HOUSTON-GALVESTON CLEAN CITIES COALITION STAKEHOLDERS MEETING

October 15, 2025

Housekeeping

1. We are recording. The recording will be published on our website: Houston-Cleancities.org

2. PLEASE drop your name in the chat to help us with attendance

Thank You!

Stakeholders Meeting

Agenda

1. Introductions – Vincent Sanders, METRO / HGCCC Chair
2. A Welcome From Our Host – Vincent Sanders, METRO / HGCCC Chair
3. Presentations
    1. Metro Environmental Management – Miriam Barranco – Houston METRO
    2. Zero Emission Vehicle Plan – Vincent Polignano – H-GAC
4. Updates on Advisory Board and Subcommittees – J. Ben Finley, *HGCCC*
    1. Annual Report
    2. Events and Outreach
    3. Grants
5. Current Grant Funding Announcements and Updates – J. Ben Finley
6. Announcements
7. Adjourn meeting

A WELCOME FROM OUR HOST: HOUSTON METRO

Vincent Sanders, Houston METRO

METRO ENVIRONMENTAL MANAGEMENT

Miriam Barranco, Houston METRO

METRO Environmental Management

Created by Environmental Services

10/7/2025

METRO's Sustainability Commitment

- METRO will manage its operations to avoid or minimize environmental impacts on the health and safety of our customers and employees.

- METRO will apply green principles to the design and management of its facilities. METRO will foster sustainable use of natural resources by promoting energy management, energy creation / generation, recycling, re-use, and re-purposing of materials and waste reduction management opportunities.

- METRO will collaborate with educational institutions and community organizations to achieve shared environmental goals.

Infrastructure and Management

- Environmental Management System (EMS)
- Environmental Aspects
  - Energy use
  - Emissions
  - Waste
  - Noise
  - Hazardous materials
- Uses the Plan-Do-Check-Act cycle

Environmental Management System

- Review of Current Environmental Programs
- Setting up Environmental Data Infrastructure.
- Transportation Environmental Database (TED)
- Smart Water Meters

Energy Management Plan

- Environmental Responsibility
- Goals
  - Guide METRO to reduce energy consumption
  - Ensure sustainability design within the facilities
  - Initiate the use of energy efficient equipment

Energy Management Plan

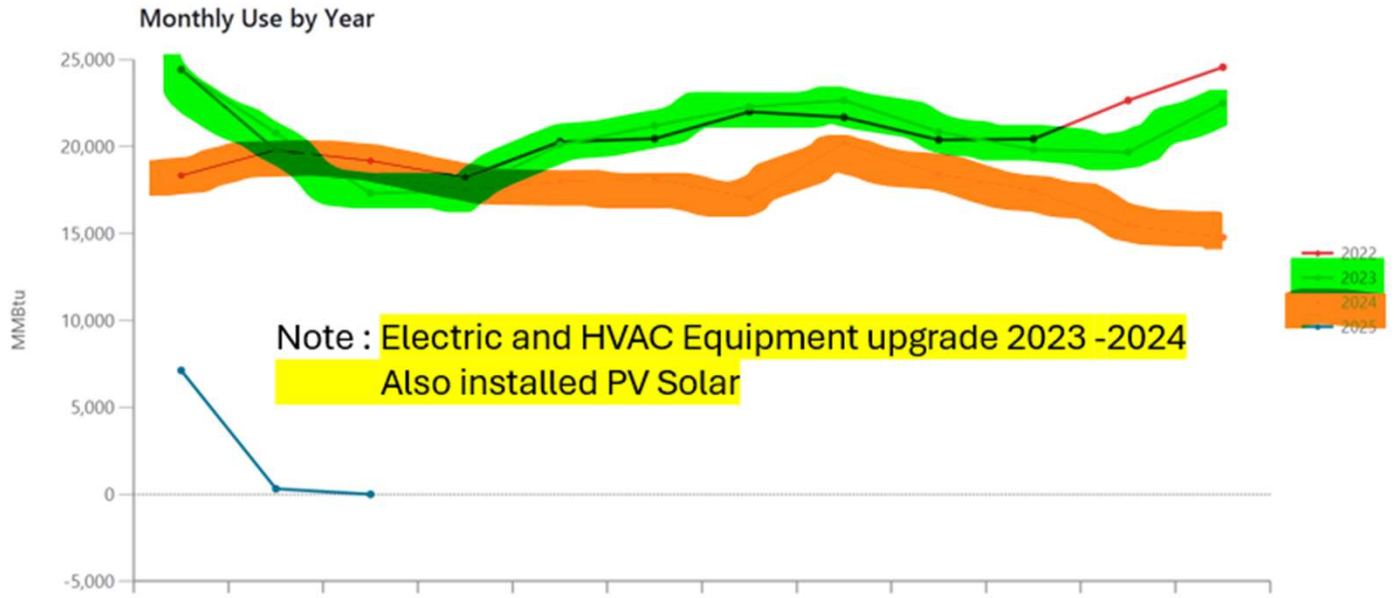
ENERGYCAP.

