



FHWA Alternative Fuel Corridors Program Update & Bipartisan Infrastructure Law Provisions

Drive Electric Pennsylvania Coalition Meeting
January 20, 2022

MIKE SCARPINO | U.S. DEPARTMENT OF TRANSPORTATION-VOLPE CENTER



Today's Agenda

- AFC Program
 - ✓ Overview of the Program
 - ✓ Results of Rounds 1-5
- Bipartisan Infrastructure Law
 - Sec. 11401 - Grants for Charging and Fueling Infrastructure for Corridors and Communities
 - National Electric Vehicle Infrastructure (NEVI) Formula Program
 - December 13 White House Fact Sheet Updates
 - Requests for Information
 - Round 6 of the AFC Designation Program
 - Other Electrification Funding Programs of Interest
- DOE Vehicle Technologies Office's Technology Integration/Clean Cities Update

National Alternative Fuel Corridors

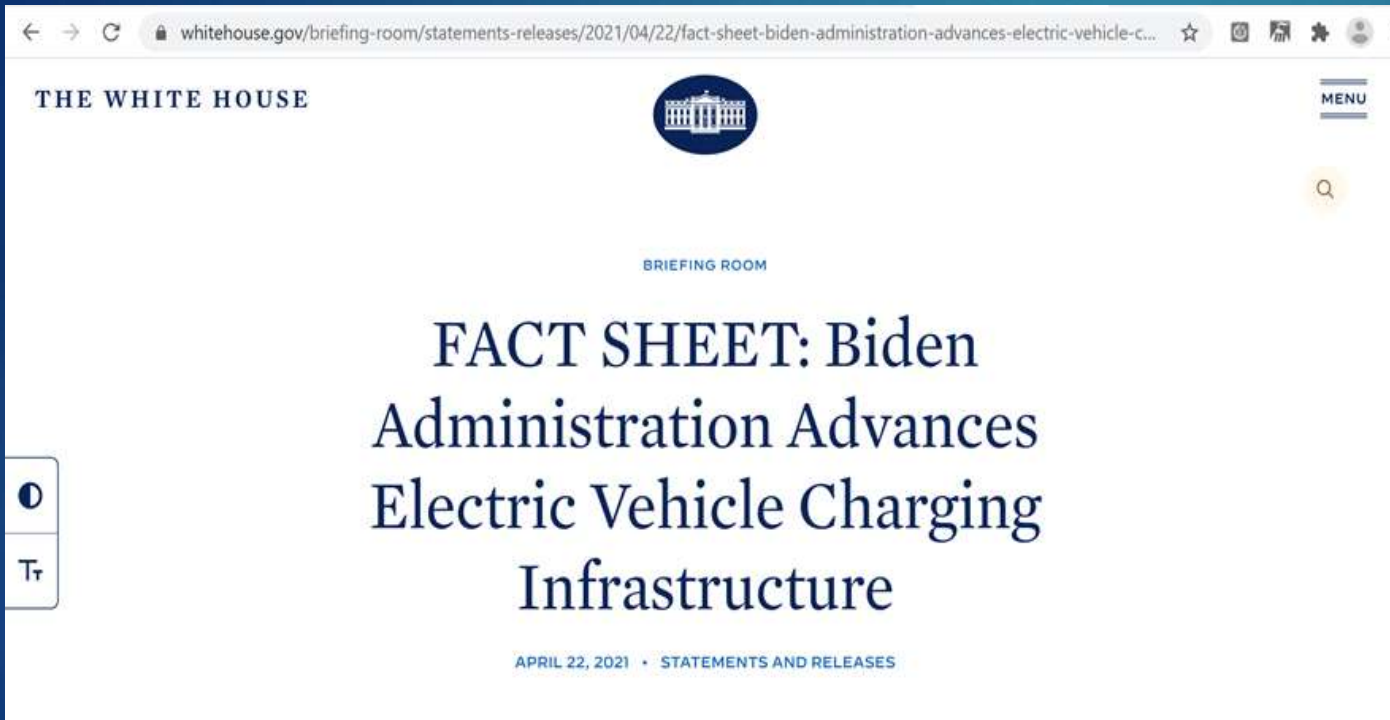


To improve the mobility of alternative fuel vehicles, the U.S. Department of Transportation (DOT) has designated national corridors in strategic locations along major highways for:

- Plug-in electric vehicle charging
- Hydrogen fueling
- Propane (LPG) fueling
- Natural gas (CNG, LNG) fueling

April 22, 2021 White House Announcement Round 5 Designations & Other EV Support

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<https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-biden-administration-advances-electric-vehicle-charging-infrastructure/>

Transportation Secretary Pete Buttigieg speaks during a news conference held in front of new EVGo electric vehicle charging stations in the parking garage of Union Station in Washington, D.C., on Thursday. Photo by Sarah Silbiger/UPI | [License Photo](#)

Combined Results Rounds 1-5

- ▶ Designations....
 - ✓ **125** nominations
 - ✓ Includes portions/segments of **134** Interstates, along with **125** US highways/state roads
 - ✓ Comprise **49 states plus D.C.**
 - ✓ Covers **approximately 165,772** miles of the National Highway System (all fuels combined)

Alternative Fuel Corridor Designations

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- Nominated corridors separated into two designation categories:
 - **Corridor-Ready** – sufficient facilities on the corridor currently exist to allow for corridor travel on the designated alternative fuel(s);
 - **Corridor-Pending** – currently insufficient facilities on the corridor to allow for corridor travel on the designated alternative fuel(s).
- **Corridor Planning/Analysis (2016-2021)**
 - Build/Expand charging and fueling capacity along corridors connecting communities, states and regions.
 - Identify potential fueling site locations along corridors
 - Close gaps and/or extend corridors

Corridor-Ready Criteria- Round 5

EV

DCFC only
(CHAdeMO +
CCS)

50 miles
between
stations

5 miles from
highway

Public stations
only (no Tesla)

