State and Local Government Experiences with Workplace Electric Vehicle Charging

Poll 1

- We will start in a few minutes
- Two audio options: (1) Listen via computer (2) Call in to 1-833-799-1917
State and Local Government Experiences with Workplace Electric Vehicle Charging

March 12, 2018
2:00 – 3:00 PM Eastern

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1. Listen via computer
2. Call in to 1-833-799-1917
How to Participate

Question and Answer

- Enter your question in the Q&A box
- Questions will be moderated at the end
- EPA will post responses to unanswered questions on the State and Local Webinar Series page
How to Participate

Polling

- We’ll ask several poll questions during the webinar
- On mobile devices or tablets
  - Exit full screen mode
  - Tap the Poll icon
Today’s Agenda

- Peter Banwell, Senior Manager
  U.S. Environmental Protection Agency

- Maria DiBiase Eisemann and Zachary Owens
  Transportation Fuels and Technology, Colorado Energy Office

- Michelle Finchum, Lead Sustainability Specialist
  City of Fort Collins

- Question and Answer Session

*The views expressed by speakers on this webinar are solely those of the participants and EPA does not endorse any products or commercial services mentioned in this webinar.*
Introduction

Peter Banwell
Senior Manager
U.S. Environmental Protection Agency
ENERGY STAR Certified Electric Vehicle (EV) Charging Stations
Efficiency Opportunities in Alternating Current (AC) Charging

![Graph showing efficiency opportunities in AC charging models]

- **Base Allowance**
- **Wi-Fi Allowance**
- **Cellular Allowance**
- **High-Res Display Allowance**
- **No Vehicle Mode Power**

Models 1 to 32 with varying power consumption levels.
ENERGY STAR Specification Today

Key Features:
- Energy Savings, 40% in Standby Modes
- Safety
- Open Communications

Communications Details:
- Grid Communications
- Open Access
- Consumer Override
ENERGY STAR Charging Partners

- APTIV -
- ChargePoint
- blink
- eMotorWerks
- EVBox
- LiquidSky Technologies
- SemaConnect
- Webasto
ENERGY STAR Version 1.1 Specification

- Key topics that will be addressed in the specification:
  - **Criteria to recognize energy efficiency in Direct Current (DC) chargers:**
    - Active charging % efficiency
    - Minimizing heating and cooling
    - Standby losses – display, lighting, network
  - **Allowances for features:** EPA will develop appropriate allowances for features based on data produced from the ENERGY STAR
Collaboration Opportunities

• Educate Customers about ENERGY STAR EV Chargers
  - link to resource, qualified products list

• Incorporate the ENERGY STAR into EV Programs
  • procure ENERGY STAR EV chargers
  • highlight ENERGY STAR certified equipment on vendor lists,
    Requests for Proposals

• Inform Program Developments
  • Version 1.1 DC Electric Vehicle Supply Equipment (EVSE)
    stakeholder process
Introduction to Workplace Charging
### A Day in the Life of an Average Car (...after leaving home)

<table>
<thead>
<tr>
<th>Workplace</th>
<th>Leisure Destination</th>
<th>Shopping Centers</th>
<th>Travel Stops</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5-8+ hours</td>
<td>47 min-2 hours</td>
<td>28-48 min</td>
<td>15-53 min</td>
</tr>
</tbody>
</table>

Source: U.S Department of Energy
The Value of Workplace Charging

- Supports Employees
- Supports Broader Sustainability
- Strengthens Corporate Image
- Aligns with Sustainability Strategies
Employees & Workplace Charging

Current EV Drivers
• Increased range confidence
• Increased electric vehicle miles traveled

Potential EV Drivers
• Increased EV awareness and education

Peer Effect
Contact the ENERGY STAR Team with Questions

• Questions related to ENERGY STAR collaboration marketing/promotion:
  – Peter Banwell

• Questions related to ENERGY STAR specification development
  – James Kwon
  – Emmy Feldman

Photo by Kendall Septon, NREL 45635
Maria DiBiase Eisemann
Zachary Owens
Transportation Fuels and Technology
Colorado Energy Office
Colorado’s Experiences with Workplace EV Charging

Maria DiBiase Eisemann, Policy Analyst
Zach Owens, Program Manager
Transportation Fuels and Technology
March 12, 2019
Transportation Fuels and Technology

Colorado Energy Office’s (CEO) Transportation Fuels and Technology Team works to accelerate adoption of alternative fuel vehicles through:

1. Program Management - administer grant programs that reduce the upfront cost of installing fueling and charging infrastructure.

2. Policy and Planning - make Colorado an attractive place to own and operate an alternative fuel vehicle (AFV) and make investments in AFV fueling and charging infrastructure.

