

# The ETCFC: Action for more Sustainable Tennessee Fuels



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East Tennessee Clean Fuels Coalition

February 1, 2007

*IAC Student Meeting  
Oak Ridge, Tennessee*

*ETCFC - Creating Actors for Change in East TN*

## The Basics - Why Alternative Fuels

- Reduces vehicle pollution
- **Reduces oil dependence**
- Helps create jobs in the USA
- Reduces global warming
- **Reduces national security risks due to importing oil from not-so-friendly countries (Iran, Venezuela)**
- Promotes renewable resource use



Good Visibility Day  
Visual Range: 100 miles



Bad Visibility Day  
Visual Range: 15 miles



## AF101 - What percentages of these alt fuels are domestically produced?

Biodiesel - 100%

Electricity - 95%

Ethanol - 100%

Natural gas - 90%

Propane - 95%

**VS.**

Gasoline

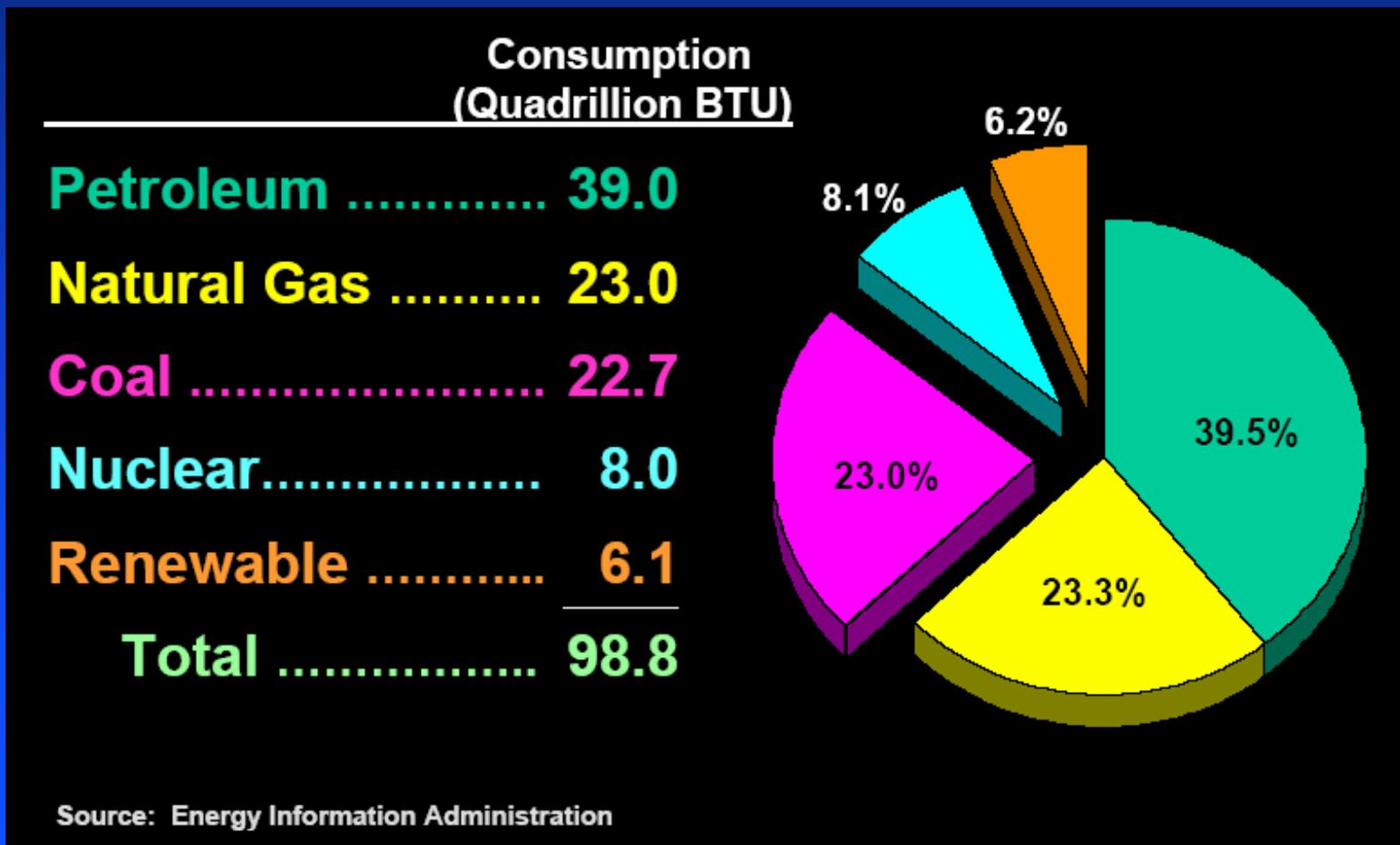
+ Diesel

= 40%

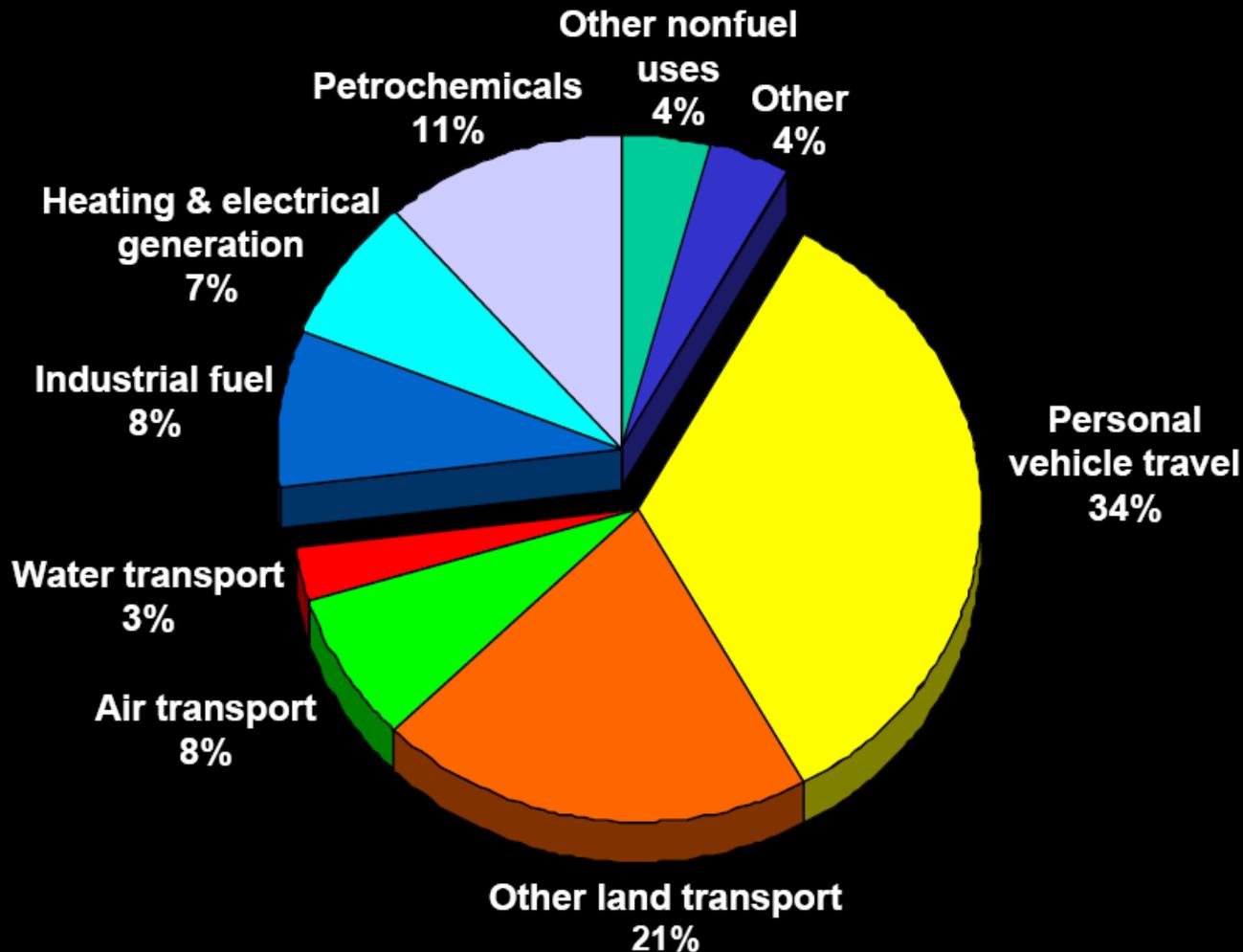
In 1945, we were 0% dependent on foreign countries for oil; now we are 60% dependent.  
~60 years = 0-60% reliance on others for oil~



