

EV Boot Camp

June 1, 2023

Carl Lisek, Executive Director
Drive Clean Indiana



CLEAN CITIES COALITION NETWORK





Agenda

- Who is DCI?
- Clean Cities Coalition
- Projects
- Basics
- Vehicles
- Infrastructure
- Other Considerations
- Additional Resources



Learning Outcomes



- Establish sustainable, reciprocal relationships with community-based organizations and diverse community members, and support community-based decision-making for transportation initiatives and projects
- Leverage existing skillsets to support EJ efforts, and recognize the role that Drive Clean Indiana can support these community-focused initiatives
- Gather feedback on mobility inequities in underserved communities and cascade to high-level partners (i.e., DOE's VTO) to identify gaps in Clean Cities initiatives and to better serve all communities
- Take from point A (no knowledge) to point B (experts).
- 9-step process for working with one or more municipalities.
- How to identify and connect with partners that will support EV zoning regulations.
- Learn how to engage with planning and zoning staff and commissions.
- Engage with communities.

Learning Outcomes



- Engage zoning boards/commissions.
- Learn how to use tools and resources that give you the confidence you need to work with zoning boards/commissions.
- EV Zoning Regulations Process
- Develop relationships with zoning boards/commissions.

Clean Cities Coalition Network

Building partnerships to advance affordable, domestic transportation fuels and technologies



Clean Cities Coalitions:

- Serve as forums for local stakeholders to connect and collaborate on saving energy and using affordable alternative fuels
- Provide grassroots support and resources on new transportation technologies and infrastructure development
- Support networks to help their stakeholders identify cost-effective solutions that work locally

Clean Cities Portfolio



**Light-,
Medium-, and
Heavy-Duty
Vehicles**



**Alternative and
Renewable
Fuels and
Infrastructure**



**Idle Reduction
Measures and
Fuel Economy
Improvements**



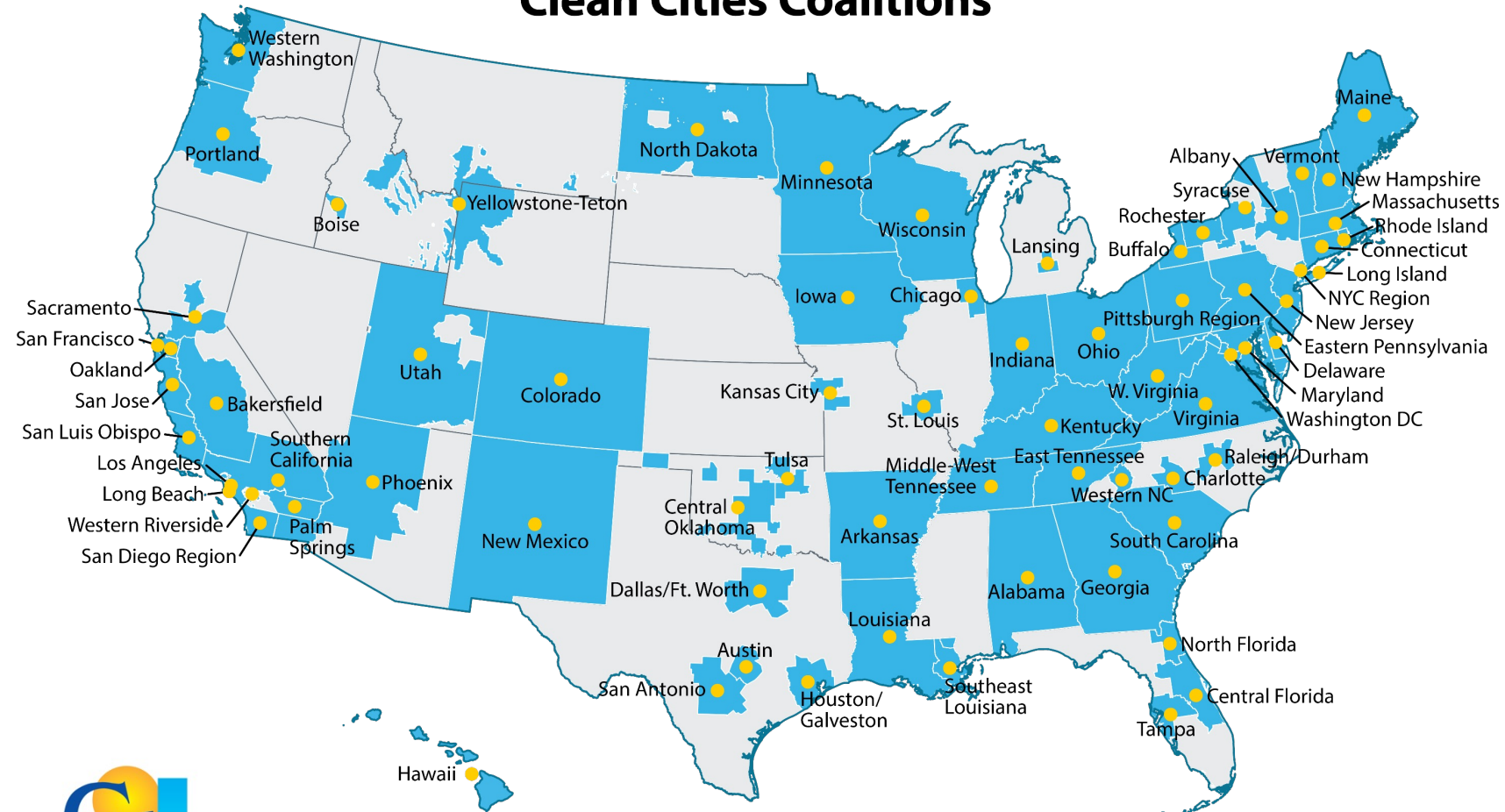
**New Mobility
Choices and
Emerging
Transportation
Technologies**

National Network of Clean Cities Coalitions

More than 75 active coalitions covering nearly every state with thousands of stakeholders

cleancities.energy.gov

Clean Cities Coalitions



Map Date: 2/3/22



Current Projects:

- Drive Clean Rural USA
- Drive Electric USA
- I-80 Mid-America Alternative fuel Corridor
- GoEVIN
- Indiana Green Fleet Program
- Note Worthy Projects
- Empower Workplace Charging

Vehicle Charging Innovations for Multi-Unit Dwellings

VCI-MUD Goal: Identify and address barriers to multi-unit dwelling (MUD) and curbside residential plug-in electric vehicle (PEV) charging.

VCI-MUD Approach:

- **Engage stakeholders** to document barriers to MUD and residential curbside PEV charging
- **Gather baseline data** from existing MUD and residential curbside charging stations
- **Demonstrate innovative technologies** that address identified barriers
- **Compile project findings** in an easy-to-use toolkit
- **Disseminate the toolkit** across national, regional, state, and local channels



Drive Clean Rural USA

- Drive Clean Rural USA is engaging with Indiana government leaders, business owners, fleet managers and farmers to remove barriers and accelerate access to clean fuel solutions that deliver financial savings, clean air and economic opportunity to rural communities.
- This eight-state DOE-funded project focuses on alternative fuel options through technical assistance, clean fuel transition planning & demo vehicles with an emphasis on business & job growth.



Drive Electric USA 2

Drive Electric USA 2 is engaging with 18 states Indiana government leaders, business owners, fleet managers and farmers to remove barriers and accelerate access to clean fuel solutions that deliver financial savings, clean air and economic opportunity to rural communities.

This twenty DOE-funded project focuses on alternative fuel options through technical assistance, clean fuel transition planning & demo vehicles with an emphasis on business & job growth.



DRIVE ELECTRIC
— **USA** —

I-80 Mid-America Alt. Fuel Corridor

Drive Clean Indiana is working across I-80 with the U.S. Department of Energy, Argonne National Laboratory, the Federal Highway Administration, IDEM, INDOT, other state DOTs and designated Clean Cities coalitions from New Jersey to Nebraska to develop a deployment plan for alternative fuel infrastructure, including DC fast charging, along the I-80 corridor.



I-80 MID-AMERICA
ALTERNATIVE FUEL
CORRIDOR

A greener way across the USA.

