NARUC Electric Vehicles State Working Group

AUGUST MEETING
AUGUST 31, 2021
Welcome

Moderator: **Commissioner Bocanegra**, Illinois

Panelists

- **Cher Griffith Taylor**, Senior Programs Specialist, Electrification Coalition
- **Chris Castro**, Director of Sustainability & Resilience, City of Orland, Florida
- **Maty Sauter**, Division Manager, Office of Management and Finance, City of Portland, Oregon
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>3:00 PM</td>
<td>Welcome and Introductions (3 minutes)</td>
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<td></td>
<td>• Agenda review</td>
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<td></td>
<td>• Introduce yourselves</td>
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<tr>
<td>3:03 PM</td>
<td>Presentation: Cher Griffith Taylor, Electrification Coalition (12 minutes)</td>
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<td></td>
<td>• Cher Griffith Taylor will introduce the Climate Mayors EV Purchasing</td>
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<td>• Collaborative and provide an overview of the municipal EV planning</td>
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<td>3:15 PM</td>
<td>Presentation: Chris Castro, City of Orlando (12 minutes)</td>
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<td></td>
<td>• Chris will discuss Orlando, Florida’s ecosystem for transportation</td>
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<td>• electrification, and emerging issues the city is dealing with</td>
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<td>3:27 PM</td>
<td>Presentation: Maty Sauter, City of Portland (12 minutes)</td>
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<td>• Maty Sauter will provide an overview of Portland, Oregon’s climate</td>
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<td>• and transportation goals, and discuss the city’s experience engaging</td>
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<td>• with the commission</td>
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<td>3:39 PM</td>
<td>Discussion and Q&amp;A (21 minutes)</td>
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<td>• Speakers will take additional questions from working group members</td>
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<td>4:00 PM</td>
<td>Closed Door Discussion (28 minutes)</td>
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<td>• Working group members will discuss their own views and the actions</td>
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<td>• their states have taken to date.</td>
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<td>4:28 PM</td>
<td>Next Steps and Announcements (2 minutes)</td>
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<td>4:30 PM</td>
<td>Adjourn</td>
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Introduce Yourselves – Will you be joining us at the Summer Policy Summit? In Denver or virtually?

EV Working Group Members

States:
- Arizona
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Illinois
- Kentucky
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Missouri
- Nevada
- New Jersey
- New York
- North Carolina
- Ohio
- Oregon
- Pennsylvania
- Puerto Rico
- Rhode Island
- South Dakota
- Texas
- Utah
- Vermont
- Washington
- Wisconsin

National/Federal Partners:
- NARUC
- NRRI
- U.S. DOE
- National Labs
- U.S. EPA
The **Electrification Coalition (EC)** is a nonpartisan, not-for-profit group of business leaders committed to promoting policies and actions that facilitate the deployment of electric vehicles on a mass scale.

<table>
<thead>
<tr>
<th>Role</th>
<th>Initiative/Project</th>
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<tr>
<td>Technical Lead</td>
<td>Climate Mayors EV Purchasing Collaborative</td>
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<tr>
<td>State EV Policy Accelerator</td>
<td>NV, MI, PA, VA, NC</td>
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<td>Electrification Advisor</td>
<td>Bloomberg American Cities Climate Challenge</td>
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<td>Lead Electrification Partner</td>
<td>Smart Columbus</td>
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<td>Project Lead</td>
<td>Drive Electric Northern Colorado</td>
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<tr>
<td>Pilot Program Leader</td>
<td>Freight and Goods Delivery Electrification</td>
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The Collaborative is a partnership designed to help accelerate the electrification of public fleets across the country.

Through the procurement portal and staff support, the Collaborative works to reduce the costs and barriers to electrifying fleets to make it easy for public fleets to go electric.

www.DriveEVfleets.org
The Collaborative Reach

- **265** committed cities, counties, ports, universities, and transit agencies
- **4,550** light-duty electric vehicles and buses committed
- **2,893** electric vehicles procured to date
- **1,350** charging stations installed to date
Light-Duty Vehicle and EVSE Options

2021 CHRYSLER PACIFICA HYBRID $40,751
2022 TOYOTA PRIUS PRIME $27,714
2021 TOYOTA RAV4 PRIME $37,196

2022 Nissan Ariya-Coming Soon
2022 Chevy Bolt EUV $35,252
2022 CHEVY BOLT $31,835

Electrification Coalition
Electric School Bus Offerings
Medium-and Heavy-Duty Electric Chassis and Equipment
Staffing and Support Resources

Customized and free technical support including:

- Connection to a cohort of public agencies
- Best practices and case studies
- Connections to leading fleets and vendors
- Parity of vehicle offerings and technical support across the US
- Analysis of current fleet and vehicle recommendations
Goals of Fleet Analysis

✓ Understand what vehicles are in the fleet and how they’re used

✓ Understand the total fueling / operation cost of fleet compared to alternatives

✓ Determine estimated emissions of fleet compared to alternative

✓ Provide recommendations for vehicle types, charging, and ways to track success metrics for EV usage
Standard fleet analysis can be costly, take weeks/months, and the results can be difficult to interpret.