# Typically Unseen Perspective -- Approximate U.S. Energy Consumption by Primary Fuel or Fuel Group - 2003



# Estimated U.S. Petroleum Consumption by End Use - 1997



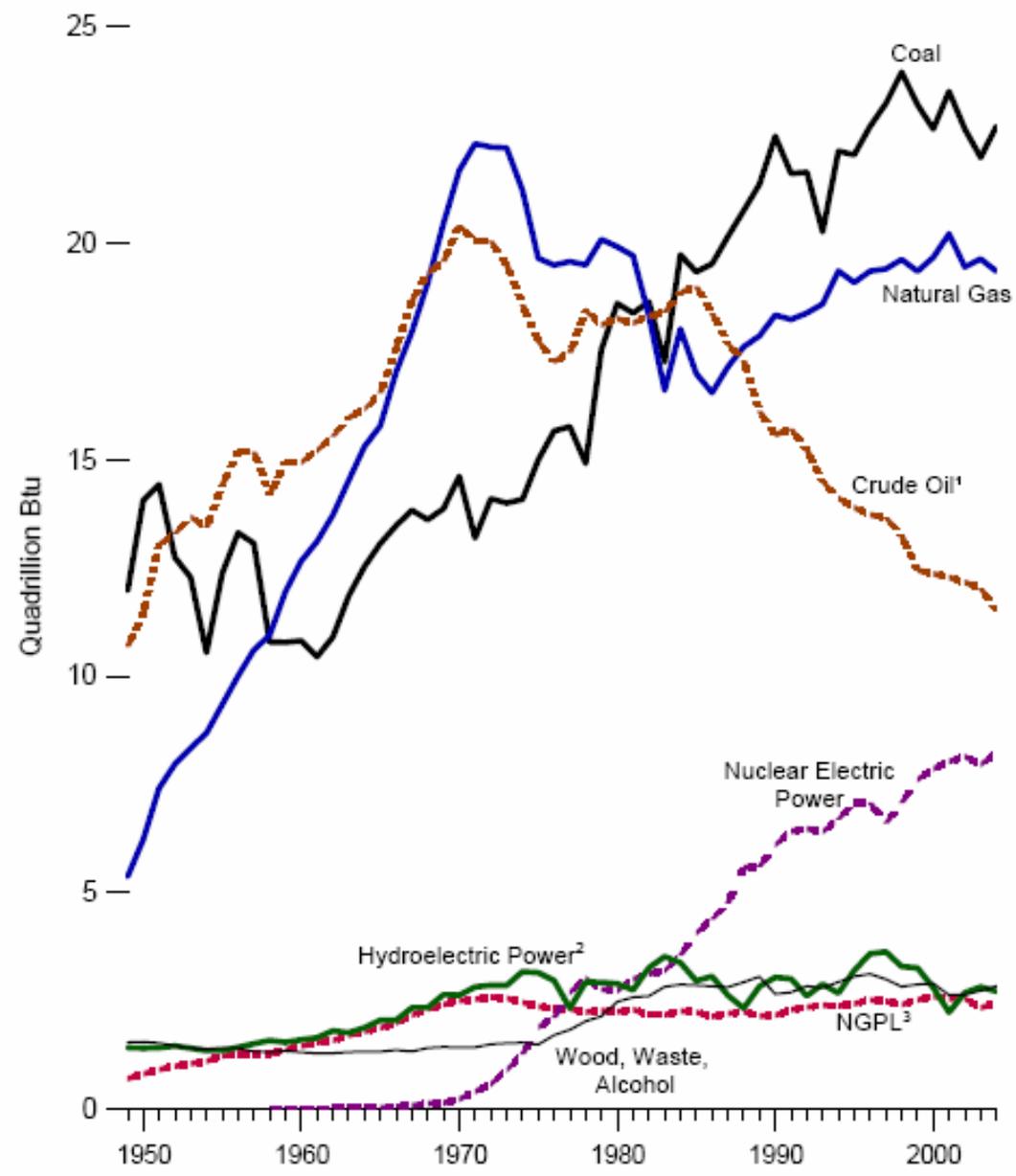
Source: American Petroleum Institute



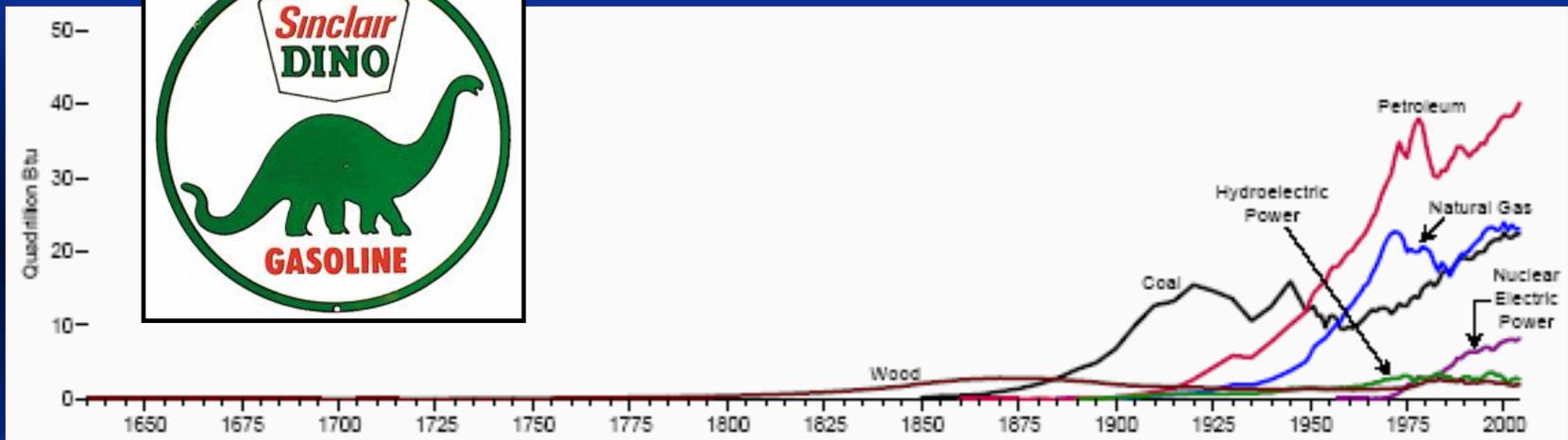
# Long-term U.S. Energy Data - Production

## Energy Production by Source

By Major Source, 1949-2004



# Really Long-term U.S. Energy Data (Consumption) & Where Fossil Fuels Come From





# When Peaking? No one knows for certain

Forecast

Source

December 2005

Deffeyes (U.S.)

