NARUC Electric Vehicles State Working Group

JANUARY MEETING - **DRIVING FORCES ACCELERATING TRANSPORTATION ELECTRIFICATION**JANUARY 31, 2023

Welcome

EV SWG Chair

Commissioner Katherine Peretick, Michigan Public Service Commission

EV SWG Vice-Chair

Chair Jason Stanek, Maryland Public Service Commission

NARUC Staff

Danielle Sass Byrnett, Jeff Loiter, Jessica Diaz

3:00 PM	 Welcome and Announcements (4 minutes) – Danielle Sass Byrnett, NARUC Agenda review Announcements: Resources, Winter Policy Summit, 2023 Plans 	
3:04 PM	Webinar: Driving Forces Accelerating Transportation Electrification Moderated by Commissioner Peretick of the Michigan Public Service Commission, EV SWG Chair Speaker introductions	
3:08 PM	Presentation: Morgan Ellis, DOE (10 minutes) Overview of the National Blueprint for Transportation	
3:18 PM	Presentations: Bridget Gilmore and Kara Podkaminer, DOE (20 minutes) IIJA/IRA/NEVI Funding Update Tax Incentives: Commercial and Residential EV Grid Assist Activities	
3:38 PM	Presentation: Alex Keros, General Motors (15-20 minutes) OEM Commitments	
3:55 PM	Q&ASpeakers will take questions from working group members	
4:05 PM	 Closed Door Discussion & Peer Sharing (20 minutes) Introductions: name, state, role, and the make/model of the first EV you ever drove or rode in Working group members will discuss their own views and the actions their states have taken to date. 	
4:30 PM	Adjourn	

Feel free to enter questions into chat at any time

Agenda

Announcements - Resources

- ▶ DOE's EV Grid Assist webinar series (June November) recordings are posted at: www.energy.gov/eere/evgrid-assist-accelerating-transition
- Presentations and recordings of past EVSWG events are available on the NARUC website: www.naruc.org/cpi-1/energy-infrastructure-modernization/electric-vehicles/
- EVSWG Listserv: <u>NARUC-EVSWG@lists.naruc.org</u>
- ► ICYMI 4 NEW NARUC EV publications released late 2022:
 - Models for Incorporating Equity in Transportation Electrification
 - Electric Vehicle Interoperability: Considerations for Public Utility Regulators
 - Considering Interoperability for Electric Vehicle Charging: A Commission Case Study
 - Transportation Electrification: State Level Roles and Collaboration among Public Utility Commissions,
 State Energy Offices, and Departments of Transportation

Announcements – NARUC Winter Policy Summit

EV Sessions & Opportunities

- Mon, Feb 13 at 3:15pm: ERE Committee Business Meeting: NASEO and AASHTO EV leaders will discuss the NASEO-AASHTO-DOE-DOT MOU and their work with state energy offices and state departments of transportation
- Tues, Feb 14 at 11am: Joint ERE-Electricity Committee: First Do No Harm: Siting EV Charging Infrastructure
- Weds, Feb 15 at ~8:30am: NARUC members-only coffee & meetup with Gabriel Klein, U.S. Energy and Transportation Joint Office Executive Director
- Weds, Feb 15 at 9:30am: General Session featuring Gabriel Klein
- Weds, Feb 15 at 1:00 4:15pm: Bonus Add-On Workshop: "Demystifying Virtual Power Plants"
 - What is a VPP? How are VPPs deployed today? What are the opportunities and challenges for regulators, utilities, and other stakeholders? This workshop will describe the fundamentals of virtual power plants (VPPs), including applications in vehicle-to-grid, solar+storage, DERs, and demand response. Register in advance. (NARUC Summit registration is NOT required to attend.)

Announcements – 2023 Tentative Plans

More details to come

- 1. Resume monthly EV SWG virtual events last Tuesday
 - each month, 3:00-4:30pm ET
 - Virtual EV Cybersecurity workshop TBC

2. Collaborate at in-person events

Striving for some add-on EV workshops at NARUC or industry conferences

3. New Publications

Options: How will IIJA/NEVI impact PUCs; Getting started with Transportation Electrification; Questions PUCs can ask utilities about T.E. investments; Case studies

Next EV SWG session: February 28, 2023 3:00 to 4:30pm ET

Welcome

Moderator: Commissioner Katherine Peretick, Michigan Public Service Commission

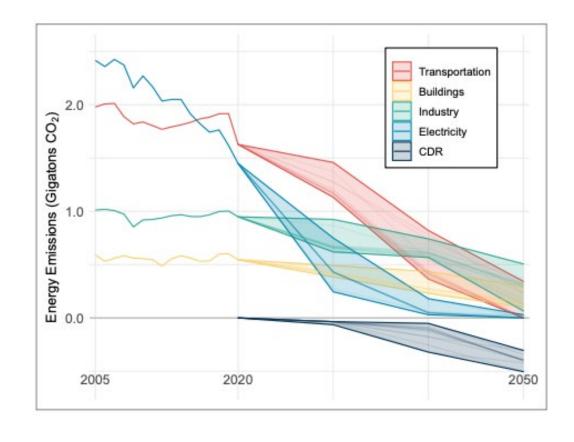
Panelists

- Morgan Ellis, Senior Advisor, Sustainable Transportation and Fuels, DOE
 Office of Energy Efficiency and Renewable Energy (EERE)
- Bridget Gilmore, EV Charging Fellow, Joint Office of Energy and Transportation
- Kara Podkaminer, Senior Advisor, Sustainable Transportation and Fuels, DOE EERE
- Alex Keros, Director, EV Infrastructure Development at General Motors



