

Natural Gas for Tennessee: Learn about NGVs

EAST TENNESSEE
**CLEAN
FUELS**
ETCleanFuels.org



TREEDC – October 7, 2011



ETCleanFuels.org
Reducing foreign oil dependence one fleet at a time.

Agenda



1. Who is ETCleanFuels?
2. Oil Dependence Picture
3. Natural Gas – Brief Introduction, NGVs, Benefits
4. Tennessee Team for NGVs
5. What fleets use CNG, and what stations are in Tennessee now or are planned?

ETCleanFuels' 2011 Founding Partners:



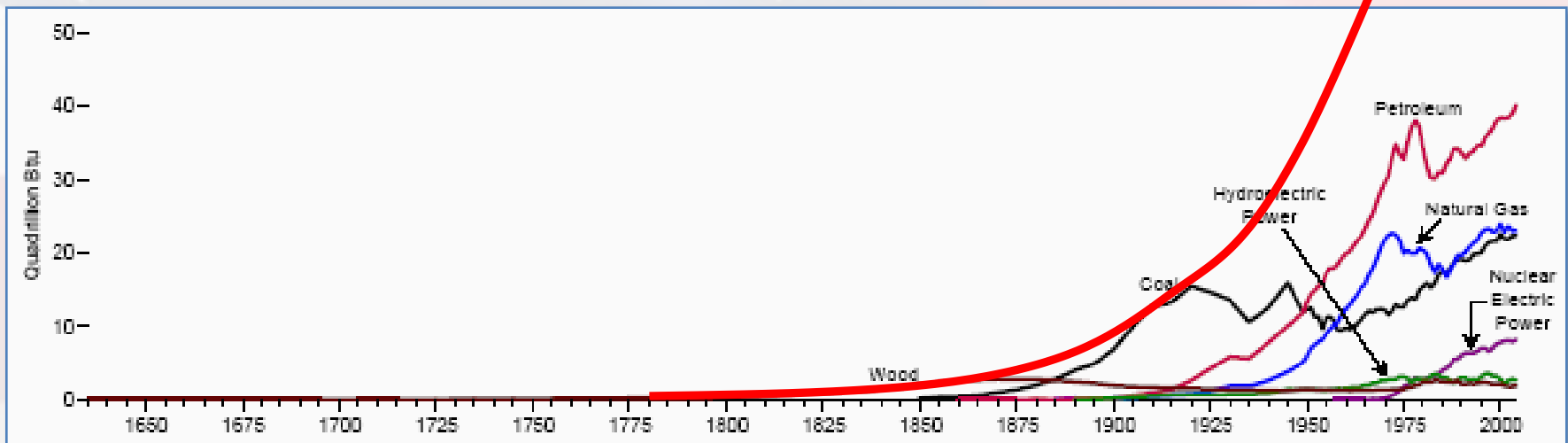
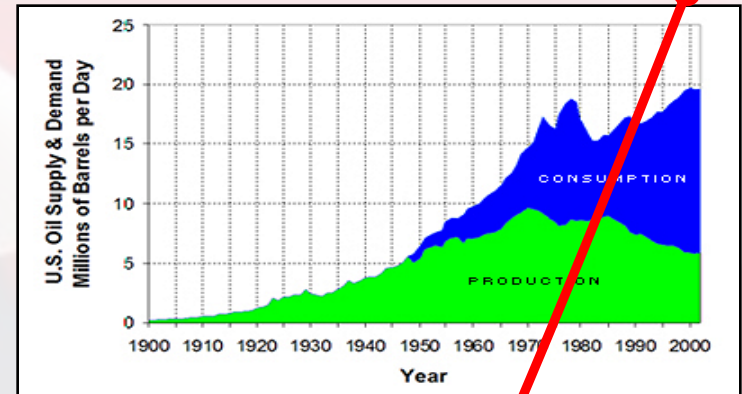
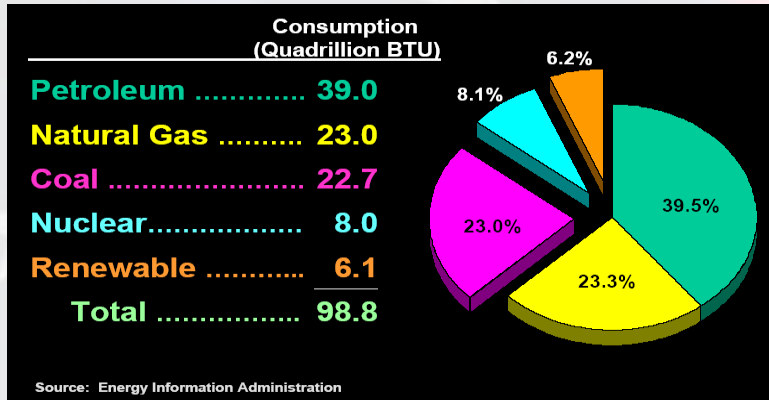
Who is ETCleanFuels?