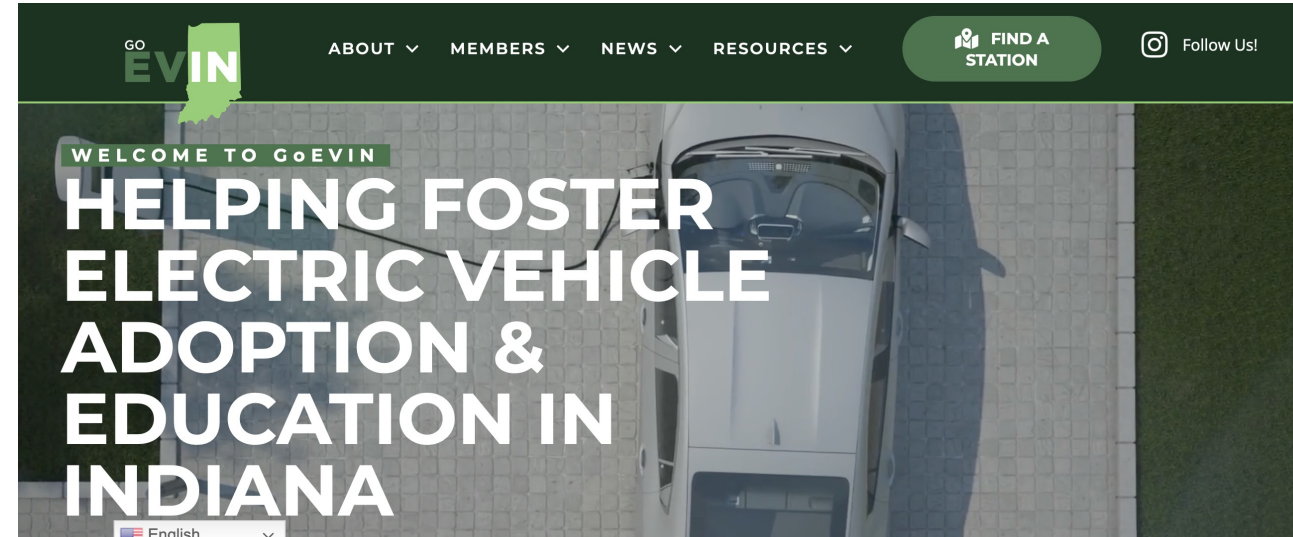
Indiana Green Fleet Program



- DCI manages the Indiana Green Fleet Program for the State of Indiana. Manage NIRPC Green Fleet Programs
- **Goal of the program:** To improve the environmental performance of public, private and nonprofit vehicle fleets in Northwest Indiana.
- DCI currently guides over **100 private, municipal, county, school & university member fleets** to help mitigate barriers associated with sustainable transportation adoption while creating policies supporting vehicle emission & petroleum use reductions.
- Over **\$51 Million** awarded in 2021 & 2022!

GoEVIN

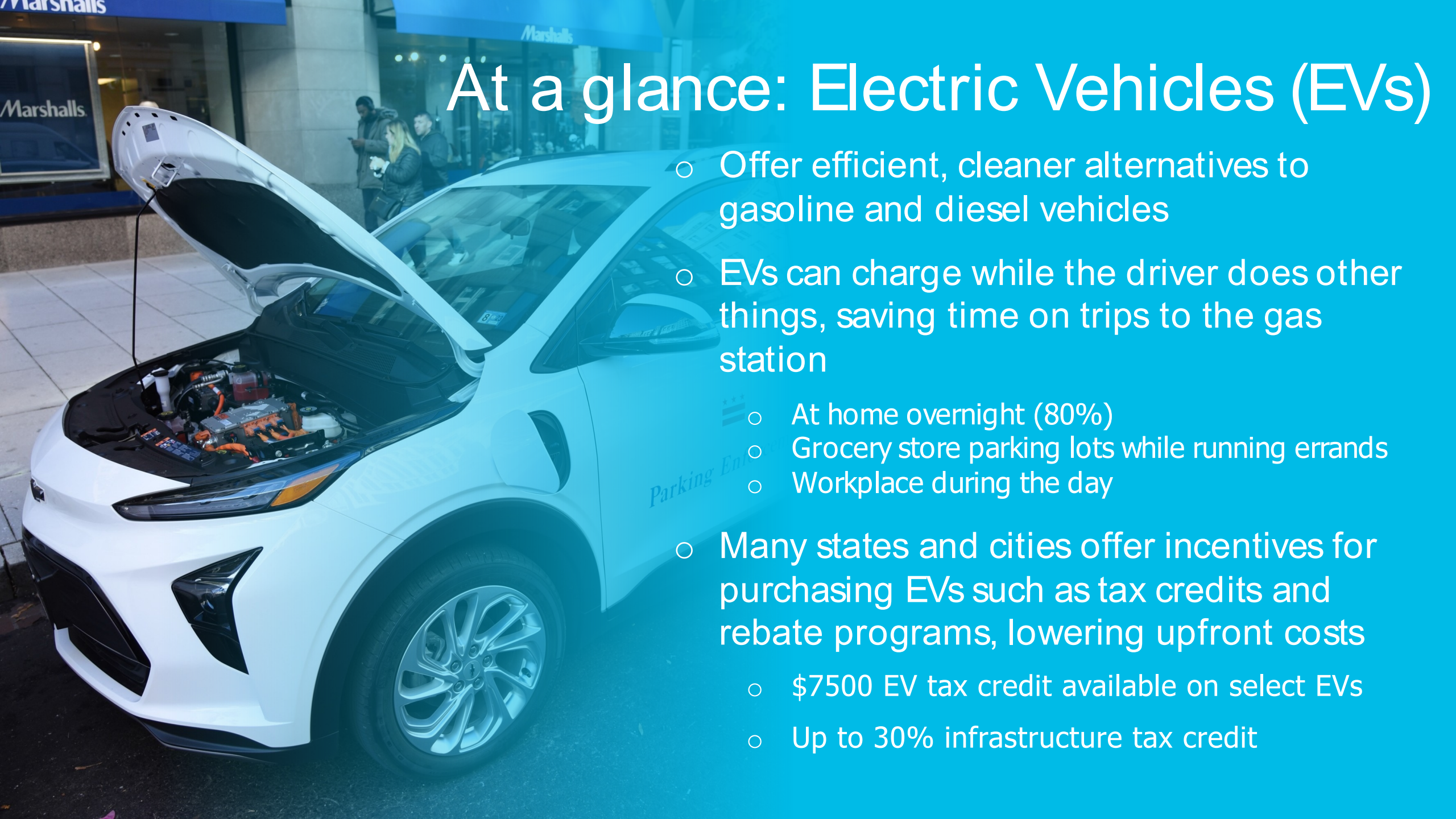
- 5 Year Contract to provide education, outreach and marketing for Indiana's EV Corridor**
- Funded by IDEM's VW Settlement program**
- 61 DCFC to be in operation by end of 2023**



Note Worthy Projects

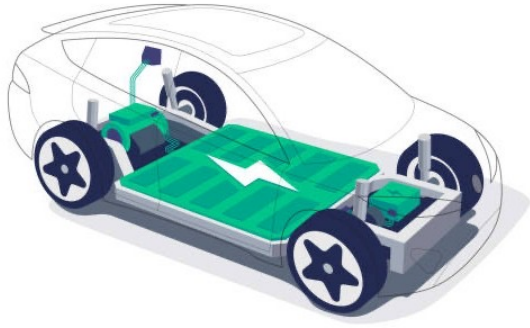
1. 56 (Level 2) Charging Stations Deployed
2. Three Electric Trucks
3. Two Electric Refuse Trucks
4. Electric Material Handlers
5. Electric Railcar Mover
6. 12 Electric School Buses
(26 total in Indiana)





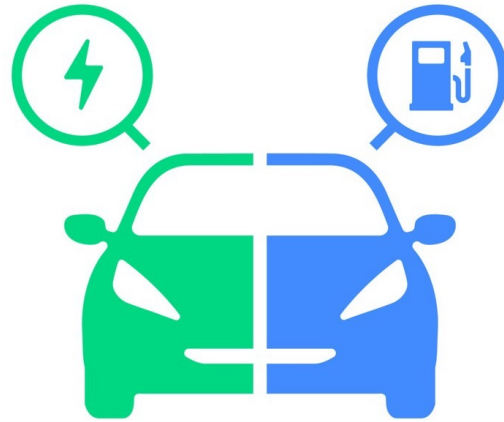
At a glance: Electric Vehicles (EVs)

- Offer efficient, cleaner alternatives to gasoline and diesel vehicles
- EVs can charge while the driver does other things, saving time on trips to the gas station
 - At home overnight (80%)
 - Grocery store parking lots while running errands
 - Workplace during the day
- Many states and cities offer incentives for purchasing EVs such as tax credits and rebate programs, lowering upfront costs
 - \$7500 EV tax credit available on select EVs
 - Up to 30% infrastructure tax credit



Battery Electric Vehicles (BEVs)

- Fully electric and rechargeable battery-powered system
- 100-400 miles on a single charge
- No tailpipe emissions
- Regenerative braking



Plug-In Hybrid Electric Vehicles (PHEVs)

- Equipped with both gas and electric capabilities
- Increased fuel efficiency results in lower tailpipe emissions
- 50 miles from electricity
- Regenerative braking



Hybrid Electric Vehicles (HEVs)

- Equipped with both gas and electric capabilities
- Increased fuel efficiency
- Has internal battery but does not recharge by plug-in charging
- Regenerative braking