The DRVE Tool is an accessible, easy-to-use tool that analyzes fleet data in **minutes**: light-, medium-, and heavy-duty vehicles.

https://www.electrificationcoalition.org/drve/
Key Inputs Required

- Fleet Inventory and Usage Data
- Operational Cost and Data
- Fuel Cost Data
- Availability of Tax Credits and Rebates
DRVE Tool Insights

• Near-term procurement opportunities
• Average Lifetime and Per-Mile Cost by Model
• Emissions Comparisons by Use Case
• Impacts on Savings Potential with Different Settings/Models

https://www.electrificationcoalition.org/drve/
**Load Data**

Fleet inventory table -- info on each vehicle in fleet (VIN, VMT, Years of Use, etc).

**Map Vehicles**

Map conventional vehicle to EV alternative. Can customize mapping if preferred vehicle(s) are available.

**Set Options**

Set custom or default market factors, as well as charging and procurement strategies, for analysis. Fully customizable.

**Run Analysis**

Time to run depends on number of scenarios; Could take more than an hour for a large fleet.

**View Results**

View results in Microsoft Power BI Dashboard
Benefits

- View various EV replacement scenarios.
- Sort and assess replacement recommendations by the 1,000s or individual unit
- Fully exportable data
- New Features released/underway:
  → Automated Report Download
  → More charging planning features
  → Increased flexibility for adding incentives/rebates

https://www.electrificationcoalition.org/drve/
Thank you!

Cher Griffith Taylor  
Senior Programs Specialist  
(202) 461-2365  
cctaylor@electrificationcoalition.org  
www.driveevfleets.org
Green Works Orlando: Advancing ZEV from the Most Visited City in America!

Chris Castro, LEED GA, CPB
Director, Office of Sustainability & Resilience
Future-Ready co-chair
City of Orlando
Green Works Orlando
Office of Sustainability & Resilience

• Award-winning sustainability program called “Green Works Orlando” launched by Mayor Buddy Dyer in 2007

• Develops internal and citywide policies + programs to:
  • Protect natural resources and the environment (air, water, land)
  • Improve public health and social equity
  • Create green economic dev. and green jobs opportunities
  • Decrease air pollution and carbon emissions
  • Enhance city resilience and adapt to climate change impacts
  • Reduce operational expenses and enhance efficiency
  • Educate the residents and businesses on sustainable practices

• Focuses on 7 key areas:
  • Clean Energy
  • Green Buildings
  • Local Food Systems
  • Zero Waste
  • Livability
  • Clean Water
  • Electric & Alternative Transportation
Orlando’s Citywide yearly emissions by sector / source
Through the **American Cities Climate Challenge**, the City of Orlando has launched an effort to accelerate and deepen our climate actions to create the greatest climate impact through 2030 and showcase the benefits – **good jobs, cleaner air, and cost savings** – that climate solutions brings.

**Orlando’s Climate Action Strategy**

- Reduce building energy use
- Increase renewable energy
- Reduce vehicle miles traveled
- Electrify vehicles and buildings

Cities Race to Zero
Trajectory for electric vehicle (EV) adoption and charging demand...

- By 2025, EV adoption is projected to more than double in the Orlando metro area.

- By 2030, EV adoption is projected to reach 10-30% of registered vehicles, and by 2050, nearly 70%.

Source: National Renewable Energy Lab

Source: FDAC
We are creating an e-mobility ecosystem and preparing for a rapid and massive transformation ahead.

