AGENDA

Electric Vehicles North Texas (EVNT)
Stakeholder Meeting

North Central Texas Council of Governments
Regional Forum Room
Wednesday, November 18, 2015
2:00 – 3:30 pm

1. Introduction
   Rachel Linnewiel, NCTCOG

2. Recent Developments:
   a. EPA Ozone Standard Update
      Jody Loza, NCTCOG
   b. EVSE Updates for the AFDC Alternative Fueling Station Locator
      Abby Brown, ICF International
   c. Battery Powered, Heavy Duty Trucks That Work: Learn How to Eliminate Diesel and Emissions, While Saving up to 90% in Fuel
      Mike Saxton, Orange EV Pure Electric Terminal Trucks

3. EVNT Update
   Rachel Linnewiel, NCTCOG

4. Other Items
   All

5. Adjourn
   Rachel Linnewiel, NCTCOG
EVNT Goals, 2015-2016

- Increase EV registration in the 10-county nonattainment area by 100% over September 2015 levels by the end of September 2016.
- Coordinate with EVNT stakeholders to host one National Drive Electric Week event between September 10-18, 2016, with an overall goal of increasing attendance to 200 EVs and 400 total attendees.
- Develop region-specific outreach materials with emphasis on economic benefits in addition to air quality/environmental benefits. Materials may include region-specific fact sheets; an infographic on financial return on investment, job creation through EV development and sales; and updated website resources.
- Produce at least one video for educational/marketing purposes.
- Identify and disseminate best management practices related to integrating EV-Ready guidelines into building codes for both residential and commercial properties, with particular focus on multifamily residential properties, with a goal of hosting at least one workshop/meeting on the topic.
- Assess infrastructure “gaps” and coordinate with industry partners to identify solutions, with data to be presented by GIS map and a white paper addressing EV-based business case studies. This may be completed by conducting geographic information system (GIS) analysis of EV registration data versus existing EVSE sites; target analyses include evaluating the locations of major employment centers and typical EV range. Integrate feedback from EV-based businesses. DFWCC has established a goal of 2 DC fast charger EVSEs being installed at or adjacent to the airports.
- Engage local businesses in the Workplace Charging Challenge with a goal to sign up 5 additional business, for a total of 12 partners from the DFW area. Maintain momentum on the topic in follow-up to the July 30, 2015, Workshop.
- Establish partnerships with rental car facilities and service centers to incentivize use of EVs as rental/loaner vehicles and increase driver exposure and, consequently, adoption.
- Identify barriers to EV adoption among regional fleets and document EV adoption among 5 local fleets. Reach out to 3 fleets that already use EVs to engage in helping relay best practices.
- Attend at least one North Texas Electric Auto Association meeting each quarter to provide updates on EVNT activities as well as to receive feedback from members on critical issues, barriers, and opportunities and engage with other local interest groups as appropriate.
- Goals for the next three-to-five years are: develop multiple videos for educational and marketing purposes, develop an intracity electrification network between the DFW, Houston, and Austin-San Antonio urban centers, pursue additional infrastructure deployment if needed, and engage transit agencies and universities in future infrastructure/rental/car loan projects. Additional goals will be developed as 1 year goals are completed and analysis indicates areas of additional needs.
Electric Vehicles North Texas (EVNT) Update

EVNT Stakeholder Meeting

Rachel Linnewiel, Transportation Planner
November 18, 2015
Registration by Electric Vehicle (EV) Model in North Texas

Total EV Registration:
Texas: 6,453
DFW Area: 2,688
(42% of TX total)
(As of November 2015)

*NCTCOG staff plans to include additional models including: Cadillac ELR, Chevrolet Spark, Fiat 500e, Honda Accord Plug-In & Fit EV, Toyota Plug In Prius, & RAV4 EV
EV Registration Frequency

Total Texas Registrations

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<td>461</td>
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<td>446</td>
<td>493</td>
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Total Texas EV Registrations by Year