EVs from manufacturers other than Tesla

BEVs



Nissan LEAF

MSRP **\$27,800**
MSRP (after federal & state rebates) **\$17,800**
Electric range **212 miles**



Chevrolet Bolt EV

MSRP **\$31,500**
MSRP (after federal & state rebates) **\$21,500**
Electric range **259 miles**



Ford F-150 Lightning

MSRP **\$39,947**
MSRP (after federal & state rebates) **\$29,947**
Electric range **320 miles**

PHEVs



Toyota Prius Prime (PHEV) [i](#)

MSRP **\$28,670**
MSRP (after federal & state rebates) **\$27,170**
Electric range **25 miles**



Kia Niro Plug-In Hybrid (PHEV) [i](#)

MSRP **\$29,590**
MSRP (after federal & state rebates) **\$28,090**
Electric range **26 miles**



Ford Escape (PHEV) [i](#)

MSRP **\$35,455**
MSRP (after federal & state rebates) **\$25,455**
Electric range **37 miles**

Types of Chargers

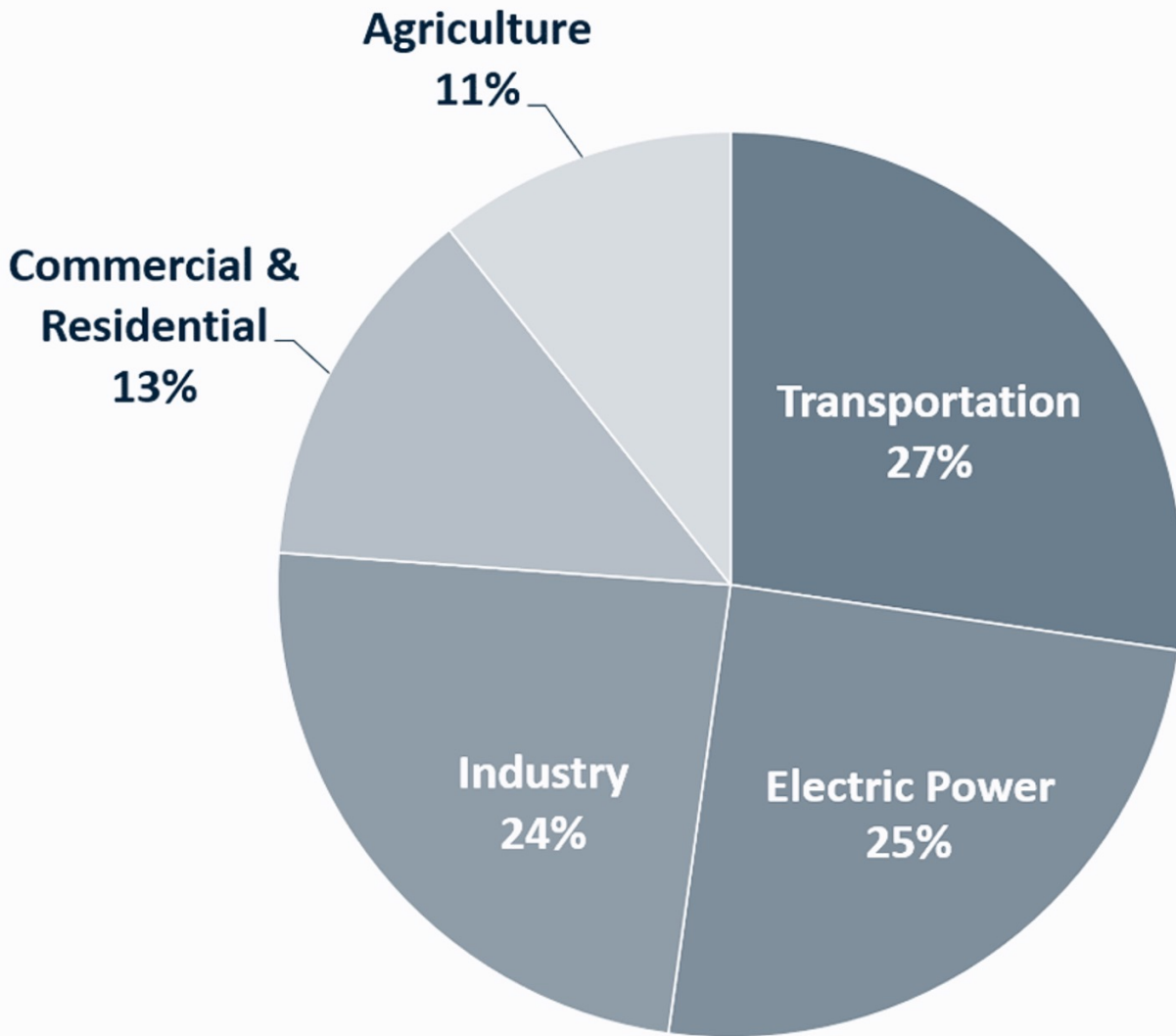
At-home and Private Charging

- Level I (110 Volts): Basic charger equipped for standard outlet
 - Adds 2-5 miles of range per hour of charging
 - BEV charge time can be upwards of 40 hours, more efficient for PHEVs
- Level II (240 Volts): Most common charger requiring little to no electrical upgrade
 - Adds 10-30 miles of range per hour of charging
 - 4-10 hours for full charge

On the Go and “Corridor” Charging

- Level III/DC Fast Charging (480 Volts): The fastest and most efficient charger
 - Adds 100-200+ miles of range in as little as 30 minutes
- Level II Chargers are commonly used for public infrastructure around the community

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2020

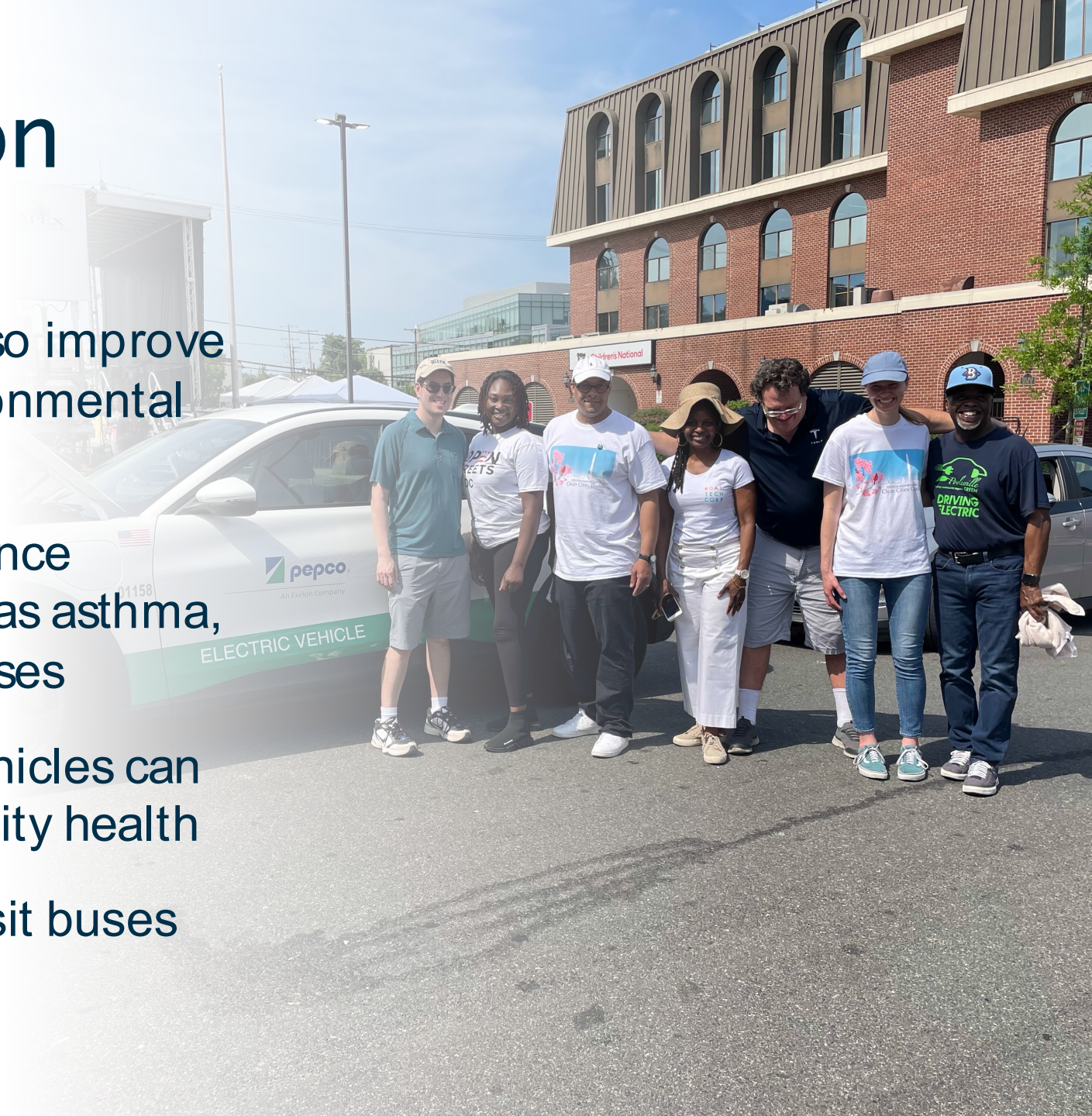


Environmental Benefits

- EVs and PHEVs help tackle the largest contributor of U.S. greenhouse gas emissions
- Improved air quality via fewer greenhouse gas emissions and reduced air pollutants
- BEVs produce zero greenhouse emissions and PHEVs emit much lower emissions compared to gas and diesel vehicles
- Emissions from electricity production for transportation are less than 1% of total emissions