2006-2007

Bakhitari (Iran)

2007-2009

Simmons (U.S.)

After 2007

Skrebowski (U.K.)

2010

Campbell (Ireland)

Before 2010

Goodstein (U.S.)

After 2010

World Energy Council

2012

Weng (China)

2016

Doug-Westwood (U.K.)

After 2020

CERA (U.S.)

2030 or later

EIA (U.S) / Exxon Mobil

5 years

5-15 years

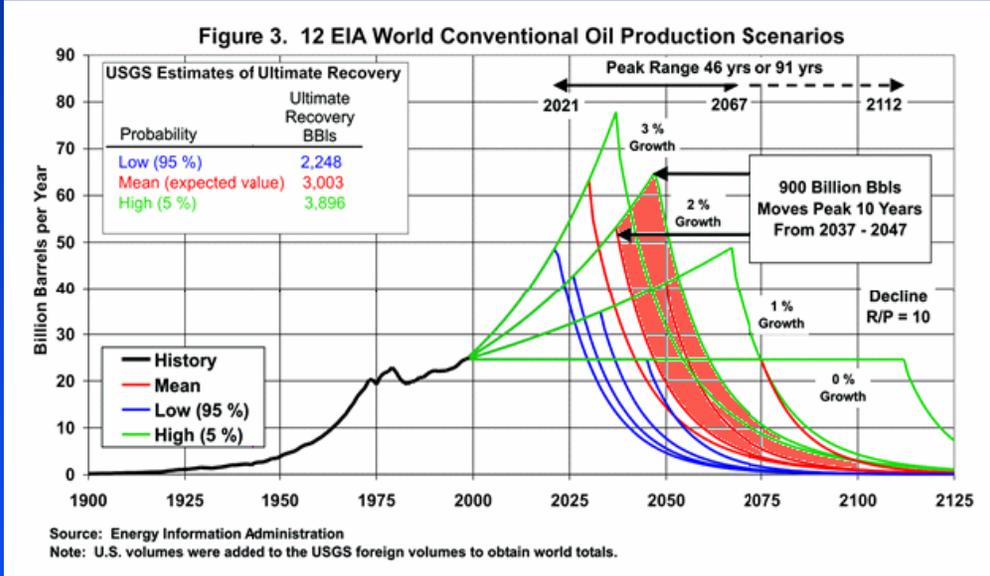
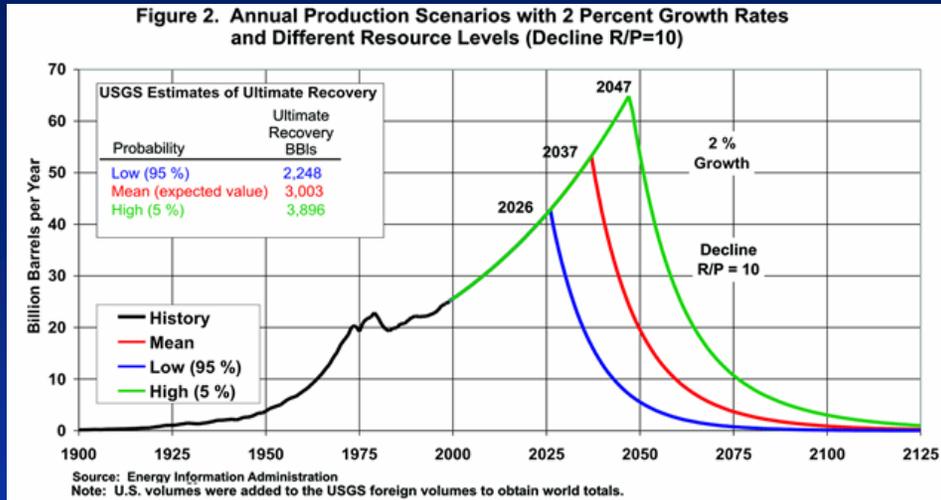
> 20 years

#2 →

#1 →



# World Oil Peak – New Data (2004)

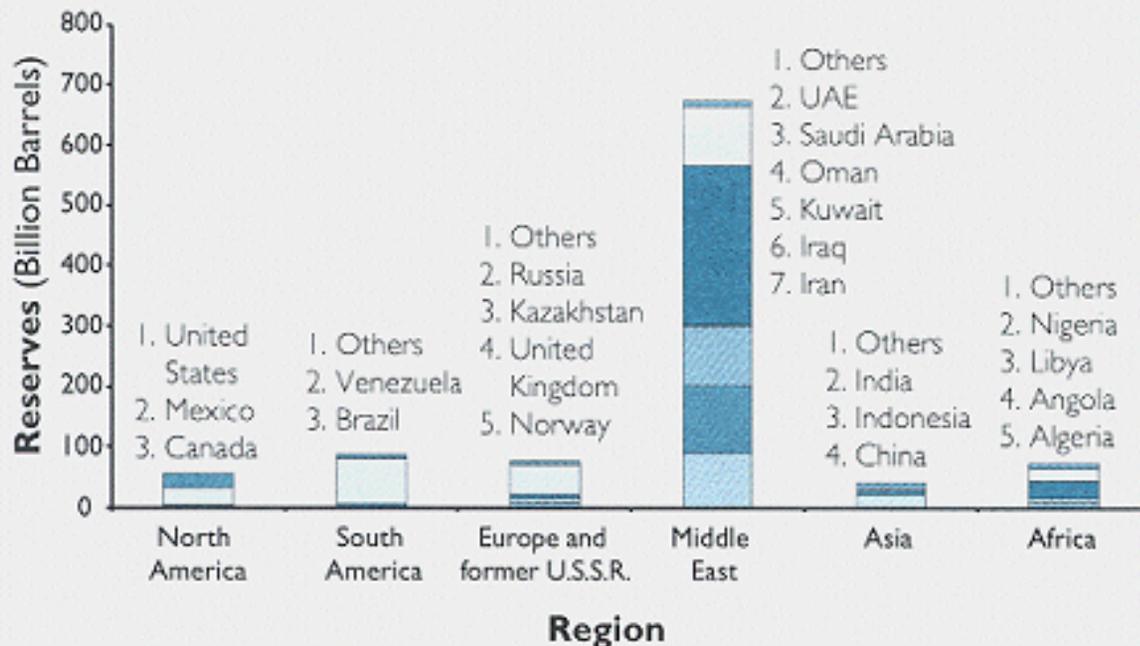


*“Adding 900 billion barrels -- more oil than had been produced at the time this was made -- to the mean USGS resource estimate, in the 2% growth case only delays the estimated production peak by 10 years.”*

*“Given the long lead times required for significant mass-market penetration of new energy technologies, this result in no way justifies complacency about both supply- and demand-side research and development.”*

Long-term data tells us that if we don't start curbing our addiction, we will be buying that oil from the Middle East.