METRO - Harris County, TX

Monthly Trends - Comparing Year-to-Year

Monthly Use by Year

Executive Summary (MMBtu)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2022	18,332	19,806	19,181	18,221	20,273	20,453	22,002	21,681	20,381	20,437	22,656	24,565	247,987
2023	24,373	20,771	17,312	17,432	20,103	21,192	22,288	22,651	20,846	19,830	19,675	22,491	248,964
2024	24,431	19,788	18,345	17,507	17,983	18,163	17,044	20,203	18,405	17,491	15,479	14,777	219,616
2025	7,124	318	0										7,442

METRO's Fleet

Fleet Type	Year Range	Number of Buses	NO_x Emissions (g/bhp-hr)	PM Emissions (g/bhp-hr)
Diesel Fleet	2010–2024	700	0.20	0.01
Diesel Fleet	2024+	350	0.050	0.01

METRO's CO_2 Emissions

- CO_2 Emissions
  - No set calculation standard
  - Previous data focused on length of bus
  - Moving towards focusing on types of engines as well
  - Re-evaluation
- Emissions reduced through:
  - Improved fuel economy
  - Lighter composite bus materials

Solar Panels

- **Townsen Park & Ride**
  - 122.4 kWdc solar canopy
  - Generates ~174,000 kWh annually
  - Enhances rider safety and comfort
- **West Bus Operations Facility**
  - 814 kWdc solar system (1.02 GWh/year)
  - 3.1 MWh Tesla Megapack battery
  - Can fully recharge 6 electric buses during outages

Key Takeaways

- METRO is committed to reducing environmental impact through strategic planning and data-driven decisions.
- Implementation of the Environmental Management System (EMS) ensures continuous improvement.
- Investments in energy efficiency, cleaner fleet technologies, and renewable energy are already showing measurable results.

