U.S. Department of Energy’s EV Everywhere
Workplace Charging Challenge
Progress Update 2014: Employers Take Charge
As the Workplace Charging Challenge nears its second anniversary, I am pleased to reflect on the continued rapid advancement of plug-in electric vehicles (PEVs), the exciting progress to date of our partners and ambassadors, and the phenomenal growth in the number of organizations that have joined the Challenge since its inception.

What began as a commitment by 13 founding employer partners has now grown more than tenfold to include 150 organizations. These leaders are accelerating the development of our nation’s worksite PEV charging infrastructure and are supporting cleaner, more convenient transportation options within their communities. Our Challenge partners are currently providing access to PEV charging stations for more than 600,000 employees at more than 300 worksites all across the country and are influencing countless other organizations to do the same. Additionally, 16 ambassador organizations and our national Clean Cities coalitions are recognizing our partners’ hard work and conducting PEV outreach activities with employers and communities across the country. With this strong and growing team, I’m confident we'll accomplish the Challenge goal to increase the number of workplace charging participants to more than 500 by 2018.

Through the Challenge, the Energy Department aims to raise the profile of the benefits of workplace charging and to recognize our partners’ outstanding accomplishments. A few ways we’ve done this in 2014 include:

- Workplace Charging Challenge Summit 2014, which convened employers from across the country to share best practices with their peers and return to their workplaces with new ideas and resources for accomplishing their workplace charging goals.
- Press event with NASCAR and Sprint as part of a ribbon-cutting ceremony for 24 employee charging stations across four states.
- Workplace charging recognition event with Drive Oregon to welcome 13 new partners.
- Weekly social media posts highlighting partner and ambassador workplace charging efforts.
- Video segment on Maryland Public Television’s MotorWeek program, reaching millions of viewers worldwide.

We’re also working to reduce challenges employers face as they develop and manage their workplace charging programs by providing technical assistance. In addition to responding to individual inquiries, highlights from this year include:

- New in-depth informational publications on workplace charging topics, such as ADA compliance, charging station bid solicitations, and DC fast chargers for the workplace.
- Quarterly newsletter to keep Challenge participants up to speed on news, events, opportunities, and incentives.
- New PEV and charging infrastructure data from the Energy Department’s National Laboratories to inform workplace charging program management and policies.

Drivers across the country are recognizing the benefits of PEVs: 2014 sales reached nearly 79,000 in the first eight months, a 32% increase over the same period in 2013. As of September 2014, more than 250,000 PEVs are on our highways, powered by electricity made right here in America. To help both current and potential EV drivers better understand the cost of driving an EV, the Energy Department created the eGallon, which represents the cost of fueling a vehicle with electricity compared to a similar vehicle that runs on gasoline. These drivers can fuel their vehicle for $1.29 worth of electricity compared to $3.30 a gallon of gasoline to drive the same distance.

We thank our Challenge partners and ambassadors for their efforts to provide charging as a valuable employee benefit. By embracing sustainable workplace practices, Challenge employers are making it easier for employees to do the same. With the Challenge’s foundation firmly in place and outstanding partners and ambassadors leading the charge, we look forward to many more great American organizations joining the Challenge in the year ahead.

Dr. David T. Danielson
Assistant Secretary for Energy Efficiency and Renewable Energy
U.S. Department of Energy
Early Successes and Insights from Workplace Charging Challenge Partners

The Workplace Charging Challenge distributed a survey to partners in August 2014 to determine the impact and progress of the Challenge and to identify best practices for workplace charging. 80% of partners responded to the survey, providing the information shown throughout this progress update. 2014 will serve as a baseline for measuring partner and Challenge progress, since this year marks the first that participants reported on their programs and plans.

