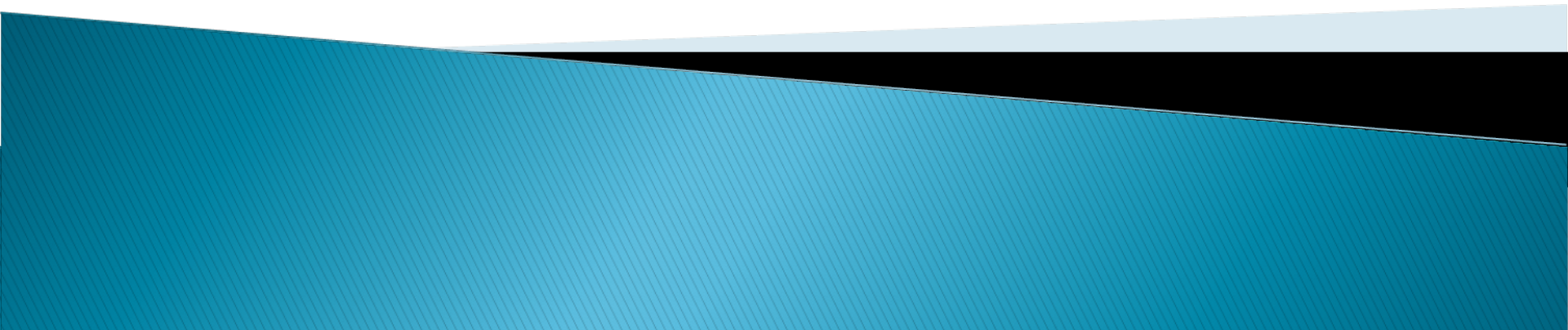


# **The Role of Natural Gas Vehicles in Securing U.S. Energy Security**

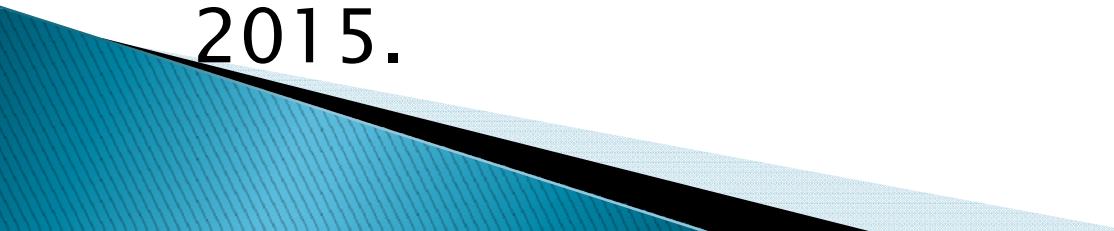
February 28, 2011



# Natural Gas as a Transportation Fuel

- **Clean**
- **Safe**
- **Affordable**
- **Domestic**
- **Abundant**
- **Reliable**
- **Economic Development**



- ▶ Americans spend about \$1 billion each day on foreign oil.
  - ▶ Many of the countries that supply foreign oil to the U.S. are converting their vehicle fleets to NGVs so that they can sell us their oil.
  - ▶ Right now there are about 110,000 NGVs in the U.S. There are currently about 12 million NGVs worldwide and that number is expected to increase to 28.7 million by 2015.
- 

# American Energy Dollars Better Spent

*In February 2010, the U.S. spent \$24.6 billion on imported oil. If not burdened by this addiction what could our country have done.*

- We could have hired over 364,000 new teachers
- We could have funded highway repairs for nearly seven years.
- We could have built 32,407 new elementary schools