CNG

150 miles
between
stations

5 miles from
highway

Public
stations only

Fast fill, 3,600
psi

LNG

200 miles
between
stations

5 miles from
highway

Public
stations only

Hydrogen

100 miles
between
stations

5 miles from
highway

Public
stations only

Propane

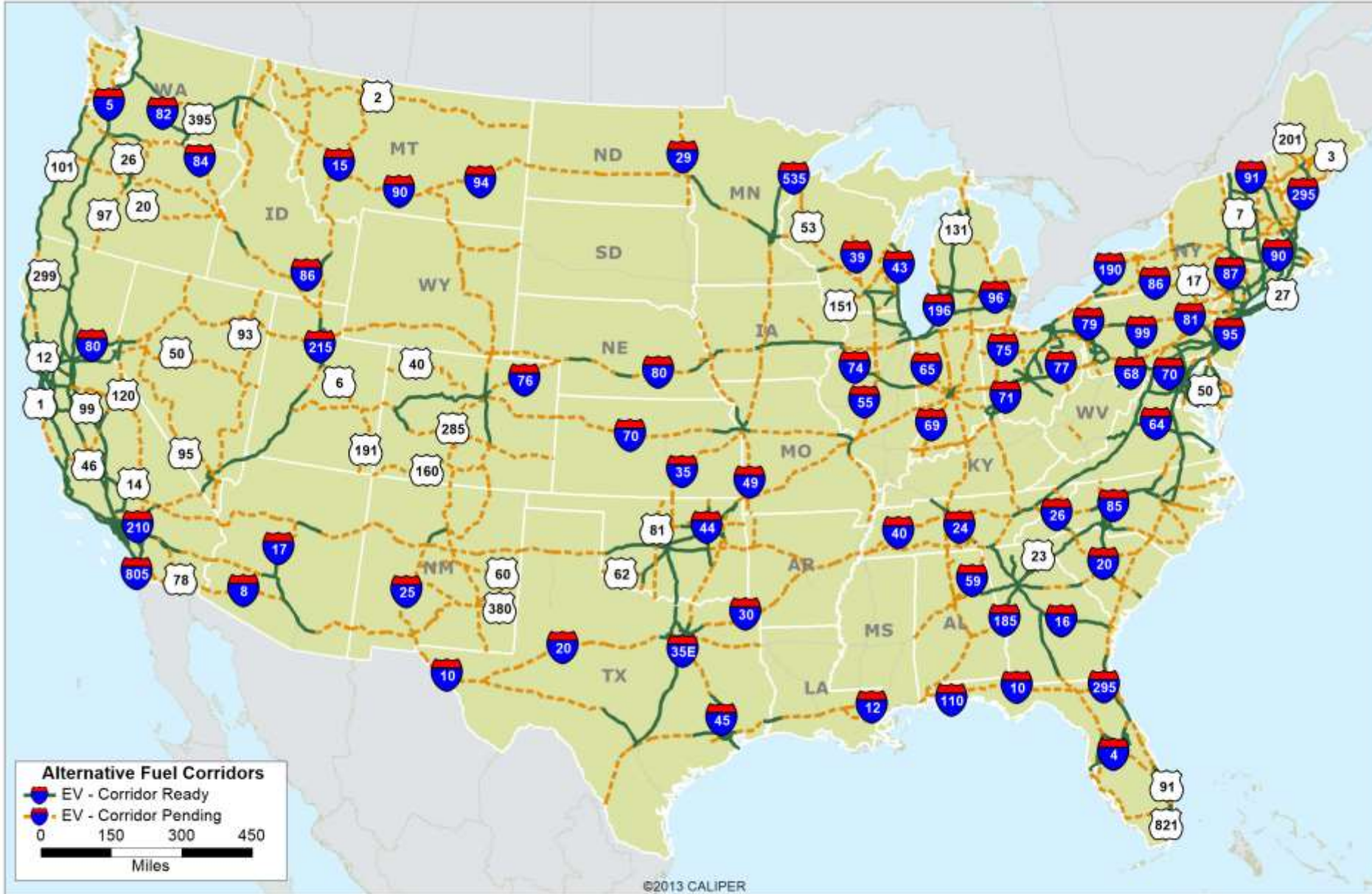
150 miles
between
stations

5 miles from
highway

Public
stations only

Primary
stations only

EV Corridors: Rounds 1-5



EV Corridors: Rounds 1-5 (Northeast)

Electric Vehicle (EV-Round 1,2,3,4 and 5)



EV Corridors: Rounds 1-5 (PA)

Electric Vehicle (EV-Round 1,2,3,4 and 5)

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DOT Funding and Financing Programs with EV Eligibilities*

LEGEND

| | | | | | |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | |
| Construction and installation of EV charging infrastructure, including parking facilities and utilities. | Workforce development and training related to EV infrastructure. | EV acquisitions and engine conversions - cars or trucks. | Planning for EV charging infrastructure and related projects. | Construction and installation of EV charging infrastructure to support operational, resiliency, national energy security, environmental, and community goals for freight transportation. | Installation of EV charging infrastructure as part of transit capital projects eligible under chapter 53 of title 49, United States Code. |



