



Advancing Sustainable Transportation in Tennessee

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TCCI Environment & Energy Conference

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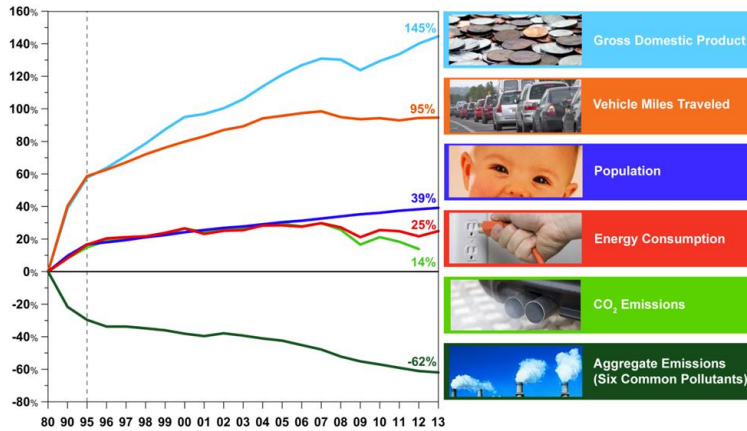
Overview

- **Mobile Source Emissions Contributions**
- **CMAQ-Funded Efforts by TDOT**
- **Office of Energy Programs**
- **Clean Tennessee Energy Grants**
- **TDEC-sponsored projects**
- **Replace one**
- **TDEC Park projects**



Aggregate Emissions: Down 62%

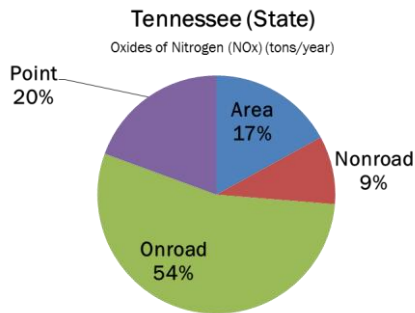
Comparison of Growth Areas and Emissions, 1980-2013



Source: US EPA Air Quality Trends



Sector Contributions to Ozone (NOx)



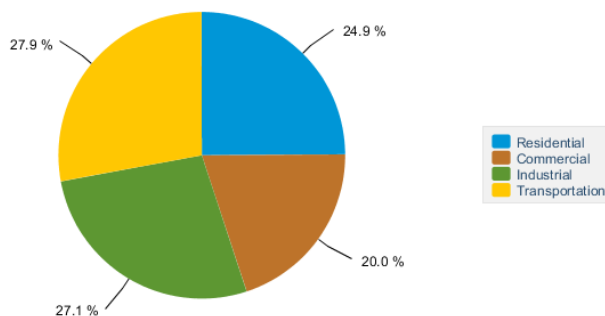
Source: 2011 NEI

- Overall tons have been decreasing in TN.
- Point source NOx consistently falling in TN.
- 63% NOx pollution from mobile sector



TN Energy: 27.9% for Transportation

Tennessee Energy Consumption by End-Use Sector, 2013



Source: Energy Information Administration, State Energy Data System

- **27.9% for Transportation**
- **27.1% for Industrial**



TN Department of Transportation: CMAQ

- Congestion Mitigation & Air Quality Improvement Program (CMAQ), 1991
- 3 Requirements for CMAQ Projects:
 - Transportation-related
 - Reduce mobile source emissions
 - Benefit air quality in nonattainment & maintenance areas
- Federal Highway Authority policy
 - Focus on diesel-retrofits & emission controls
 - Emphasize cost-effectiveness – cost/ton reduced



TDOT: CMAQ

- TDOT receives \$30+ Million CMAQ funding to reduce mobile source emissions through projects to:
 - Reduce Vehicle Miles Traveled (VMT)
 - Improve traffic flow
 - Foster cleaner fuel use
 - Sponsor Retrofits
 - Reduce idling



Photo: WILT, Knoxville



Photo: Lebanon Democrat, 2/10/15

TN

TDOT Cleaner Transportation Projects

- Lower speed limits for heavy-duty trucks
- 9 county commissions requested 65/55 speed limit
- No TDOT mowing on air quality action days
- Storage & dispensing biofuels at TDOT facilities
- Biodiesel (B20) use in TDOT diesel vehicles
- Ethanol (E85) use in TDOT flexfuel vehicles
- Developing TDOT idling reduction guidelines
- Diesel retrofits on TDOT diesel vehicles/equipment
- Purchase of hybrids (Ford Escapes and Fusions)