# Clean

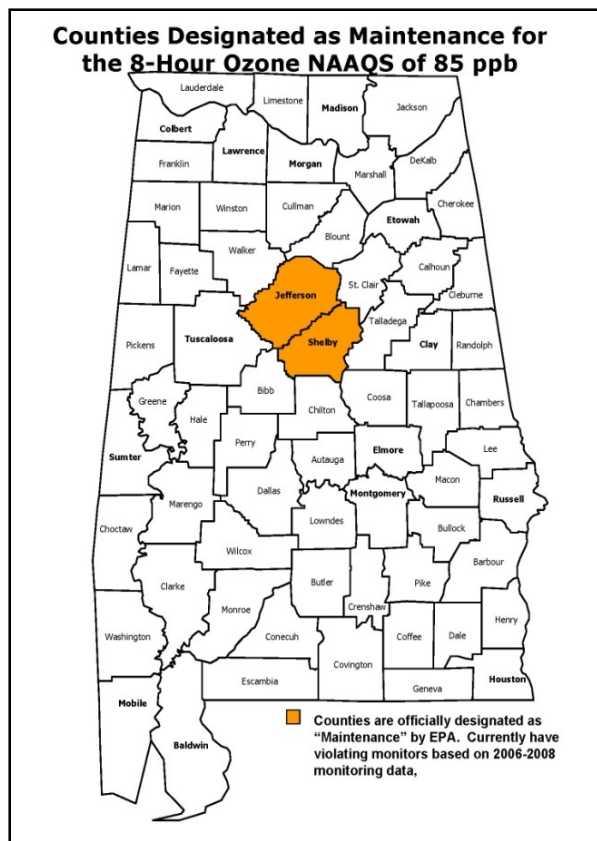


- Reduces emissions of:
- CO<sub>2</sub> by 25%
- Carbon Monoxide by 90%
- Mercury by 100%
- Sulfur Dioxide by 99.9%
- Particulates by 91.3%
- Nitrogen Oxide by 78.4%

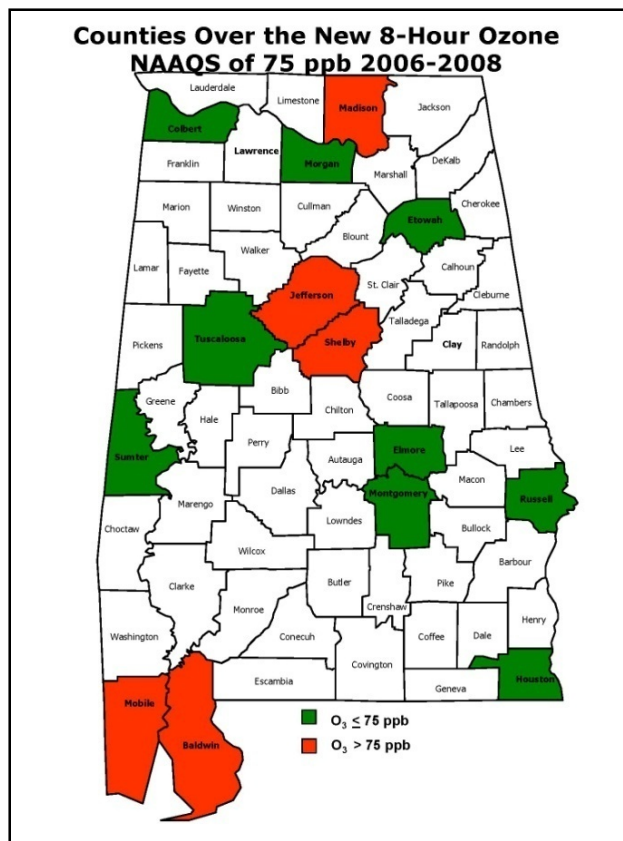
Replacing one diesel garbage truck with a natural gas garbage truck can reduce emissions equivalent to removing 325 cars from the road.



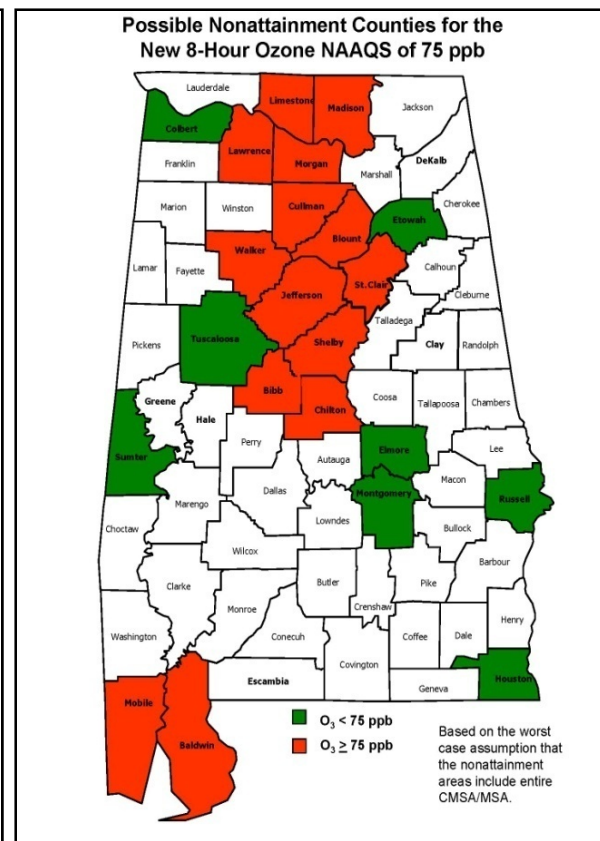
# 2006 – 2007 Ozone Monitoring Data for Alabama



*Current*



*Possible*



*Worst Case*

Counties in **Red** (Chart 2) already exceed new 75 ppb ozone standard

# The Reason Many National Fleets Are Switching to Natural Gas?

- U.S. retail CNG prices range from under \$1 to more than \$2 per gasoline gallon equivalent as compared to \$3 per gallon gasoline and \$3.40 diesel.
- This is why AT&T, UPS, Verizon, Waste Management, etc. are switching to natural gas – they can save millions on fuel costs.