Health Risk Mitigation

- Not only does clean energy pose environmental benefits, but can also improve community health and racial environmental disparities
- Underserved communities experience disproportionate health risks such as asthma, cancer, and other respiratory illnesses
- The wide-scale electrification of vehicles can have beneficial effects on community health
 - GPTC adoption of electric transit buses in Gary, IN



Basics: Electric-Drive Vehicles

Electric Vehicles (EVs):

- All-Electric Vehicles
 - Powered by an electric motor
 - Uses charging infrastructure to charge the battery
- Plug-In Hybrid Electric Vehicle (PHEV)
 - Powered by an electric motor and engine
 - Uses charging infrastructure to charge the battery

Hybrid Electric Vehicle (HEV):

- Powered by an engine and electric motor
- Does not use charging infrastructure to charge the battery



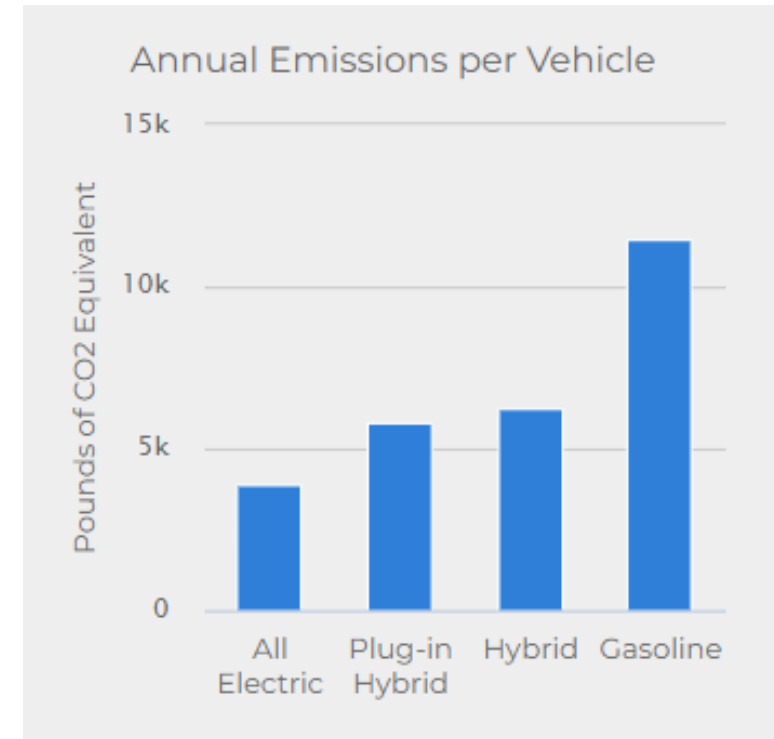
Basics: Benefits

Benefits:

- Improved fuel economy
- Lower fuel costs
- Reduced emissions
- Increased energy security

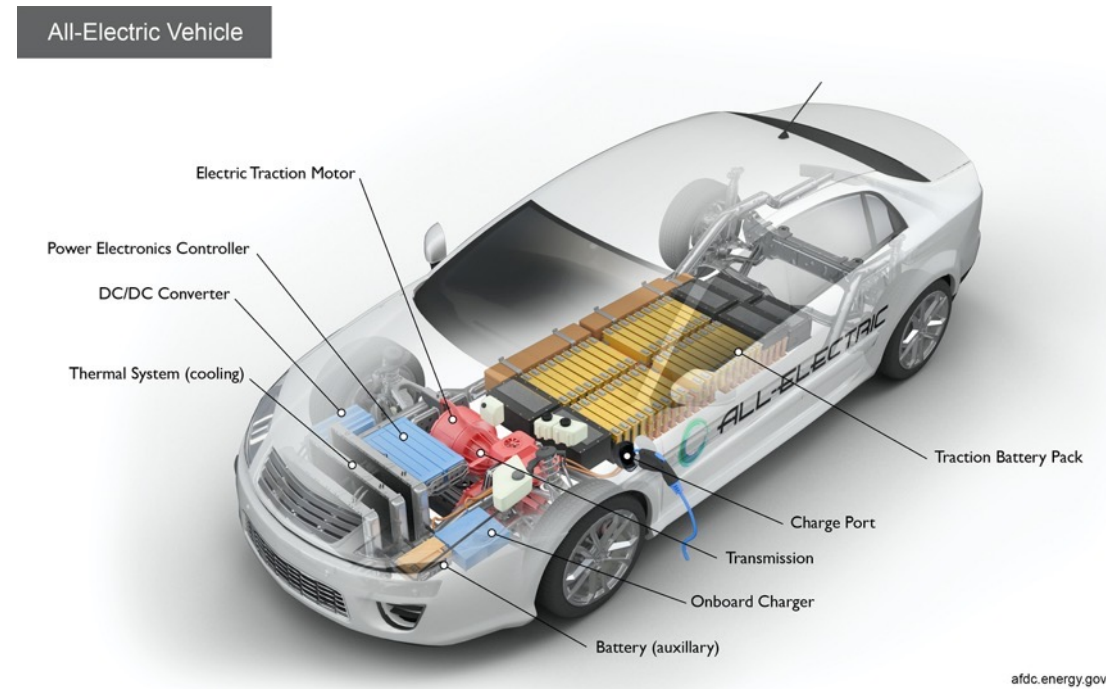
Considerations:

- Higher initial vehicle cost
- Infrastructure availability
- Battery life



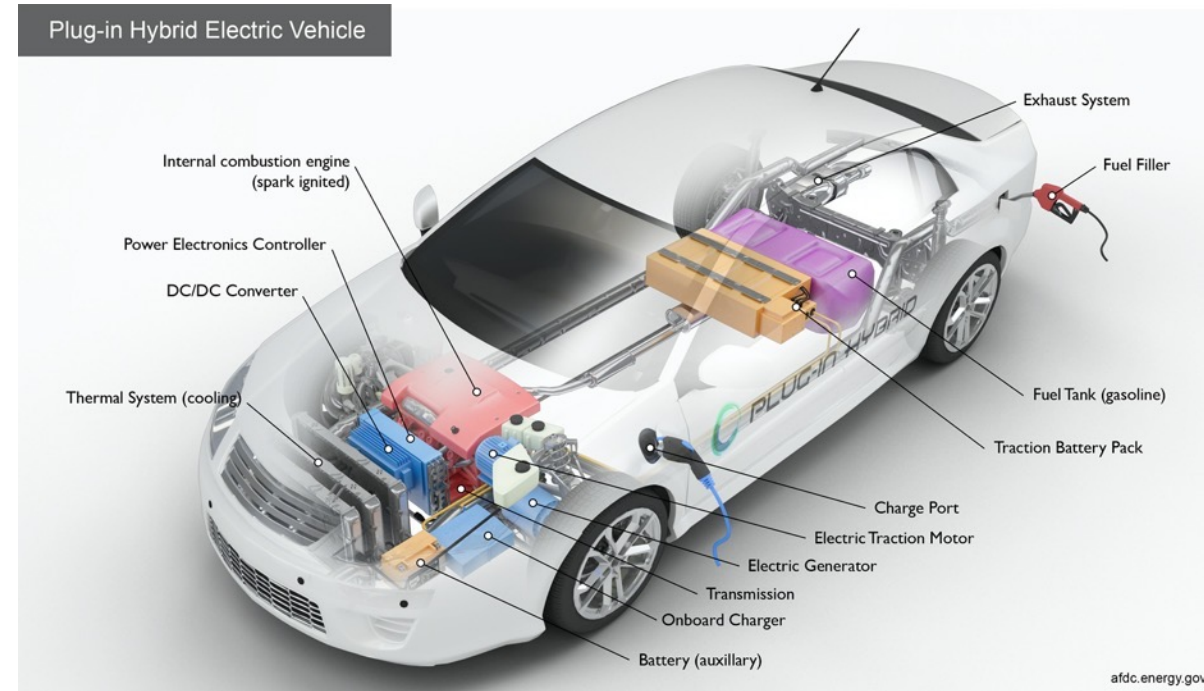
Vehicles: EVs

- Battery stores electrical energy that powers the motor
- Battery charged by plugging in to outside electric power source
- Zero tailpipe emissions, but air pollution may be produced through electricity generation
- Driving range of 100 to over 400 miles



