

Energy Crops for Farmers

TREEDC Workshop

Jackson, TN
April 5, 2011

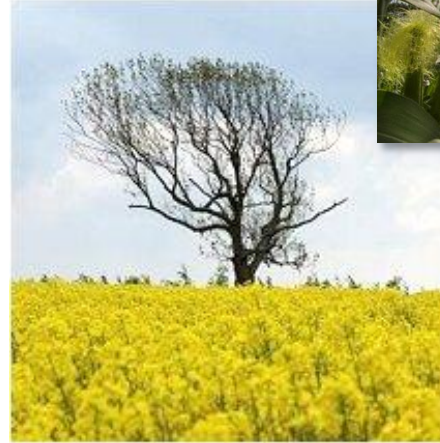
Brent Bailey, 25x'25 State Facilitator



Bringing the Vision to Life

The 25x'25 Vision

By the year 2025,
America's farms,
ranches and forests will
provide 25 percent of
the total energy
consumed in the U.S.
while continuing to
produce safe, abundant
and affordable food,
feed and fiber.

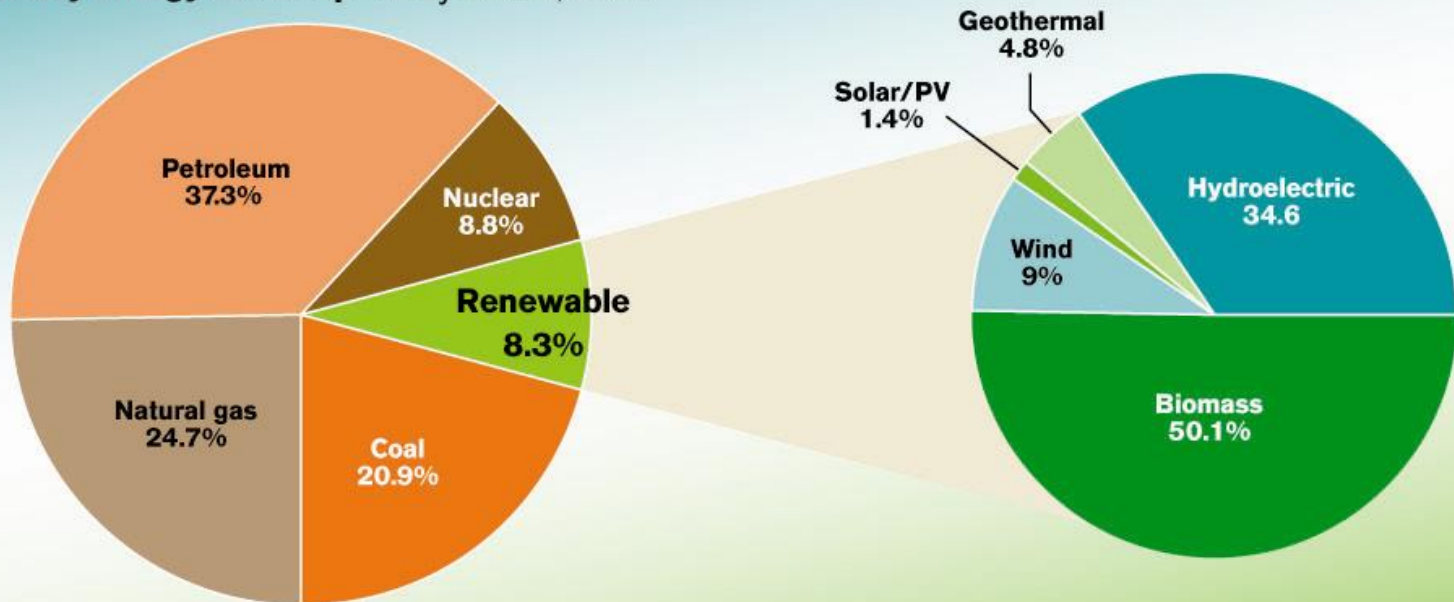


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Where We Are Now

FIGURE 3

U.S. primary energy consumption by source, 2009



SOURCE: EIA Monthly Energy Review, April 2009



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Today's Energy Paradigm

- Fossil fuel **resources are finite**
- Global energy **consumption is increasing** (nearly 30% by 2030)
- The world **population is growing** (9 billion by 2050)
- Fast-developing **economies** like India and China **are demanding more resources**
- Greenhouse gas **emissions are increasing** (World carbon dioxide emissions expected to increase by 1.9% annually between 2001 and 2025)