| | | | | | | | |
|-----------------------------------------------------------------------------------------------------|-----------|--|--|--|--|--|--|
| National Highway Performance Program (NHPP) | \$23.1 B | | | | | | |
| Surface Transportation Block Grant Program (STBG) | \$10.2 B | | | | | | |
| Congestion Mitigation & Air Quality Improvement Program (CMAQ) | \$2.4 B | | | | | | |
| National Highway Freight Program (NHFP) | \$1.5 B | | | | | | |
| State Planning and Research (SPR) | \$641.5 M | | | | | | |
| Metropolitan Planning (PL) | \$357.9 M | | | | | | |
| DISCRETIONARY PROGRAMS | | | | | | | |
| Rebuilding American Infrastructure with Sustainability and Equity (RAISE) (formerly known as BUILD) | \$1.0 B | | | | | | |
| Infrastructure for Rebuilding America (INFRA) Grant Program | \$889.0 M | | | | | | |
| Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) | \$53.3 M | | | | | | |
| OTHER ALLOCATED PROGRAMS | | | | | | | |
| Federal Lands and Tribal Transportation Program (FLTTP) | \$1.0 B | | | | | | |
| Highway Infrastructure Program (HIP) (other than for bridges) | \$644.0 M | | | | | | |
| Puerto Rico Highway Program (PRHP) | \$74.9 M | | | | | | |
| Territorial Highway Program (THP) | \$37.3 M | | | | | | |
| INNOVATIVE FINANCE PROGRAMS | | | | | | | |
| State Infrastructure Banks (SIBs) | Varies | | | | | | |
| Transportation Infrastructure Financing and Innovation Act (TIFIA) | Varies | | | | | | |

Disclaimer: Many of these programs are oversubscribed, and EV charging infrastructure competes with many other types of eligible projects.

* All eligibility determinations are fact specific. Limitations may apply. Additional low and zero-emission fuel types also may be eligible under these programs.

Note: Total (in millions and billions, rounded to one decimal place)

April 22, 2021 White House Announcement

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Federal Funding is Available For Electric Vehicle Charging Infrastructure On the National Highway System

https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/resources/ev_funding_report_2021.pdf

Penn DOT's I-81/I-78 Corridor Plan

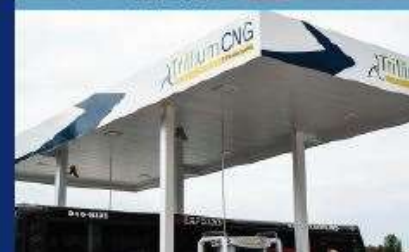
- FHWA funded 5 AFC Deployment Grant Awards
 - To assist with planning for the deployment of alternative vehicle fueling and charging facilities along Interstate corridors across the nation.
 - To program emphasized on turning "pending" corridors to "ready" through the use of public-private partnerships.

https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/deployment_plan/ & <https://www.penndot.gov/ProjectAndPrograms/Planning/Pages/Energy-and-Environment-Initiatives.aspx>



Alternative Fuels Deployment Plan for I-81 and I-78 in Pennsylvania

FHWA APPLIED RESEARCH PILOT STUDY





Administrat

BRIEFING ROOM

FACT SHEET: The Bipartisan Infrastructure Deal Boosts Clean Energy Jobs, Strengthens Resilience, and Advances Environmental Justice

NOVEMBER 08, 2021 • STATEMENTS AND RELEASES

[FACT SHEET: The Bipartisan Infrastructure Deal Boosts Clean Energy Jobs, Strengthens Resilience, and Advances Environmental Justice | The White House](#)

White House Fact Sheet (Nov 8, 2021)

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- ▶ The Bipartisan Infrastructure Deal will invest **\$7.5 billion** to build out the first-ever national network of EV chargers in the United States.
- ▶ A critical element in the Biden-Harris Administration's plan **to accelerate the adoption of EVs to address the climate crisis and support domestic manufacturing jobs.**
- ▶ Provide funding for deployment of EV chargers **along highway corridors to facilitate long-distance travel and within communities to provide convenient charging where people live, work, and shop.**
- ▶ Funding will have a particular focus on **rural, disadvantaged, and hard-to-reach communities.**