# Domestic



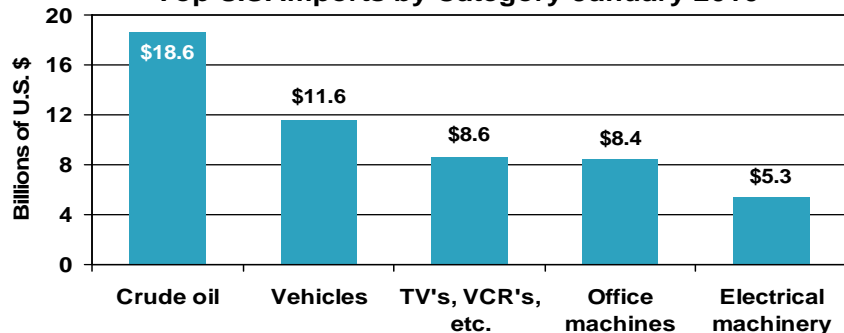
- 98% of the natural gas consumed in the U.S. is produced in North America
- 85% from U.S.
- 13% from Canada



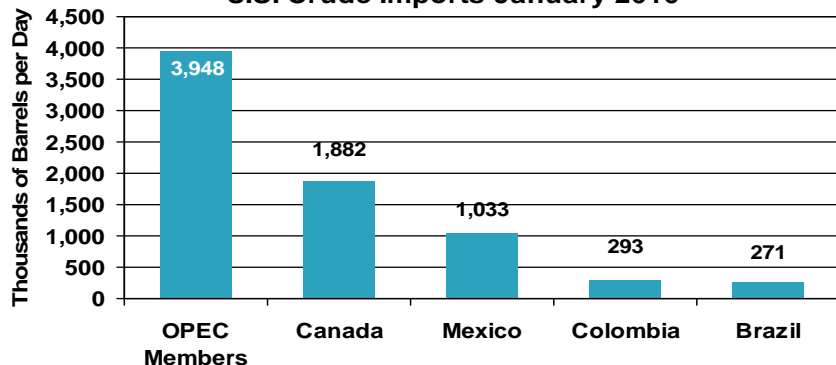
# Crude Oil Imports into the U.S.

## Opportunities for Displacement

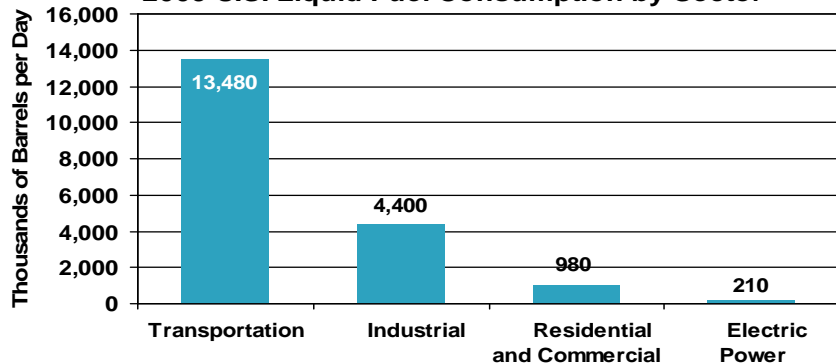
Top U.S. Imports by Category-January 2010