Key Findings of 2014 Annual Survey

Installing & Managing Workplace Charging

Cumulative Growth in Partner Workplace Locations with Charging Stations

<table>
<thead>
<tr>
<th>Year</th>
<th>Workplaces with Charging Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>300</td>
</tr>
<tr>
<td>2008</td>
<td>250</td>
</tr>
<tr>
<td>2009</td>
<td>200</td>
</tr>
<tr>
<td>2010</td>
<td>150</td>
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<td>2011</td>
<td>100</td>
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<td>2012</td>
<td>50</td>
</tr>
<tr>
<td>2013</td>
<td>50</td>
</tr>
<tr>
<td>2014</td>
<td>300</td>
</tr>
</tbody>
</table>

Installed and Planned Partner Charging Stations Almost Doubled in the Last 2 Years

<table>
<thead>
<tr>
<th>Type</th>
<th>Before June 2013</th>
<th>June 2013 - May 2014</th>
<th>After May 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>1,000</td>
<td>1,500</td>
<td>1,500</td>
</tr>
<tr>
<td>Level 2</td>
<td>1,500</td>
<td>1,500</td>
<td>3,000</td>
</tr>
</tbody>
</table>

1 Partners also have 35 installed or planned DC fast charging stations

The Challenge builds upon the experience of its founding partners; some of these partners installed their first charging stations in the mid-1990s.

Partner workplaces with charging access increased year-on-year 40% in 2013 and an additional 45% in 2014.
Partner Plans for Charging Station Installation

- Fixed number of charging stations regardless of the number of PEVs: 48%
- More than 1 charging station for every PEV: 8%
- 1 charging station for every PEV: 9%
- Less than 1 charging station for every PEV: 34%

Partner workplaces with free charging: 1 in 67 employees drive a PEV to work
Partner workplaces with fee-based charging: 1 in 97 employees drive a PEV to work

Partner Billing Policy

- Employees did not pay a fee: 80%
- Employees paid a fee based on usage (i.e., electricity or time): 15%
- Employees paid a fixed fee: 5%
Workplace Charging Utilization

Employee PEV Ownership

The average\(^1\) reporting workplace has \textbf{11 charging stations}\(^2\) and \textbf{26 PEVs}.

Workplace Charging Challenge partner employees are \textbf{20x} more likely to drive a PEV than the average worker. \textbf{1 in 73 partners’ employees} drive a PEV, while the national average is 1 in more than 1,400 employees.\(^2\)

Employees commuting to workplaces with charging stations now own over \textbf{5,000 PEVs}.

Partner Electricity Utilization and GHG Reduction

81 workplaces reported an average kWh utilization of \textbf{10 kWh per charging station} per day.

Utilization of electricity \textbf{reduced about 370,000 gallons of gasoline} and about 2.5 million pounds of GHG emissions at those workplaces between June 2013 and May 2014.\(^1\)

Calculated benefits show that all partner charging stations in operation by June 2014 would provide an estimated annual kWh usage of 6.7 million kWh. This usage would be saving 800,000 gallons of gasoline and 5.5 million pounds of GHG—the equivalent of \textbf{removing nearly 1,500 average cars} from U.S. roads.\(^2\)

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\(^1\) Average calculation and ratios reflect only survey responses that included number of PEVs and kWh utilization.
Partners Leading the Charge

Workplace Charging Challenge partners have the potential to widely impact the economic and environmental sustainability of their organizations, communities, and the nation. With worksites in nearly 40 states, partners demonstrate that there is a need for workplace charging across the country. From small businesses, hospitals, universities, and governmental organizations, employers are demonstrating that workplace charging is not just for large corporations. Partners demonstrate their leadership by going above and beyond to not only provide PEV charging access, but also to promote PEV deployment among employees, conduct media outreach, and adopt PEVs in their fleets. True to the best-practices sharing mission of the Challenge, more than 60% of partners who responded to the Workplace Charging Challenge annual survey indicated that they have helped other employers with their workplace charging efforts in the first years of the initiative. The following is a selection of outstanding partner commitments since the Challenge launch in 2013:

3M

3M's workplace charging goal is to provide a power source to every employee with a PEV working at 3M Center, the company’s headquarters in St. Paul, Minn. Currently, 23 employees charge at 3M Center daily, and that number continues to increase as more staffers learn about the benefits of electric vehicles. To date, 3M has made 42 charging stations available for employee use, and they can utilize these power sources to obtain a Level 1 charge for their PEV during the workday. 3M has also made Level 2 charging stations available for visitors to 3M Center.