EV Registration Frequency
DFW Public EV Charging Infrastructure

- **Total Locations**
  - Nov-14: 252
  - Feb-15: 269
  - Nov-15: 284

- **Total Ports**
  - Nov-14: 604
  - Feb-15: 648
  - Nov-15: 697

- **Level 1**
  - Nov-14: 62
  - Feb-15: 70
  - Nov-15: 70

- **Level 2**
  - Nov-14: 509
  - Feb-15: 544
  - Nov-15: 582

- **Level 3**
  - Nov-14: 33
  - Feb-15: 34
  - Nov-15: 45

*Data as of November 18, 2015*
Program Goals
<table>
<thead>
<tr>
<th>Goal</th>
<th>Performance Measure</th>
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<tbody>
<tr>
<td>Increase public and private EVSE</td>
<td>Host workshop/meeting on Best Management Practices (BMPs) for EV-ready guidelines in</td>
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<tr>
<td>infrastructure availability</td>
<td>building codes</td>
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<tr>
<td>Assess infrastructure gaps and coordinate</td>
<td>Present business case-studies using GIS map and White Paper</td>
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<tr>
<td>with industry partners to identify</td>
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<td>solutions</td>
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<tr>
<td>Goal</td>
<td>Performance Measure</td>
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<tr>
<td>Address and increase EV adoption among regional fleets</td>
<td>Identify barriers to adoption</td>
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<td></td>
<td>Reach out to 3 regional fleets to understand BMPs</td>
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<td>Document EV adoption among 5 local fleets</td>
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EVNT 2016 Goals: Outreach

<table>
<thead>
<tr>
<th>Goal</th>
<th>Performance Measure</th>
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<tr>
<td>Strengthen partnerships with regional stakeholder organizations</td>
<td>Attend at least one meeting of the North Texas Electric Auto Association each quarter</td>
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<tr>
<td>Develop region-specific outreach materials with emphasis on economic benefits</td>
<td>Complete fact sheet, infographic, updated website materials, and/or video</td>
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Contact Information

Rachel Linnewiel
Transportation Planner
rlinnewiel@nctcog.org
817-608-2329

Lori Clark
Principal Air Quality Planner
lclark@nctcog.org
817-695-9232

www.dfwcleancities.org/evnt
Other Items?
National Drive Electric Week 2015

- 5th year for DFW event
- September 19
- Grapevine Mills Mall
- About 116 EV owners attended
- North Texas record attendance, even in the rain
- Coordination with NTX Electric Auto Association
- Various prizes provided to lucky attendees
DFW Clean Cities Web Traffic

Website Traffic

- Visits
- Users
- Pageviews

- August
- September
- October
NDEW Webpage Traffic

Drive Electric Week Page Traffic

- Pageviews
- Unique Pageviews
- Entrances

August | September | October
NDEW Advertising

Dallas Morning News
• 400,000 impressions

Fort Worth Star Telegram
• 475,000 impressions

KERA/KXT
• 0:15 second spots, 68

Cumulus Radio
• 0:15/0:30 second spots, 98

Clear Channel Billboards
• 12 digital billboards

Facebook
• 1 week of newsfeed ads
Additional Promotion/Materials

Join us for
NATIONAL DRIVE ELECTRIC WEEK

Saturday, September 19, 2015
10 AM - 2 PM
Grapevine Mills Mall
JC Parking Lot
3000 Grapevine Mills Pkwy
Grapevine, TX 76051

Activities, entertainment, giveaways, ride & drives, and much more!

Learn how you can drive electric at the largest gathering of EVs in North Texas!
#texasEV

For more information, please stay tuned to:
www.dfwcleancities.org/ndew
#texasEV

STAMP CARD
Visit with at least 8 different exhibitors and/or owners to be entered in a drawing for a prize.
Drawings will occur throughout the duration of the event. Return this card to the main tent when completed with 8 stamps.

Clean Cities / 6
Save the Date...

9.17.16
DFWCC Staff Contact Information

Kenny Bergstrom  
Communications Specialist  
817-704-5643  
kbergstrom@nctcog.org

Rachel Linnewiel  
Transportation Planner  
817-608-2329  
rlinnewiel@nctcog.org

Pamela Burns  
DFW Clean Cities Coordinator  
817-704-2510  
pburns@nctcog.org

Lori Clark  
Principal Air Quality Planner  
817-695-9232  
lclark@nctcog.org

NCTCOG Funding Website  
www.nctcog.org/aqfunding

DFW Clean Cities Website  
www.dfwcleancities.org

EVNT Website  
www.dfwcleancities.org/evnt

EVNT Logo
EPA’S NEW OZONE NATIONAL AMBIENT AIR QUALITY STANDARD (70 PPB) AND END OF SEASON UPDATE

EVNT Stakeholder Meeting

Jody Loza, Senior Air Quality Planner
November 18, 2015

North Central Texas Council of Governments
2015 8-Hour Ozone Draft Timeline

Standard:  70 ppb

Final Rule Issued – October 1, 2015¹

EPA Expects to Designate Nonattainment Areas – October 1, 2017

Effective Date of Designations – Early 2018

Conformity Determinations for Newly Designated Counties – Early 2019

Anticipated SIP Due – Early 2021

Classification Attainment Years, Based on Effective Date:

- Marginal:  3 Years from Effective Date (2021)
- Moderate:  6 Years from Effective Date (2024)
- Serious:  9 Years from Effective Date (2027)
- Severe 1:  15 Years from Effective Date (2033)
- Severe 2:  17 Years from Effective Date (2035)
- Extreme:  20 Years from Effective Date (2038)

¹Published in the Federal Register on October 26, 2015; https://federalregister.gov/a/2015-26594
Ozone Season Extended

Ozone Season Extended by One Month
(March 1 – November 30)

Effective January 1, 2017

RTC Previously Provided Comments Encouraging EPA to Not Implement Extended Ozone Season in the Dallas-Fort Worth Nonattainment Region from the End of October Through the End of November.

In Past 10 Years, No Exceedances (>70 ppb) Recorded During Month of November

SIP Baseline to be Developed for 2015 Ozone Standard Set at 2012
Exceedance Level indicates daily maximum eight-hour average ozone concentration. Exceedance Levels are based on Air Quality Index (AQI) thresholds established by the EPA for the revised ozone standard of 75 ppb.

- Purple (116+ ppb)
- Red (96-115 ppb)
- Orange (85-95 ppb)
- Orange (76-84 ppb)

$^\text{Current as of 11/1/2015. Data not certified by TCEQ.}$

Source: TCEQ, [http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_monthly.pl](http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_monthly.pl)

ppb = parts per billion
According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the Design Value (three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration) is equal to or less than 75 parts per billion (ppb).

- **1997 Standard < 85 ppb (Revoked)**
- **2008 Standard ≤ 75 ppb¹ (by 2017)**
- **2015 Revised Standard ≤ 70 ppb (TBD; Moderate by 2024)**

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¹Attainment Goal - According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the Design Value (three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration) is equal to or less than 75 parts per billion (ppb).

^Current as of 11/1/2015. Data not certified by TCEQ.

Source: NCTCOG TR Dept
END OF OZONE SEASON UPDATE

2008 8-Hour Ozone Standard Design Values

Legend
- Counties Designated as Nonattainment Under 2008 8-Hour Ozone Standard
- Metropolitan Planning Area

2013-2015 Design Value (ppb)
- 0 - 59 ppb
- 60 - 75 ppb
- 76 - 95 ppb

According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 75 parts per billion (ppb).

*Current as of 11/1/2015. Data not certified by TCEQ. Colors represent Air Quality Index breakpoints.
Jenny Narvaez
Principal Air Quality Planner
inarvaez@nctcog.org
817-608-2342

Jody Loza
Senior Air Quality Planner
jloza@nctcog.org
817-704-5609

Air Quality Policy and Regulations: www.nctcog.org/trans/air/policy/
NCTCOG Ozone Updates: www.nctcog/ozone
Station Locator Overview

As of November 10, 2015

Alternative Fuels Data Center

Alternative Fueling Station Locator

Find alternative fueling stations near an address or ZIP code or along a route in the United States. Enter a state to see a station count.

Find Stations

13,079 electric stations
32,222 charging outlets in the United States

Plan a Route

Electric

more search options

Location details are subject to change. We recommend calling the stations to verify location, hours of operation, and access.

About the Data

Go to mobile version
Download iPhone app

Submit New Station

Embed

Clean Cities
U.S. Department of Energy
Electric Vehicle Supply Equipment (EVSE) Growth

U.S. EVSE Growth

Texas EVSE Station Growth

Source: AFDC Maps and Data
Evolution of the Station Locator

• Updates to the Station Locator:
  – New EVSE search options
  – Ability to select public or private stations in the station counts by state page
  – More automatic updates from charging networks
Coming Soon!