U.S. Crude Imports-January 2010



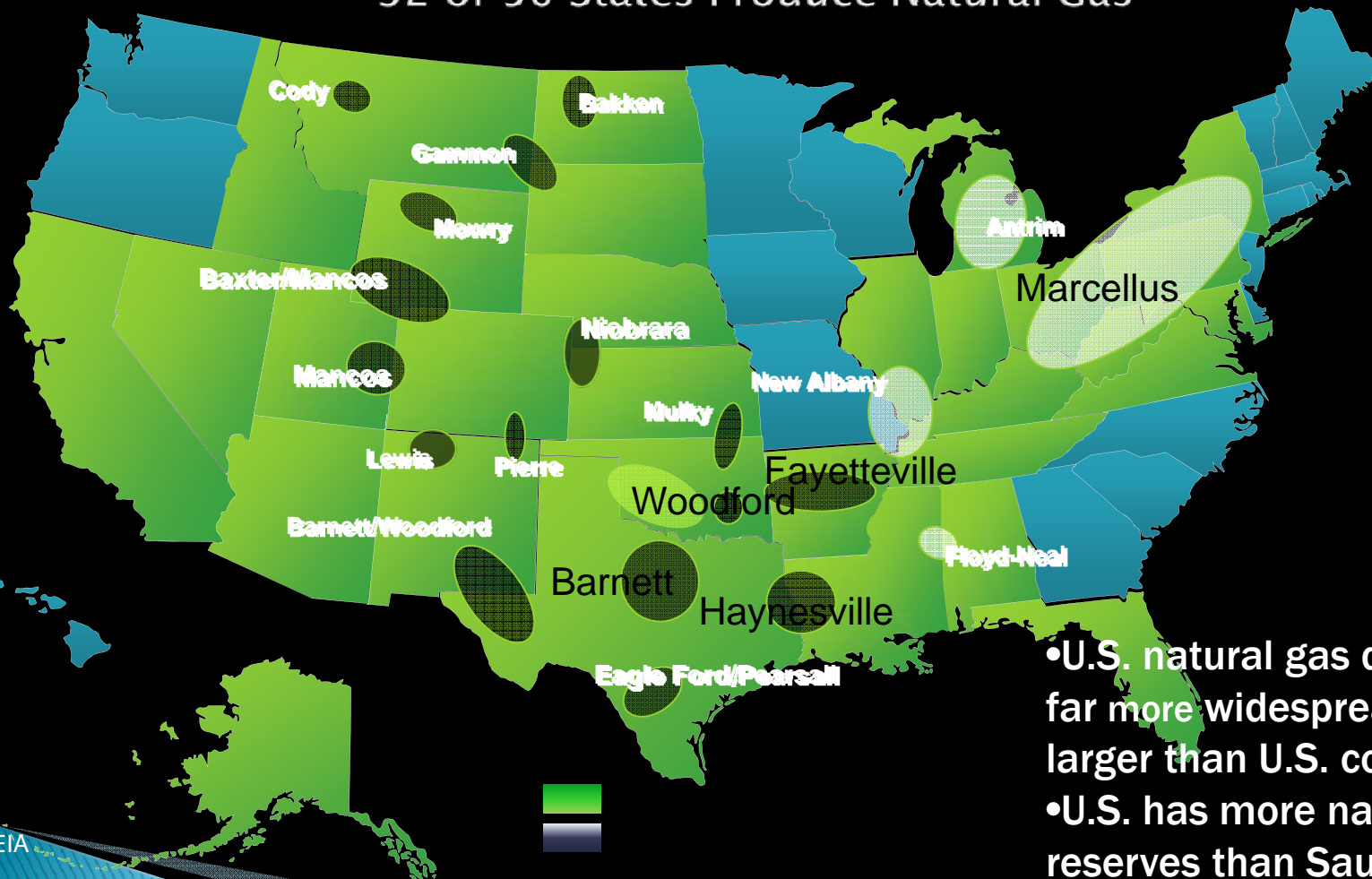
2009 U.S. Liquid Fuel Consumption by Sector



- ▶ Crude oil imports have historically led total U.S. imports of goods and services
  - Crude oil imports comprised nearly 15% of total imported goods in January 2010
  - Net crude imports accounted for half (49.6%) of the foreign trade deficit of \$37.1 billion for the month
- ▶ Imports from OPEC member countries were more than twice that of the next closest country
- ▶ The transportation sector presents the biggest opportunity for imported petroleum displacement

# Abundant

120 year supply  
32 of 50 States Produce Natural Gas



- U.S. natural gas deposits are far more widespread and larger than U.S. coal deposits.
- U.S. has more natural gas reserves than Saudi Arabia has oil reserves.

# Reliable

- ▶ Nationwide natural gas distribution system is already in place
- ▶ Proven technology for vehicles and infrastructure

# Natural Gas Vehicles



Source: Natural Gas Vehicles for America (NGVA)



# Natural Gas Use Per Vehicle

- ▶ Transit bus: 12-15,000 gal/yr (1.7-2.1 MMcf)
- ▶ OTR freight truck: 12,000 gal/yr (1.65 MMcf)
- ▶ Garbage truck: 9,000 gal/year (1.12 MMcf)
- ▶ Airport shuttle: 5,800-7,200 gal/yr (0.8-1.0 MMcf)
- ▶ Delivery truck: 4500-5,500 gal/yr (0.6-.75 MMcf)
- ▶ Taxi cab (@75K /year): 5,000 gal/yr (0.65 MMcf)
- ▶ School bus: 2,200-2,800 gal/yr (0.03-.035 MMcf)
- ▶ Commercial van: 1600-1800 gal/yr (.02 MMcf)