Alameda County, California, has fully embraced PEVs to help meet its Climate Action Plan goals, and its employees can access charging at six of its county worksites. The county has installed 40 charging stations to date, the majority of which are dedicated to public use. To further promote the early adoption of PEVs in the community, the county’s board of supervisors passed a resolution that made these stations available for free to the public until the end of 2014. In addition, over 50 PEVs are currently utilized in the county’s fleet. Alameda County is also the lead agency for the Local Government EV Fleet Demonstration Project, which is funded by the Department of Transportation and aims to deploy 90 PEVs and charging stations across 10 government agencies in the San Francisco Bay area.

AVL Powertrain Engineering, Inc. (AVL) develops and performs simulation and testing of powertrains for passenger cars, trucks, and large engines. By installing workplace charging stations, AVL is helping build the infrastructure that will allow its employees to take advantage of the technology they work on every day. Nine AVL employees currently charge their PEVs at work. AVL has installed four charging stations for its employees at two of its facilities in Plymouth, Mich., and plans to expand offerings to its Lake Forest, Calif., location and Arbor, Mich., facility in the future.

Baxter

Baxter’s commitment to sustainability extends to its employees. At its Illinois locations, the company has installed four dual head Level 2 charging stations, capable of charging eight vehicles simultaneously. With increasing demand, a fifth Level 2 charging station is being installed. Additionally, many Baxter facilities globally provide onsite PEV charging. The number of employees driving PEVs continues to increase, partially due to a unique financial incentive that Baxter and the Baxter Credit Union offer to employees who purchase PEV or hybrid technology vehicles. In October 2014, Baxter hosted fellow Illinois employers in a one-day workplace charging workshop. At the event, Baxter and its PEV-driving employees were offered first-hand insight into the benefits, challenges, and solutions of workplace charging.
By taking a leadership position on sustainability, Coca-Cola aims to inspire others to act positively. At its headquarters in Atlanta, Ga., the company initially installed 12 Level 1 charging stations. It was not long before more employees made the choice to drive electric based on the company’s support—120 Coca-Cola headquarters employees now drive PEVs to work. In fact, workplace charging became so popular that the company has installed a total of 75 Level 1 charging stations, the most Level 1 units deployed by a partner outside of California.

Concurrent Design is committed to clean energy and is purpose-built to support the development of clean energy products. Concurrent Design aims to have no upstream fossil fuels involved in vehicle charging at their office. The small business currently has one solar-powered Level 2 charging station available for use by its 18 employees and has infrastructure in place to install another charging station when demand increases.

Google believes that PEVs help the effort to reduce transportation’s carbon footprint, improve air quality, and increase the adoption of renewable energy sources. To support its corporate car share program and encourage employees to buy their own PEVs, Google provides free workplace charging access for its 25,000 employees. Google deployed more than 750 charging stations across its Mountain View headquarters and other Google locations. In addition to promoting PEVs internally, Google supports local organizations’ PEV outreach efforts and encourages employees to speak about workplace charging and PEV fleets at conferences and events.

The Hartford, a 204-year-old insurance and financial services firm, is on the cutting edge of corporate environmental stewardship. In 2011, the company installed PEV charging stations on its Connecticut campuses in Hartford, Simsbury, and Windsor. This effort is helping The Hartford meet its greenhouse gas reduction targets. The company adopted its third target—to reduce GHG emissions by another 20 percent from its 2013 base by 2018—after reaching its second target ahead of schedule. To encourage the use of PEVs, The Hartford not only offers free charging to more than 7,000 employees at the Connecticut locations, but it is also the first insurer in the United States to offer PEV premium discounts to its customers.

Raytheon provides workplace charging access to more than 20,000 employees across seven locations in Arizona, California, Colorado, Massachusetts, Texas, and Virginia. These 30 Level 2 charging stations represent just one of many initiatives Raytheon has implemented as part of a sustainability program that aims to reach 15 long-term sustainability goals by 2015. These goals include reducing GHG emissions, energy usage, water usage, and waste, as well as the greening of Raytheon’s supply chain operations and products. Raytheon personnel have presented their lessons learned on the installation and use of charging stations at numerous conferences and forums, showing the company’s commitment to support workplace charging not only at their facilities, but also at other employer sites.
San Diego Gas & Electric (SDG&E) has installed pay-for-use employee charging at 14 of its worksites to serve its growing list of 70 employees who have purchased PEVs, and to provide implementation examples for its customers. By accessing the charging stations, employees can commute to and from work and can also conveniently travel throughout the work day and reach the furthest boundaries of the utility’s 4,100 square-mile service territory. In addition to providing employee charging, SDG&E is a leading utility in the effort to promote PEV deployment among its employees and customers through California Public Utilities Commission-approved outreach and education efforts, such as PEV ride and drive events.