Need a portfolio approach to meeting energy needs:

- Increase energy efficiency/productivity
- Capture wind, solar, hydro, and geothermal energy
- Provide biomass for generating heat and power and for producing liquid transportation fuels



Need to do your Homework

- **Local approach to assessing energy crops**
 - Biomass resources assessments are needed
 - What crop? Switchgrass; Sorghum; Miscanthus; Willow; Poplar; Algae; other?
 - Understand the feedstock you wish to produce



Need to do your Homework

- **Refer to the experts**
 - University research & extension and private sector
 - Best variety given geography, climate, soil quality, agronomic practices, harvest ability, storage, etc.
 - Goal: minimize inputs while maximizing yields



Need to do your Homework

- **What markets are available?**
 - What are the options/opportunities?
 - Low carbon fuels; biopower; bioproducts
 - Can you match supply with the demand?
 - Will you employ a sustainable production system that creates secondary benefits?

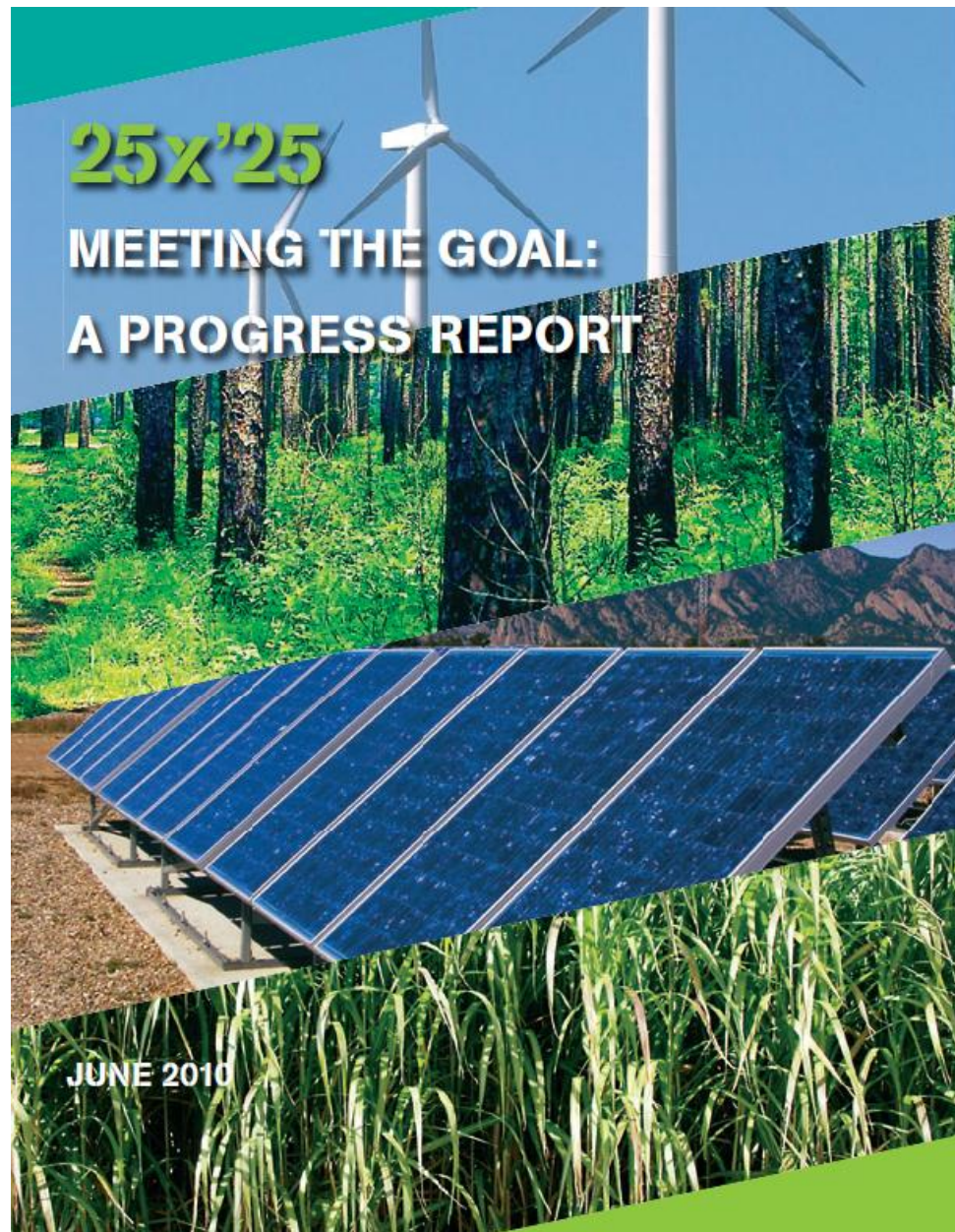


25x'25 Meeting the Goal: A Progress Report

June 2010

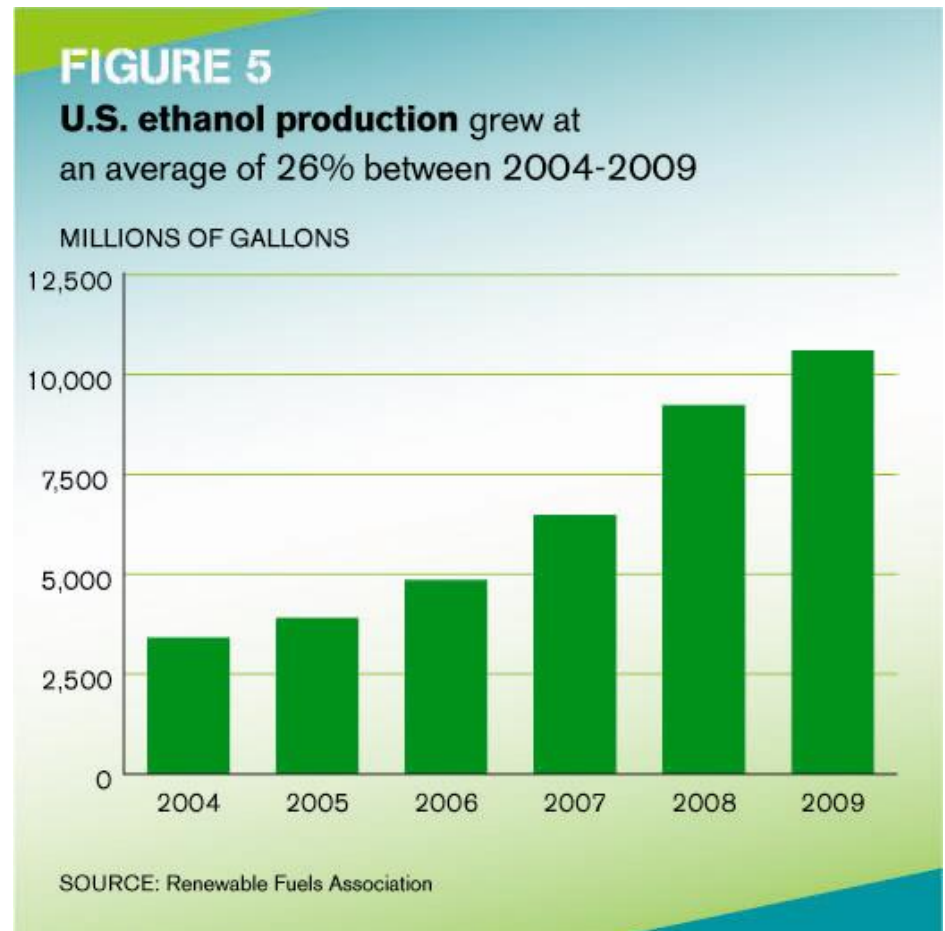


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Biofuels

- Biomass accounted for **50%** of renewable energy consumption in 2009.
- **13.1 billion gallons** of ethanol were produced in 2010.
- Biodiesel production peaked in 2008 with almost **700 million gallons**.