- ✓ 9-year old nonprofit in East TN, 501(c)3
- ✓ Focused on transportation sector change:
Utilize partnerships to get cleaner, American fuels in use!
- ✓ Designated member of U.S. DOE Clean Cities Program...

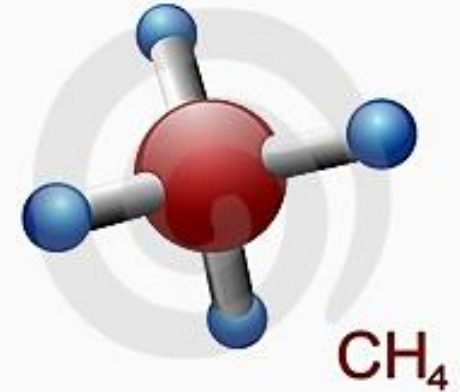


U.S. Addiction to Oil – Think Long-term



Natural Gas Basics

- ✓ 87-95% methane
- ✓ Nontoxic, noncorrosive and noncarcinogenic
- ✓ Existing pipeline distribution system
- ✓ Extracted from gas and oil wells
- ✓ Higher ignition temperature – 1000-1100F



Natural Gas Vehicle (NGV) Basics

Dedicated Natural Gas Vehicles

- ✓ Run on natural gas only
- ✓ Better performance
- ✓ Lower emissions



Bi-fuel NGVs

- ✓ Two fueling systems: gasoline, NG
- ✓ Fueling Flexibility

Dual fuel NGVs

- ✓ Run on diesel & NG; HD only



Benefits of Using Natural Gas

- ✓ Put your American dollars back into the U.S. – **Energy Security**
- ✓ Diversifying our fuel portfolio: *all of the alternative fuels are needed*
- ✓ Save money on fuel costs, life-cycle fleet costs – National average fleet savings are currently on the order of \$1.25-1.75 less per DGE (NVGAmerica; was as high as \$2.50 in 2008!)
- ✓ American jobs – converting vehicles, building stations
- ✓ Greenhouse gas reductions: 20-30%; a low-C fuel (*that includes methane emissions*)
- ✓ Particulate matter reductions: 50-90+%
- ✓ Ozone-forming emissions reductions

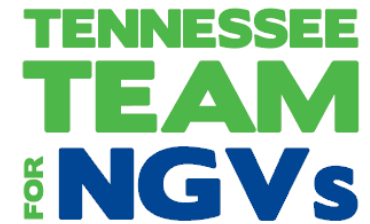


Benefits of Using Natural Gas

- ✓ ~12 million NGVs in use worldwide; ~112k in use on U.S. roads
- ✓ HD NGVs are 80-90% lower db level than comparable diesels
- ✓ Maintenance costs are =/< gas or diesel
- ✓ Comprehensive fuel tank, vehicle and station design & manufacturing codes and standards
- ✓ A growing selection of NGVs from OEMs, small-volume manufacturers