• **NEW STATION LOCATOR FEATURES**
  - More search options for Data Download
  - More fields on the Add and Edit a Station forms, and customized forms by fuel type
  - Tool for accessing historical data

• **NEW APP FEATURES**
  - Android interface
  - Additional fuel-specific search options
  - User-submitted feedback and new station updates
  - Real-time EVSE status

• **NEW FIELDS**
Data Collection

• Regular comparisons between Station Locator data and trade organization lists and websites
  – Differences in methodologies, data confirmation, and inclusion criteria may result in slight variations (e.g., PlugShare)

• Existing stations are contacted once a year

• Ad hoc updates are made frequently

For more information, see the About the Data page: www.afdc.energy.gov/fuels/data_methods_stations.html
Charging Networks

- ChargePoint
- SemaCharge
- Blink / CarCharging Group
- NRG EVgo
- AeroVironment

More coming soon!
Other Collaboration

Industry Collaboration

– Navigation companies
– Incentive and utility programs

Data Requests

– Historical open dates
– Facility types
Contact Information

• **Clean Cities Technical Response Service**
  – TechnicalResponse@icfi.com
  – 800-254-6735

• **Abby Brown**
  – abby.brown@icfi.com
  – 303-792-7804

• **Station Locator:** [www.afdc.energy.gov/locator/stations/](http://www.afdc.energy.gov/locator/stations/)

• **About the Data:** [www.afdc.energy.gov/fuels/data_methods_stations.html](http://www.afdc.energy.gov/fuels/data_methods_stations.html)
Alternative Fuels Data Center

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Find Stations Plan a Route

Electric

13,079 electric stations
32,222 charging outlets
In the United States
Including private stations

Location details are subject to change. We recommend calling the stations to verify location, hours of operation, and access.

As of November 10, 2015
Orange, the New Green

Pure Electric Terminal Trucks

• Same Load
• Zero Diesel
• Zero Emissions
• 90% Lower Energy Cost

Contact: Mike Saxton (O) 866.688.5223 (M) 816.210.9669 MikeS@OrangeEV.com

“Spend 90% Less in Fuel to Haul the Same Load with Zero Diesel & Emissions”
Manufacturing electric vehicles to meet harsh demands of industrial markets while making economic sense, Orange EV delivers practical solutions designed to specific market needs, configured to each customer site.

**Orange EV Designs and Delivers Pure Electric Industrial-Strength Vehicles that are Better for the Earth, People and Bottom Line**
THE PROBLEM - DIESEL TERMINAL TRUCKS

Price & Fuel Volatility
Emission gear driving diesel truck prices ↑, reliability ↓

Diesel costs 10x more than electricity

Hidden Costs of Diesel
Higher cost of safety/health, maintenance & downtime

Emission & Environment
More restrictive emissions rules

Wasted Capital Investment
Diesel & alternate fuel tech strand capital investment

CUSTOMERS, REGULATORS AND SHAREHOLDERS REQUIRE CHANGE
T-SERIES TERMINAL TRUCK SOLUTION

Step 1: You - give us your old diesel

Step 2: We – build your truck

Step 3: You – enjoy your new truck

Total solution: trucks, charging capabilities, training, owner manuals, customized operator settings, warranty and technical support. Like new today, soon all new as well.

Configuration Options
• Charging Off-board or On-board
• DOT Off-road or On-road
• Battery From 80 to 160 kWh

Performance
• Capacity 81,000 GCWR
• Top Speed Up to 25mph
• Endurance 24 x 7 Operations

From Diesel to Pure Electric, In New Trucks You Already Know
PROVEN TO GO THE DISTANCE

In a range of onsite customer demonstrations the T-Series has proven it can work through the shift and beyond, supporting 24 x 7 operations.

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<tr>
<th>Environment</th>
<th>Machine Hours On a Single Charge*</th>
<th>Highlights</th>
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<td>Demo (72 kWh battery)</td>
<td>T-Series Extended Duty (160 kWh battery)</td>
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<tr>
<td>Retail Distribution</td>
<td>5.0 – 9.6</td>
<td>11.0 – 21.3</td>
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<tr>
<td>LTL Trucking</td>
<td>8.4 – 10.9</td>
<td>18.6 – 24.2</td>
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<tr>
<td>Rail Intermodal</td>
<td>4.5 – 7.2</td>
<td>10.6 – 16.1</td>
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<td>Agriculture</td>
<td>10 – 12.6</td>
<td>22.2 – 28.0</td>
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<td>Rail Intermodal</td>
<td>4.5 – 7.0</td>
<td>10.0 – 15.6</td>
</tr>
<tr>
<td>Parcel Distribution</td>
<td>9.7 – 13.5</td>
<td>21.6 – 29.9</td>
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* The hours measured are “machine” hours, during which the truck itself is working. Actual shift hours are greater than truck machine hours shown. Demo truck is equipped with a 72 hour battery back and onboard charging, enabling demos at any on existing power. The T-Series Extended Duty is designed with a 160 kWh pack (i.e. larger “fuel tank”). Hours on a single charge are measured from 100% to end of shift (or low battery point). Plugging in when the truck is not working (aka opportunity charging) extends endurance even further.