Biopower

- Biomass power generates at least **15 million MW hours** of electricity annually on and off the grid.
- Biogas recovery systems produced an estimated **374 million kilowatt-hours** of useable energy in 2009.



The Opportunity & Potential



Biomass Feedstock

- Ded. Energy Crops
- Ag and Forest Residues
- Hazardous Fuel Treatments
- Short Rotation Woody Crops
- Wood Waste

Conversion Processes

- Co-firing
- Combustion
- Biochemical
- Thermochemical
- Gasification Fermentation
- Catalytic Cracking

USES

Fuels:

- Bio/Renewable Diesel
- Ethanol

Electricity and Heat

Biobased Products

- Composites
- Specialty Products
- New Products
- Chemicals
- Traditional Products

Challenges

- Infrastructure remains one of the biggest challenges in bringing renewable energy online.
 - Transmission lines need to be modernized and expanded to tap into rural sources of electricity, especially wind.
 - Biofuels need expanded pipelines, rail, ports and other shipping facilities to get to urban consumers; expansion of blender pumps and flex fuel vehicles are also needed.
- Significant long term *public and private investment* is needed to achieve a new, renewable energy future.
- Regulatory actions and proposals from EPA, DOE, USDA, states, etc.



2011 25x'25 Key Issues & Focus Areas

1 Communications and Partner Engagement

2 Policy Facilitation and Initiatives

- **Biofuels**
- **Distributed Generation/Community Wind**
- **Bioenergy Roadmap**
- **Wood-to-Energy Roadmap**
- **Adaptation**
- **CLEAN Work Group**

3 Reenergize and grow the 25x'25 Alliance

- **National Defense Sector**
- **Animal Agriculture**



Policy Facilitation and Initiatives

- Bioenergy Work Group
 - Newest project: Combo of Carbon Work Group and Biomass Work Group
 - Focus on the development of a Bioenergy Road Map via the utilization of non-woody biomass resources



Policy Facilitation and Initiatives

- Adaptation Work Group
 - Another new project; currently forming team
 - Purpose is to prepare the ag and forestry sectors to deal with the potential effects of climate change and weather pattern variability
 - Education and familiarization of new farm and forest technologies and support of new research



Policy Facilitation and Initiatives

- Agriculture Leader Clean Energy Dialogue
 - Last week, we facilitated dialogue among commodity crop, animal ag, and general farm org leaders
 - Seek consensus on next-generation of biofuels incentives and affirm relations between animal and crop sectors
 - Ongoing discussion and exchange of ideas to position ag as a leader in energy policy messaging



Reenergize and grow the 25x'25 Alliance

- Engage the National Defense sector
 - Examine impact of America's energy choices on national security - **militarily, diplomatically and economically**
 - Climate change acts as a **threat multiplier** for regional instability
 - Critical need exists for ag leadership on energy and climate issues



Reenergize and grow the 25x'25 Alliance

- Reconnect with Animal Agriculture
 - U.S. animal agriculture sector had been on an economic roller coaster
 - Global demand for meat is increasing; as is concerns
 - Cant sacrifice food security for energy independence
 - Energy crops will be part of the solution



The Path Forward

- The 25x'25 goal is achievable and significant progress has been made, but there is more to be done - all forms of renewable energy must increase production.
- Policy makers and stakeholders must understand that this is a critical need for a **comprehensive national energy policy** that addresses our environment, invigorates our economy and enhances our national security.



America is on a path to a low-carbon energy future that aims to:

- improve national security
- strengthen the economy
- contribute positively to the quality of life
- provide a cleaner environment



Unresolved Issues

- National Renewable Electricity Standard (CES)
- Transmission (siting and financing)
- Definition of renewable biomass
- Indirect land use issues
- Expired/expiring tax credits (PTC/ITC)
- CRs, FY 12 budgets, and 2012 Farm Bill
- RFS2/ethanol blend wall (E15)
- Assessing costs and impacts of GHG regulation and legislative efforts to stop EPA regs



What is East Tennessee's *vision* for a new energy future?

- Who/How will you participate?
- What does ag and forestry need for this vision to be realized?
- Who is at the policy table representing your interests?



Thank you!



25x'25

**AMERICA'S
ENERGY FUTURE**

www.25x25.org

<http://www.facebook.com/25x25Alliance>



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