TRANSPORTATION DECARBONIZATION

- The Long-Term Strategy of the United States
 establishes a goal of net-zero greenhouse gas
 emissions by no later than 2050 and a 50-52%
 reduction by 2030 (from 2005 levels) in economy-wide
 net greenhouse gas emissions.
- Addressing the climate crisis is critical for the United States and will require rapid, widespread, and major transformation of many complex systems that are closely intertwined with our economy and way of life.
- The sense of urgency is high, and the time to act is now to produce effects by 2030 and net-zero by 2050
- Achieving net-zero by 2050 involves aggressive curbing emissions from all sectors, including transportation – the largest source of US greenhouse gas emissions today









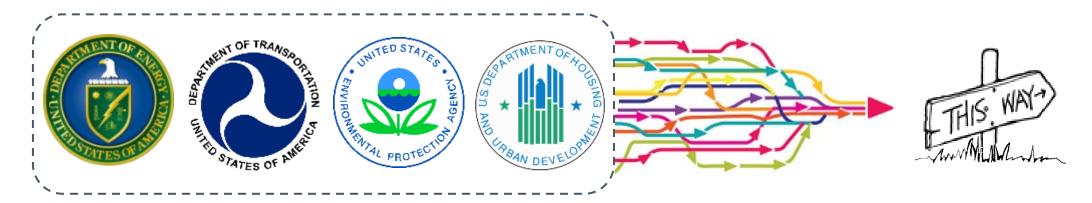


A Coordinated Approach

Close coordination accelerates transportation decarbonization:

- Consistent and expanded stakeholder outreach
- Clear signals to industry
- Coordination at all staff levels:
 - RDD&D planning and execution
 - Infrastructure deployment
 - Policy & regulation development
 - Data, tools, education and training

Underpinned by a singular aligned transportation decarbonization vision/blueprint











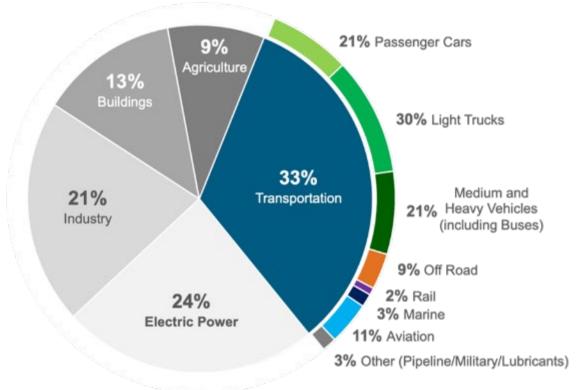
Focus on the Entire Transportation Sector

The goal is <u>complete decarbonization</u> of the transportation sector

The Blueprint

- Covers every mode and sets up realistic, achievable pathways based on innovation and science
- Builds on existing federal commitments
- Focuses on achieving a clean, safe, accessible and equitable transportation system to deliver benefits all communities.

2019 U.S. GHG Emissions



Aviation and marine include emissions from international aviation and maritime transport. Fractions may not add up to 100% due to rounding.







The Strategies

Strategies to achieve decarbonization:

Convenient

















Efficient











Clean



Improve Community Design and Land-use Planning

Increase Options to Travel More Efficiently

Transition to Zero Emission Vehicles and Fuels

Prioritizing land-use decisions and community design solutions that prioritize access

Expanding options to enable shifts in more efficient vehicles and transport modes

Deployment of zeroemission vehicles, fuels and associated infrastructure









Call to Action: Milestones and Timeline

Timeframe	Actions
Before 2030	Turning the Tide on Transportation GHGs: Research Investments to Support Deployment
<u>2030 - 2040</u>	Accelerating Change: Scaling Up Deployment of Clean Solutions
<u>2040 - 2050</u>	Completing the Transition: A Sustainable and Equitable Future









Thank you!