Proven in Customer Environments
Charging solutions designed to serve different work environments and shift schedules

**Standard Charge**
- Onboard and Offboard
- 220 or 480 VAC
- Max full charge time: 8 or 4 hrs*

**Fast Charge**
- Offboard, Fast-Charging Station (FCS)
- 480 VAC
- Max full charge time: 2 hrs*

*Charge times given are for full charge from 15% (lowest expected) to 95% (after which charge rate slows a bit). In practice, charging starts from higher charge % and so takes less time.
AND DRIVERS / OPERATORS LOVE THE T-SERIES

“Loved the truck”

“Easy to use”

“Demonstrated it has the endurance and power we need”

“I believe it will be much less maintenance”

“Super quiet and drives me crazy to get back in regular hostler”

“Will take less of a toll on your body in the long run. Less noise, heat, and shaking”

“I can hear the radio!”

“Very short learning curve”

“Temperature was much, much cooler by at least 30 degrees”

“Easy to plug in and unplug”

“I feel ALIVE at the end of my shift”

“Instant heat – no waiting for engine warm-up”

“Enthusiastic about driving a cooler, quieter, low-vibration, zero-emission vehicle”

“Better impact on driver health with no black smoke particles to breathe”

“The regenerative brakes make braking simpler. I can go hours without using the regular brakes”.

“Really enjoyed electric deceleration”

“Battery location makes for much smoother, more stable ride (especially when cornering)”

“Will do the job”
SAVING COST IN MANY PLACES

Fuel

Save up to 90%
Electricity, the most efficient vehicle fuel

Maintenance

Power Train

Save 100%
Maintenance-free motor & no transmission

Maintenance

Brakes

Save ~ 95%
Regenerative braking recharges battery

Other

Save on
Health care, downtime, turnover and more ... including cost of emissions

Diesel

Electric

Diesel

Electric

Diesel

Electric

Diesel

Save money from day one on easy to identify hard dollar costs
INCENTIVE PROGRAMS

• ERIG  **OPEN NOW.** Apps due Feb 2.
  – Attend Applicant Workshops Dec 3-14
  – Use “Engine Hours” method for offroad. Use “Miles” for onroad
  – Competitive. Awarded by Cost / Ton NOx emission reduced. Some strategy involved.

• ERIG Rebate  Closed. Opens Jan 2017
  – First Come First Served

• Clean Fleet  Closed
  – Large Fleet
  – Onroad to Onroad TT (virtually same truck EV)

• SECO  May craft to opportunity
  – Gov Entity focus (e.g. port authority)
  – DFW?

MULTIPLE PROGRAMS - $100,000+ / TRUCK AVAILABLE
Orange EV Value Delivered

Vehicle Performance
1. Does the job of the current diesel
2. Power / torque on demand
3. Program managed max speed
4. Supports 24 x 7 Operations
5. Driver-friendly

Safety and Emissions
1. ZERO EMISSION
2. ZERO DIESEL - Eliminate onsite fuel storage & pain of volatile oil prices
3. No engine idle, so there’s no diesel consumption
4. Low noise and vibration
5. Smooth acceleration / deceleration (same linear rate regardless of load)

Worksite Productivity
1. Eliminate scheduled maintenance & downtime (e.g. oil change, radiator fluid, brakes, and other diesel related systems)
2. Improved performance management
3. Better employee health & availability
4. Enables indoor use – no emissions!

Savings (from day one...)
1. Costs a LOT less. Annual Savings:
   - Diesel fuel (saving up to 90%)
   - Maintenance
   - Employee downtime & healthcare costs
   - Fuel Mgt, HazMat, Emission and more
2. Uses lowest cost, available fuel
3. Recycles old truck
4. Fast Payback

Does the Job - Costs Less - Drives Value
Fleet & Maintenance Managers, Sustainability Teams and Cost-Minded Executives Choose Orange EV’s Pure Electric Terminal Truck Solution to Reduce Cost, Improve Performance and Safety, while Eliminating Emissions.
Q&A

How Might We Work Together?

Orange, the New Green

“Spend 90% Less in Fuel to Haul the Same Load with Zero Diesel & Emissions”