Ethanol in Tennessee:

We Don’t Just Drink It

September 10, 2010
Shaping Texas’ Fuel Ethanol Policy Conference
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Jonathan Overly, Executive Director
East Tennessee Clean Fuels Coalition

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

1. Who is the East Tennessee Clean Fuels Coalition?
2. Ethanol Policy in Tennessee
4. Leading the Way with Cellulosic – UTBI & Genera Energy
Just a little fib...

Charlie Daniel, Knoxville News Sentinel, published 8/3/10

Moonshine still?? Good heavens no...this here is a cellulosic ethanol biorefinery.

Charlie Daniel @knoxnwsd.com
Who is ETCleanFuels?

- 8-yr old nonprofit in East TN
- Designated member of U.S. DOE Clean Cities Program (~90)
- Direct fleet & fuel supplier interaction; meetings; workshops; presentations; adult & K-12 education; multiple newsletters
- Focused on transp. sector change: 
  diversify away from oil & use less!

U.S. Department of Energy

Clean Cities

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Ethanol Policy in Tennessee

1. 2006 – Gov. Bredesen issues EO 33 to establish the *Interagency Alternative Fuels Working Group* (w/ partners)
   - Purpose – continue and build upon work underway to expand biofuels availability across the state; education and outreach
   - $4.5 million from budget for a) public biofuel pumps, b) soybean processing facilities, c) innovation projects (some - E85 tank/pump)

2. Public Chapter 489 in 2007 - State fleet must reduce 20% of oil use by 1/1/10; also, make “every effort” to purchase and use efficient vehicles, AFVs and E85 and biodiesel

3. Otherwise, TN currently has no E85 policies like tax credit for FFV purchase/conversion, producer’s credit, or tax/fuel rebate
4 yrs later... TN E85 (& B20) Stations

- E85 stations – 33 public stations
- B20 stations – 32 public stations (*most public B20 in U.S.*)

Most stations thanks to the state funding! Some added by coalitions or stations.

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EAST TENNESSEE CLEAN FUELS
ETCleanFuels.org
Reducing foreign oil dependence one fleet at a time.
Getting smart – Let ‘em Know

☑ State (through TDOT) offers highway incentive program:

*If station will place “E85” (or “B20”) on their sign, TDOT will erect blue “biofuel” sign... on all 4 exit signs*
Building a Biomass Industry in TN

- Demonstration Scale Cellulosic Ethanol Biorefinery
- Switchgrass farmer incentive program
- Biomass Innovation Park
- Technology demonstrations
- Tennessee Biomass Supply Co-op
- Seed production capacity

www.GeneraEnergy.net
www.UTbioenergy.org
**Demonstration Scale Cellulosic Ethanol Biorefinery**

- Collaboration between Genera Energy and DuPont Danisco Cellulosic Ethanol (DDCE)
- Vonore, Tennessee: Niles Ferry Industrial Park, Monroe County, 32 acre site
- 250,000 GPY demo plant and Process Development Unit (PDU) pilot plant
- Optimized as precursor to commercial facility; long-term operation as R&D facility
- Started operations December 2009
- Multiple feedstocks: cob & switchgrass
Switchgrass as an Energy Crop

• Well suited to the Southeast
  → Currently, ~6-10 tons/acre in TN; potential for 12+ tons/acre
• Warm season, native, perennial grass
• Tolerates poor soils, flooding, drought
• Highly resistant to many pests, diseases; low use of chemicals or fertilizers
• 1-2 year establishment
  → Weed control critical in establishment
• Works with existing infrastructure
• May be removed, improves soil quality
• UT research focus for 20+ years
Tennessee Switchgrass Experience

- Contracting with local farmers to produce 6,000 acres of switchgrass
  - Nearly 3,000 acres harvested in 2009
  - Added >3,000 acres in 2010
  - 1,000 acres improved varieties

- UT/Genera contract with local farmers
  - ~$450/ac/yr for 3 years
  - We provide seed, technical expertise
  - Separate storage contracts
  - Yield-based component in 2010

- Averaging about 8 tons/ac by 3rd year
  - Harvesting ~2 tons in year 1
  - ~5 tons in year 2
  - ~8 tons year 3 and beyond
Switchgrass Contract Farms

- 2008 SFIP Contract
- 2009 SFIP Contract
- 2010 SFIP Contract

Cumberland
Roane
Rhea
Meigs
McMinn
Monroe
Loudon
Vonore
Knox
Blount
Polk
Bradley
Vonore

Biorefinery

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Switchgrass
Tennessee Biomass Innovation Park

- World-class RD&D campus
- Integrates entire biomass supply chain
  - Harvest, handling, storage, densification, logistics
  - Pre-processing
  - High throughput screening and analysis
  - Agronomics, plant genetics, production
  - Intermediate processing and conversion
- Multiple feedstocks
- Site for $5M DOE-funded high tonnage bulk handling demonstration
- Operational by end of 2010
- Strategic partnership opportunities
- Template for regional biomass depots
(Not policy, but partnership + progress)

I-75 Green Corridor Project

- Add 10 E85 & 15 B20 public pumps @ 200 mile intervals
- Enable driving all the way from Sault Ste. Marie, MI to Miami, FL on your biofuel
- 1,786 miles – will be the longest biofuels corridor in U.S.
- Displace 1.7+ MGY of petroleum
- Proposed I-40 last year... didn’t win
Tennessee – Leading by Example

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

<<< Check out the SE Fuels Fix
- visit www.FuelsFix.com

Follow me on Twitter – “jgoverly” ^^^