The Bipartisan Infrastructure Law- \$7.5B Investment

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- Sec. 11401 - Grants for Charging and Fueling Infrastructure for Corridors and Communities
 - **\$2.5B for Alternative Fuels (EV, CNG, LNG, LPG, H2)**
 - \$300,000,000 for FY2022; \$400,000,000 for FY2023; \$500,000,000 for FY2024; \$600,000,000 for FY2025; and \$700,000,000 for FY2026
- National Electric Vehicle Formula Program
 - **\$5.0B for EV Corridors**
 - \$1B/year for FY2022-2026
- Establish a new **Joint Office of Energy & Transportation** to provide tools & technical assistance to funding recipients

The Bipartisan Infrastructure Law-

Charging and Fueling Infrastructure for Alternative Fuel Corridors & Communities Grant Program

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- Sec. 11401 - Discretionary Grant Program (80% Federal Share)
 - \$2.5B for all alternative fuels
 - Eligible Fuels: **EV, CNG, LNG, LPG, Hydrogen**
 - LPG fueling for MD/HD vehicles only
- Focus is on Alternative Fuel Corridors and Community Fueling/Charging
 - 50% of funding for designated Alt Fuel Corridors
 - 50% of funding for Communities
- Eligible Entities:
 - State, Local Governments, MPOs/Planning Agencies, Transit/Port Authority, Tribal

The Bipartisan Infrastructure Law-

Charging and Fueling Infrastructure for
Alternative Fuel Corridors & Communities Grant Program

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- **Corridor Fueling/Charging Requirements:**
 - **Publicly accessible** sites along an FHWA **designated alternative fuel corridor**
 - Improve alternative fueling corridor networks by:
 - **Converting corridor-pending corridors to corridor-ready corridors;**
 - In the case of corridor ready corridors, **providing redundancy:**
 - To meet excess demand for charging or fueling infrastructure; or
 - To reduce congestion at existing charging or fueling infrastructure in high-traffic locations;

The Bipartisan Infrastructure Law-

Charging and Fueling Infrastructure for Alternative Fuel Corridors & Communities Grant Program

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➤ **Community** Fueling/Charging Requirements:

- A project receiving a grant under this paragraph may be located **on any public road** or in **other publicly accessible locations, such as:**
 - **Parking facilities at public buildings, Public schools, Public parks, Publicly accessible parking facilities** owned or managed by a private entity
- Priority will be given to projects in:
 - **Rural areas,**
 - **Low & moderate income neighborhoods** and
 - Communities with **a low ratio of private parking spaces to households or a high ratio of multiunit dwellings** to single family homes

The Bipartisan Infrastructure Law-

National Electric Vehicle Formula Program

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- National Electric Vehicle Formula Program
 - **\$5.0B** for **EV Corridors**
 - \$1 B/year for FY2022-2026
 - 80% Federal Share
- The program will provide states and localities funding for:
 - The **acquisition and installation of electric vehicle charging infrastructure** to serve as a catalyst for the deployment of such infrastructure and to connect it to a network to facilitate data collection, access, and reliability;
 - Proper **operation and maintenance** of electric vehicle charging infrastructure
 - **Data sharing** about electric vehicle charging infrastructure to ensure the long-term success of investments made

The Bipartisan Infrastructure Law-

National Electric Vehicle Formula Program

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➤ Eligible Projects

- Any EV charging infrastructure acquired or installed **shall be located along a designated alternative fuel corridor**
- If a State determines, and DOT certifies, that the designated alternative fuel corridors in the States are “**fully built out**”, then the State may use funds provided for EV charging infrastructure on any public road or in other publicly accessible locations, such as:
 - Parking facilities at public buildings, Public schools & parks; Publicly accessible parking facilities owned or managed by a private entity

➤ State Plans

- Each State **is required to develop an EV infrastructure deployment plan** and submit the plan to DOT by the deadline established.
- If the State fails to submit a plan, **DOT may award such funds on a competitive basis to local jurisdictions within the State**