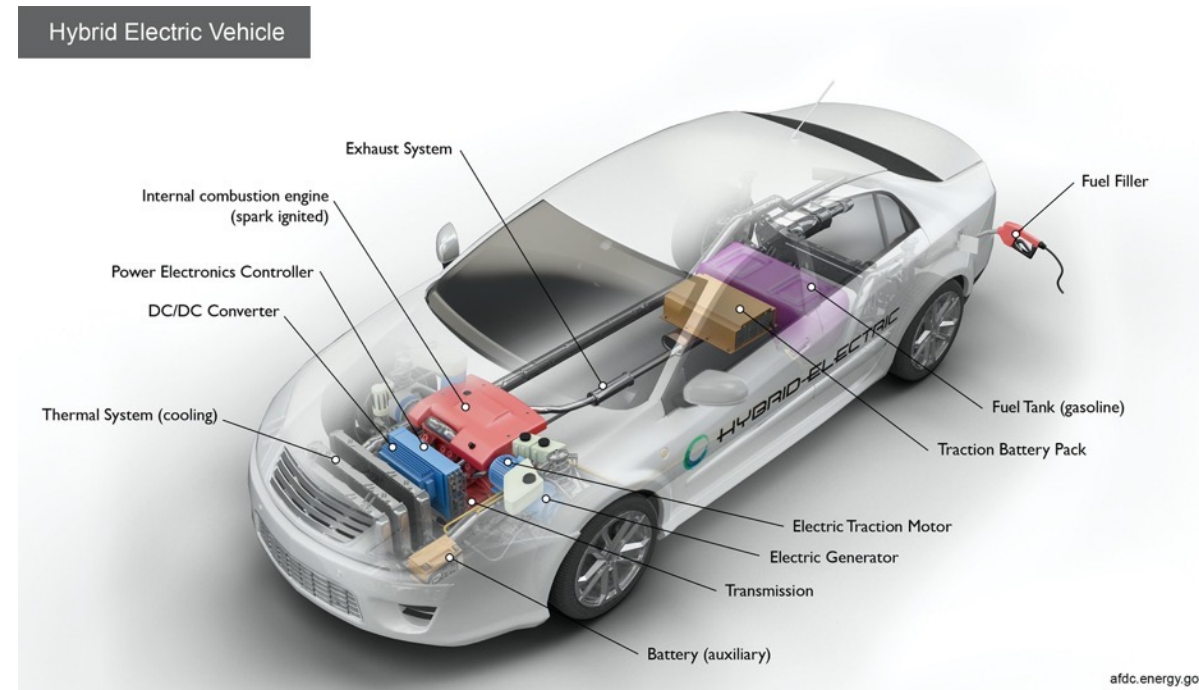
Vehicles: PHEVs

- Internal combustion engine uses alternative or conventional fuel
- Battery charged by outside electric power source, engine, and regenerative braking
- During urban driving, most power comes from stored electricity



Vehicles: HEVs

- Battery is charged by the engine and regenerative braking
- Power from electric motor allows smaller engine and better fuel economy
- Fuel-efficient system design
 - **Mild hybrid:** Cannot power vehicle using electric motor alone
 - **Full hybrid:** More powerful electric motor, larger batteries can drive vehicle on just electric power for short distances and at low speeds



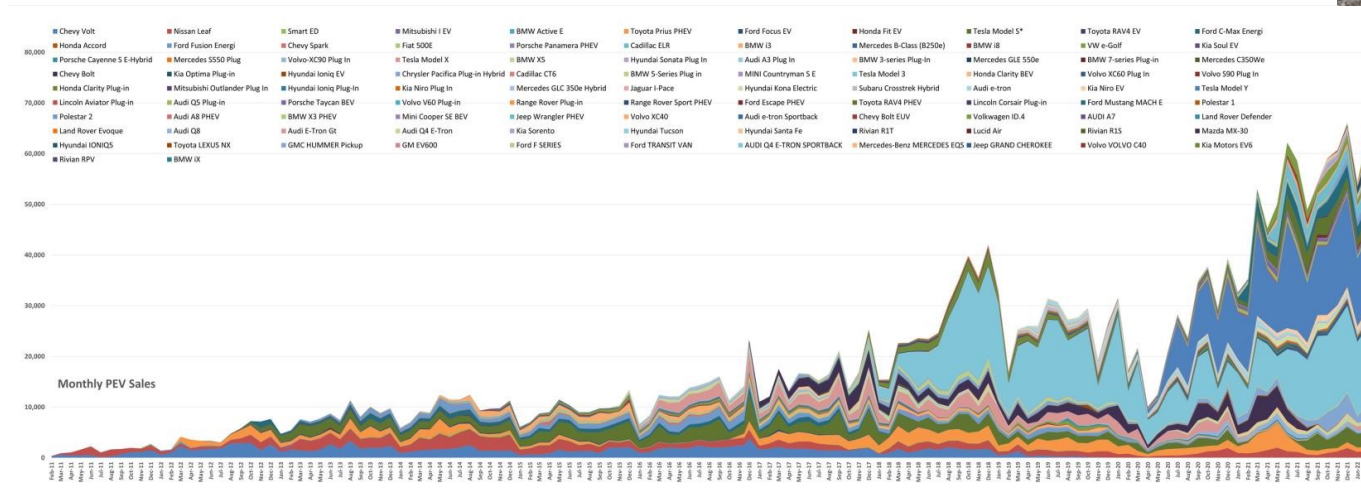
Vehicles: Batteries

- Energy storage systems, such as batteries, are essential for electric-drive vehicles
- All original equipment manufacturer EVs made today use **lithium-ion** batteries.
 - For more information about lithium extraction, contact Drive Clean Indiana at info@drivecleanindiana.org
- Other energy storage options:
 - Nickel-metal hydride batteries (HEVs)
 - Lead-acid batteries
 - Ultracapacitors



Vehicles: Light-Duty Vehicle Availability

- EVs, PHEVs, and HEVs widely available
- New models rolling out nationwide



Helpful Resources

- **AFDC Alternative Fuel and Advanced Vehicle Search**—find available electric-drive vehicle models
- **Electric Drive Transportation Association's Electric Drive Sales page**—see current information on electric-drive vehicle sales

Vehicles:

Medium- and Heavy-Duty Vehicle Availability

Medium-Duty

- Variety of electric vehicles available
- New models becoming available, including vans and pickup trucks
- Certified conversions an option

Heavy-Duty

- Several EV and HEV makes and models available
- EV transit buses growing in popularity
- Regional haulers, refuse trucks, and yard tractors available



Source: https://caletc.com/wp-content/uploads/2019/12/ICF-Truck-Report_Final_December-2019.pdf

Infrastructure: Electric Vehicle Charging Infrastructure

Type of Charger	Current Type	Input Voltage (V)	Power Output	Typical Charging Time	Primary Use
Level 1	Alternating Current (AC)	120 V	1 kW	~5 miles of range per hour of charging	Residential (comes with EV)
Level 2	AC	208 V or 240 V	7 – 19 kW	~25 miles of range per hour of charging	Residential Commercial
DC Fast	Direct Current (DC)	480 V	50 – 350 kW	100–200+ miles of range per 30 minutes of charging	Commercial
Wireless	AC	Varies	Varies	10–20 miles of range per hour of charging	Commercial



Infrastructure: Extreme Fast Charging

- Power outputs of up to 350 kW and higher
- New EV models will be able to charge at higher rates
- May provide up to 200 miles of charge in less than 10 minutes



Infrastructure: Connectors and Plugs

Type of Charger	Charging Standard
Level 1	SAE J1772
Level 2	SAE J1772
DC Fast	CHAdeMO CCS (SAE J1772 Combo) Tesla Supercharger
Wireless Charging	SAE J2954



Infrastructure: Charging at Home and in Public

Charging at Home

- Most charge overnight at home using a Level 1 outlet or installed Level 2 charging infrastructure
- Installation requires permitting and licensed contractors