ZERO EMISSION VEHICLE PLAN

Vincent Polignano – H-GAC

ZEV Study Overview

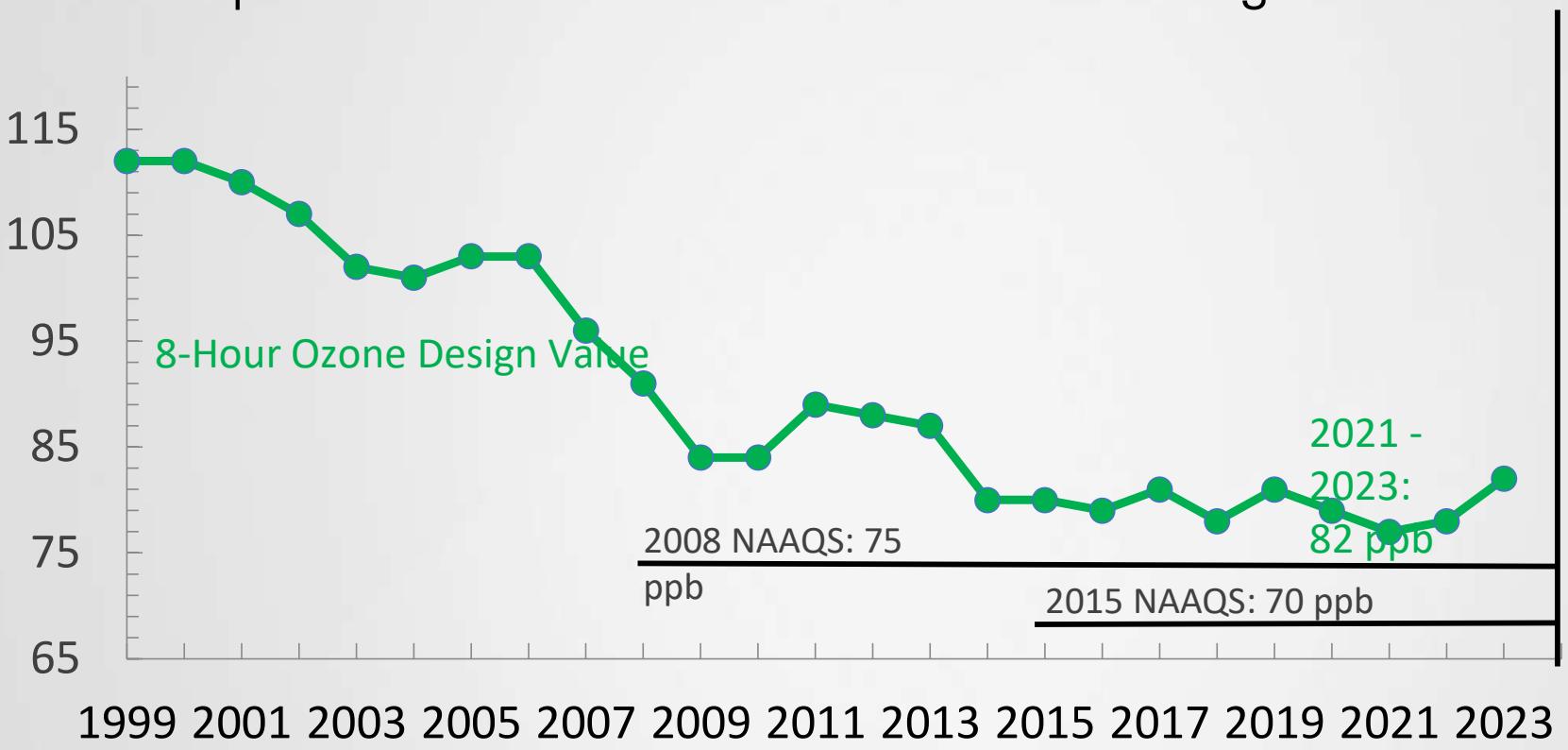
Regional Collaboration • Transportation Planning • Multimodal Mobility

Houston-Galveston Area Council

Regional AQ Issues

HGB Nonattainment Status

- 8 counties (2008 ozone) and 6 counties (2015 ozone)
- The region has had 30 daily exceedances of the 2015 ozone standard this year
- Transportation accounts for 63% of NOx in the region



ZEV as an AQ Opportunity

- Zero Emission Vehicles (ZEV) can help improve regional air quality
  - ZEV vehicles have zero tailpipe emissions
    - Battery Electric Vehicles (BEVs)
    - Fuel Cell Electric Vehicles (FCEVs)
- 25% of Texas EVs are registered in the Houston region (357,334/90,045)
- Abundant hydrogen production and industrial expertise in the region
  - HyVelocity (industry-led partnership) & H2LA (DOE/GTI Energy I-10 Alt. Fuel corridor)
- To adequately account for the expansion of ZEV in the region, H-GAC as the region's MPO is developing planning materials.