➤ Equity Provisions under **Justice40** to be included

The Bipartisan Infrastructure Law-

National Electric Vehicle Formula Program

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- Formula Program Funds may be used for:
 - The acquisition or installation of **electric vehicle charging infrastructure**;
 - **Operating assistance** for costs allocable to operating and maintaining electric vehicle charging infrastructure acquired or installed under this program, for a period not to exceed five years;
 - The acquisition or installation of **traffic control devices** located in the right-of-way to provide directional information to electric vehicle charging infrastructure acquired, installed, or operated under this paragraph in this program;
 - **On premises signs** to provide information about electric vehicle charging infrastructure acquired, installed, or operated under this paragraph in this program;
 - **Development phase activities** relating to the acquisition or installation of electric vehicle charging infrastructure, as determined by DOT; or
 - **Mapping and analysis activities** to evaluate, in an area in the United States designated by the eligible entity

The Bipartisan Infrastructure Law-

Charging & AF Fueling Infrastructure Programs- Final Items of Interest

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- Joint Office of Energy & Transportation
 - Provide tools & technical assistance to funding recipients
 - Leverage and integrate w/ existing DOE/DOT programs and resources
 - IIJA contains numerous specific actions related to technical assistance, studies, and establishing programs/pilots
 - Staffed with DOT, DOE, Lab personnel
 - Under development but should have roles/lines of communication defined soon
- All formula funding will flow through State DOTs
 - Timelines: Officially TBD but should be issued in the next 6-12 months

FACT SHEET: The Biden-Harris Electric Vehicle Charging Action Plan

DECEMBER 13, 2021 • STATEMENTS AND RELEASES

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White House Fact Sheet (Dec 13, 2021)

Vice President Kamala Harris to Announce Action Plan that Fast Tracks Bipartisan Infrastructure Law Investments

President Biden has united automakers and autoworkers to drive American leadership forward on clean cars, and he set an ambitious target of 50% of electric vehicle (EV) sale shares in the U.S. by 2030. Now, the Bipartisan Infrastructure Law will supercharge America's efforts to lead the electric future, Building a Better America where we can strengthen domestic supply chains, outcompete the world, and make electric cars cheaper for working families.

President Biden, American families, automakers, and autoworkers agree: the future of transportation is electric. The electric car future is cleaner, more equitable, more affordable, and an economic opportunity to support good-paying, union jobs across American supply chains as automakers continue investing in manufacturing clean vehicles and the batteries that power them.

Today, the Biden-Harris-Administration is releasing an EV Charging Action Plan to outline steps federal agencies are taking to support developing and deploying chargers in American communities across the country. As a result of the Bipartisan Infrastructure Law, the Department of Energy (DOE) and Department of Transportation (DOT) will establish a Joint Office of Energy and Transportation focused on deploying EV infrastructure, working hand-in-hand to collect input and guidance from industry leaders, manufacturers, workers, and other stakeholders that will ensure the national network provides convenient charging for all. The initial focus will be building a convenient, reliable public charging network that can build public confidence, with a focus on filling gaps in rural, disadvantaged, and hard-to-reach locations.

<https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/13/fact-sheet-the-biden-harris-electric-vehicle-charging-action-plan/>

White House Fact Sheet (Dec 13, 2021)

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The Biden-Harris Administration announced the following actions:

- ▶ Established a Joint Office of Energy and Transportation
- ▶ DOT/DOE MOU was signed on Dec 14, 2021



White House Fact Sheet (Dec 13, 2021)

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The Biden-Harris Administration actions (cont.):

- ▶ White House is Gathering Diverse Stakeholder Input
- ▶ Preparing to Issue Guidance and Standards for States and Cities
 - ▶ To be Issued **no later than Feb 11th**
 - ▶ For the \$5B National Electric Vehicle Infrastructure (NEVI) Formula Program
- ▶ Requests for Information
 - ▶ Buy America RFI was due on Jan 10th
 - ▶ BIL EV/AF Infrastructure Programs RFI **due on Jan 28th**
- ▶ New Solicitation for Alternative Fuel Corridors
 - ▶ Round 6 **to be issued shortly**