# Expanding Selection of Light-Duty Vehicles From Growing Number of Suppliers



2009 Civic GX



Pictured: 2009 Sierra 3500 Chassis Cab

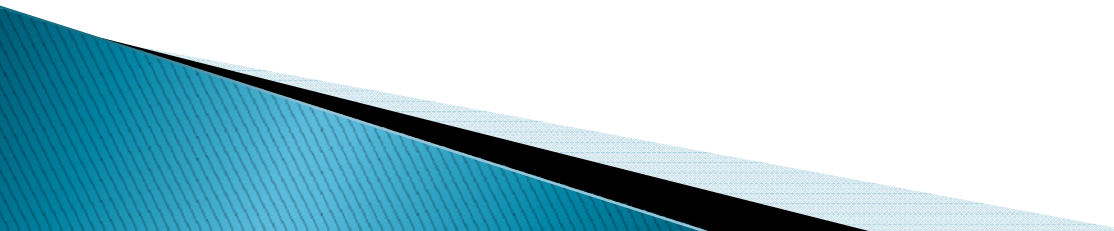


Altech-Eco  
American Honda  
BAF Technologies  
Baytech  
FuelTek  
IMPCO  
Natural Drive  
Cummins  
ESI  
Westport Innovations

# The Domestic NGV Market Is Growing

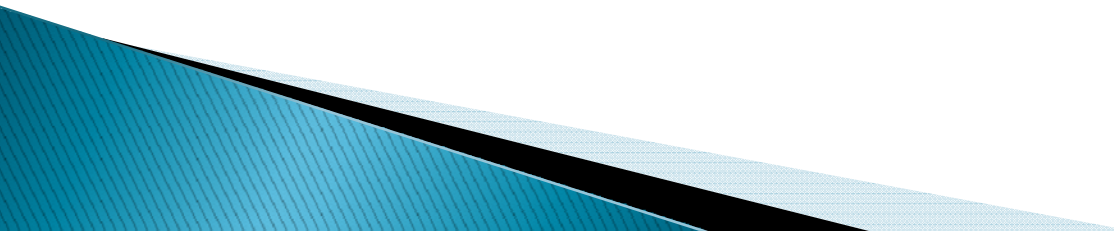
- ▶ Light duty natural gas vehicle options are increasing
  - GM providing OEM CNG vans; pickup trucks coming soon
  - Chrysler/Dodge to come out with 2012 Model Year CNG Bi-Fuel Dodge Ram
  - Chrysler working on bringing Fiat CNG sedans to the US market
  - Honda produces dedicated CNG Civics (GX)
- ▶ Legislation Being Passed and Proposed at the State Level for NGV Incentives
  - Legislation being filed in TX, PA, NM, WY, etc.
  - Legislation exists in UT, LA, NY, CO, GA, OK (e.g. 75% station credit, 50% of additional vehicle cost)

# ANGA + AGA = CATA

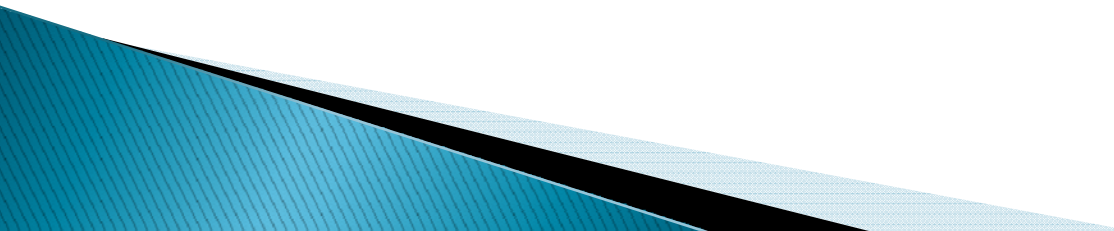
- ▶ ANGA = America's Natural Gas Alliance (gas producers)
  - ▶ AGA = American Gas Association (trade association)
  - ▶ CATA = Clean American Transportation Association
  - ▶ NGV America also actively promotes NGVs
- 



# CATA Committees

- ▶ Legislative – Federal and State
  - ▶ Vehicle Production
  - ▶ Marketing and Education
  - ▶ Infrastructure – Corridors
- 

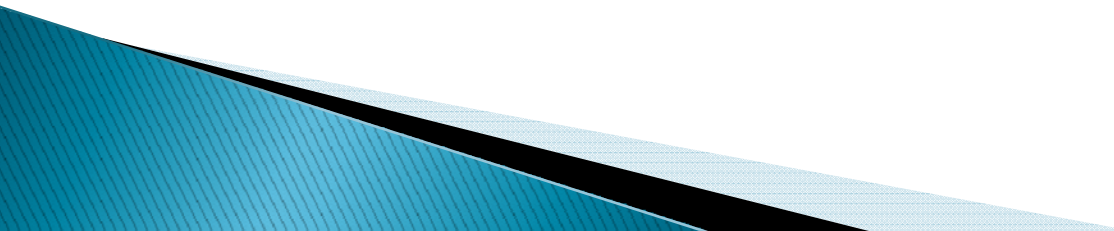
# Federal incentives

- ▶ Federal Tax Credits for NGVs expired at the end of 2010 at a time when the market was starting to expand.
  - ▶ What our country needs is stability and predictability in federal policies promoting alternative fuel vehicles and infrastructure so that long-term planning and investment can be efficiently done by the private sector. Extending incentives for one year, making incentives retroactive, or making incentives effective only for a short period of time does not give fleet and station owners the consistency needed to accurately formulate plans or to make fully informed purchasing decisions.
- 