Bridget Gilmore, EV Charging Fellow

NARUC EV State Working Group 1/31/2023

driveelectric.gov

Agenda

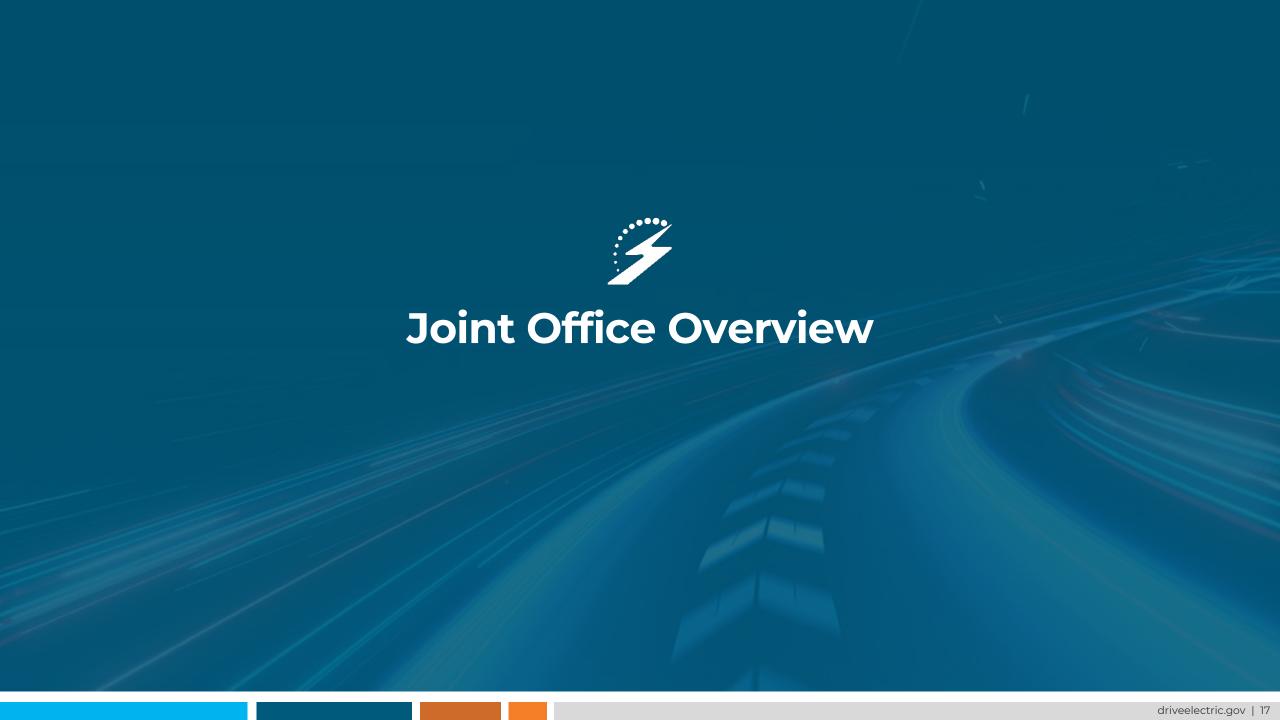
Brief Joint Office Overview

Program Updates

Technical Assistance with State DOTs and Energy Offices

Connecting with the Joint Office





Joint Office Purpose

Established by the Bipartisan Infrastructure Law to address areas of joint interest to the U.S. Departments of Energy and Transportation

\$300M

in Fiscal Year 2022 funds to DOT with transfer authority to DOE

9

major areas of emphasis

Areas of emphasis:

- 1) Technical assistance for EV charging and refueling infrastructure
- 2) Data sharing
- 3) National and regionalized study vehicle of infrastructure needs
- 4) Training and certification programs
- 5) Program to promote renewable energy generation, storage, and grid integration
- 6) Transmission pilots in interstate rights-of-way
- 7) Research, strategies, and actions to mitigate effects of climate change
- 8) Develop streamlined utility accommodations policy for transmission in transportation right-of-way
- 9) Any other issues the Secretary of Transportation and Secretary of Energy identify as issues of joint interest

Mission and Vision



Mission

To accelerate an electrified transportation system that is affordable, convenient, equitable, reliable, and safe.

Vision

A future where everyone can ride and drive electric.

BIL Programs Supported by the Joint Office

The Joint Office will provide unifying guidance, technical assistance, and analysis to support the following programs:



National Electric Vehicle Infrastructure (NEVI) Formula Program (U.S. DOT) \$5 billion for states to build a national electric vehicle (EV) charging network along corridors



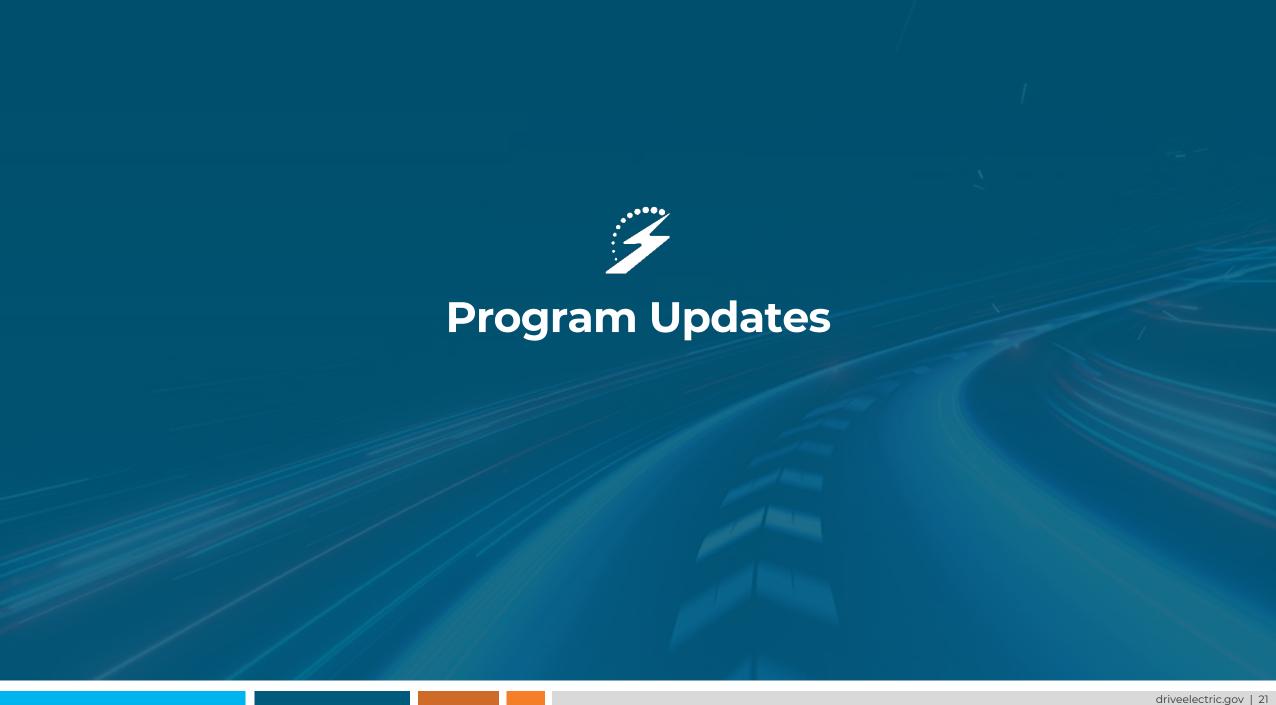
Charging & Fueling Infrastructure Discretionary Grant Program (U.S. DOT) \$2.5 billion in community and corridor grants for EV charging, as well as hydrogen, natural gas, and propane fueling infrastructure



Low-No Emissions Grants Program for Transit (U.S. DOT) \$5.6 billion in support of low- and no-emission transit bus deployments



Clean School Bus Program (U.S. EPA) \$5 billion in support of electric school bus deployments