The Bipartisan Infrastructure Law-

Charging & AF Fueling Infrastructure Programs- Joint DOT & DOE RFIs

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- Request for Information- Issued November 29, 2021
 - The BIF directs **DOT, in coordination DOE, to develop guidance** for both the National Electric Vehicle Formula Program and the discretionary grant program for Charging and Fueling Infrastructure.
 - The RFI includes the 9 the statutory considerations for the NEVFP and 3 programmatic topics for the Charging & Fueling Infrastructure program and **invites public comments** to inform the development of the guidance.
 - FHWA is especially interested in comments suggesting ways that the guidance could **promote equity** in the deployment of EV charging infrastructure under these programs.
 - Comments would be most useful if they are received **on or before January 28, 2022** to allow for their consideration during development of the EV Charging Program guidance. FHWA will consider comments received after the due date to the extent practicable.

<https://www.federalregister.gov/documents/2021/11/29/2021-25868/development-of-guidance-for-electric-vehicle-charging-infrastructure-deployment>

AFC Designation Program-

The Bipartisan Infrastructure Law Updates

- ▶ Round 6 of Designations on hold until the framework of the 2 infrastructure programs are agreed upon
- ▶ Per Section 11401:
 - ▶ Not later than **180 days** after the date of enactment, the DOT shall update and redesignate the corridors
 - ▶ Not later than **1 year** after the date of enactment, DOT shall designate **national electric vehicle charging corridors to support freight and goods movement** at strategic locations along major national highways, the National Highway Freight Network, and goods movement locations including ports, intermodal centers, and warehousing locations

The Bipartisan Infrastructure Law-

Other Electrification Programs of Interest

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- Section 11402- Reduction of Truck Emissions at Port Facilities
 - Program to reduce truck idling at port facilities including to study port electrification, study emerging technologies and fund projects that reduce port related emissions. **(\$250M)**
- Section 11402- Port Infrastructure Development Program
 - Funding for projects that improve resiliency of ports, including port electrification and “Electric vehicle charge or hydrogen refueling infrastructure for drayage, and medium or heavy-duty trucks and locomotives that service the port and related grid upgrades.” **(\$2.25B)**
- Section 71102- Electric or Low Emitting Ferry Pilot Program
 - Electric or low emitting ferry pilot that provides grants for the purchase of “alternative” fuel and electric ferries. **(\$250M)**

<https://afdc.energy.gov/laws/infrastructure-investment-jobs-act>

The Bipartisan Infrastructure Law-

Other Electrification Programs of Interest

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- Section 30018- Grants for Buses and Bus Facilities
 - **\$5.6 billion in Low- or No- Emission Bus Grants** to transition to low- or zero-emission buses and purchase fueling and maintenance infrastructure.
 - Requires grant applicants to submit zero emission transition plan that addresses workforce transition, costs, and other relevant indicators. Allocates at least 25 percent of the funds made available to carry out this sub-24 section, only consider eligible projects related to the acquisition of low or no emission buses or bus facilities other than zero emission vehicles and related facilities.
- Section 25006- Electric Vehicle Working Group
 - Working group to be established with Government, utilities, manufacturers including to report on the barriers to greater EV adoption. Group to prepare 3 reports – first report due in 18 months (DOT, DOE, EPA, CEQ, GSA)
- Section 71101- Clean School Bus Program (EPA)
 - Funding for zero emissions school buses. **(\$2.5B)**
 - Funding for zero and low emissions school buses. **(\$2.5B)**



ON-ROAD
Light-, Medium-, Heavy
Duty Vehicles



Batteries &
Electrification



Materials
Technology



Mobility
Systems



Demonstration and Deployment



Air, Marine, Rail



Some R&D for On/Off-
Road MD/HD Vehicles

Technology Integration Program

Provide objective/unbiased data and real-world lessons learned that inform future research needs, support local decision-making, resulting in the successful implementation of advanced transportation demonstration/deployment projects.