For the University of North Carolina at Pembroke (UNCP), workplace charging is one of the commuting transportation strategies that supports the campus’ sustainability goal of becoming carbon neutral by the year 2050. Some of the electricity utilized by PEV drivers using one of the campus’ first two charging stations will be offset by a 2kW solar photovoltaic array. UNCP also plans to install up to four more charging stations on campus in 2015, with additional charging stations installed due to employee demand and funding.

“It is important for the City of Atlanta to participate in the Workplace Charging Challenge so that we are leading by example, showing that we too see the importance of actively working to reduce air pollution from vehicle emissions.”

Denise Quarles, Director, Mayor’s Office of Sustainability, City of Atlanta
Partners

Workplace Charging Challenge partners commit to assessing employee demand for PEV charging at the workplace and to developing and executing a plan to provide PEV charging access for employees. As of November 2014, 150 employers have joined as partners in the Challenge.

200 Market Associates
3M
ABB
Advanced Micro Devices
Advocate Health Care
AeroVironment
Alameda County, CA
Arkansas Power Electronics Inc
Atlanta Regional Commission
AVL Powertrain Engineering
Avista Utilities
Baxter Healthcare Corporation
BECO South
Bentley Systems
Biogen Idec
Bloomberg LP
BMW North America
BookFactory
Broward County, FL
Capital One
CFV Solar Test Laboratory
ChargePoint
Chrysler
Cisco
City of Atlanta, GA
City of Auburn Hills, MI
City of Beaverton, OR
City of Hillsboro, OR
City of Palm Springs, CA
City of Sacramento, CA
Classique Floors
ClipperCreek
College of Lake County
Concurrent Design
Consumers Energy
Conrad N. Hilton Foundation
Dell
Dominion Resources
DTE Energy
Duke Energy
Duro-Last
Eaton
El Camino Real Charter High School
Electric Power Research Institute
Eli Lilly
EMC Corporation
EMD Serono
Envision Solar
Evolution Marketing
EV Grid
Facebook
FEV
Ford
Fraunhofer Center for Sustainable Energy Systems
General Electric
General Motors
Georgia Institute of Technology
Google
Great River Energy
Green Cab VT
Green Mountain Power
Green Wheels
Greenlots
Hannah Solar
Harris Civil Engineers
Harvard University
Heartland Community College
Hertz
IBEW #48 (International Brotherhood of Electrical Workers)
IDEXX Laboratories
Intel
JLA Public Involvement
Kaiser Permanente
Kankakee Community College
Kaskaskia College
KEMET
Kohl’s
Lane Regional Air Protection Agency
Lawrence Berkeley National Laboratory
Legrand
Lewis and Clark Community College
Leviton
Los Angeles Department of Water and Power
lynda.com
Melink
Mentor Graphics
MetLife
Mitsubishi
NASDAQ
National Grid
NetApp
New York Power Authority
Nissan
Northern Illinois University
NRG Energy
Oak Ridge National Laboratory
OpConnect
OSRAM SYLVANIA
Pacific Gas & Electric
Pat’s Garage
Pentair Water Pool and Spa
Pepco Holdings
Phil Haupt Electric
PJM Interconnection
Pomona College
Portland General Electric
PPL Electric Utilities
Prairie State College
Providence Health & Services
Raytheon
Rockwood Lithium
Samsung Electronics
San Diego Lithium
SAP
SAS Institute
Schneider Electric
SemaConnect
Shorepower Technologies
Siemens
Sierra Nevada Brewing Co.
SolarWorld
Southern California Edison
Southern Company
Sprint
State of Illinois
State of Oregon
TECO Energy
Telefonix
Territo Electric
Tesla
The Coca-Cola Company
The Hartford
The Venetian and The Palazzo
Township High School District 214
UL
University of California Los Angeles
University of Louisville
University of Maine
University of Maryland Baltimore
Washington Medical Center
University of North Carolina at Pembroke
University of Vermont
Utah Paperbox
Verizon
Vermont Energy Investment Corp
Volkswagen Group of America
WESCO
Westar Energy
Wisconsin Public Service Corporation
World Wildlife Fund
Zappos
Zero Motorcycles
A Nationwide Network of Workplace Charging Ambassadors

