Dallas-Fort Worth Clean Cities Coalition: Networking for Solutions

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RCE North Texas Annual Summit
SDG 9 Panel: Industry, Innovation, and Infrastructure

November 9, 2022
Who We Are

DFW Clean Cities Coalition: Networking for Solutions

Regional Planning Agency
North Central Texas Council of Governments

Metropolitan Planning Organization (MPO)

Local Clean Cities Coalition

Dallas-Fort Worth Clean Cities
Nitrogen Oxides Emissions Sources

Total Nitrogen Oxides ($NO_x$) = 234.75 tons per day (tpd)

- On-Road Mobile: 88.27 tpd
- Non-Road Mobile: 38.18 tpd
- Off-Road Mobile: 30.95 tpd
- Point (Excluding Oil & Gas): 30.05 tpd
- Area: 34.47 tpd
- Oil & Gas (Production & Drill Rigs): 6.79 tpd
- Light-Duty Vehicles: 36.18 tpd
- Medium-Duty Vehicles: 9.81 tpd
- Heavy-Duty Vehicles: 42.28 tpd

Source: Dallas-Fort Worth Serious Classification Attainment Demonstration State Implementation Plan Revision for the 2008 Eight-Hour Ozone National Ambient Air Quality Standard, September 2019
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

- Electricity
- Hydrogen
- Fuel Economy
- Natural Gas
- Propane
- Idle Reduction
- Ethanol
- Biodiesel
Trends in Annual Energy Impact

Department of Energy Goal: Increase GGE Reductions 16% Year Over Year
2021 Target: 27.79M, 2021 Reported: 24.19M

- RNG-DFW Airport
- CNG-DFW Airport
- LNG
- Biodiesel
- Off-Road Vehicles/Equipment
- RNG-DART
- CNG-DART
- LNG
- LPG
- Fusion
- Hybrid
- Idle Reduction

Dallas County Schools Dissolution
Operations Reduced Due to COVID-19; Reduced National Fleet Partner Involvement

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Impact of Various Fuel Types

- Greenhouse Gas Reductions (71,924 tons)
- Fine Particulate Reductions (1,403 pounds)
- Nitrogen Oxides Reductions (27,556 pounds)
- Number of Vehicles (11,571 vehicles)

RNG: Renewable Natural Gas; CNG: Compressed Natural Gas; LNG: Liquified Natural Gas; LPG: Liquified Petroleum Gas; EV: Electric Vehicle; PHEV: Plug-In Hybrid Electric Vehicle

- RNG
- CNG
- LNG
- Propane
- Ethanol
- Biodiesel
- EV+PHEV
- Hybrid
What We Do

**Funding Support**
- Assist with Navigating Programs and Developing Grant Applications
- Administer Funding

**Technical Assistance**
- Maintain and Analyze Data
- Hold Webinars, Workshops, Peer Exchange
- Develop Best Practices and Template Resources

**Planning the Future**
- Alternative Fuel Corridors
- Texas EV Charging Plan
- ZEV Infrastructure
- Organic Waste to RNG Feasibility Study

**Raising Awareness**
- Facilitating Relationships
- National Drive Electric Week
- Fleet Recognition
- Success Stories and Community Events
Electric Vehicle Market Trends

Over half of new vehicle sales forecasted to be electric by 2030

- *Bloomberg New Energy Finance*, September 2022

42% of medium- or heavy-duty truck sales forecasted to be zero emissions by 2030, assuming *economics* drive adoption


To serve projected 22 million electric vehicles by 2030, need 10-fold increase in charging stations

- *Governing.com*, December 2021
## Electrification Transition Goals Of Manufacturers