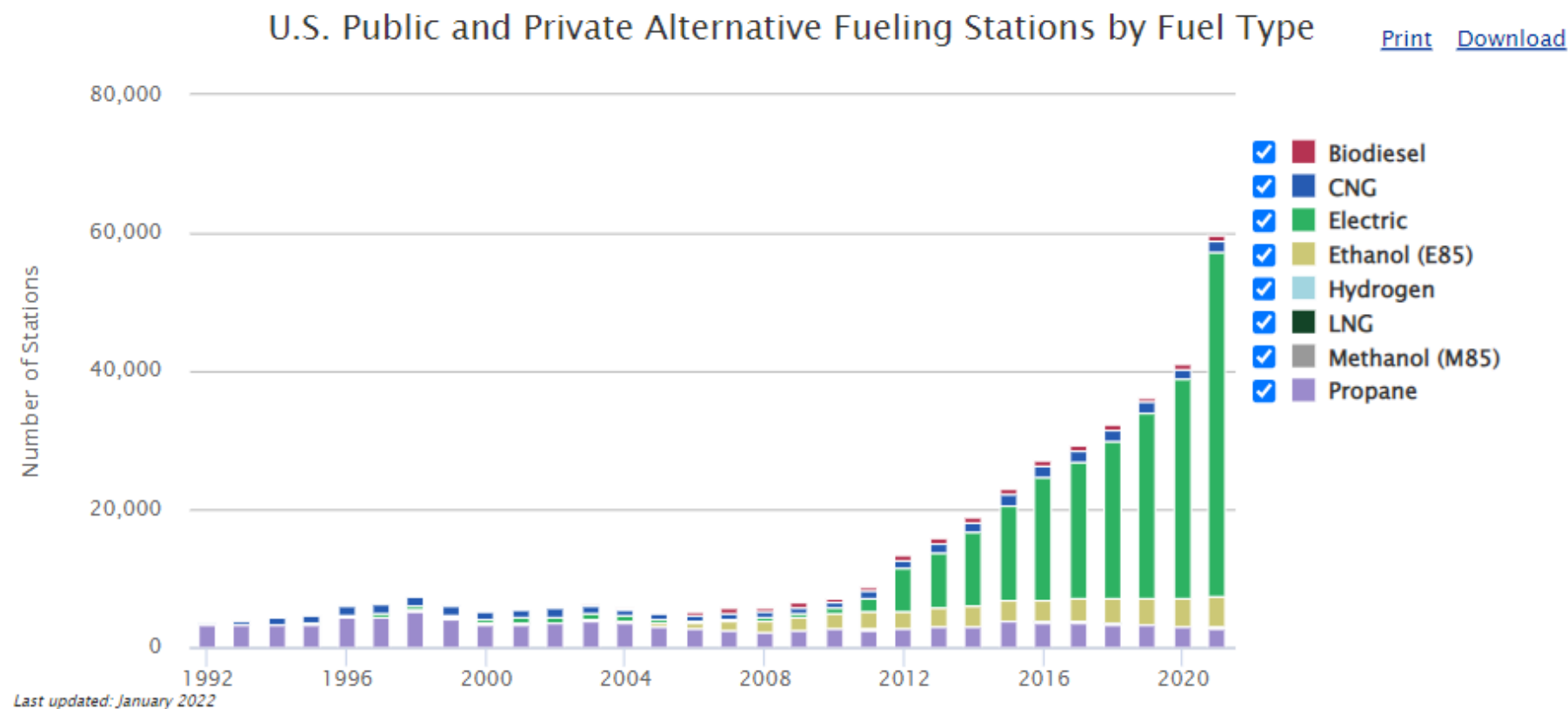
Charging in Public

- Increases vehicle range, especially for consumers in dense urban areas
- Ideal public charging locations include:
 - Workplaces or office buildings
 - Shopping centers
 - City parking lots
 - Airports
 - Hotels



Infrastructure: Charging Infrastructure Availability

Station Growth Over Time:



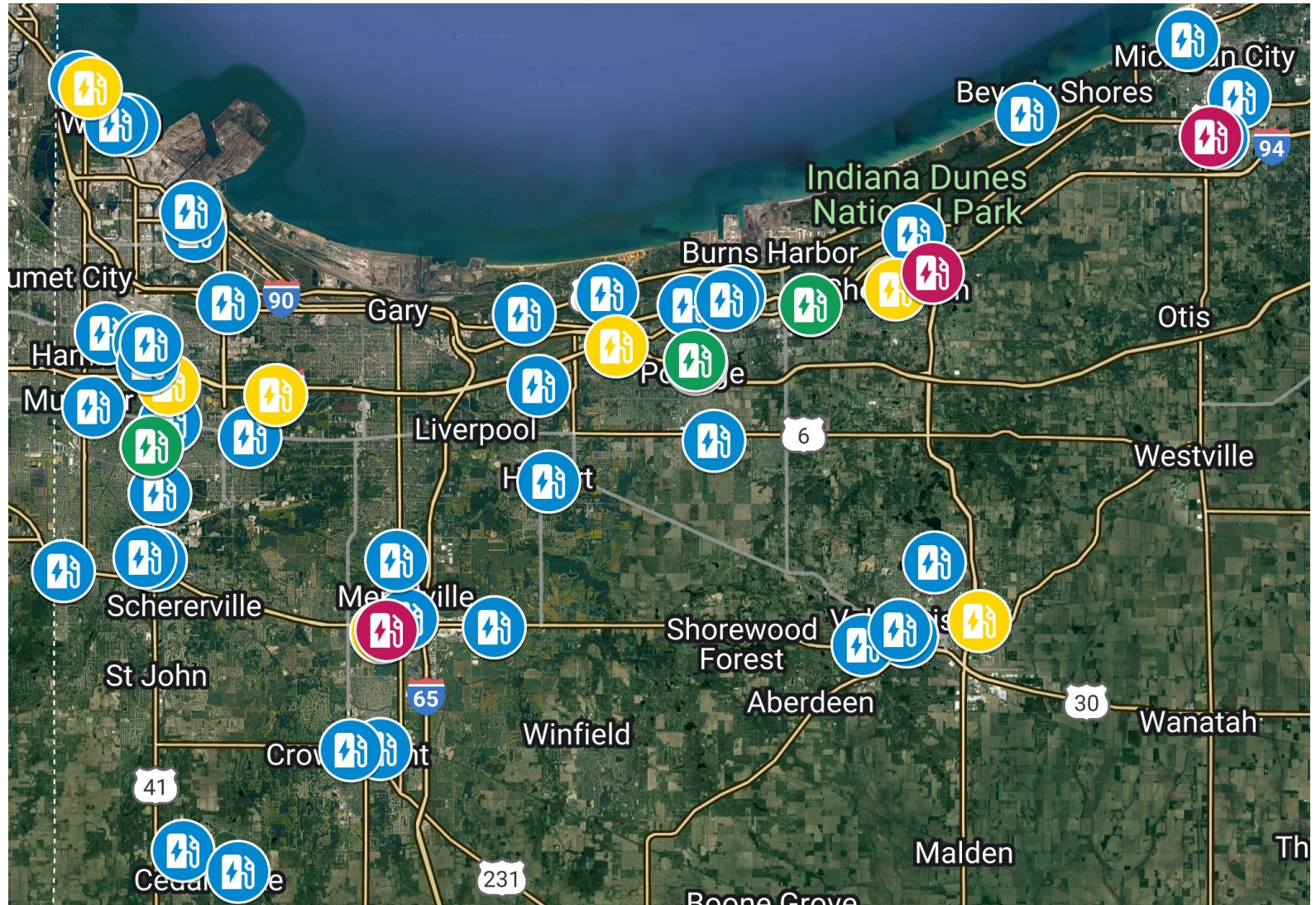
NIRPC Territory Current and Planned

Red = Tesla Superchargers

Blue = Current Level 2

Green = Current DCFC

Yellow = Planned DCFC



Other Considerations:

Maintenance and Safety

- EVs typically need less maintenance:
 - Battery, motor require little to no maintenance
 - Fewer fluids to change
 - Brake wear is reduced due to regenerative braking
 - Fewer moving parts
- PHEVs and HEVs have maintenance requirements like conventional vehicles
- Electric-drive vehicles must meet the same safety standards as conventional vehicles



Other Considerations: Tools

afdc.energy.gov/tools

Tools

The Alternative Fuels Data Center offers a large collection of helpful tools. These calculators, interactive maps, and data searches can assist fleets, fuel providers, and other transportation decision makers in their efforts to advance alternative fuels and energy-efficient vehicle technologies.



Calculators



EVI-Pro Lite

Estimate a city or state's need for vehicle charging and the effect on electric load.




AFLEET Tool

Calculate a fleet's petroleum use, cost of ownership, and emissions.



Vehicle Cost Calculator

Compare cost of ownership and emissions for most vehicle models.  [mobile](#)



VICE Model


Evaluate the financial case for natural gas vehicles and battery electric buses.



Interactive Maps



Alternative Fueling Station Locator

Locate alternative fueling stations and get maps and driving directions.  [mobile](#)



Alternative Fuel Corridors

Find maps and station data to help with nominating alternative fuel corridors.



TransAtlas

Analyze vehicle densities and locations of fueling stations and production facilities.



Biofuels Atlas

Compare feedstocks and analyze biofuel production by location.



Data Searches



Vehicle Search

Compare all classes of alternative fuel vehicles, electric vehicles, and hybrids.



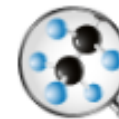
Laws and Incentives Search

Search for laws and incentives related to alternative fuels and advanced vehicles.