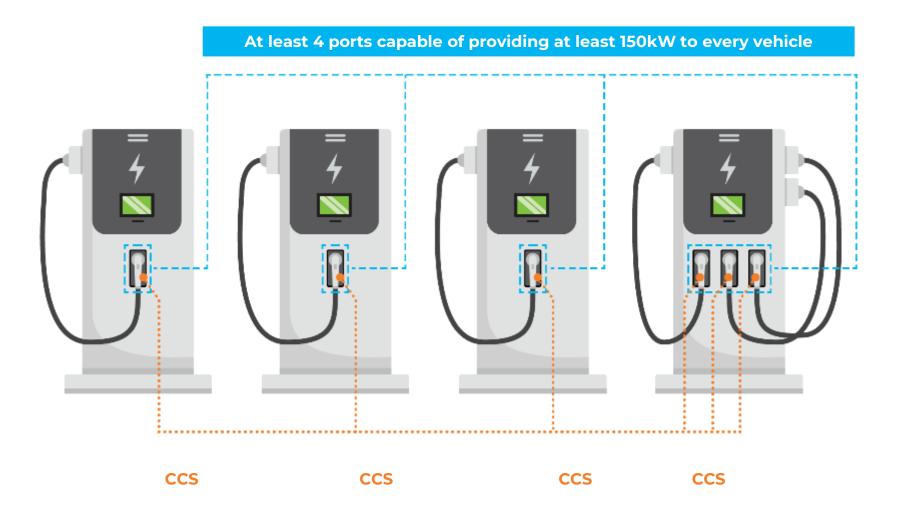


National Electric Vehicle Infrastructure (NEVI) Formula Program Updates



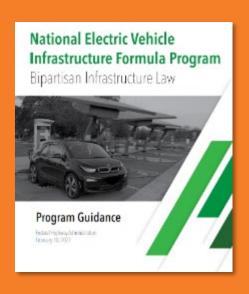
- \$5.0B for **EV charging along** designated alternative fuel corridors
- 80/20 Federal Cost Share
- All 50 state plans plus DC and Puerto Rico are approved by FHWA, unlocking \$1.5 B in funding
- Kentucky, Pennsylvania, New Jersey,
 Texas, and Ohio all have open RFPs,
 RFIs, or draft versions that are publicly available.

NEVI Charging Station Design



Every 50 Miles Along Alternative Fuel Corridors

What NEVI investments may be relevant for commission approval?



Generally, NEVI funds can be used for:

- Acquisition and installation of EV charging infrastructure
 - May include on-site distributed energy resources
- Upgrades to existing public charging stations to meet program requirements
- Maintenance and Operating Assistance
- Other costs specified in NEVI program guidance

May see topics related to:

- Rate proposals to mitigate demand charges
- Utilities using funds to contribute to 20% match
- Major grid upgrade needs to accommodate NEVI stations

Discretionary Grant Program for Charging and Fueling Infrastructure – Coming Soon!

- EV charging, hydrogen, propane, and natural gas fueling infrastructure
- 80/20 Federal Cost Share

Divided into two distinct \$1.25 billion grant programs:

Corridor Charging Grant Program

 Strategically deploy publicly accessible EV charging infrastructure and alternative fueling infrastructure along designated Alternative Fuel Corridors

Community Charging Grant Program

Strategically deploy publicly accessible
 EV charging infrastructure and alternative fueling infrastructure in communities



Technical Assistance with State DOTs and Energy Offices

Status and coordination with state DOTs and SEOs

Joint Office signed an MOU between NASEO/AASHTO in February 2022

Goal: Support NEVI implementation and the JO with technical assistance, enabling **peer-to-peer learning**

Activities:

- Holding in-person regional meetings
 - Western region and Northeast meetings took place in the last few weeks
- Hosting monthly regional calls
 - Last month's call pertaining to utility coordination
- Will be hosting a national meeting this summer

Use TA Channels



To Spread Awareness of New and Existing Resources

Addressing TA Needs



What's Next for the Joint Office

NEVI Notice of Proposed Rulemaking (NPRM) NPRM Closed on August 22nd with **380+ comments**

Buy America

Proposed Waiver Issued for Comment on August 31st

Discretionary Charging and Fueling Infrastructure Grants

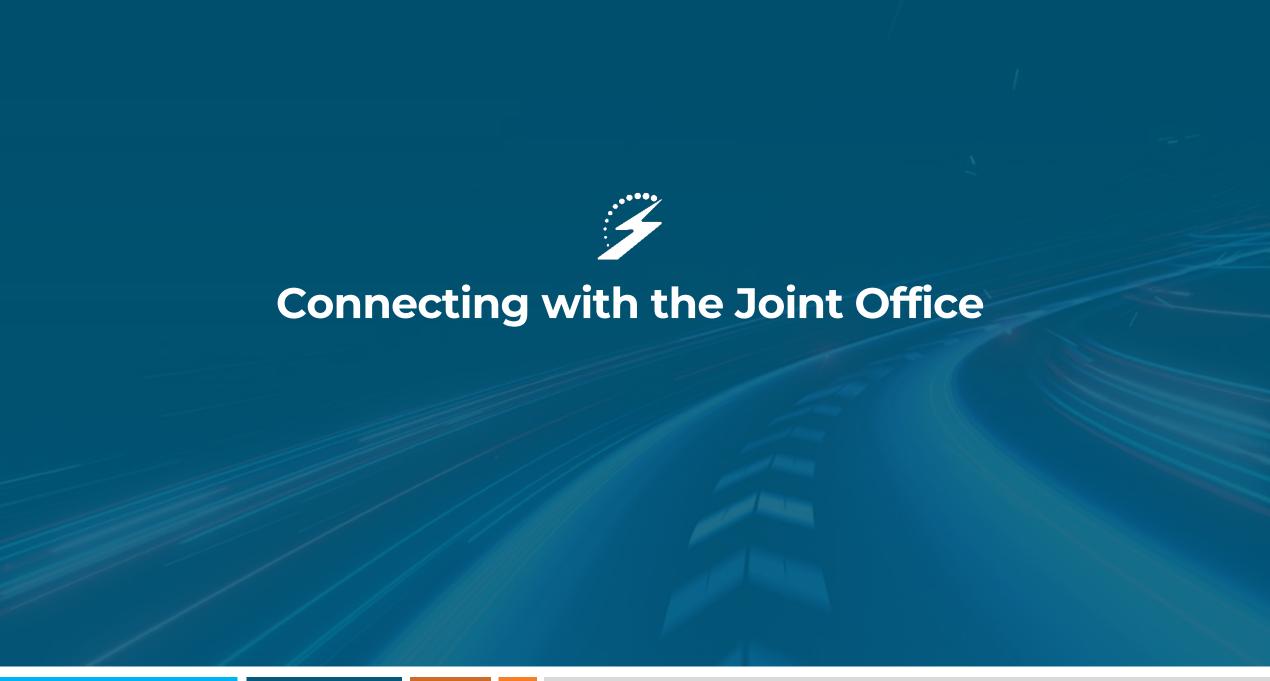
\$2.5B for corridor and community charging grants via BIL