TN

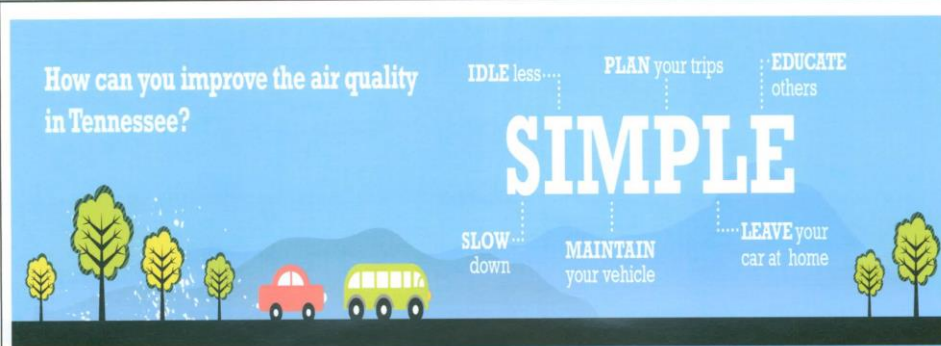
TDOT: Diesel Retrofit Grant Program

- 2007 - \$1.6 Million for competitive grants
- Targeted heavy-duty diesel engines in nonattainment counties in East TN
- 36 locomotive retrofits targeting switchyard & short haul trains
- 1st program to use federal CMAQ money for locomotive reductions
- 2011 - \$4.3 Million for 2nd round
- 80% CMAQ funded, 20% applicant



TN

TDOT Clear The Air Campaign



TN

TDEC: Office of Energy Programs

- **Electric Vehicle Rebate Program - \$2.5M**
- **First Iteration: Nissan Leaf w/ DC Fast Charge & Chevy Volt: 727 rebates, \$1.8M**
- **Second Iteration: Expanded to 22 eligible vehicle models**
 - \$2,500 on zero-emission battery electric vehicles
 - \$1,500 on plug-in hybrid electric vehicles
 - Sold or sign a 3-year lease after June 15, 2015
 - Bought in Tennessee by Tennessee resident
 - YTD 62 rebates totaling \$148,500
- <http://www.tennessee.gov/environment/article/energy-electric-vehicle-rebates>



New Electric Charging Stations at BNA

- Nashville International Airport received \$181,000 to build 3 solar powered, charging stations
- Clean Energy Tennessee Grant funded 50% of the project. BNA provided 50%.
- Power produced also feeds into the parking garage to power lights and signs when not charging cars.



Photo: flynashville.com



Replace one truck with a hybrid vehicle

- Ducktown replaced the city's primary vehicle, a Dodge Ram pickup, with a Ford Fusion hybrid.
- Saves \$1,318 annually
- 660 less gallons of gas & reduces 3 tpy emissions
- \$15,000 funded by Clean Tennessee Energy Grant with 50% from Ducktown



Photo: Curbside Classic (not Ducktown's pickup)

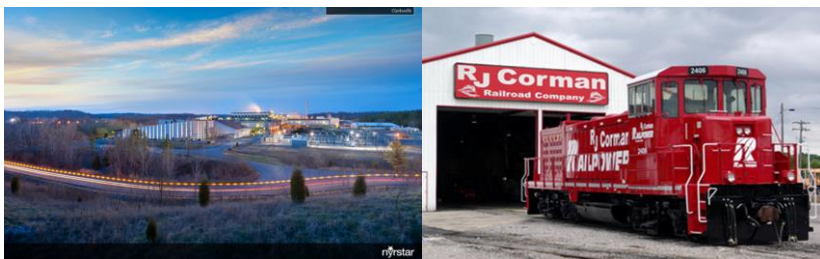
Replace diesel buses with clean fuel

- Nashville Metropolitan Transit Authority purchased an overhead fast charger for the all electric/zero emission Music City Circuit Bus Route.
- Saves \$75,092 annually in fuel savings
- ~28 tpy CO₂ removed just from fuel switch
- Funded by \$250,000 Clean Tennessee Energy Grant and at least 50% matching by Nashville MTA



Replace One Old Port System

- Cumberland River Regional Waterway Facility
- Create a multi-modal river port in Clarksville
- Private partnership on Nyrstar Zinc's plant property
 - \$6 Million CMAQ-funded project award in 2015
 - \$2 Million matching by RJ Corman Railroad
- Will allow barges to empty cargo in Clarksville to prevent loop from Nashville back via trucks on I-24



Tennessee State Parks: Home to Innovation



Tennessee is proud to feature Nissan LEAFs in our state fleet and EV chargers in certain State Parks. Nissan's Smyrna production plants make both the lithium-ion battery for the LEAF and its final assembly.



The Quietest Golf Course in the Nation



Golf Digest recognized the Bear Trace golf course at Harrison Bay State Park outside Chattanooga with its prestigious 2014 Green Star Award & International Environmental Leaders in Golf Award for its use of electric equipment to save money, improve the golf experience and reduce environmental impacts.



Sustainable Transportation Forum



- Inaugural forum held in Memphis in May 2015
- Recognizes outstanding, voluntary achievements that demonstrate leadership in advancing sustainable transportation.
- Awards were given for green fleets, diesel hybrid use, back haul trucking, solar education, electric charging stations and more.
- **Next Year's Forum: May 12-13, 2016, Chattanooga**



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Questions?