Webpage and One-Pagers

- Webpage Link
- One-Pagers

PLUG-IN HYBRID ELECTRIC VEHICLES (PHEV) combine the technology of conventional gasoline vehicles and battery electric vehicles, fueling with both gasoline and electricity. These versatile vehicles offer the familiarity of conventional fueling as well as electric motors that offer sufficient range for many daily driving activities. PHEVs may fit your lifestyle and transportation needs. This fact sheet provides answers to common questions, to aid in informed decision making about PHEVs.

What powers PHEVs?

Both electricity and gasoline. PHEVs have an electric motor with a small battery pack and an internal combustion engine

Do PHEVs generate air pollution?

While operating on electric power, PHEVs produce no tailpipe emissions, contributing to cleaner air and reducing harmful pollutants. Since most trips taken are short and local, they may spend most of their time operating primarily in electric mode without emissions. PHEVs will produce tailpipe emissions when operating on gasoline only.

How are PHEVs different than a conventional hybrid car?

PHEVs are able to charge via an external source and have larger batteries than conventional hybrid cars. The electric motor in conventional hybrid cars usually supports auxiliary functions like air conditioning or aiding acceleration. PHEVs' electrical motor actually powers the vehicle's motion.

Are PHEV chargers different than other electric chargers?

No. They are the same. Level 1 and level 2 chargers will charge the vehicle as they would a full electric vehicle. Due to the smaller battery sizes of PHEVs, Level 3 fast chargers are not typically compatible.

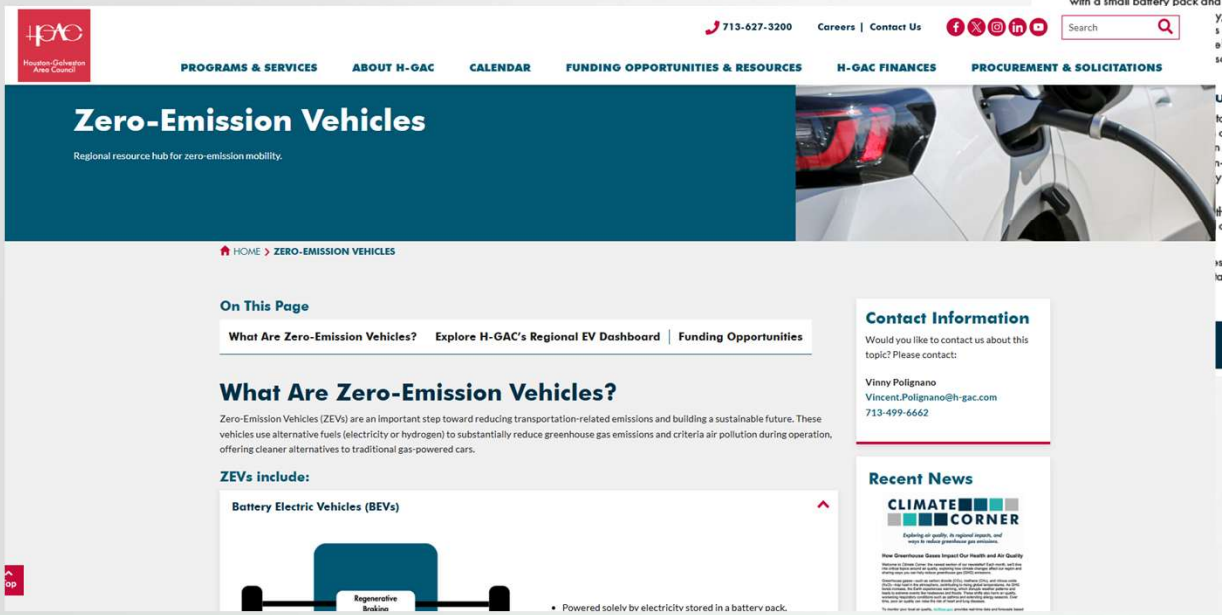
HOW ARE PHEVS REFUELED?

ELECTRICITY
Most PHEV batteries charge via a standard electrical outlet (Level 1). Faster, level 2 charging is also available.

GASOLINE
PHEVs have a 12–15-gallon gasoline tank, which can be refueled at any gas station.