Tennessee Team for NGVs... *Cross-state Collaboration*

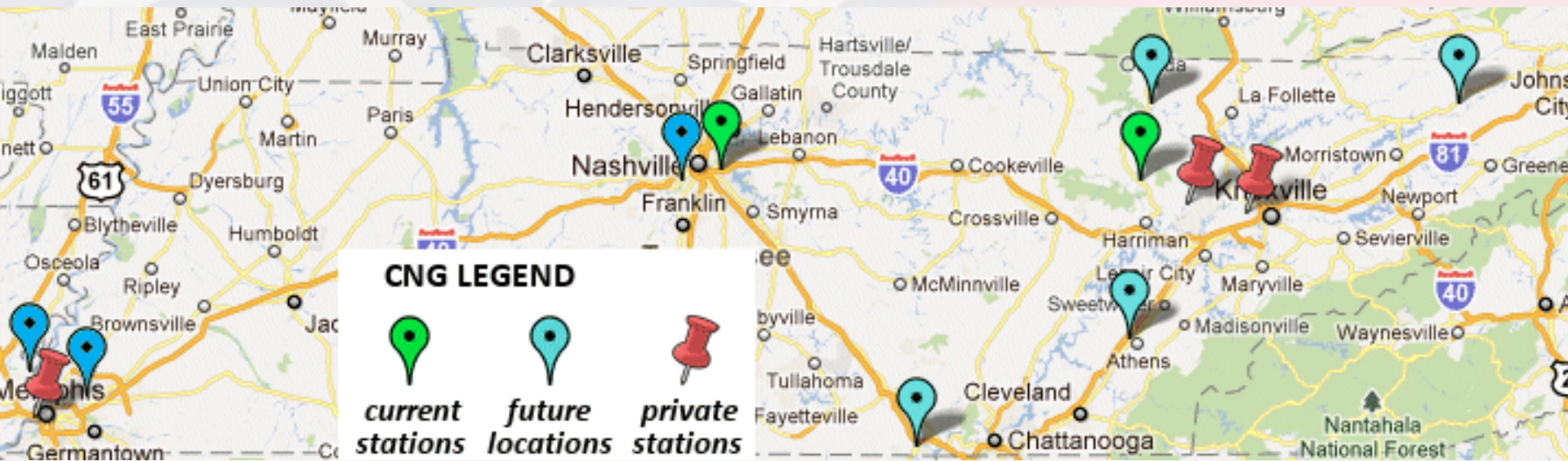


- ✓ Partnership of TN Clean Cities coalitions, TN Gas Association & other organizations to advance NG as transportation fuel in the state
- ✓ Have several items on 1-year agenda (e.g., education, legislation)
- ✓ *Working on fleets and public stations throughout the state to make this a viable alternative for Tennessee*



What is in TN now?

- ✓ Current Fleets: Knoxville Utilities Board, AT&T, MLGW, Scott Appalachian Industries, Piedmont NG, several city/county fleets
- ✓ Picture of Current and Planned Stations in Tennessee...



Other Items, Opportunities

- ✓ **Tennessee Team for NGVs** – Visit www.TNngv.org – we hold monthly, open conference calls that anyone can join in on to ask questions!
- ✓ **Southeast CNG Corridor calls** – All southeastern states; great opportunity to hear what is going on in other states, regions in the southeast
- ✓ **ETCleanFuels fleet manager meetings, or one-on-one meetings** – Opportunity to delve deeper into CNG topics, questions
- ✓ **Much more info, presentations** – From a recent (9/11) Virginia natural gas workshop - <http://www.hrccc.org/get-involved/stakeholder-events/>



*“Do not follow where the path may lead.
Go, instead, where there is no path
and leave a trail.”*

- Ralph Waldo Emerson

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