NEVI "gap-filling" grants

10% of NEVI funds are set-aside annually to fund strategic deployment of EV chargers.

Designation of Freight Corridors

Federal Highway Administration (FHWA) will initiate the designation of **freight EV corridors**



We are looking to hire a Senior Advisor for Electric Utility Policy and Programs

- Visit DriveElectric.Gov
- Apply through to Clean Energy Corps
- Select "EV Charging" as an area of interest
- Email resume to jointofficejobs@ee.doe.gov



Careers

The Joint Office of Energy and Transportation (Joint Office) and its partners are always looking for talented individuals interested in helping deploy a network of electric vehicle (EV) chargers, zero-emission fueling infrastructure, and zero-emission transit and school buses across all 50 states. Washington, D.C., and Puerto Rico. See below for current opportunities.

Joint Office Careers through Clean Energy Corps

In the coming months, the Joint Office of Energy and Transportation will be hiring staff for positions listed below. Apply to the <u>Clean Energy Corps</u> to be considered for these positions. Please select "EV Charging" as an area of interest when you submit your application. After you have submitted your application to the Clean Energy Corps, please email your resume to <u>significations</u> interest.

Senior Advisor for Community and Urban Charging	+
Senior Advisor for Electric Utility Policy and Programs	+
Budget Analyst	+
Chief of Staff	+
Program Manager for Technical Assistance and Implementation	+
Deployment Manager for Community Charging Technical Assistance	+
Deployment Manager for Corridor Electrification Technical Assistance	+
Deployment Manager for School and Transit Bus Electrification	+
Program Manager for Standards and Reliability	+
Deployment Manager for Standards and Reliability	+
Deployment Manager for EV Charging Reliability	+
Program Manager for Data and Analysis	+
Deployment Manager for EV Charging Analysis	+
Deployment Manager for Transportation Electrification Data	+
Program Manager for Communications and Education	-
Communications Manager for Electrification Education	-

- Request assistance via online form
- Initial response within 48 hours
- General questions and feedback welcome!



Contact Us

Use this contact form to submit a media inquiry, ask a general question about Joint Office of Energy and Transportation resources and activities, or request technical assistance for states, tribal nations, or clean school buses or transit buses.

	٥
Name *	
Email *	
Subject *	
Message *	
viessage	

driveelectric.gov/contact



Thank You!



BIL & IRA Funding for Transportation Electrification and Upcoming EVGrid Assist Activities

Kara Podkaminer, Senior Advisor Sustainable Transportation, EERE

1/31/23



Government Action Propelling Transportation Electrification

Historic measures that will transform the market, over \$25B in direct investments

Bipartisan Infrastructure Law (BIL)

NEVI Formula Program (DOT, \$5B)

Charging and Fueling Infrastructure, Community and Corridor Grants (DOT, \$2.5 B)

> Clean School Bus Program (EPA, \$5B)

Low or No Emission (Bus) Grants (DOT, \$5.6B)

Smart Grid Grants (DOE, \$3B)

Utility EV Promotion Measures Amends 111(d) PURPA, transportation electrification

Inflation Reduction Act (IRA) Non-tax Provisions

Clean Heavy-Duty Vehicles (EPA, \$1B)

Grants to Reduce Air Pollution at Ports (EPA, \$3B)

Diesel Emissions Reduction (EPA, \$60M)

US Postal Service Clean Fleets (USPS, \$3B)

Inflation Reduction Act (IRA) Tax Credits

30D - Clean Vehicle Credit up to \$7,500

45W – Commercial Vehicle Credit up to \$7,500

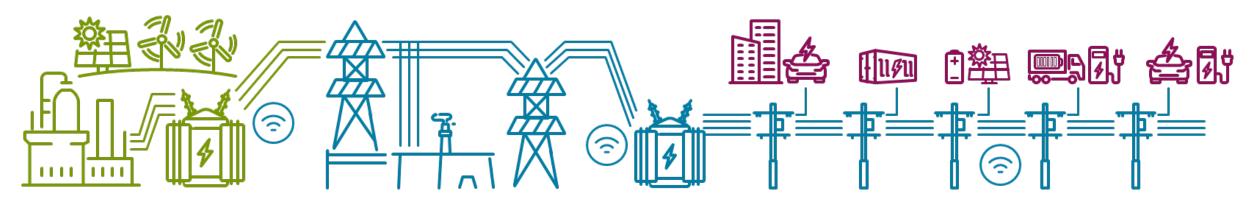
25E – Previously Owned Vehicle Credit, up to \$4,000

30C – Alternative Fuel Refueling Property Tax Credit Up to 30%, \$1,000 (residential), \$100,000 (commercial) per item

Vehicle Grid Integration for Electric Mobility

Interactions and Enablers

Decarbonized | Reliable | Resilient | Cost-effective



ENABLED BY

- Renewable Resources
- Reliable Charging
- Sufficient Capacity
- Driver Behavior