REGENERATIVE BRAKING
A small portion of the energy is recovered through braking, converting motion into electricity.

To learn more visit: www.h-gac.com/go/zev



Regional Collaboration • Transportation Planning • Multimodal Mobility

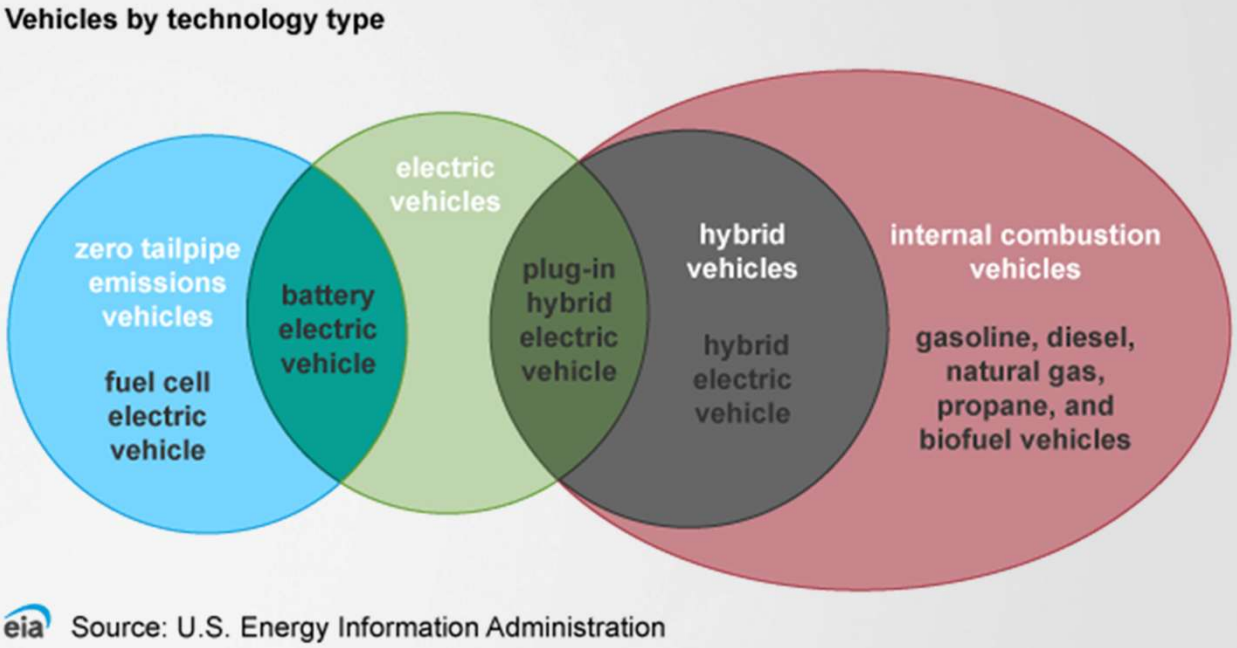
Houston-Galveston Area Council

Study Sections

- Introduction
  - Regional Context
- ZEV Background
- County-Level Data
- Recommendations

Background

- Explain alphabet soup
- BEVs
  - Operations & Charging
  - Range, maintenance costs, etc.
- PHEVs
  - How they operate/differences to BEVs
- FCEVs
  - Operation, hydrogen production
  - Least developed market
  - Federal Investment in hydrogen market at large // BIL