# Federal Support for NGVs?

- ▶ Unlike for other alt fuels, federal incentives are *not* essential for NGVs:
  - But the market will grow much faster with federal government support
- ▶ If foreign oil is a federal priority, the most effective policy is for Congress to provide incentives for the purchase and use of NGVs:
  - Bonus: Reduced GHGs and urban pollution

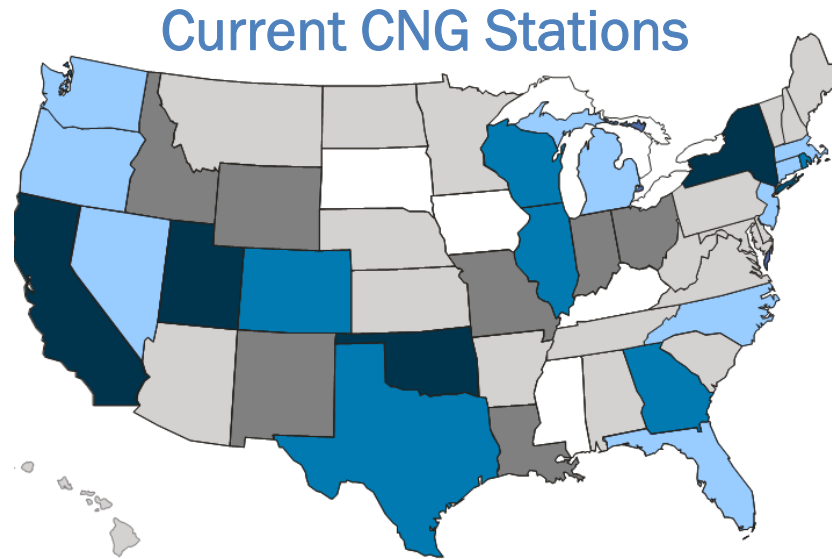
# Importance of NAT GAS Act

- ▶ Bipartisan NAT GAS Act introduced in 111<sup>th</sup> Congress:
    - 155 House co-sponsors
  - ▶ NAT GAS Act 2.0 to be introduced in both Houses this spring
  - ▶ Would accelerate market penetration of NGVs by providing five years of financial incentives for :
    - Buying NGVs; Using NGVs; Producing NGVs (OEMs); Installing NGV stations
    - Focus on businesses and fleets
- 



# » Corridors

# Expanding CNG Infrastructure

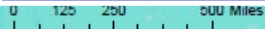


919 total stations as of September 18, 2010

- CNG Stations – 880
  - 361 Public access stations (~41%)
  - 519 Private access stations (~59%)
- LNG Stations – 39
  - 12 Public access stations (~32%)
  - 26 Private access stations (~68%)

- 1-5 Stations
- 6-10 Stations
- 11-15 Stations
- 16-25 Stations
- 26-50 Stations
- 51+ Stations

- 1) Texas Triangle, 2) Rockies Corridor, 3) Southeastern Corridor, 4) Eastern Corridor, and 5) I-75 Corridor
- Alliances, legislation, and regional networks are being set up to support these regional efforts