3. Outreach and Education - provide information and technical support to fleets and consumers on the costs and benefits of owning and operating AFVs.
Background: Charge Ahead Colorado

- Partnership between CEO and Regional Air Quality Council.
- Grants for community-based Level II and DC fast-charging stations across the state.
- Grants for EVs in 7-county metro area - public/non-profit fleet owners.
- Grants for 782 stations awarded to date.

Source: Alternative Fuels Data Center
Charge Ahead Colorado

- Eligible applicants include local governments, school districts, State agencies, and non-profits.
- Apartment/condo complexes and private businesses are also eligible. Workplaces are a priority!

<table>
<thead>
<tr>
<th>Charge Ahead Colorado</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Air Quality Council</td>
</tr>
<tr>
<td>Funding Source</td>
</tr>
<tr>
<td>Geographic Area</td>
</tr>
<tr>
<td>Eligible Equipment</td>
</tr>
<tr>
<td>Funding Level</td>
</tr>
<tr>
<td>80% up to:</td>
</tr>
</tbody>
</table>
Background: Refuel Colorado - Education and Outreach

Alternative Fuel Experts
- Understand EV
- Chargers
- Work with Fleets
- Resource for Wired Workplaces

Refuel Colorado Territories
- 4CORE
- CLEER
- Denver Metro Clean Cities
- Northern Colorado Clean Cities
- South Central Council of Governments
- Southern Colorado Clean Cities

Refuel Coaching

4CORE: Four Corners Office for Resource Efficiency
CLEER: CLean Energy Economy for the Region
Background: Wired Workplaces

• Recognition Program started in 2015.
• Applicants, with the assistance of a Refuel Coach, signed on to the U.S. Department of Energy’s (DOE’s) Workplace Charging Challenge, followed a set of best practices, installed charging stations (funded through Charge Ahead Colorado), held a ceremony with plaque signed by Governor
• DOE’s program ended in 2017
• CEO incorporated requirements of that program into Wired Workplaces and program continued until fall of 2018
• Program on hold while CEO attempts to evaluate value of recognition part of program
Background: Award Program Steps

Contact a Refuel Coach
- Conduct a survey of your employees

Install a Charging Station
- Consider Charge Ahead Grant

Take the Pledge
- Commit and submit to CEO

Award and Celebrate!
Colorado Wired Workplace Awardees (15)

- ALIO Industries
- The Alliance Center
- American Lung Association
- Colorado State University
- City of Aurora
- Colorado Department of Transportation - Headquarters and Region 1
- Colorado School of Mines
- Eagle River Water and Sanitation District
- E-470 Public Highway Authority
- La Plata Electric Association
- University Corporation for Atmospheric Research
- Xcel Energy
- Conscience Bay Company
- Walking Mountain Science Center
- University of Colorado
Colorado Wired Workplace Awardees
• Build out key charging corridors that facilitate economic development, boost tourism, and reduce harmful air pollution.

• Accelerate adoption of EVs and ensure Colorado remains a leader in the EV market.

• Goal #3: Increase the number of public and private employers in Colorado that provide workplace charging to employees.
Top ten performing stations and their averages for 2018 (Jan. through Oct.):

1. Hewlett Packard, Fort Collins workplace lvl 2: 1119 kWh per a month
2. Mountain Valley Development Services, Glenwood Springs workplace lvl 2: 1064 kWh per a month
3. Broadcom, Fort Collins workplace lvl 2: 1021 kWh per a month
4. Eagle County Government, Eagle municipality building lvl 2: 926 kWh per a month
5. City of Colorado Springs, Colorado Springs parking garage lvl 2: 918 kWh per a month
6. Powdr-Copper Mountain, Copper Mountain leisure destination lvl 2: 899 kWh per a month
7. City of Aspen, Aspen leisure destination lvl 3: 741 kWh per a month
8. City of Colorado Springs, Colorado Springs parking garage lvl 2: 715 kWh per a month
9. City of Glenwood Springs, Glenwood Springs parking garage lvl 2: 701 kWh per a month
10. Town of Carbondale, Carbondale municipality building lvl 2: 688 kWh per a month
Charge Ahead Colorado - Data

Number of Charging Stations

- Parking Garage/Lot, 31%
- Workplace, 26%
- Leisure Destination, 12%
- Municipality Building, 11%
- Retail, 3%
- Hotel, 2%
- University/Medical Campus, 5%
- Fleet, 5%
- Home Owners Association/Apartment, 1%
- Other, 4%
Number of Charging Events

- Parking Garage/Lot: 36%
- Workplace: 26%
- Leisure Destination: 13%
- Municipality Building: 15%
- University/Medical Campus: 4%
- Retail: 1%
- Hotel: 1%
- Fleet: 2%
- Other: 2%
- Home Owners Association/Apartment: 0%
Charge Ahead Colorado - Data

Electricity Consumed (kWh)

- Workplace, 30%
- Parking Garage/Lot, 30%
- Leisure Destination, 11%
- Municipality Building, 11%
- University/Medical Campus, 6%
- Retail, 2%
- Fleet, 7%
- Hotel, 0%
- Home Owners Association/Apartment, 0%
- Other, 3%
EV Wired Workplace Evaluation

CEO saw the need to evaluate the value of the Award given the resources required to implement and paused the Program.