Clean Cities
Coalitions



Information
and Tools



Technical
Assistance



Training,
Outreach,
Partnerships



Financial
Assistance



Regulatory Activities /
State and Alt Fuel
Provider Fleets



Advanced Vehicle
Technology
Competitions

Technology Integration Program

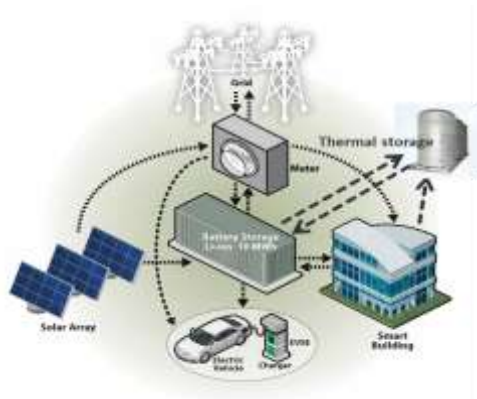
Clean Cities Coalitions



- More than 75 Clean Cities Coalitions with thousands of stakeholders, representing ~80% of U.S. population
- Since 1993, the cumulative energy impact of Clean Cities coalition activities has surpassed 9.8 billion GGEs through alternative fuel use, fuel economy improvements, idle-reduction measures, and other strategies
- In 2019, nearly 1 million of the AFVs in operation were a result of Clean Cities coalition efforts
- VTO has funded over 600 Technology Integration Projects and distributed nearly \$500Million since 1983



Accelerate Nationwide Adoption and Deployment of EVs and Infrastructure



- ❑ Significantly **expand EV community partner demonstration** activities
- ❑ **Demonstrate innovative charging/ infrastructure technology** for various types of EV owners. **Improve equitable access** to the benefits of electrified transportation,
- ❑ Support Administration's goal to deploy 500,000 charging stations across the Nation.
- ❑ **Demonstrate innovations to enhance community resilience** (especially underserved communities) to physical hazards using distributed solar, energy storage, EVs, and other DERs (joint EERE-OE effort).
- ❑ Support **education and workforce training**.

Technology Integration Program

Investing in Equitable Access to Clean and Affordable Transportation

Electric Vehicles and Charging Stations



Targeting Underserved Communities



Community Engagement and Workforce Development



Low- and Moderate-Income Drivers

- Multi-family housing charging stations
- Public EV charging
- E-car sharing



Transportation Riders

- E-buses
- E-ride hailing



Environmental Justice Community Air Quality

- Electrify MD/HD vehicles operating in or near EJ communities



Summary & Final Updates

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- **AFC Program** and **Clean Cities** deployment activities will play a key role in supporting the Administration's climate and environmental justice goals and initiatives
 - A national network of 500,000 chargers by 2030 that ensures a convenient, reliable, affordable, and equitable charging experience for all road users.
 - The Justice40 Initiative
 - Net-zero emissions economy by no later than 2050 goal

For More Information

DOT Alternative Fuel Corridor Team Contact Information

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Resources

FHWA Alternative Fuel Corridor website:

http://www.fhwa.dot.gov/environment/alternative_fuel_corridors/

MUTCD Memorandum – Signing for Designated Alternative Fuel Corridors:

https://mutcd.fhwa.dot.gov/resources/policy/alt_fuel_corridors/index.htm

DOE/NREL Alternative Fueling Station Locator & Corridor Tools:

<https://afdc.energy.gov/stations/> & <https://afdc.energy.gov/corridors>

FHWA Alternative Fuel Corridors Convenings:

<http://altfueltoolkit.org/regional-convenings/>

Motorweek Alternative Fuel Corridors Video Segment:

<https://www.youtube.com/watch?v=AvCqXXPcVwI>