Higher Education PEV Charging Webinar

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Sarah Olexsak, U.S. Department of Energy
Nicholas Bleich, U.S Department of Energy
Nicholas Palumbo, Suffolk County Community College
Jay Blauser, University of North Carolina at Pembroke
Aaron Fodge, Colorado State University
U.S. DOE Workplace Charging Challenge

Goal: 500 U.S. employers committed to employee charging by 2018

275 Partner employers committed to provide charging at...
600+ Worksites where employees have access to...
5,500+ Installed or planned charging stations

Join today! Email WorkplaceCharging@ee.doe.gov
Voluntary Model to Promote & Support Charging

**DOE Support**
- Provide technical assistance
- Recognize success
- Convene employer network

**Partner Actions**
- Pledge commitment to employee charging
- Communicate by announcing Challenge pledge and posting a profile to DOE website
- Share workplace charging plan and provide updates by responding to annual survey

Join today! Email [WorkplaceCharging@ee.doe.gov](mailto:WorkplaceCharging@ee.doe.gov)
How is DOE providing technical assistance?

- EV 101
- Employer Resources
- Employee Outreach Toolkit
- Case Studies
- Webinars
- Workshops
- Quarterly Newsletters
- One-on-One Technical Assistance

http://energy.gov/eere/vehicles/ev-everywhere-workplace-charging-challenge

Join today! Email WorkplaceCharging@ee.doe.gov
EV EVERYWHERE WORKPLACE CHARGING CHALLENGE

University Campuses Charge Up
America's higher education institutions are at the forefront of workplace charging.

WHY ELECTRIC VEHICLE CHARGING AT WORK:
Many PEV drivers charge their vehicles primarily at home, but accessing chargers at work can help owners double their vehicles' all-electric daily commuting range. To increase the
Top Reasons for PEV Charging in Higher Education

- Reduce commuter emissions
- Provide research opportunities
- Enable fleet charging
- Signal environmental leadership
- Provide employee and student benefit
Higher Education Workplace Charging Success

52 Higher Education Partners!
Higher Education PEV Charging Webinar Speakers

Nicholas Palumbo, Suffolk County Community College
Jay Blauser, University of North Carolina at Pembroke
Aaron Fodge, Colorado State University
Today’s Discussion Format
Sustainability at SCCC

A holistic approach to identifying best practices across the institution for improving our campus environments, reducing negative impacts on the planet, and operating at maximum efficiency.

7 Dimensions of Sustainability
(from University Leaders for a Sustainable Future)

Institutional Mission, Structure & Planning
Faculty & Staff Development & Rewards
Student Opportunities
Curriculum
Operations
Community Outreach & Service
Research & Scholarship

CURRENT MAJOR INITIATIVES

LEED USGBC
Cenergistic
Solarize Southampton
Climate Smart Communities New York State
Electric Vehicle Charging Stations

- 6 Dual Port Leviton Level 2 EVCS’s, connected to the Chargepoint network. Two at each campus.

- Made possible by NYSERDA grant which funded the bulk of the cost.
  - $107,286 total
  - NYSERDA: $63,294
  - SCCC: $43,992

- No formal study undertaken prior to assess demand. Occasional inquiries to Office of Sustainability. Program aim to encourage adoption. “If you build it, they will come.” model.

- First stations came on line Earth Day 2014.
Installation Considerations

- Driven primarily by cost = Distance to nearest electrical service (40A/220V). Not ideal location in all instances.

- Chargepoint network (web based management tool) invaluable resource for monitoring usage. Real-time analytics, billing service option, mobile app for EV drivers – charge status, etc.

- Chargepoint network also makes resource available to public. Limited time of day/week access. Important to note on network & alert staff.

Eastern Campus  Grant Campus  Ammerman Campus
EVCS Management Policy

- Use Policy still very much evolving.
  - Recommendations submitted, not yet formally approved.
  - Utilization patterns will probably influence some decision points.
- Currently free for all users (registered through Chargepoint).
  - Total cost of electricity to the college under $500 to date.
- Administered by Office of Sustainability. Chargepoint is a big plus.
- Enforcement by Public Safety – informal notice.
  - Parking is a challenge at all campuses.
Impact to Date

- 2,282 Kg. avoided Greenhouse Gas Emissions
- 831 Gallons of gasoline saved
- 967 total charges
- Only 30 Unique drivers, but the trend is up ↑.
- We *are* influencing change.
University of North Carolina Pembroke
The University of North Carolina at Pembroke (UNCP), founded in 1887 as a school for the education of American Indians has always prepared students to be responsible stewards of the world.