- Communications & Controls
- Technical Standards
- Cyber Security

- Retail Rates
- Grid Services Markets
- Actionable Data

- Policy
- Transparency & Oversight
- Investment





EVGrid Assist: Accelerating the Transition

Comprehensive VGI Technical Assistance Initiative



Building Momentum and Capabilities

VGI Vision and DOE Road Map

Educational Webinar Series and Resource Library

Stakeholder Processes to Resolve Challenges

EV Rate Design Considerations

Vehicle to Everything (V2X) MOU

State-Specific Tool Demonstration Reports

Direct Technical Assistance

Goals

- Activate community
- Educate stakeholders
- Resolve barriers
- Drive coordination among stakeholders
- Identify emerging needs and challenges
- Work together on solutions

Jpcoming Events

GI Educational Webinar Series

register for EVGrid Assist Webinars at www.EVGridAssist will be linked in the list below, as they become available.

- The Importance of VGI: WATCH[□]
- EV Basics: WATCH
 — Webinar highlights (PDF)
- DCFC Charging for Light, Medium, and Heavy-duty Vehicles
- Grid Aware Site Selection: WATCH[□]
- Charging Station Site Design: WATCH
- Load Forecasting: WATCH
- Rates and Incentives: WATCH
- Planning for the Future: WATCH

EVGrid Assist Website

www.energy.gov/EVGridAssist

- Sign up for announcements
- Register for upcoming webinars
- Links to recordings and webinar highlights
- Resource library
 - National lab tools
 - Relevant reports

Resource Library

Thank you!









Pioneer and grow innovative energy solutions to empower every person



HOW WILL WE ACHIEVE THIS MISSION?

By delivering a full suite of charging, energy products & services



Adding meaningful value to our customers



\$750M Investment in EV Charging Ecosystem



Home Charging

~90% of charging happens here

47K charging events daily

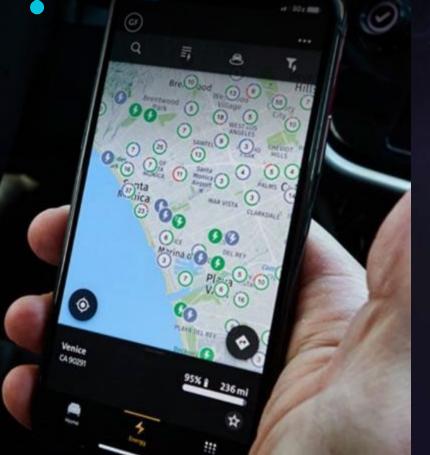
Only company to cover home install for eligible customers

Urban & Highway Charging

Over 5,000 DC fast chargers

350kW, reservations, discounts, connected, & reliable

Ultium everywhere, open to all, differentiated for GM customers



Community Charging

40K Level 2 chargers in collaboration with Dealers

Investment in electrifying local dealer communities

Remove customer barriers to drive EV adoption & growth





Home Charging Solutions



Remove barriers to EV adoption by addressing customer charge anxiety

Providing our customers with charging solutions that fit their lifestyle through partnerships with **Qmerit** and **EVgo**



CHEVROLET

BOLT EUV/EV

Free 240V outlet installation or \$500 EVgo public charging credit valid for 3 years





. .

Complimentary **11.5kW/48A** L2 charger and referral to self pay EV Concierge service





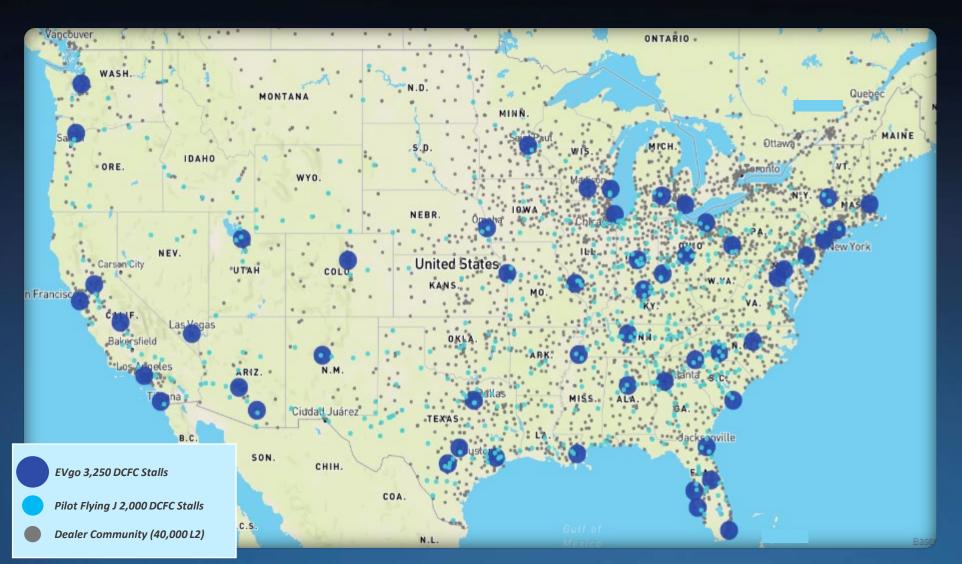
LYRIQ

\$1500 credit to EV concierge installation or **2** years unlimited public charging with EVgo

general motors 44

Ultium Charge 360 | Expanding Access & Improving Experience

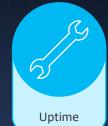




















Fleet Solutions



Overview

- Turnkey charging solutions that address today and future goals.
- GM & depot provider enabled tools that reduce cost, like managed charging & grid services.