(% of Sales) | Data as of 11/10/2021
---|---

*This list is not comprehensive, and manufacturers are not endorsed by NCTCOG*

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Electrification Goals</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Audi</strong></td>
<td>100% (Only New Models) by 2025</td>
<td>100% by 2030</td>
</tr>
<tr>
<td><strong>Ford</strong></td>
<td>50%</td>
<td>20% Globally (100% in Europe)</td>
</tr>
<tr>
<td><strong>General Motors</strong></td>
<td>50%</td>
<td>40% Globally (100% in Europe)</td>
</tr>
<tr>
<td><strong>Honda</strong></td>
<td>40% (Includes FCEVs)</td>
<td>80% (Includes FCEVs)</td>
</tr>
<tr>
<td><strong>Hyundai</strong></td>
<td>40% (Includes FCEVs)</td>
<td>80% (Includes FCEVs)</td>
</tr>
<tr>
<td><strong>Kia</strong></td>
<td>40% (Includes Hybrids)</td>
<td>100% (Aspirational)</td>
</tr>
<tr>
<td><strong>Mercedes-Benz</strong></td>
<td>50%</td>
<td>40% (100% New Models)</td>
</tr>
<tr>
<td><strong>Nissan</strong></td>
<td>40% (Includes Hybrids)</td>
<td>80% (Includes FCEVs)</td>
</tr>
<tr>
<td><strong>Stellantis</strong></td>
<td>100% (In Select Markets)</td>
<td>Signed UN COP26</td>
</tr>
<tr>
<td><strong>Subaru</strong></td>
<td>40% (Includes Hybrids)</td>
<td>Carbon Neutral</td>
</tr>
<tr>
<td><strong>Toyota</strong></td>
<td>15% (70% with Hybrids)</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Volkswagen</strong></td>
<td>20%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Volvo</strong></td>
<td>50%</td>
<td>100%</td>
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**FCEV** – Fuel Cell Electric Vehicle  
**PHEV** – Plug-In Hybrid Electric Vehicle  
**ICE** – Internal Combustion Engine

- **% of sales that do not use ICEs**
- **Electrification plans includes hybrids or only applies to new models**
- **OEM has phased out ICEs in a region other than the United States**
- **Signed UN COP26 (No ICE Sales by 2035)**
- **Carbon neutrality goal**
- **Signed UN COP26**

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**Carbón Neutral**
EV Data And Trends

EV Registration Data
www.dfwcleancities.org/evnt -> EVs and Texas
As of October 31, 2022:
~155K EVs in Texas

September 2021:
~93K EVs in Texas

Charging Station Dashboard
https://txdot.mysocialpinpoint.com/tx_ev_pla
n
As of October 31, 2022:
EV Adoption and Infrastructure Availability

**Collin** 217 2
**Dallas** 529 18
**Denton** 78 15
**Ellis** 0 4
**Johnson** 5 1
**Kaufman** 2 0
**Parker** 2 1
**Rockwall** 9 5
**Tarrant** 313 28
**Wise** 2 0

*As of July 2022; Excludes Tesla Stations*
DC Fast Charging Across Texas

Texas Volkswagen Environmental Mitigation Program:

~$20.9 Million DC Fast Charging
170 Plugs at 41 Sites
96% of Funds to Fuel Retailer Sites

Legend
- TxEEMP DC Fast Charge Stations
- Existing Public DC Fast Charge Stations
- Priority Areas
- FHWA Designated Electric Corridors
  - Corridor Ready
  - Corridor Pending
  - County

*Existing Station Data from Department of Energy Alternative Fuel Station Locator as of January 2021
### Highlights Of Texas EV Charging Plan

Plan Posted at [Texas electric vehicle planning (txdot.gov)](https://txdot.gov) - $408M Total

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
<th>Estimated Locations</th>
<th>Estimated Federal Funding</th>
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<tbody>
<tr>
<td><strong>1</strong></td>
<td>Install DC Fast Chargers Along Alternative Fuel Corridors</td>
<td>~55 Stations Statewide</td>
<td>$48.5M</td>
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<td></td>
<td>Work with Counties and Small Urban Areas to Install DC Fast Charge Sites In/Near County Seats</td>
<td>Estimated 190</td>
<td>$159.7M</td>
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<td><strong>2-5</strong></td>
<td>Work <em>with MPOs</em> to Identify Locations and Appropriate Combination of Charging Sites (Number Locations TBD, Estimated $198.92M Federal)</td>
<td>NCTCOG Area: ~$64.5M</td>
<td></td>
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**For Reference:** 290 DC Fast Charging Sites Statewide as of October 31, 2022
Medium- and Heavy-Duty Truck Impact on Regional Air Quality

Medium/Heavy Duty Vehicle Impacts:
~5% of Miles Traveled
~40% of Nitrogen Oxides (NO$_X$)

Key Factors in Choosing Zero Emission Vehicle (ZEV) Platform:
Weight
Refueling Time
Range (Route Length)

![Pie chart showing NO$_X$ emissions in tons per day by Medium/Heavy-Duty Vehicle Type]

- Transit Bus
- Refuse Truck
- School Bus
- Motorhome
- Single Unit Short-Haul
- Single Unit Long-Haul
- Combination Short-Haul
- Combination Long-Haul

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IH 45 Corridor Zero Emission Vehicle Infrastructure Plan

Provide Actionable Recommendations to Facilitate ZEV Deployments:
- Battery Electric
- Hydrogen Fuel Cell Electric

Support Future Strategic Initiatives (e.g., Autonomous Vehicles)

Engage Wide Range of Stakeholders

www.nctcog.org/IH45-ZEV
Contact Us

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www.nctcog.org/airquality