**FIGURE 2: CRUDE OIL RESERVES BY REGION AS OF JANUARY 1999**



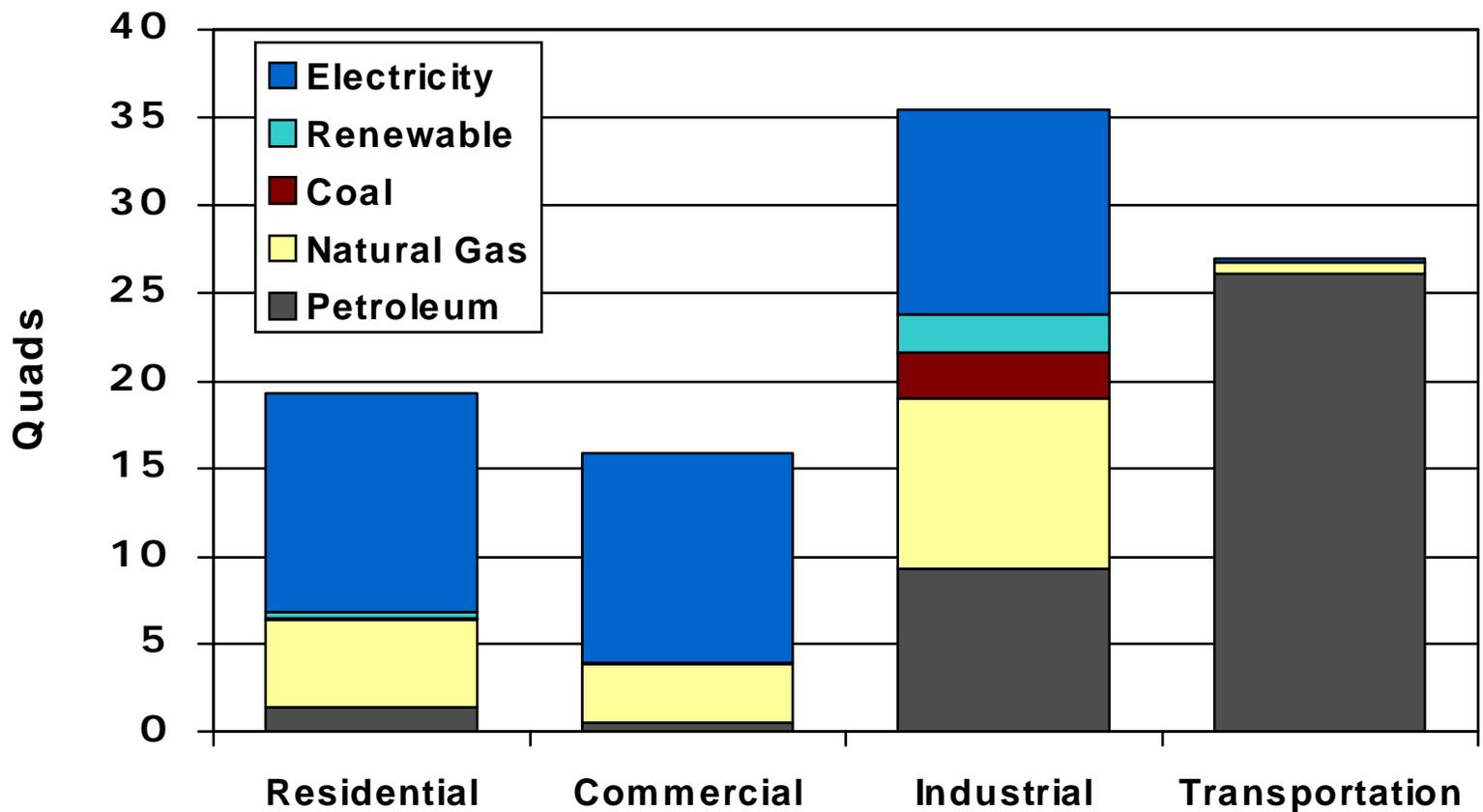
**Fig. 2 Percentage Breakdown**

(numbers approximated from Figure 2)

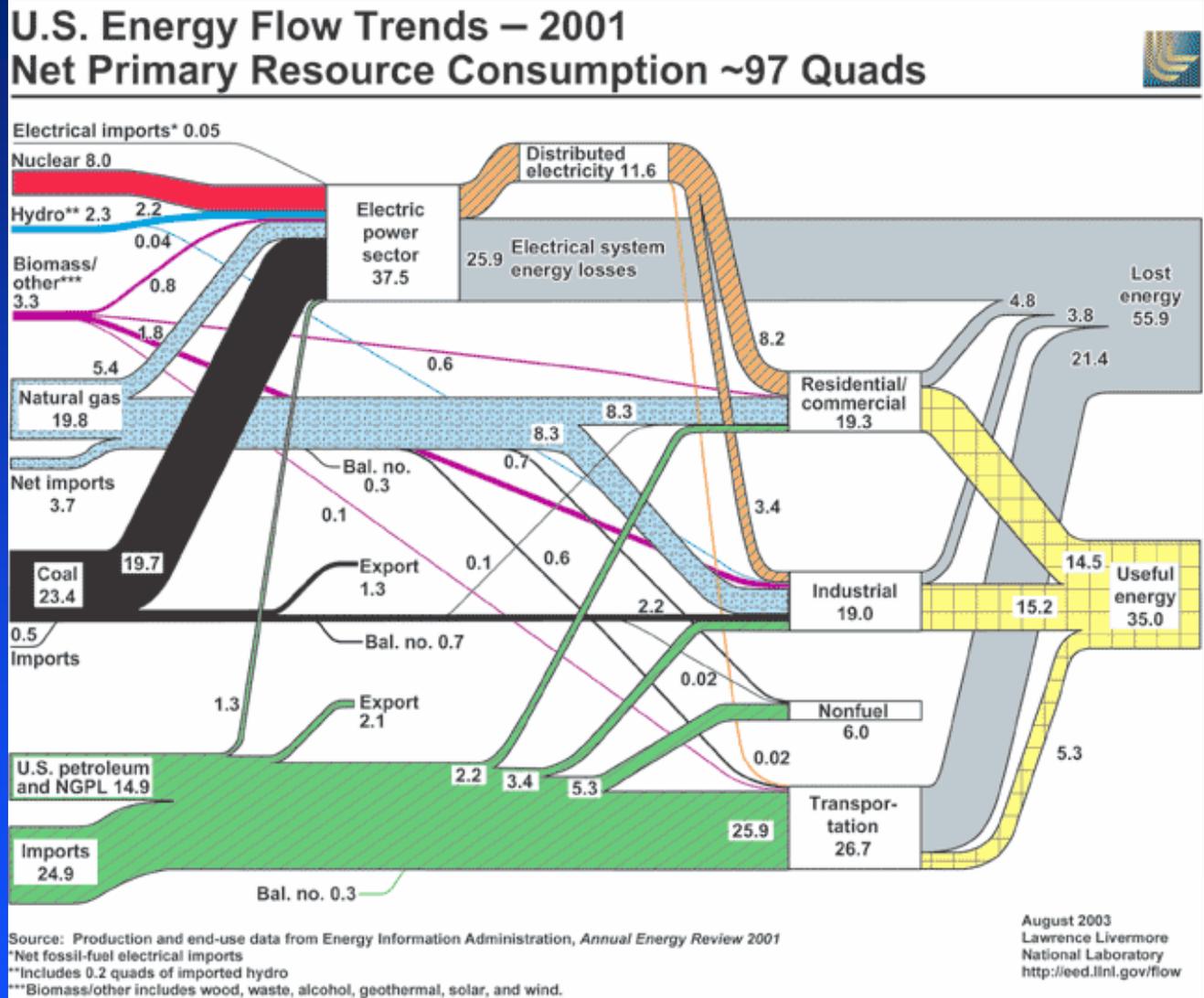
Region	(Bil. Bbl)	(%)
North Am	55	5.1%
South Am	100	9.3%
Europe/USSR	95	8.8%
Middle East	700	64.8%
Asia	40	3.7%
Africa	90	8.3%
<b>TOTAL</b>	<b>1,080</b>	<b>100.0%</b>

Note: Countries included within each column are listed at the top of that column. Countries whose reserves were less than 5 billion barrels were placed in "Others." The world's total reserves are roughly 1 trillion barrels.