Digital | Enabling Charging Experience



FIND



NETWORK AGGREGATION: LOCATE OVER 100,000 CHARGERS

PLAN ROUTE AND RECEIVE REAL-TIME UPDATES

DIRECT INTEGRATION INCLUDES

DYNAMIC DATA

CHARGE



ULTIUM NETWORK INTEGRATION ACROSS ROAMING PARTNERS

ENABLE FEATURES LIKE PLUG & CHARGE, ISO-15118

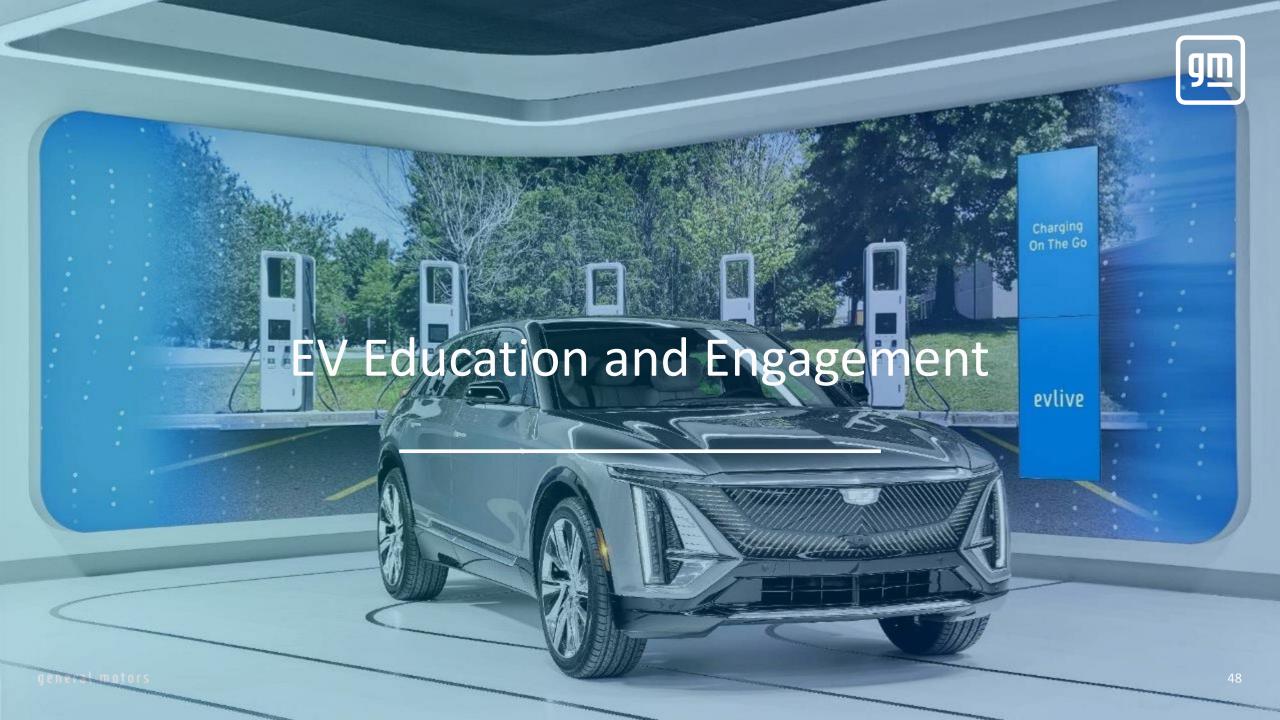
PAY



SINGLE PAYMENT SYSTEM MANAGED THROUGH GM ULTIUM CHARGE 360

LINK ACCOUNTS VIA BACK OFFICE INTEGRATION

PERSONA-BASED FILTERS (E.G. SPEED, TYPE, DISCOUNT)



Education & Engagement



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EV Academy

In-Person Training

EV Live

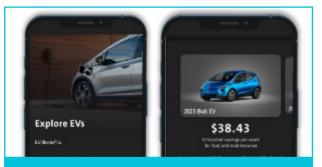
myBrand Explore EV

EV Showroom

Micro-Learning (Trivie)

Center of Learning

Readiness Guides



myBrand: Explore EV

WHAT

Invites ICE owners to see benefits of EV ownership, including cost of ownership calculators, charging solutions, etc

WHO

Available to all myBrand app users

WHEN

myChevy US experience available now, (82k monthly users visit Explore EV myChevy US) and MyGMC US and MyChevy Canada rolling out



EV Showroom

WHAT

Adaptive web-app featuring interactive tools like fuel savings and charging calculators

