposure among residents and help open the possibility for a PEV purchase in later years; events attended by high likelihood to purchase attendees can also demonstrate strong conversion rates. Thought leader events create the opportunity for introducing entirely new sectors to the prospects for supporting PEVs. An overview on the relative impact of each event type follows below.



Workplace Events - Strong Conversion Rate to Sale/Lease

Workplace events offer the distinct advantage of providing a targeted channel to high likelihood-to-purchase consumers in a setting that is most amenable to allowing those consumers to materially advance their PEV sales search process - a midday test drive experience during their workday. Beyond offering the ability to target certain demographics in a way that is difficult to achieve in other event settings, it is likely that consumers are voting with their feet in participating in a vehicle test drive while at work. Consumers closest to needing a new vehicle are likely among those with the greatest interest in allocating time during the workday to participate in a workplace test drive event. Across 2015-2016, the eight (8) workplace events produced 765 direct exposures via test drives and an additional 13,000 exposures through outreach and promotion.

Community/Public Events - Strong Overall Exposure Potential

Public showcases across both campaign years have been held at large festivals, public events hosted by specific towns/municipalities, and higher education institutions. Across both event years, a total of eight (8) events have produced 649 direct exposures via test drives and 35,000 exposures to campaign resources. Public events can vary widely in test drive numbers, though they often engage much larger and more diverse audiences given what is typically a larger overall event size. Public events require the most intense pre-event promotion. Outreach channels include press releases, social media, and other methods as needed given event specifics. The wide range of outreach opportunities generates greater indirect exposure through pre-event promotion, on-site interactions, and post event follow up even though the overall test drive numbers can at times be low. The wide range of differences between community/public events means that they generate very disparate conversion rates.

Thought Leader Events - Strong Market-Moving Potential

Thought leader events include conferences such as the annual National Grid Energy Summit where fleet operators or corporate and civic leaders are in attendance, multi-unit dwelling (MUD) locations and working with public agencies such as MassDEP. Although total test drive rates from these events are the smallest, they hold significant market moving potential due to the audiences they can reach. During 2015-2016 four (4) thought leader events produced 313 direct exposures via test drives and 2,000 exposures to event materials. To date, events held at multi-unit dwellings (MUD) have proven to produce fewer test drives; however, they serve as an excellent educational opportunity for MUD residents. Mobilizing MUD landlords to offer more vehicle charging options could unlock an entirely new market segment. In those cases where infrastructure is available, campaign events suggest that many renters remain unaware that the resource is available on the property. For properties that do not yet offer charging, PEV events can serve as a launch point for discussions among residents and property managers about the best ways to support greater utilization. For events held at MUDs in particular, additional event components such as raffles, specialty vehicles, food and beverage options and ample promotion to incentivise attendance can be crucial for boosting participation.

FIVE: The Statewide Test Drive Campaign Model Complements Consumer Buying Habits for New Vehicles

Consumer data show that the era of multiple visits to dealerships as the primary means for vehicle shopping is over. Consumers now do the majority of their vehicle shopping online and visit just one or two dealers before making a purchase. Increasingly, consumers have made most of their vehicle buying decisions before they even enter the showroom.

PEV test drives offer an opportunity to bring consumers into that buying chain for ZEVs in a way that would otherwise not be available to them. Consumers are less likely to research a vehicle that they have never before experienced. Yet campaign survey data across both years demonstrates that 72% of ride and drive attendees conducted further online research about PEVs post-event.

Using the test drive as a jumping off point for that research dovetails with how the vast majority of Americans shop for cars. Autotrader and Kelley Blue Book [report](#) a combined 38 million unique website visitors per month in 2016. According to Kelley Blue Book, 60% of their visitors will purchase a vehicle within 60 days. Professionally staffed, smartly designed, no-sales pressure events can help bring consumers from the start to the mid-way point in the consumer adoption process as they begin their web-based research.



NEXT STEPS FOR MASS DRIVE CLEAN

Survey feedback after MDC events demonstrate that the campaign continues to provide a fun, informative opportunity to experience zero-emission vehicles (ZEVs) through test drives and to learn about other sustainable technologies via showcases accompanying each event.

Based on the strength of the campaign to date, developing an expanded event calendar that reaches an even more diverse set of venues will be crucial to moving forward. At a minimum, a 40-50 event annual campaign calendar is likely a good starting point for ensuring that MASS DRIVE CLEAN delivers enough test drives and generates adequate exposure to substantially advance vehicle penetration in the state; of course, an even larger event calendar (50 - 100 events each year) would go even further.

As the multi-year experience of the program grows, the opportunity to return to particular sites each year will also emerge. It is possible that year-to-year first time drive numbers will begin to go down - with a concomitant uptick in sales/lease conversion rates - as the campaign has more opportunities to return to particular settings.

Developing a more robust program of sustainable lifestyle fairs to accompany the test drives will also be an important program design evolution to afford MASS DRIVE CLEAN the greatest opportunity to support a host of clean air goals in Massachusetts.

The growing roster of vehicle choices for consumers also offers important opportunities. The presence of long range battery electric vehicles at lower price points - such as the Chevy Bolt and the Tesla Model III - open up new categories of consumers that can join the PEV market. Fuel cell vehicles, also important in the ZEV strategies for states and companies, are also emerging that can begin to be included into consumer events. Finally, leveraging the MDC campaign effort with EV-focused programs such as those soon to roll out from utilities in the state could dramatically boost its reach with consumers. New national initiatives - such as the newly emerging Electrify America infrastructure campaign - can also create significant partnership and new outreach opportunities for MDC in aligned target markets (e.g., Boston).

MASS DRIVE CLEAN continues to provide a crucial proofpoint and implementation channel for achieving the state's clean air goals.



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