- EV Rental Car program
- Consumer rebates
- EV charging access
- EV consumer education
- Fleet electrification
- EV Readiness (Development)
- EV Rental Car program
Municipal EV Fleet - ~3,000 vehicles

- **Goal:** 100% Electric and Alt. Fuel for all City Fleet by 2030

- **200+ EV & Hybrids in City Fleet**
  - Chevy Bolts EV’s for City Hall motor pool
  - Nissan Leafs
  - EV Motorcycles for OPD
  - Solar golf cart pilots

- Submitted LOI for 100 F-150 EV Trucks

- **EV Purchasing Collaborative with Climate Mayors**
Lymmo Electric Bus Expansion

• **Goal:** 100% of Lymmo BRT powered by zero-emission EV by 2025

• Added 8 new EV buses in 2021; 6 more in 2022

• 100% Grapefruit, Lime, and partial Orange lines
RENT A CHEVY VOLT
It Doubles as a VIP Pass

LEARN MORE
Expansion of public charging stations

* Currently showing a limited data set.
Starting April 2021, the City of Orlando and OUC will be enabling 100+ new Level 2 EV charging stations throughout City parks, Rec centers, parking garages, and more.

ADA Accessibility was major lesson learned!
EV Recharge Hubs

Downtown Orlando. 22 DCFC stations, up to 350 kW chargers.
Ride & Drive events

Launch: Quarterly

Purpose:

- Encourage residents and businesses to test ride various EV models
- Provide opportunity for test-rides without the pressure of buying or leasing a vehicle
- Q&A with EV experts
- Compare various EV models
- $50 VISA gift card for test driving an EV
EV Virtual Ride & Drive Video Series

http://ouc.com/EV
Electrified Dealership Program

Launch: November 2020

Progress:
- 5 dealerships participating with a goal of 15 participating in 2021
- Diversity in branding. Nissan, Jaguar, Volvo, Audi confirmed
- 10+ of 30 sales reps trained
- Chevrolet (3), Ford and Mini all introduced to the program

Next steps: Continue to build dealership pipeline. Continue to train more salespeople.
Orlando EV Readiness Code

• Approved by Orlando City Council on August 23, 2021
  • Sunrises January 1st, 2022

• An EV readiness ordinance requires a percentage of new parking spaces built to include electrical infrastructure that enables future EV charging.

• Covered types can include:
  • Commercial
    • 2% installed; 10% capable
  • Multi-family
    • 2% installed, 20% capable

**EV Capable**: Install electrical panel capacity with a dedicated branch circuit and a continuous raceway from the panel to the future EV parking spot.

**EVSE Installed**: Install a minimum number of Level 2 EV charging stations.

**Graphics**: Sacramento, CA. **Definitions**: SWEEP.
Green Works Orlando: Climate Solutions from the Most Visited City in America!

Chris Castro, LEED GA, CPB
Director, Office of Sustainability & Resilience
Future-Ready co-chair
City of Orlando
PUC Coordination with Local Governments for Transportation Electrification

NARUC EV State Working Group

August 31, 2021 | 3:00-4:30 PM EST
• **City of Portland Green Fleet Conversion Overview**
• **Challenges & Opportunities for Municipalities**
• **Tips for Successful Engagement & Collaboration**
City of Portland/CityFleet Overview

• 3,600 vehicle/equipment units – largest municipal fleet in OR

• All fleet services administered by one department (CityFleet)
  – Long-range inventory planning (working with bureaus)
  – Specifications development & procurement
  – Maintenance & repair
  – Vehicle/equipment disposition
  – All fueling (liquid and otherwise)

• City has aggressive climate/equity goals (as does the public)

• Fairly complicated implementation environment
  – Fleet services are provided to 26 independent bureaus that all have different needs, operating environments, and perceptions of authority
1.0 Achieve Council Goals
By 2030, reduce emissions 50% from 1990 levels; be at net zero by 2050

2.0 Improve Public Health
Leverage green fleet to improve city air quality and achieve more equitable public health outcomes

3.0 Maintain Reliability
Ensure bureaus continue to have reliable and cost-effective fleets while making this transition

4.0 Deliver Real Value
Embrace a data-driven approach to conversion: sound environmental, social, and financial analyses

5.0 Improve Operations
Embrace change, and leverage the moment to enhance CityFleet’s daily operations

6.0 Be the Leader
Create a national model, and regional pathways for EV conversion at scale
Inputs considered in analysis
- Vehicle lifecycle costs: acquisition, maintenance, and fuel costs
- Carbon emissions

Three options to meet goals: First Call, Last Call, and Fast Adoption
- First Call = high cost
- Last Call = high emissions
- Fast adoption is City’s plan = fiscally and socially responsible
What comprises EV “fuel costs”?