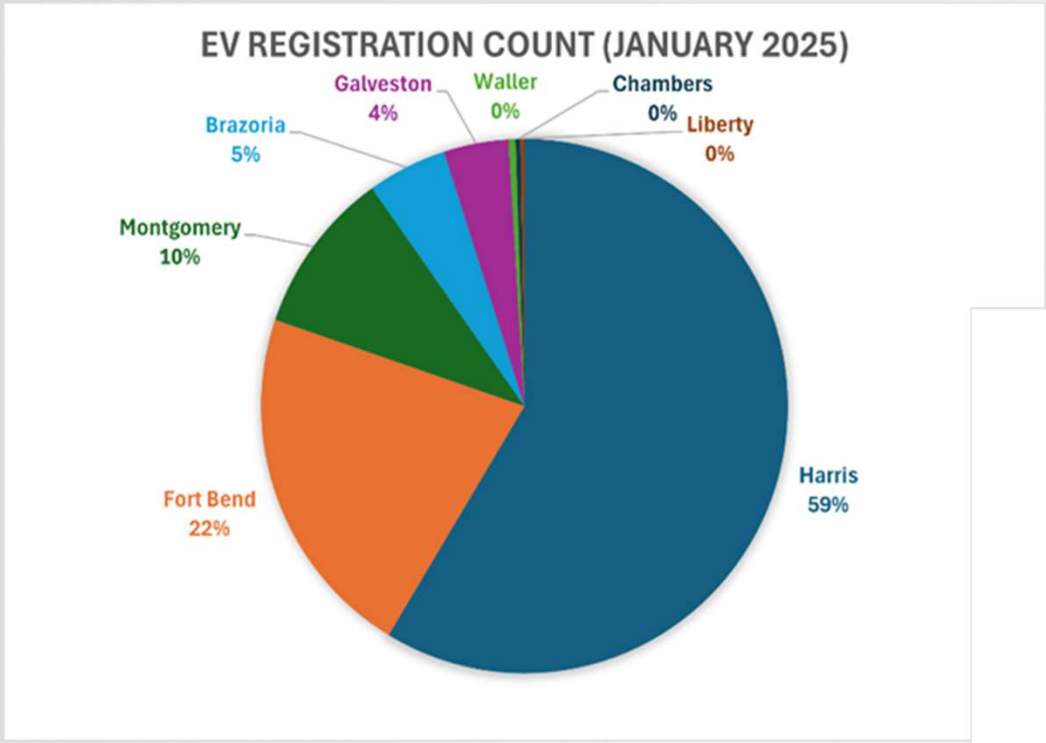
Background (cont'd)

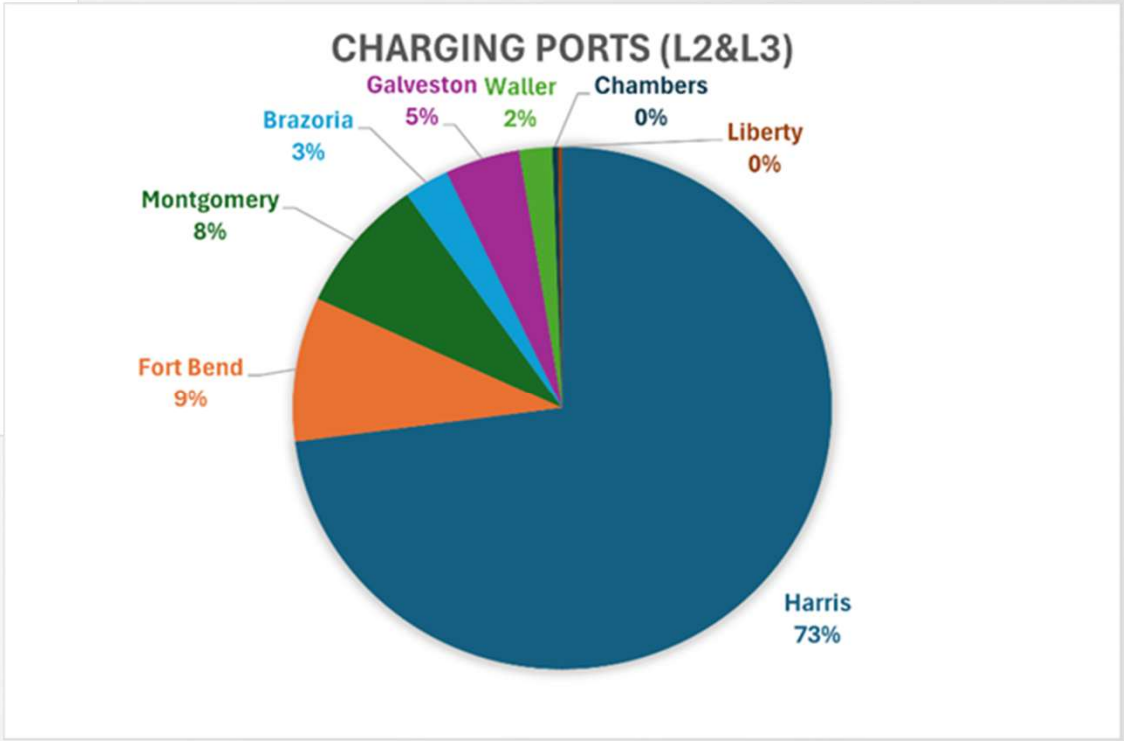
- National and State Trends
  - BEV (LD & MHD) market share/sales
  - Declining costs/ lower cost models
  - FCEV trends (LD low adoption, MHD emerging pilots)
  - Federal Investment
- State Trends
  - Texas 3rd nationwide BEVs – regional discussion later
  - NEVI, grid, charger deployment
  - Mostly with BEVs, some discussion of hydrogen