Challenge ambassadors are fulfilling their pledge to promote workplace charging. Ambassadors have worked with employers to increase PEV deployment and expansion of workplace charging across the United States. Notable efforts since the Challenge’s launch in 2013 include:

- Drive Oregon included workplace charging as a key topic of its EV Roadmap 7 conference and held a recognition ceremony for 15 Challenge partners from Oregon.

- Plug In America and the California Center for Sustainable Energy organized and supported a number of workplace ride and drive events, including those held at Google’s Mountain View, Calif., headquarters.

- California Plug-in Electric Vehicle Collaborative’s Drive the Dream Initiative brought California Governor Jerry Brown and 40 Fortune 500 executives together to announce corporate commitments to workplace charging.

- CALSTART and the California Plug-in Electric Vehicle Collaborative developed case studies, decision guides, and other resources to help employers determine if workplace charging is a suitable option for their organizations.

- Next Energy, Advanced Energy, Land of Sky Clean Vehicles Coalition, Clean Fuels Ohio, and CALSTART held workshops for employers to learn about workplace charging best practices.

- Clean Cities coalitions are reaching out to employers in their communities and providing technical support for the development and deployment of workplace charging. Coalitions in Georgia, Illinois, Kansas, Massachusetts, New Jersey, North Carolina, Ohio, and Washington have hosted educational workshops and convened stakeholder meetings to encourage workplace charging at the local level.

- The map below shows events hosted by ambassadors in 2013-2014 to recognize and educate employers.
Ambassadors

Ambassadors commit to supporting and promoting the deployment of workplace charging infrastructure.

Advanced Energy
California Plug-in Electric Vehicle Collaborative
CALSTART
Center for Sustainable Energy
Clean Cities
Clean Fuels Ohio
Drive Electric Vermont
Drive Oregon
Edison Electric Institute
Electric Drive Transportation Association
Electrification Coalition
Green Parking Council
Green Sports Alliance
International Parking Institute
NextEnergy
Plug In America
Rocky Mountain Institute

“MetLife is a great employer, and its recognition and support of PEV charging only proves their forward thinking and quality as an employer meeting their employees’ present and future needs.”

Steve Feldman, PEV-driving employee, MetLife
Join the Charge: Become a Workplace Charging Challenge Partner

The U.S. Department of Energy’s Workplace Charging Challenge is open to employers of all sizes and industry types, in all regions of the United States. Taking the Challenge offers benefits to employers who are considering installing PEV charging stations, as well as those who have successfully launched workplace charging programs. Becoming a partner in the Challenge allows your organization to gain access to informational resources, peer-to-peer networking, one-on-one technical assistance, and recognition for your workplace charging efforts. More than 70% of partners surveyed reported receiving outside recognition for their workplace charging efforts. Survey respondents also noted that they are receiving positive staff feedback, with 95% of partners’ employees expressing satisfaction with their workplace charging program. To learn more and join the Challenge, contact WorkplaceCharging@ee.doe.gov.

For further information, visit electricvehicles.energy.gov.

“All feedback has been positive. Our employees realize it’s a symbol of innovation, and they support it. If anything, they’d probably like to see more charging stations within the next year.”

— Brad Tomm, Senior Manager for Campus Operations and Sustainability, Zappos

Join the Workplace Charging Challenge

The U.S. Department of Energy is inviting employers to advance the deployment of plug-in electric vehicles by signing the Workplace Charging Challenge Pledge, a commitment to providing employee charging. Learn more about the Challenge and how to join at electricvehicles.energy.gov.