Furthermore, UNCP is committed to minimizing its global-warming emissions, while providing educated graduates needed to lead the changes necessary to resolve the world’s social, environmental and economic issues; in doing so, positioning itself as a regional leader and model for sustainability, academically and operationally.
Why PEV Charging?

GHG emissions reduction strategy

2013:
23,211 metric tons of CO2E

2014:
22,853 metric tons of CO2E

1.5% less
• Centrally located, visitor parking lot which is accessible to students, faculty, staff and visitors
• State term contract 691A: Electric Vehicle Charging Station Equipment

www.uncp.edu/sustainability
Workplace Charging Challenge Partner Plan  
December 31, 2014

I. Background
On June 23, 2014, UNC Pembroke became a Partner in the U.S. Department of Energy’s Workplace Charging Challenge and was the first university in North Carolina to do so! This effort to make plug-in electric vehicle (PEV) charging stations available to students and employees in the workplace supports the campus’ Sustainability Plan. This program is one of the transportation initiatives designed to reduce greenhouse gas emissions generated from commuting.

II. Goals and Progress
The main campus’ first two PEV charging stations were installed in Parking Lot 17 (visitor’s lot), at the Dial Building and Lumbee Hall. These PEV stations were unveiled on December 11, 2014 with a brief ribbon-cutting ceremony. The campus goal for this Partner Plan is to provide one level II PEV charging station for every two PEVs owned by students and employees. This program is contributing towards the campus’ long-range goal to become carbon neutral by the year 2050.

III. Charging Demand Assessment
Initial demand was assessed by an electronic survey sent to all students and employees in 2014. During this survey, it was reported that seven PEVs were owned by the over 7,000 campus students and employees. At least two more stations are pending installation in 2015 to meet this latest demand. PEV ownership and desire to have access to charging stations will be assessed annually. Results and reported demand will be monitored and recommended for approval to provide one station for every two PEVs, budget permitting. Usage rates of the charging stations will also be monitored.

IV. Charging Management and Policy
Signage was and will continue to be installed that should be sufficient for users to understand, follow and allow usage and daily operation of the stations to be self-regulating. The stations are available to any PEV driver allowed to park in a designated lot (i.e. anyone in a visitor’s lot, staff and faculty within those lots, etc.). Stations are free of charge and available for use at all times. The Sustainability Office serves as the point of contact with coordination and management responsibilities for this program. Support will also be provided by Campus Police and Public Safety, Facilities Management, University Communications and Marketing as well as other departments as needed.

V. Charging Station Procurement and Installation
State and campus purchasing and construction contracting policies guided procurement and installation of the first two stations. This is the standard that will continue to be followed, as well as Master Plan coordination regarding site locations. In more detail, the first stations included: Eaton chargers purchased, per State Term Contract for electric vehicle supply equipment. A local, licensed electrical contractor was selected for installation after becoming the successful low bidder. A two kilowatt solar photovoltaic array was also installed to offset energy consumed by the stations to create a carbon net-zero installation. This net-zero concept will be employed with future installations as funding permits. A portion of the costs were satisfied with new Sustainability Green Fees. The use of these funds are planned to offset a portion of future procurement and installation costs.