County BEV Vehicle Registrations and Infrastructure Profiles

County	Number of EV Registrations	Percentage Annual Increase (2019-2025)*	Number of Level 2 EV Ports	Number of Level 3 Ports	EV Public Charging Stations
Harris	51,261	56.3	38	87	87
Fort Bend	18,898	67.8	125	154	255
Montgomery	8.661	62.1	68	147	115
Brazoria	4,290	60.2	116	153	187
Galveston	3,470	60.1	36	108	85
Waller	430	120.5	39	12	27
Chambers	263	120.7	26	N/A	52.6
Liberty	212	83.5	106	N/A	212

County BEV Vehicle Registrations and Infrastructure Profiles (cont'd)





County BEV Vehicle Registrations and Infrastructure Profiles (cont'd)

Montgomery County

Vehicle Registrations

There are **7,852 BEVs and PHEVs registered in Montgomery County**; BEVs and PHEVs account for 76.5% and 23.5% of the total, respectively.

From 2019 to December 2024, **EV registrations increased in Montgomery County by an average of 59.80% each year.** The most sluggish growth year during the period still increased EV stocks in the county by 38.58%.

Year	EV Registrations	Percent Change
2019	488	
2020	891	+82.58%
2021	1,427	+ 60.16%
2022	2,605	+ 82.55%
2023	3,885	+ 49.14%
2024	5,666	+ 45.42%
2025	7,852	+ 38.58%

Montgomery County accounts for 9.89% of electric vehicles registered in the H-GAC 13-county region.

The county-wide rate of EVs per 100 households is 3.5, but dense zip-code pockets in the south exceed that number, 77386 and 77382 (Spring), and 77381 (The Woodlands) have EV rates per 100 households of 7.8, 6.6, and 5.4, respectively.

Charging Infrastructure

There are **645 total EV charging stations** in Montgomery County. There are **509 DCFC ports and 1,586 L2 ports.** A charging station refers to the physical location that has one or more charging ports. A charging port provides power to one vehicle at a time.

	Totals	EVs:Port Ratio
DCFC Ports	72	109
L2 Ports	167	47
Charging Stations	84	93

- Registrations of BEVs and PHEVs
- Year over year percent change
- Notable dense pockets identified
  - Adding commentary about income level of those pockets
- Charging stations (L2 vs. L3)
  - EVs to Ports ratio (benchmark metric)

Recommendations (to H-GAC Leadership)

- Expand and streamline public charging infrastructure deployment
- Foster strategic partnerships through workforce development initiatives
- Develop and distribute public education materials and experiences
- Complete a comprehensive Regional ZEV Infrastructure Plan

Next Steps

- Study published (~2 weeks)
- Promotion of study, webpage, one-pagers
- Presentations to interested groups, committees, etc.
- Scope of Work for Zero-Emission Vehicle Infrastructure Plan
  - In review, RFP and procurement process ~early 2026