# Fuel Use Within Sectors: Diversity, or Lack Thereof



# U.S. Energy Flow Map – 2001



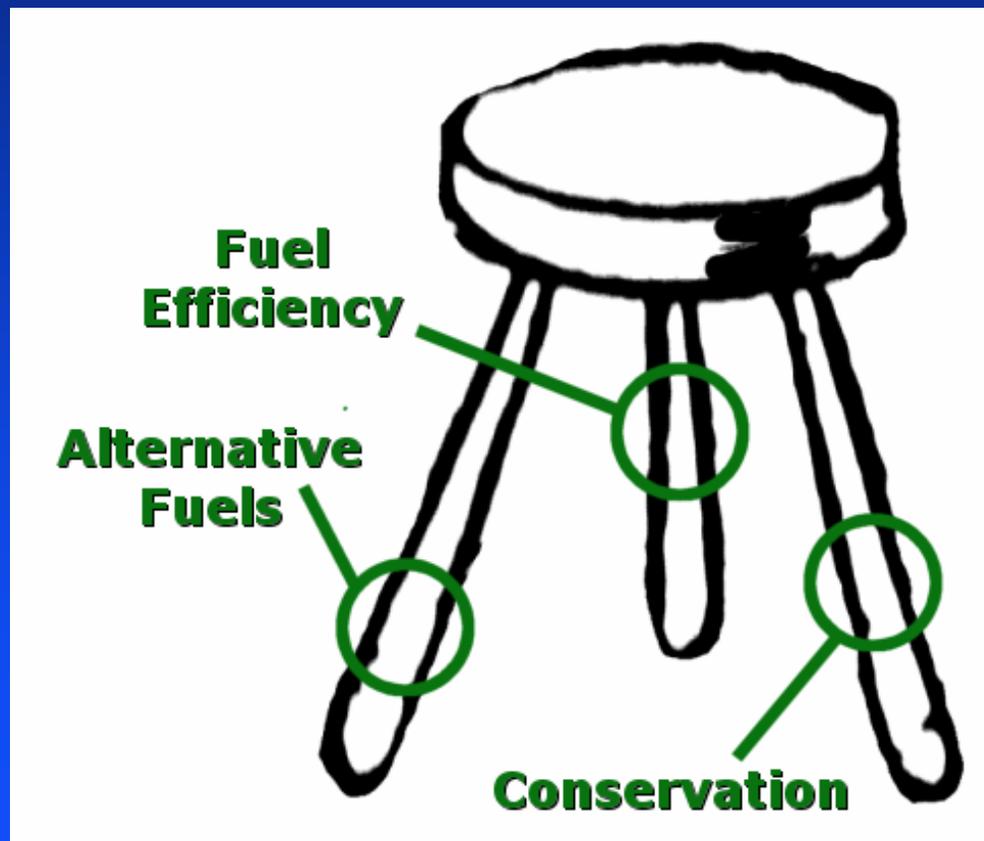
*This is why improving fuel economy and using hybrids is important!*

# There is no Silver Bullet!

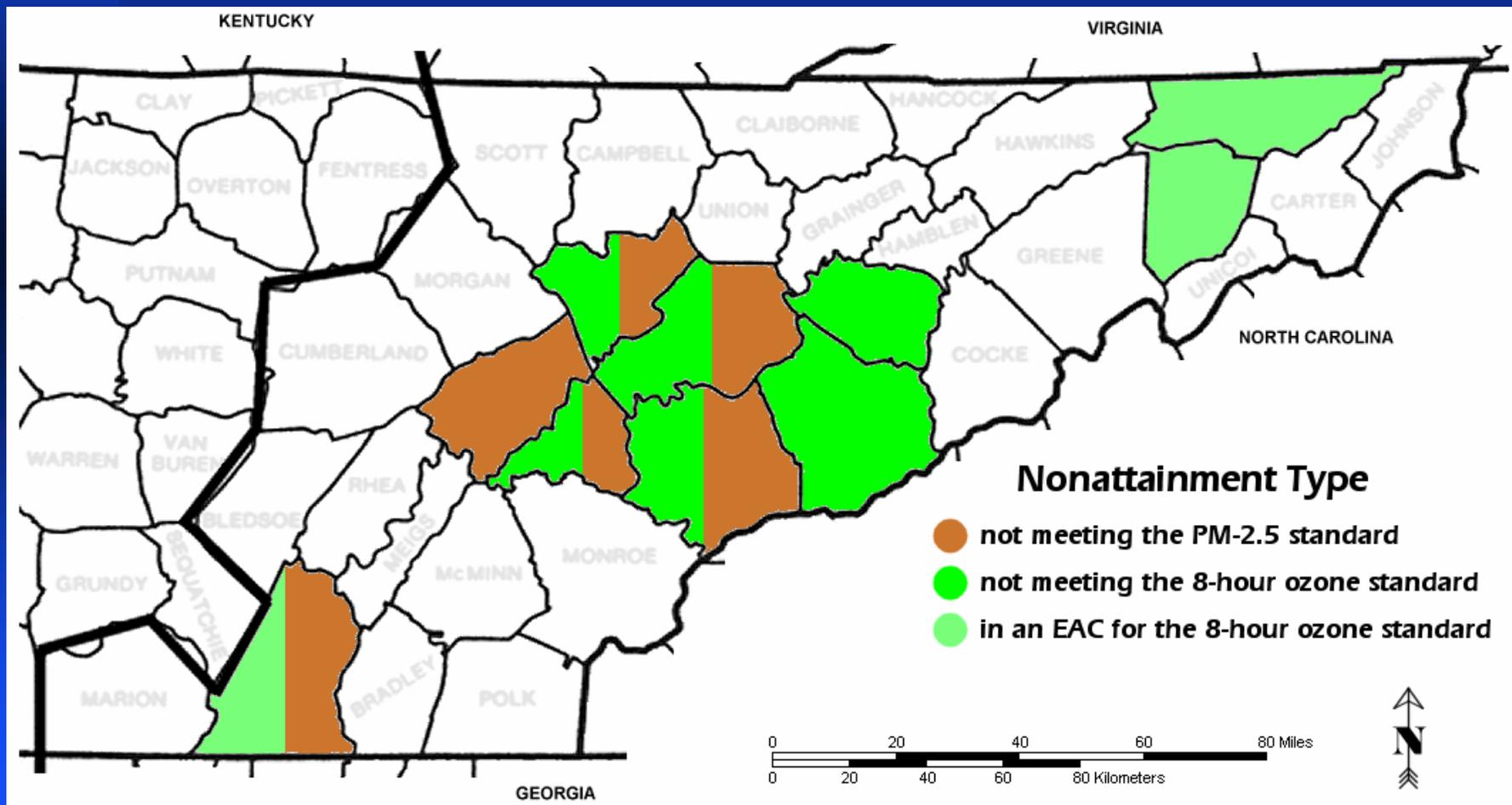
## AFs are not a Panacea -- All 3 Needed