Snapshot of results at Awarded Workplaces:

+ 10 EVs at a state agency
+ 4 EVs at a non-profit center, another -2 EVs
+ 49 EVs and +25 EVs at two universities

Initial evaluation found it is difficult to separate impact of Award from other efforts (e.g., EVSE installation, EV incentive programs, access to EV fleet vehicles)
Looking Forward

• Workplace charging remains a priority for the State and our Charge Ahead Colorado and Refuel Colorado Programs.

• Do we continue issuing Wired Workplace Awards? If we continue, how can we leverage it for greater education/awareness opportunities?

• We are in the process of strategic planning and determining how to proceed.

• We welcome feedback from webinar participants.
Maria DiBiase Eisemann
Policy Analyst
Transportation Fuels and Technology

Zach Owens
Program Manager
Transportation Fuels and Technology

Colorado Energy Office
@COenergyoffice
Michelle Finchum
Lead Sustainability Specialist
City of Fort Collins
Summary and Lessons learned from 2015

The City of Fort Collins, CO participated in the Workplace Charging Challenge.
Drive Electric Northern Colorado

Creating a Model Deployment Community
World Class City
Climate Action Plan
Energy Policy
High Performing Government

Values: Innovation, Collaboration
Formal Agreement
Workplace Charging Challenge

February 2015 event

Mayor Karen Weitkunat
Deputy City Manager, Jeff Mihelich
WORKPLACE CHARGING CHALLENGE: PARTNERS

One of 8 Cities participating

Use the interactive map and list below to learn more about employers who have joined the U.S. Department of Energy’s Workplace Charging Challenge. These employers are providing workplace charging for their employees who drive plug-in electric vehicles. Partners receive assistance from DOE to help them establish and expand workplace charging while ambassador organizations work to promote and support partners’ workplace charging efforts across the country. Learn more in the Workplace Charging Challenge Progress Update 2014. You can also learn how to become a partner in the Workplace Charging Challenge.

WORKPLACE CHARGING CHALLENGE PARTNERS

- 200 Market Associates
- 3M
- ABB Inc.
- ABB Inc.
- Fuji Electric Corp. of America
- Genentech
- General Electric
- General Electric
- PSE&G (Public Service Electric and Gas Company)
- Public Service Company of New Mexico
Workplace Charging Challenge Objectives

Provide Infrastructure (charging stations)

Examine Policy

Educate and Engage
EV Pool Cars – 17
Staff with an EV – 5
Workplace Charging Stations – 1
Awareness – internal communication

Pre/Post employee survey
All Supervisors Memo
Executives presentation
Intranet site
All Supervisors presentation
Video (spotlight)
Employee video blog
Internal newsletter article

Goal: 200 City employees drive an EV in 2015
Highlighting City employee EV owners

Utilities employee

Streets employee
Promote understanding of EVs through extended (3-5 day) drive opportunity. Thank you local car dealerships!!!
Drive Leadership – Executive Leadership

Darin Atteberry
BMW i3

Kelly DiMartino
Chevy Volt

Jeff Mihelich
BMW i3

Jacqueline Kozak-Thiel
Mitsubishi iMiEV

Mike Beckstead
BMW i3

Kevin Gertig
City employee Picnic Ride and Drive event
Coffin Break Halloween EV event

Drive a City pool car
Awareness – external communication

Full Circle Show – Cable 14
Radio interview Jimmy Lakey
Article in Biz West (by Mayor Troxell)
Social Media
Colorado State University panel
Flickr photos
6 new employee charging stations in parking garage
Help employees know other 2015 Infrastructure

There are 16 businesses on track to offer workplace charging soon.
Workplace Charging Challenge Objectives

Provide Infrastructure (charging stations)

Examine Policy

Educate and Engage
Fast Forward to 2019

Awesome:

- Paved the road for **EV Readiness Roadmap 2018**
- Awareness
- Enthusiasm by staff
- Leadership inclusion
- Perception
- Employee charging stations
  - 2015 = 1
  - 2019 = 6

Issues:

- Policy
- Employee charging stations
- Parking code (enforcement)
- Signs
- Staff resources
Michelle Finchum
Lead Sustainability Specialist
City of Fort Collins, CO

Michelle Finchum with her new 2017 Nissan Leaf
Question and Answer Session
Connect with the State and Local Energy and Environment Program

Webinar Feedback Form

Andrea Denny
U.S. Environmental Protection Agency
Denny.Andrea@epa.gov

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