Contact Information

- Vinny Polignano, Planner Specialist
  - vincent.polignano@h-gac.com
  - 713-499-6662
- Pharr Andrews, Principal Planner
  - pharr.andrews@h-gac.com
- Andrew DeCandis, Air Quality Manager
  - andrew.decandis@h-gac.com

UPDATES ON SUBCOMMITTEES

J. Ben Finley, HGCCC

Annual Report

Our results are officially approved:

GGE Reduction = 18,121,941 Gallons

GHG Reduction = 56,428 Tons

Events and Outreach

- Hydrogen Workforce Event
  - Partnering with:
    - Center for Houston's Future
    - Black Arrow Consulting
    - Texas Hydrogen Alliance
    - Port of Houston Authority

- Clean Cities Coalition Expo Planning

Grants

- Grants Database Use
- EPA Competitive Grant Research Webinar
  - October 22nd
  - 12:00 – 1:00
  - Register before attending (epa.gov/grants/epa-grants-webinars)

As Always

- Contact me if you wish to be on any of the subcommittees:
  - Strategic Planning
  - Stakeholder Meeting Planning
  - Annual Report
  - Events and Outreach
  - Grants

Ben.Finley@h-gac.com

GRANT OPPORTUNITIES PRESENTATION

J. Ben Finley, HGCCC

Vehicle Purchase, Lease, Replace, and Repower

Agency	Name	Might Be Good For	Close Date	Link
Texas Commission on Environmental Quality	Light-Duty Motor Vehicle Purchase or Lease Incentive Program	Public, Private, Nonprofits	March 6, 2026	LDPLIP
	Texas Clean School Bus Program	Public and Charter Schools	TBD	TCSBP
	Texas Hydrogen Infrastructure, Vehicle and Equipment Program	Public, Private, Nonprofits	TBD	THIVE

Infrastructure

Agency	Name	Might Be Good For	Close Date	Link
Department of Transportation	FY24-25 Federal-State Partnership for Intercity Passenger Rail Grant Program - National	Local Governments and Public Agencies	1/7/2026	FR-FSP-25-006
Department of Agriculture	Renewable Energy Systems and Energy Efficiency Improvements Program	Small Agricultural Businesses	Tbd	RDBCP-REAP-RES-EE1-2016
Texas Commission on Environmental Quality	Alternative Fueling Facilities Program	Public, Private, Nonprofits	TBD	AFFFP
Waste Management	Waste Management RNG Program	All	Tbd	Andrew Garcia (575) 404-5180

Research

Agency	Name	Might Be Good For	Close Date	Link
Department of Energy	Spurring Projects to Advance Energy Research and Knowledge Swiftly	Research Labs, Universities	12/30/2029	SPARKS

Texas Volkswagen Environmental Mitigation Program

The All-Electric Program funded by the Volkswagen Settlement is open. Eligible projects include replacements of:

- Class 8 freight or port drayage trucks
- Class 4-8 school bus, shuttles, and transit buses
- Class 4-7 freight trucks
- Airport Ground Support Equipment
- Forklifts and Port Cargo Handling Equipment
- Refueling Infrastructure

- Closing August 31, 202**6**

Tax Credits

- Tax Credits
  - Alternative Fuel Vehicle Refueling Property Tax
  - Electric Vehicle and Fuel Cell Electric Vehicle
    - Previously owned Clean Vehicle Credit

WHAT DID I MISS?

ANNOUNCEMENTS OF CURRENT & UPCOMING ACTIVITIES

Open Forum

Upcoming Events

- EPA Competitive Grant Research Webinar (October 22nd)
- Hydrogen Workforce Event
  - Moved to Jan/Feb
- CPRG Update
- *OTHERS?*

- Next Stakeholder Meeting (TBD)

Please visit our website:
Houston-Cleancities.org

Thank You!

In person attendees are invite to the offsite field trip!