**#1. All  
alternative fuels  
have pros *and*  
cons.**

**#2. We will  
*never* replace all  
our diesel with  
biodiesel or all  
our gasoline  
with ethanol.**



# Air Quality – We Are Not Meeting Federal Health-based Standards!







## How Do Clean Cities Coalitions Operate?

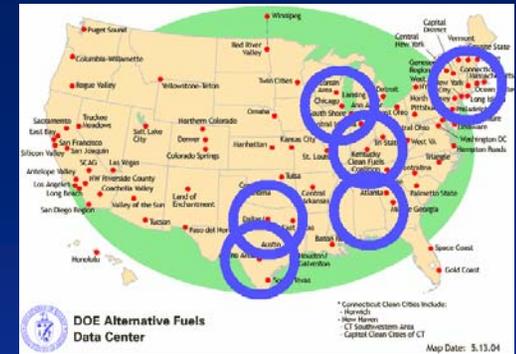


- Serve as educator, facilitator, enabler
- Weave efforts into the community thru outreach
- Different alt fuels work better in different areas
  - ◆ Don't expect every fuel to work everywhere
  - ◆ Depends mainly on partners, production & suppliers
- How sell? Each coordinator has their own style although pros and cons don't change much (cost can be different)
  - ◆ ETCFC - biodiesel example: *"Since Rudolph, only one fuel for diesel engine; now there's two."*

**Key ingredient: fuel suppliers!**



## Clean Cities – Action



- Central AL CC – Worked with Hoover to move to E85, with 160 FFVs, of which 104 are Police Pursuit Tahoes
- Alamo Area CC – 410 of 441 school buses in Northside School District [33k students/day] run on propane (dedicated or bi-fuel)
- DFW CC – Major tenant American Airlines committed \$20 million for purchase of 300+ electric-powered baggage tractors and belt loaders
- Capital CC of Conn. – Yellow Cab purchased 31 natural gas-powered Honda Civic GXs
- Chicago Area CC – Developed “IL Green Fleets Program”
- KCFC – 15 million gallons of oil displaced in ‘05

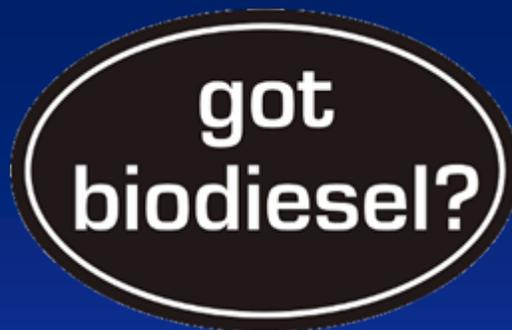


## ETCFC Introduction - What do we do?

- Nonprofit 501(c)3 founded in 2/02; 89<sup>th</sup> CC coalition
  - We serve eastern portion of Tennessee (and beyond)
  - On the order of 80 working partners throughout East Tennessee (53 dues-paying members, some are collectives)
- 
- Monthly meetings in Knoxville; alternating monthly meetings in Chattanooga and Kingsport
  - Direct meetings with fleets and fuel suppliers
  - Approx. 4-5 annual biofuels workshops
  - Presentations - Gave 53 to various groups in 2006
  - Newsletter reaches about 2,000 people each quarter
  - Serve as a general info resource through phone and email



## Biodiesel – Pros & Cons



### PROS

- Cost competitive most of the time (fuel economy; subsidies)
- Is the only alt fuel that can yield increased economy *and* power
- No new vehicles or infrastructure required
- Fill-n-go option at B20 or less
- Renewable; helps farmers
- Less smoke, smell and noise
- Biodegradable; nontoxic
- Helps equipment last longer; less wear and tear

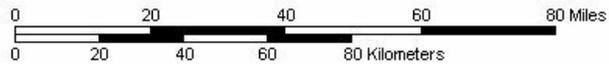
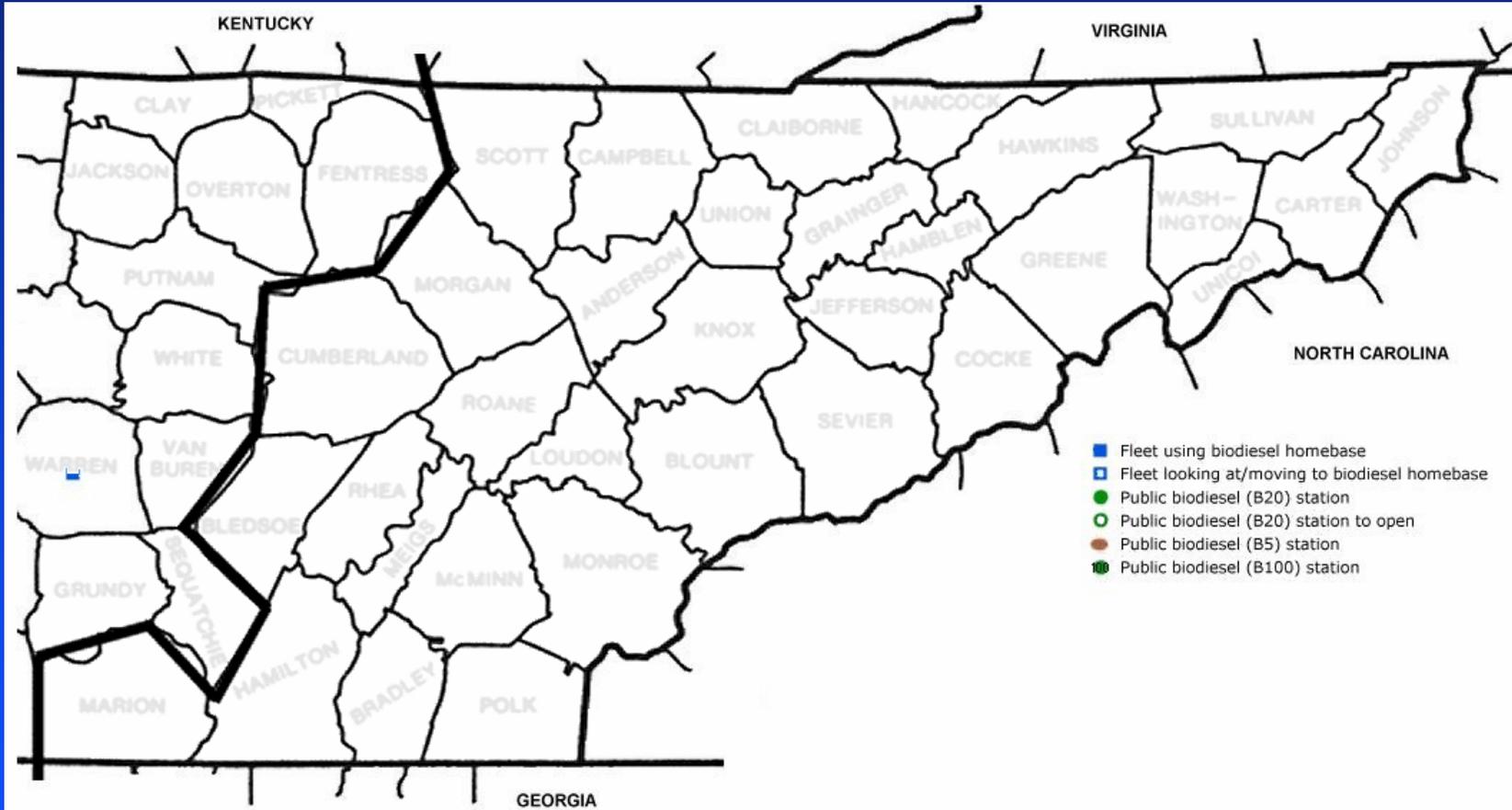