Battery Policies and Incentives

Find policies and incentives for batteries developed for EVs and energy storage.



Fuel Properties Comparison

Compare alternative fuel properties and characteristics.

Other Considerations:

Tools

afdc.energy.gov/tools



JOBS Model

Estimate economic impacts of deploying alternative fuel and charging infrastructure.




Coalition Locations

Find Clean Cities coalitions and contact information for coordinators.



Find a Car

Compare fuel efficiency, costs, carbon footprints, and emissions.  [mobile](#)



Heavy-Duty Vehicle Emissions

Calculate the emissions of alternative fuel medium- and heavy-duty vehicles.



Energy Zones Mapping Tool

Identify potential energy resource areas and energy corridors in the United States.



State Information

Find state information about alternative fuels and advanced vehicles.



EVolution: E-Drive Vehicle Education

Understand the costs and benefits of electric vehicles based on location.

Getting Started:

Questions to Ask

- What support can Drive Clean Indiana provide?
- What federal, state, and local incentives are available?
- What additional fees are associated?
- What are my driving range needs?
- What type of EV is best for me?
- How and where will my EV be charged each day?
- What level of charging will I need?
- Are there charging stations in my area? Are they public or private? Can I visit?
- **Helpful Resource:**
 - **The AFDC Laws and Incentives Search** provides information about available state and federal incentives for EVs and charging infrastructure.



More Information

Drive Clean Indiana

DriveCleanIndiana.org

Alternative Fuels Data Center (AFDC)

afdc.energy.gov

Plug In America

pluginamerica.org

fueleconomy.gov

U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy

EERE Home | Programs & Offices | Consumer Information

Alternative Fuels Data Center


Search the AFDC **SEARCH**

FUELS & VEHICLES **CONSERVE FUEL** **LOCATE STATIONS** **LAWS & INCENTIVES** **Maps & Data** **Case Studies** **Publications** **Tools** **About** **Home**


[EERE » AFDC](#) [Printable Version](#)

Fuels & Vehicles





Biodiesel Electricity Ethanol Hydrogen Natural Gas Propane Renewable Diesel



Information by State




Information by Fleet Application

 Delivery Services  Refuse Collection
 Public Transit  School Transportation

Maps & Data

- U. S. Alternative Fueling Stations by Fuel Type
- U. S. Hybrid Electric Vehicle Sales by Model
- Light-Duty Alternative Fuel Vehicle Registrations

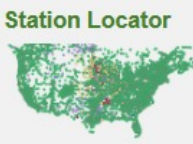
Fuel Prices




Tools

- Laws & Incentives
- Electricity Sources & Emissions
- Vehicle Cost Calculator
- Vehicle Search

Station Locator



[Download iPhone app](#) or [Android app](#)



Flipping the Switch on Electric School Buses

The Information Source for Alternative Fuels and Advanced Vehicles

The Alternative Fuels Data Center (AFDC) provides information, data, and tools to help fleets and other transportation decision makers find ways to reach their energy and economic goals through the use of alternative and renewable fuels, advanced vehicles, and other fuel-saving measures.

Potential Partnerships

1. Indiana Clean School Bus Consortium
2. EJ & DAC Education/Outreach
3. 20 Level 2 Charging Stations for EJ Communities
4. 80 Electric Pick up trucks coming to EJ Communities
5. Port Electrification Initiatives
6. Grant Opportunities

1. Indiana NEVI Plan

- **INDOT is investing more than \$100 million** to build an EV charging network at strategic locations across Indiana.
 - Through the NEVI Formula Program, INDOT will contract with partners to build direct current fast charging (DCFC) stations along Indiana's federally-designated alternative fuel corridors.
 - Funding is available for up to 80% of eligible project costs, including:
 - The acquisition, installation, and network connection of EV charging stations to facilitate data collection, access, and reliability;
 - Proper operation and maintenance of EV charging stations; and,
 - Long-term EV charging station data sharing.
- Summer of 2023

References and Resources

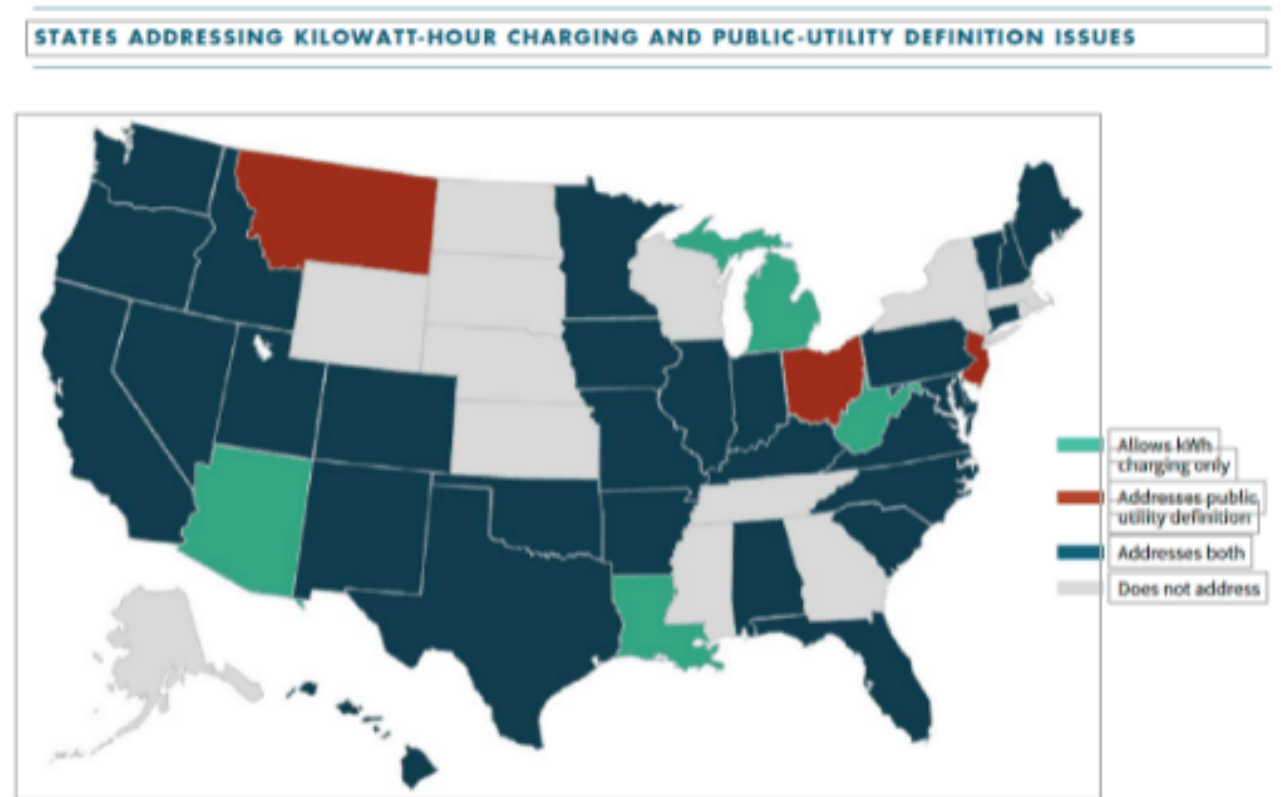
- AFDC Alternative Fuel and Advanced Vehicle Search: <https://afdc.energy.gov/vehicles/search>
- AFDC EV Emissions page: https://afdc.energy.gov/vehicles/electric_emissions.html
- AFDC EVI-Pro Lite tool: <https://afdc.energy.gov/evi-pro-lite>
- AFDC Station Locator Database: <https://afdc.energy.gov/stations/#/find/nearest>
- AFDC Vehicle Cost Calculator: <https://afdc.energy.gov/calc>
- Argonne National Laboratory AFLEET tool: <https://greet.es.anl.gov/afleet>
- Argonne National Laboratory Evolution tool: <https://evolution.es.anl.gov>
- Electric Drive Transportation Association Electric Drive Sales page: <https://electricdrive.org>
- Federal Fleet Training: Electric Vehicle Technology Overview:
https://www.youtube.com/watch?v=UgUAFU3rCHU&list=PLmIn8Hncs7bEa_NOG5Y8EZyONoxJtT0EF&index=1
- Federal Fleet Training Video 2: Electric Vehicle Financial Considerations:
https://www.youtube.com/watch?v=Xdi7T_rz75Q&list=PLmIn8Hncs7bEa_NOG5Y8EZyONoxJtT0EF&index=3
- FuelEconomy.gov Alternative Fuel Vehicles: <https://www.fueleconomy.gov/feg/alternatives.shtml>
- *Impacts Assessment of Plug-in Hybrid Vehicles on Electric Utilities and Regional US Power Grids: Part 1: Technical Analysis*: https://www.researchgate.net/publication/237324999_Impacts_Assessment_of_Plug-in_Hybrid_Vehicles_on_Electric_Utilities_and_Regional_US_Power_Grids_Part_1_Technical_Analysis

References and Resources (Continued)

- Light Duty Electric Drive Vehicles Monthly Sales Updates: <https://www.anl.gov/es/light-duty-electric-drive-vehicles-monthly-sales-updates>
- Lithium-Ion Battery Recycling Prize: <https://americanmadechallenges.org/batteryrecycling>
- National Alternative Fuels Training Consortium First Responder Safety Training: <https://naftc.wvu.edu/afv-safety-training-home/>
- National Fire Protection Association EV Safety Training: <https://www.nfpa.org/EV>
- PlugStar by Plug In America: <https://plugstar.com>
- U.S. Department of Transportation Federal Highway Administration Alternative Fuel Corridor Program: https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/

More than 30 states have addressed two common issues

1. Clarifying that an EVSE site host is not a public utility and thus not subject to the regulatory regime that governs utilities. The regulatory regime is not applicable and it would prove burdensome to those entities looking to develop EV-charging sites.
2. Allowing site hosts to charge by the kWh, which may be more transparent for EV drivers. Even if a state has not yet clarified that EVSE or site hosts are not defined as public utilities and not subject to that regulatory regime, no state to date has regulated third-party EVSE as public utilities or prohibited third-party deployments for that reason.