VI. For More Information:
Visit the Sustainability Office website at www.uncp.edu/sustainability. Presentations have been made available to new students and employees during orientations and Freshman Seminars. Press releases and other communiqué have and will continue to be published and disseminated to the campus, stakeholders and the public.

http://energy.gov/eere/vehicles /ev-everywhere-workplace-charging-challenge

Fast Facts
- 4 charging stations (1 for every 2 PEVs)
- Level 2 (3 hours)
- Free for users
- Move after charged
- Register with the Sustainability Office
- Carbon neutral b/c solar PV
- UNCP is a “Partner” with US DOE’s Workplace Charging Challenge
2015 National Drive Electric Week (Sept 12-20)

• Over 45 attendees
• 13 test drives
• PEV “how to,” then Q&A
• Local sponsors:
  - Advanced Energy
  - Fred Anderson Nissan
  - Dieffenbach GM Superstore
• National hosts:
  o Plug In America
  o Sierra Club
  o Electric Auto Association

UNC Pembroke – Sustainability Office
910.521.6509
jay.blauser@uncp.edu
www.uncp.edu/sustainability
Charger Placement Strategy
The Opportunity of New Construction

- Pull Conduit for Future EV Charger
- Site Departmental EV Fleet Vehicle
Grant Funding for Chargers and EVs

<table>
<thead>
<tr>
<th>Funding</th>
<th>Electric vehicles (EV) and Electric Vehicle Supply Equipment (EVSE) – Level 2 and Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible Fleets</td>
<td>Fleets and entities located in the seven county Denver Metro Area (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas or Jefferson Counties).</td>
</tr>
<tr>
<td>EVSE Available</td>
<td>Funding will fund 80% of the incremental cost differential between an EV and the comparable gasoline vehicle up to $8,260.</td>
</tr>
<tr>
<td>Funding Priority</td>
<td>Priority is directed to those organizations that are excluded from existing state tax credits and incentives. For both EVSE and EV funding, eligible applicants include local governments, school districts, State / Federal agencies, non-profit educational institutions, and other non-profit agencies. Apartment / condominium complexes and businesses that own multi-vehicle parking facilities for fleet, public or guest / visitor are also eligible for EVSE funding.</td>
</tr>
<tr>
<td>CEO</td>
<td>Electric Vehicle Supply Equipment (EVSE) – Level 2 and Level 3</td>
</tr>
<tr>
<td>Eligible Fleets</td>
<td>Entities located in Colorado outside of the seven county Denver Metro Area.</td>
</tr>
<tr>
<td>EVSE Available</td>
<td>CEO is not funding EVs.</td>
</tr>
</tbody>
</table>

Funding is directed to private non-profit or for-profit corporations, state agencies, public universities, and public transit agencies, in addition to local governments, landlords of multi-family apartment buildings and homeowner associations (as defined more specifically in C.R.S. Article 33.5 of Title 38).
Strategy for EV Parking Permits

1. Not Charging for Electricity (charger capable)
2. Student / Staff must have EV permit (license plate is the permit)
3. Visitors – Chargers placed in hourly and daily permit lots
Drive Electric Northern Colorado

- The core partners (2013) in DENC include:
  - Colorado State University
  - City of Fort Collins
  - City of Loveland
  - Electrification Coalition (EC)

- A “living laboratory” --a scalable and replicable model for implementing EV deployment communities

- Collaboration with every level of the EV supply chain including: OEMs, car dealerships, infrastructure providers, universities, state and city governments, utilities, private businesses, non-profits.
Ride and Drives
Targeted events with multiple vehicles to test drive
• Employees
• Students
• Alumni
• Visitors
Student Research

Students at CSU have taken part in programs such as the U.S. Department of Energy’s EcoCAR 3 competition, which brings together collegiate engineering teams to reduce the environmental impact of transportation.
Testing Ground

CSU was awarded four neighborhood electric vehicle with diagnostics and tracking metrics for employees to use for cross-campus trips.

Tiny-electric car test a big part of deciphering CSU travel habits

By Howard Pankratz
The Denver Post

CSU is one of four universities nationwide that will receive four all-electric micro vehicles for research projects. (Courtesy of CSU)

The Innova Dash is tiny — minuscule, even.

But four of the urban electric vehicles will be a big part of understanding the public-transportation habits of Colorado State University employees.
Fleet Conversion

- Determine Demand within range of EVs
- Set Fleet Conversion Goal
  - President’s Sustainability Committee
- EV Fleet Vehicles allow:
  - employees to be insured by University when they make work day trips
  - an employee to commute without a personal vehicle
- Seek dealership maintenance training for staff
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www.electricvehicles.energy.gov