WHO

Customer-facing Dealer personnel; customers in showrooms

WHEN

Cadillac launched; Canada, Chevy, GMC in Q4; global in 2023



Trivie

WHAT

Gamified micro-learning app to enhance EV proficiency

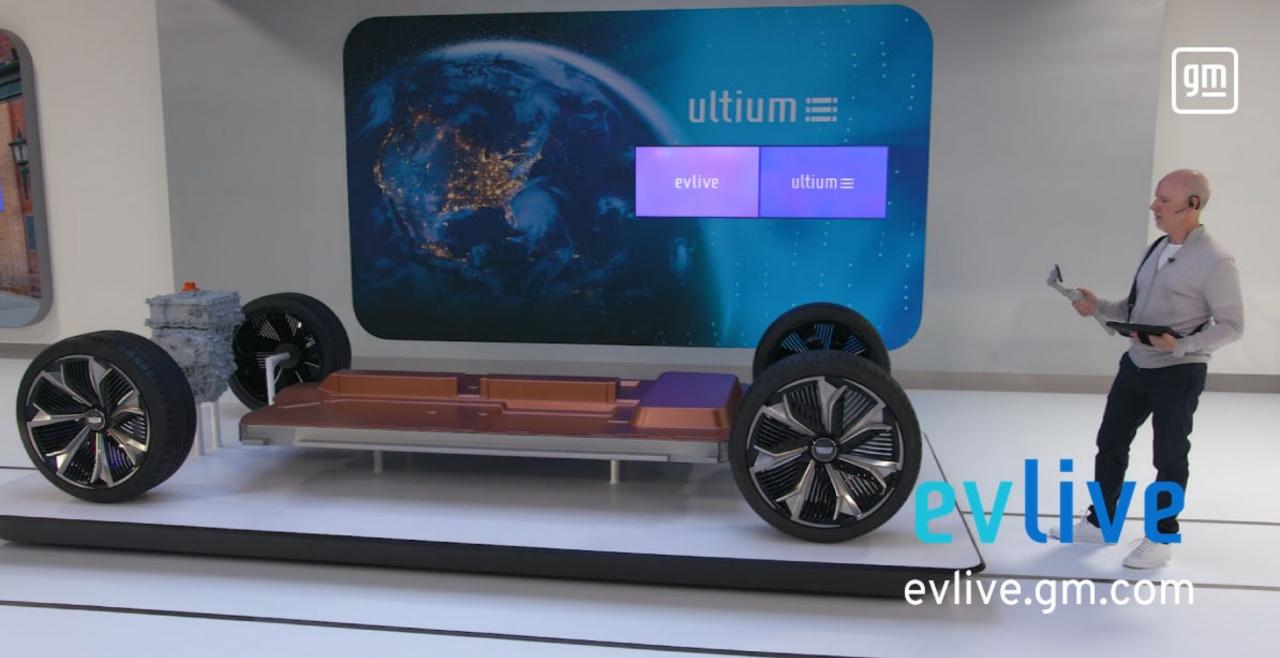
WHO

Customer-facing Dealer personnel; GM employees

WHEN

App is live for Dealers in US (10,000 users enrolled); open enrollment open; Canada and GM employees to follow in Q4

general motors









Home Energy Storage Unit & 2-Way EV Charger²

MyUltium Cloud App is pre-production and subject to change. **Accessory charging unit shown requires a fully charged and properly equipped Silverado EV having bidirectional charging capabilities, a properly equipped home, and a transfer switch to disconnect home from the grid. Power supply from the vehicle will power only certain appliances in the home for certain durations of time up to 21 days collectively, depending on usage and appliances. Appliance usage and energy consumption based on analytical data and average household energy usage, per available U.S. Energy information Administration statistics. Weather conditions, life of the battery, energy efficiency of appliances, and other external factors may impact the duration of time. Results may vary. "Available to order in 2023, 46th is collaborating with partners to provide coast-to-coast charging stalls across the U.S. and Canada.





DC Fast Charger⁴ Level 2 Pedestal Charger4 ultium **≡**



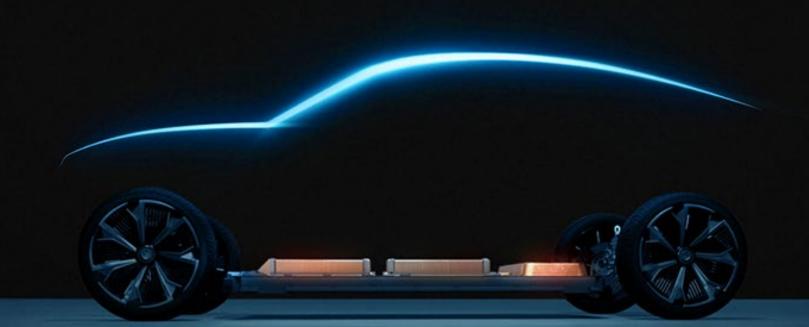


Commercial Energy Storage Unit³

Looking Forward



- Significant EV Growth Charging, Infrastructure & Experience Matters
- Accelerating Partnerships & Flawless Launches in 2023
- Expansion of Ultium Cell & Energy Management Beyond the vehicle





Questions?

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

Commission-Only Peer Sharing Discussion Questions (do not share)

- ▶ 1. Have commissions developed relationships/multiagency transportation task forces with sister agencies? How is that working? Are there state-wide blueprints or master plans in place or under development?
- Michigan: Two different groups
 - Council for Electrification and Future Mobility
 - A smaller group working on NEVI that includes the Dept. of Transportation; Dept. Office of Labor and Economic Opportunity; and Dept. of Environment, Great Lakes, and Energy
 - There have been several meetings, communications, and at least one memorandum. They feel like they are making a lot of progress.
- Maryland
 - Zero-Emission Electric Vehicle Infrastructure Council established by legislation, originally as the Electric Vehicle Infrastructure Council in 2011.
 - Commission has also appointed a working group that is externally facing with broad participation. Membership overlaps with the Council to some extent. PSC Staff Joey Chen is available to answer questions: joey.chen@maryland.gov

Washington

- Initiated by legislation in 2022, the Interagency EV Coordinating Council
 is co-lead by the Departments of Commerce and Transportation. Other
 members include the State Efficiency and Environmental Performance
 Office, Office of Financial Management, Office of Superintendent for
 Public Instruction, Utilities and Transportation Commission, and the
 Departments of Agriculture, Ecology, Enterprise Services, and Health.
- Has responsibility for developing an electrification strategy and a strategy to reach the 2030 100% zero-emission vehicle goal.
- The Commission has also organized an EV working group

Oregon

 There is a longstanding Zero Emission Vehicle Interagency Working Group (ZEVIWG) that drives significant cross-agency coordination. It is led by the Dept. of Transportation.

Commission-Only Peer Sharing Discussion Questions (do not share)

▶ 2. How involved is your commission in planning for or dealing with the influx of federal funding?

There was limited time for this question

- Illinois
 - The Climate and Equitable Jobs Act (CEJA) passed in 2021 resulted in a number of activities by the Illinois Commerce Commission, including the approval of innovative performance metrics for the two large IOUs.
 - ICC proceedings seeking alignment between federal legislation and CEJA are summarized here: <u>Federal legislation completely</u> changed the energy landscape. How do states take advantage of it? | <u>Utility Dive</u>

Next EV SWG meeting: Tues, Feb. 28 at 3pm ET OR SEE YOU AT THE NARUC WINTER POLICY SUMMIT IN DC