EVSE at the State Level

1. Statewide policies
2. Utility engagement
3. EV-charging incentive programs
4. Utility “make-ready” programs and other utility policies
5. EVSE building codes
6. Broad EV zoning regulations – to allow all municipalities to install EVSE
7. Public regulatory commissions addressing issues surrounding cost recovery, time of use (TOU), and demand charges, utility rate designs for EV charging
8. EVSE policies
9. Learn more: <https://afdc.energy.gov/laws>

Indiana

- EVSE Policies – Installation
- Utility Engagement Policies

Best EVSE Practices

Local Level

Harmonize policies, to reduce confusion, allowing for both local preferences & overall consistency

Standardize EV parking signage to be used throughout the town/county/region

Expedited EVSE permitting process

Municipal EVSE policies – that support **Diversity, Equity and Inclusion** and safety

Before passing EV regs – consider starting with an **EV Policy**

Understanding the differences of and supporting EVSE in both **rural and urban municipalities**

Awareness of **funding opportunities**

Establish standardized, **low-cost** permitting process

Track EVSE permits

Involve Police Commission, Fire Department and Economic & Community Development

Draft EVSE Policy - Municipal Policy

USE POLICY - Electrical Vehicle Supply Equipment (EVSE) — are available on a **first come, first serve basis** for citizens with plug-in electric vehicles (EVs) in accordance with the following Use Policy and Guidelines at their own risk. By using the EVSE, you agree to abide by these policies.

FEES - At present, there is **no fee for EV charging (or) A minimal fee** is in place for patrons of the EVSE by a third party vendor.

QUALIFIED AND TIME OF USE - Qualifying vehicles that are permitted to park in the charging stalls are battery electric vehicles, and plug in/hybrid electric passenger vehicles. **Charging must be limited to no more than x hours.**

LIABILITY - By using (town's) EVSE, the EV owner consents for their vehicle to be unplugged by town personnel when the EVSE indicates their vehicle is fully charged, and is aware that **violating the time limit may result in their vehicle being towed at their expense.** Persons who damage the EVSE will be held financially responsible.

Permitting Process

Common information typically required in the permitting process includes:

- Site plans
- A single-line electrical diagram
- Load calculations and potential panel upgrades
- Manufacturers' charger installation instructions
- Accessibility, with clear diagrams demonstrating ADA requirements are met
- Easement requests, if necessary

Site Plan

- Utility interconnection requirements and electrical plan
- Grading and drainage that may be required at the site
- Landscaping plan, particularly if any trees will need to be removed, which may trigger a tree removal permit
- Parking, with the number of required and existing parking spaces shown in the plan
- Percentage of parking spaces be dedicated to EV charging
- Equipment anchorage accessibility and compliance with Americans with Disabilities (ADA) requirements
- EVSE protection, such as with the placement of bollards and curbs
- Ensuring right-of-way for pedestrians and that cords will not present trip hazards
- Types of station and wayfinding signage used to direct drivers into EV-charging spaces
- Adherence to all applicable codes, such as the National Electric Code (NEC), National Fire Protection Code (NFPA), and the International Building Code (IBC), among others.

What is the purpose of zoning regulations?

The basic purpose and function of zoning is to divide a municipality into residential, commercial, and industrial districts (or zones), that are for the most part separate from one another, with the use of property within each district being reasonably uniform. The zoning regulations maintain the character of each zone.

Benefits of EV Zoning Regulations

EV zoning regulations empower local zoning commissions to establish standards that ensure the safety of charging station users, promote equity, drive the implementation of electric vehicle supply equipment (EVSE), stimulate economic and community development, define signage requirements, and serve as a valuable tool for municipalities striving to keep pace with evolving transportation needs.

Why EV Zoning Regulations Matter?



Foster Diversity,
Equity and
Inclusion



Helps to make
EV adoption
inevitable



Regional
Consistency



Reduces range
anxiety and
creates safety



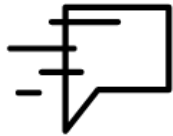
Economic and
Community
Development

Obstacles and Solutions



Lack of EVSE Understanding

Varying EVSE styles and advertising/cost options to consider



P&Z unsure about which EV regs are right for their muni

Review existing EV zoning regs examples



Site Hosts

Learning about and understanding site host demands



Pushback and Enforcement

Education, Incentives, & Penalties



Liability - Equipment and User

Understanding insurance coverage and responsible parties



Time limits & restrictions

The use of signage and occupancy fees

EV Zoning Regulations Opportunities



Lighting Requirements

Decrease crime



Overhead Coverage

Ability to charge in inclement weather



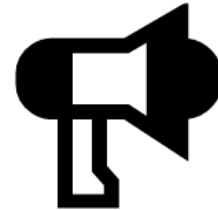
Proximity to Services

Improved experience and benefit to local merchants



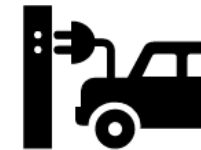
Security Cameras

Decrease crime



Permitted use of advertising screens

Maintain character of neighborhood



EV zoning regs that provide for those who do not have access to overnight charging

Prioritizing equity

EV Zoning Regulations: 9-Step Process

Step 1: Working in Collaboration with State Goals

Step 2: Building the EV Zoning Regulations Core Team

Step 3: Analyze Existing EV Zoning Regs to Identify Potential EV Zoning Opportunities

Step 4: Develop Public Outreach Plan, Collaborate with all Sectors, Gather Feedback

Step 5: Preparation for Public Meeting by Assimilating Feedback

Step 6: Write the EV Zoning Regulations Draft

Step 7: Share Draft EV Zoning Regulations with the Public

Step 8: Presenting Proposed EV Zoning Regulations to the Zoning Commission

Step 9: Managing Setback and Obstacles

Resources

- EV Zoning Regulations Blueprint
- Existing EV Zoning Regulations
- EV Policy Template
- Drive Clean Indiana

Building a Team: Roles and Pathways

Collaborate with those who have a clear interest in EV infrastructure and include all four “sectors” of influence:

- Public Sector
- Private Sector
- Community Members
- Non Profit and Associations

Analysis of IN EV Zoning Regulations

- Number of municipalities
- Different Percentages of minimum EV parking requirements
- Wide range of EV regulations passed
- A variety of municipalities have passed EV zoning regulations

EV Zoning Regulations Highlights


- **ADA Accessibility:** public services, i.e. EVSE, must be accessible to individuals with disabilities
- **Minimum number of EVSE parking spaces:** similar to non-EV minimum parking requirements
- **Make-Ready Standards:** encourage the installation of wiring and conduits for future EVSE
- **Signage:** understand appropriate use and repercussions

QUESTIONS?


Drive Clean Indiana



 DriveCleanIndiana.org

 219-644-3690

 Info@DriveCleanIndiana.org

 10115 Ravenwood Drive, Suite B
St John, IN 46375



UPCOMING EVENTS

Student Transportation News Conference

June 2nd – 6th, 2023 in Indianapolis, IN

Student Transportation Association of Indiana

June 26th – 29th in Westfield, IN

NFPA Ready for EVs Virtual Workshop - Gary Community

June 6, 2023 at 1 p.m. – 3 p.m. CST

Drive Clean Indiana's Annual Conference & Expo

August 23, 2023 @ Blue Chip Casino, Michigan City, IN

Drive Clean IN's Clean School Bus Consortium Webinar

June 13, 2023 at 10 a.m. CST

Drive Clean Indiana's 11th Annual Clean Air Golf Outing

September 19, 2023 @ White Hawk Country Club,
Crown Point, IN



Register at www.DriveCleanIndiana.org