1. **Charging infrastructure/backbone – “make-ready”**
   - Gets electricity from the pole to the charger
   - Barriers: no charging = no conversion; $$ & risky

2. **Charging infrastructure/equipment – “charger”**
   - Plugs into the vehicle to fuel it up
   - Barriers: no charging = no conversion; O&M is real

3. **Electrons**
   - Fuel!
   - Barriers: stable, affordable (cost neutral) pricing
Make-ready infrastructure

• Make-ready is risky and expensive to build, and few from market are interested in acting; could this be utility-owned?
• Is there an appropriate way to socialize make-ready costs?
  – Months of effort to evaluate new ideas using existing methodologies
  – Portland General fleet pilot make-ready program approved by OPUC
  – CityFleet is in the program with 3 development/pilot locations
• Ideally, CoP’s work will support other fleets in converting
Charging equipment

• City does not have the experience, knowledge or resources to build, own and operate charging stations

• City’s opinion is that this is best served by the market (low/moderate risk; want competition to get good pricing; want competition to compel lifecycle innovation)
  – Soliciting innovative solutions from competitive marketplace with Charging as a Service (Caas) RFP
  – Vendor will build/own/maintain chargers while City pays for the service (presumably monthly, TBD)
  – RFP is out for bid right now
Electrons/Fuel

• Likely procured along with our charging equipment (CaaS)

• Looking for solutions like Smart Charging to save on costs

• Certain operational realities make some energy pricing concepts appealing; other operational realities make them complex to administer or benefit from
  – Shift work/time-of-use pricing – are units down in the off-hours?
  – “Hot cars” – 24/7 use, with no down time; how fuel at all?

• Fast charging is the next frontier
Other Interesting Notes on Fleets

• For fleet charging, geography/location matter (and change)
  – Integrated fleet/operations planning
  – Integrated fleet/facility planning (this is very complex)

• Lots of questions about co-location with the public
  – Ideal – would provide public benefit and offset costs
  – Very difficult to administer (e.g., police cars)

• Lots of interest in EVs as part of a larger program for municipal benefit (e.g., resilience – batteries/microgrids), but real-world experimentation is necessary to test the validity of these ideas in the fleet environment
Roadmap: How do we get to Net Zero?

Assess
Fully understand our current state and what we need to do.

Codify
Amend City rules, service levels, and policies to support a green fleet.

Lead the Way
Support the bureaus step by step.

Collaborate
Work with key partners to innovate and enable change.

Optimize Investment
“Build” cost-effective infrastructure and right-size the fleet.

2050
Transition!
All vehicles are fueled by a mix of net-zero emission electricity and RNG.

The Path Forward
Getting to net-zero emissions by 2050 requires:
• Sound analytics
• Innovative partnerships
• Strategic and operational credibility
• Leadership support
• Reliable vehicles + cost-effective “fuel”
# Tips for Successful Engagement & Collaboration

1. Focus on a common goal – municipalities, utilities, and regulators should all be aligned.

2. Understand the potential and the reality of municipalities: catalysts with limited funds.

3. Connect desired outcomes with incentives: what’s utility work, and what’s market work?

4. Ensure that other stakeholders are involved to monitor claims re: benefits/value delivery.

5. Look for different models/approaches to solving the problem; pick the right one (data).

6. Work incrementally; learning, tweaking, but also proving out the concept (benefits).
Thank you!

City of Portland
Questions?

Raise your hand to ask a question or type a question into the question box.
Facilitator

- EV Working Group Chair Maria Bocanegra and Illinois Commerce Commission Staff
Discussion Questions

1. What goals have municipalities in your jurisdiction set with regards to climate / transportation planning?
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2. To what extent have municipalities engaged with your commission, and how has this engagement taken place?
   1. Have municipalities in your state engaged with the commission regarding transportation electrification?
   2. If so, what top issues have emerged from the municipal perspective?
Discussion Questions

1. What goals have municipalities in your jurisdiction set with regards to climate / transportation planning?
2. To what extent have municipalities engaged with your commission, and how has this engagement taken place?
   1. Have municipalities in your state engaged with the commission regarding transportation electrification?
   2. If so, what top issues have emerged from the municipal perspective?
3. What opportunities are available, or could be leveraged, in your commission to enable greater coordination with local governments?
Announcements

- **Sep 22, 1-5pm (ET):** NASEO State EV Infrastructure Summit
- **Oct-Nov (dates TBD):** NASEO EV Infrastructure Workshop Series
  - Workshop series will replace EVSWG monthly meetings through November
- **Nov 7-10:** NARUC Annual Meeting, registration opens this week
- Presentations and recordings of past EVSWG events are available on the website
- EVSWG Listserv: [NARUC-EVSWG@lists.naruc.org](mailto:NARUC-EVSWG@lists.naruc.org)