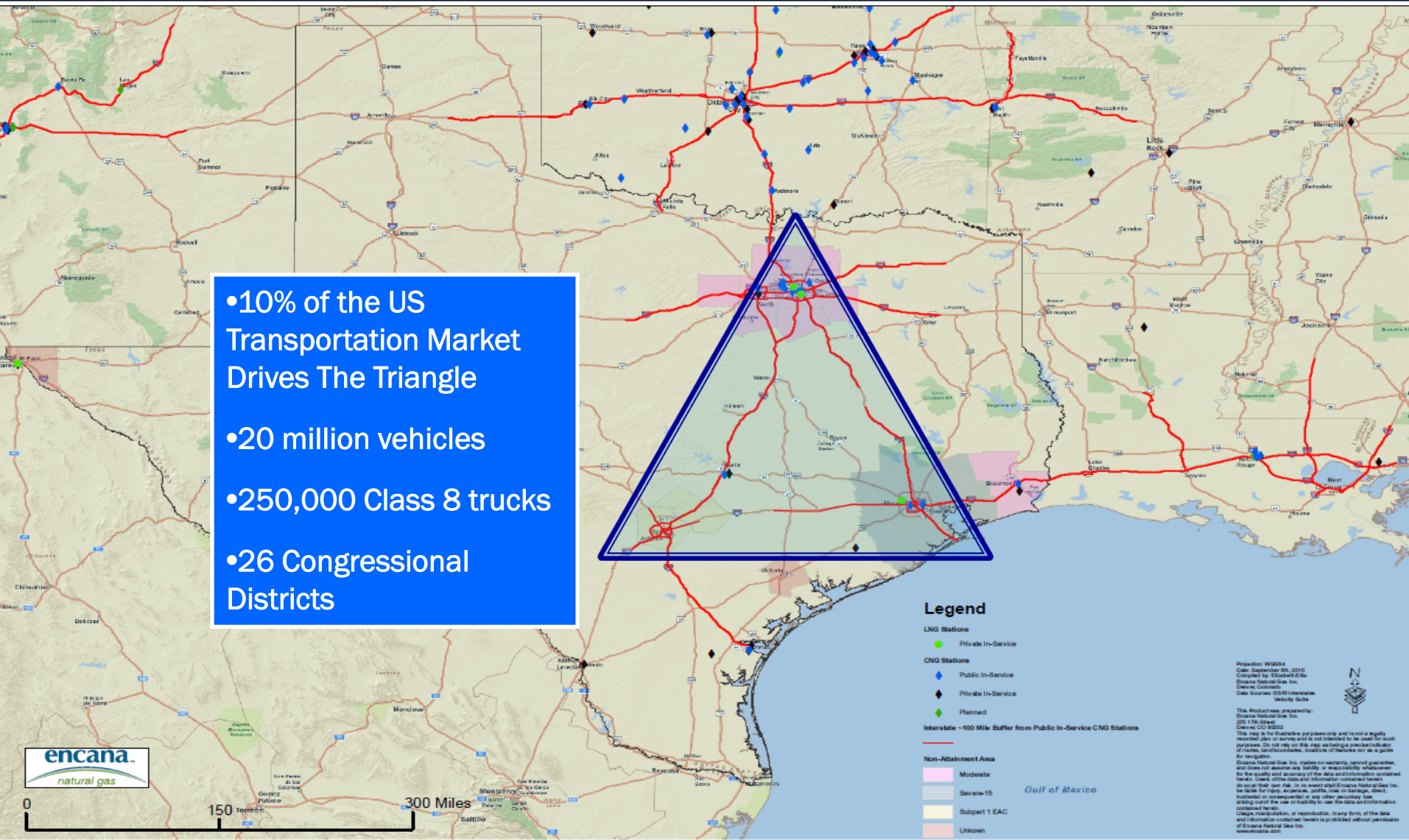




# Texas Triangle – Dallas, Houston and San Antonio

## CNG & LNG Stations - Texas, USA

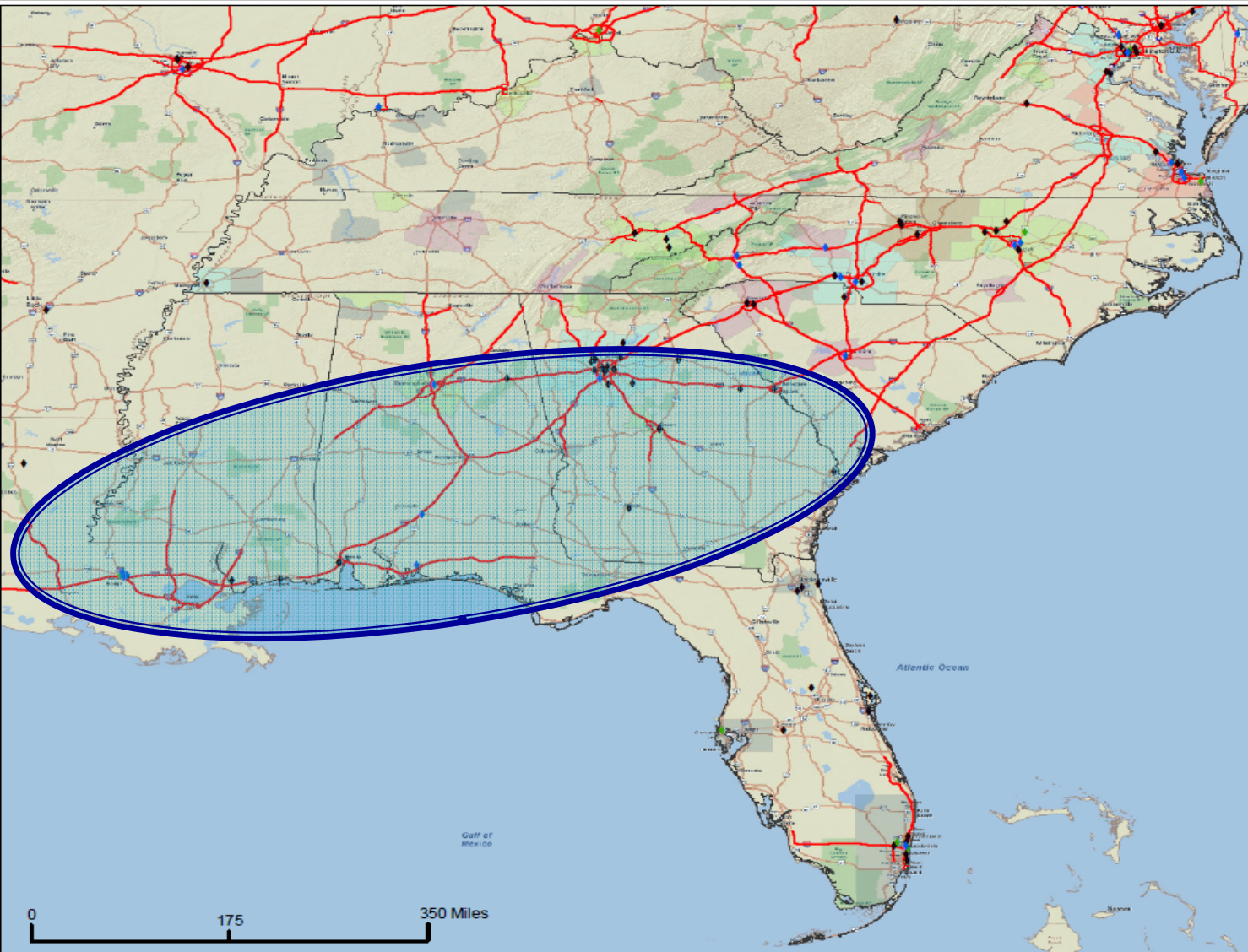
- 10% of the US Transportation Market Drives The Triangle
- 20 million vehicles
- 250,000 Class 8 trucks
- 26 Congressional Districts





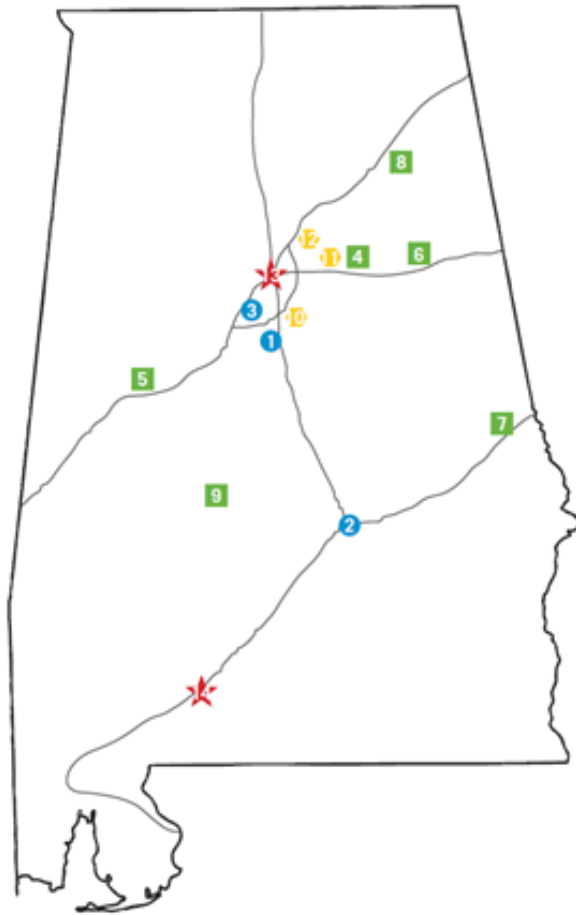
# Southeast Corridor

CNG Stations - Southeastern Region, USA



Alabama  
Florida  
Georgia  
Kentucky  
Louisiana  
Mississippi  
North Carolina  
South Carolina  
Tennessee  
Virginia

# Alabama's Plan for CNG Stations



Alagasco Private Stations		
1	Southern Operations Center	Operating Now
2	Montgomery Operations Center	Operating Now
3	Western Operations Center	March 2011
Alagasco Public Access Stations		
4	Pell City Operations Center	March 2011
5	Tuscaloosa Operations Center	May 2011
6	Anniston Operations Center	Summer 2011
7	Opelika Operations Center	Summer 2011
8	Gadsden Operations Center	Summer 2011
9	Selma Operations Center	2012
Independent Public Access Stations		
13	Max Station	Operating Now
14	Evergreen Station	Operating Now
10	Hoover	2011
11	Moody	2011
12	Trussville	2011

# For additional information

Please contact Bob Strickland at  
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