### CONS

- Can require fuel filter changes at the onset of usage (easy)
- Gels faster than diesel, so precautions must be taken during wintertime use (easy)

# Biodiesel Explosion in ET – 3/04

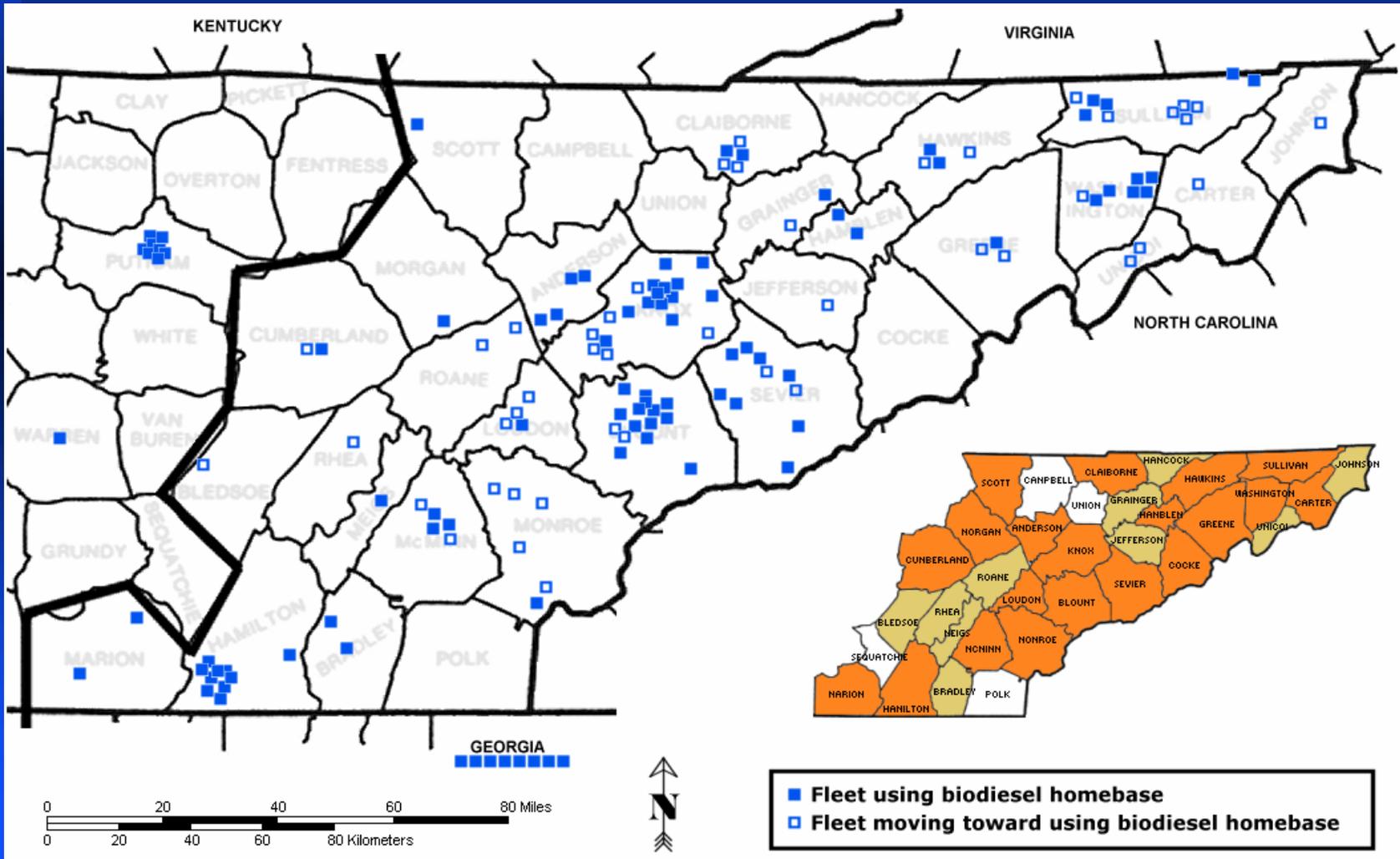
## Consumption in 2003: zero gals B100



# Biodiesel Explosion in ET

**B100 use (gal): '03-0, '04-90k, '05-750k, '06-1.4m**

**Public stations: '03-0, '04-5, '05-17, '06-24**



# East Tennessee Fleets - Biodiesel

**Biodiesel  
 as B99**

**Biodiesel**  
 MY FARM. MY FUEL. MY FUTURE.

**CO-OP**  
 This cleaner-burning, renewable,  
**AMERICAN**  
 fuel brought to you by

**Biodiesel Now Available!**

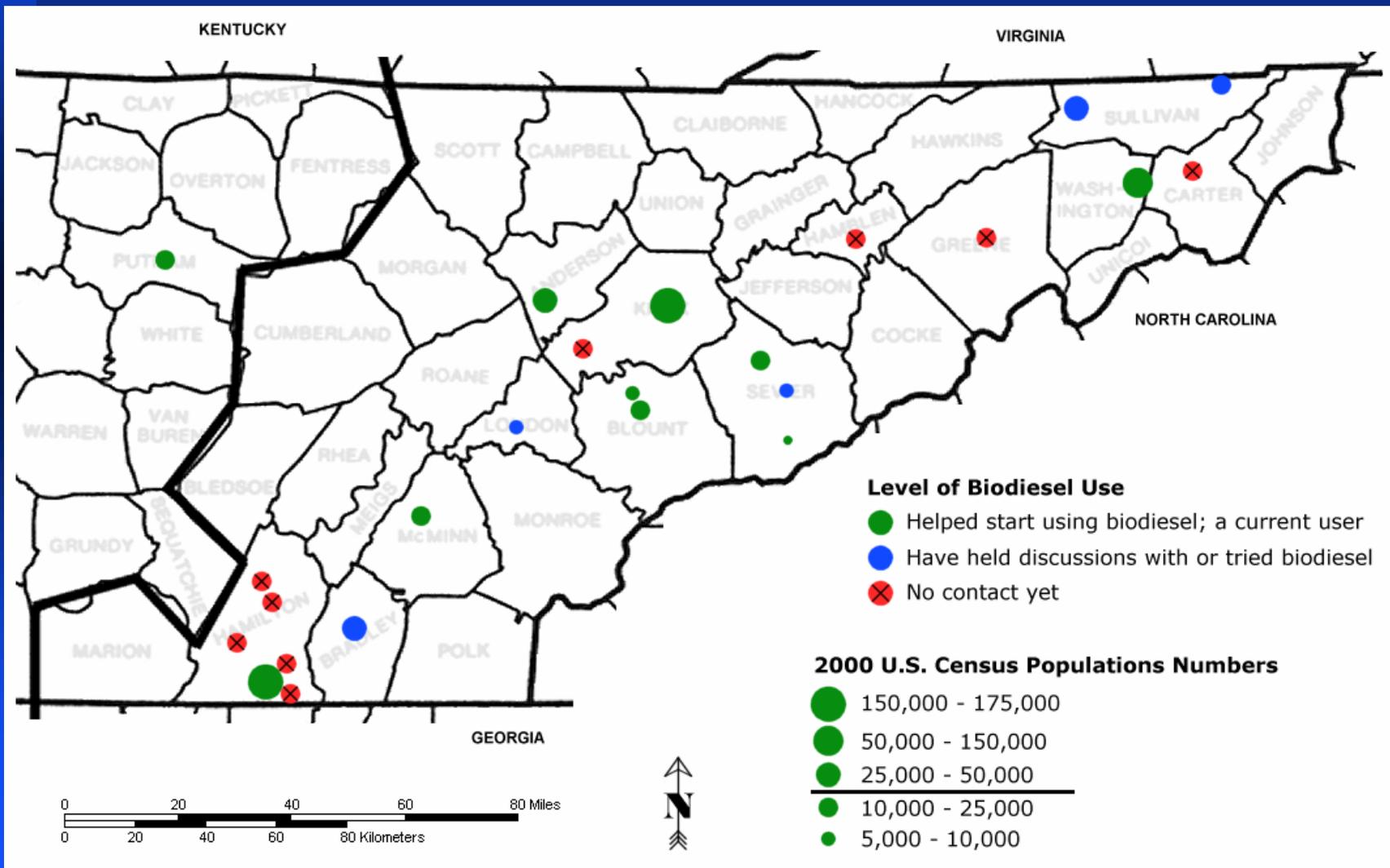
- Reduces foreign oil dependence
- Supports American farmers
- Increases energy




# ET Cities & Towns – Leaders for Biodiesel

## Cities with Populations >10,000

(and smaller that have started biodiesel projects)

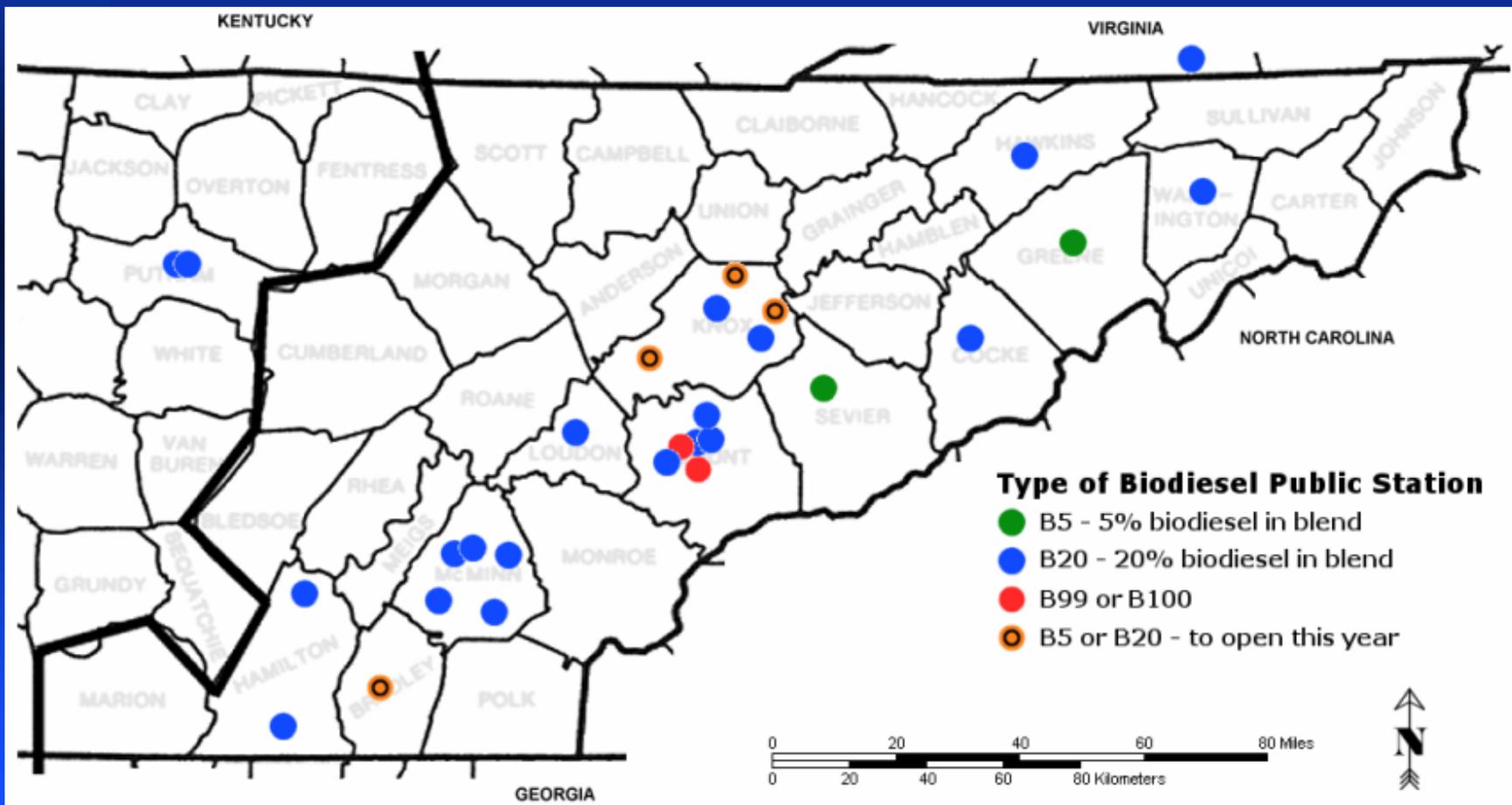




# ET Public Biodiesel Stations

*(there were none in March 2004)*

**As of 9/12/06: 24 -- B99 - 2, B20 - 20, B5 - 2**





# Public Biodiesel Stations



# Working toward Alt Fuels Highway Signage in the SEAFTF and in TN

Before

After!





# Andrew Leads the Charge at the Tennessee Trucking Association Pres. ~ 10-27-05





# “1<sup>st</sup> Graders for Clean Fuels” Program Kick-off ~ 1-31-07





# Options for How Students Can Become Actors for Change

**Presentation to School Bus Drivers** – The ETCFC will help you develop materials to use to bring your case to the school’s bus drivers through a meeting/presentation. You can use our slides as you wish, if you wish. The gist is to tell them you’d appreciate their support and use of cleaner, American fuels that help the country and the community at the same time!

**Presenting our “Station Cards” to Local Stations, or to Bus Drivers**  
– Use these FREE cards to show local stations that you want biofuels offered there, or give them to interested bus drivers who can do the same! Using biodiesel is easy, it just takes the desire and a little work!



# Random Pictures



# UT Biodiesel Production





# Major Regional Event: *The Run for Clean Air*

2007 event -- Saturday, April 14 - 9am

Includes 5k run/walk, displays in regional air quality, 15 AFV showcase, Hybrid Ride 'n' Drive, Clean Air QnA, and great awards and prizes!!

We are looking for \$500 and \$1,000 sponsors for the Run! Sponsors receive publicity and knowledge that they are helping put out the message that East Tennesseans have to be a part of an ACTIVE TEAM of doers to make a difference in our air quality.

Visit = [www.RunforCleanAir.org](http://www.RunforCleanAir.org)





*“You must be the change you want to see in the world.”*

*Ghandi*



*Leave the World a Better Place  
than You Found It.*

**Your Link to Alternative Fuels Information  
in East Tennessee:**

***ETCleanFuels.org***

***(865) 974-3625***

**Questions?**