



Tennessee Renewable Energy & Economic Development Council

Presentation to Farmland Legacy Society
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November 11, 2010

TN Farmland Legacy Agenda:

- ❖ History/Mission of MTAS/TREEDC
- ❖ Renewable Energy and Farming
- ❖ Statewide Community Forums/Projects
- ❖ 2011 Goals
- ❖ Cities /Partners

History/Mission

1. MTAS – 1949 TML:346 cities – mission – make cities be the best they can be - 30 consultants– associations – energy – cities use a lot
2. TREEDC -2008 by 4 Mayors/UT President Emeritus Joe Johnson:– mission – promote renewable energy with economic development and best management practices for all TN communities.
3. Advisory Board – MTAS/TREEDC – not a typical green organization – not a trade organization – Univ+mayors+businesses



Founding Executive Committee
Fall Creek Falls



- Pikeville Mayor Greg Johnson – Bledsoe Co
- Gainesboro Mayor John Fox – Jackson County
- Crossville Mayor JH Graham – Cumberland
- Graysville Mayor/Comm Andy Beene – Rhea County



TREEDC - Franklin

Why TREEDC

- 1) **Building Relationships** - Ground floor MTAS, UT, State, TVA – “built in people infrastructure and markets” farming – big market
- 2) **Outreach**: Provide educational and networking opportunities for all interested parties- among the people- the UT name
- 3) **Technical Assistance**: Cities/counties lack resources to recruit development and need help
- 4) **Business Development**: Companies need help achieving developmental objectives relating to incentives and workforce development.

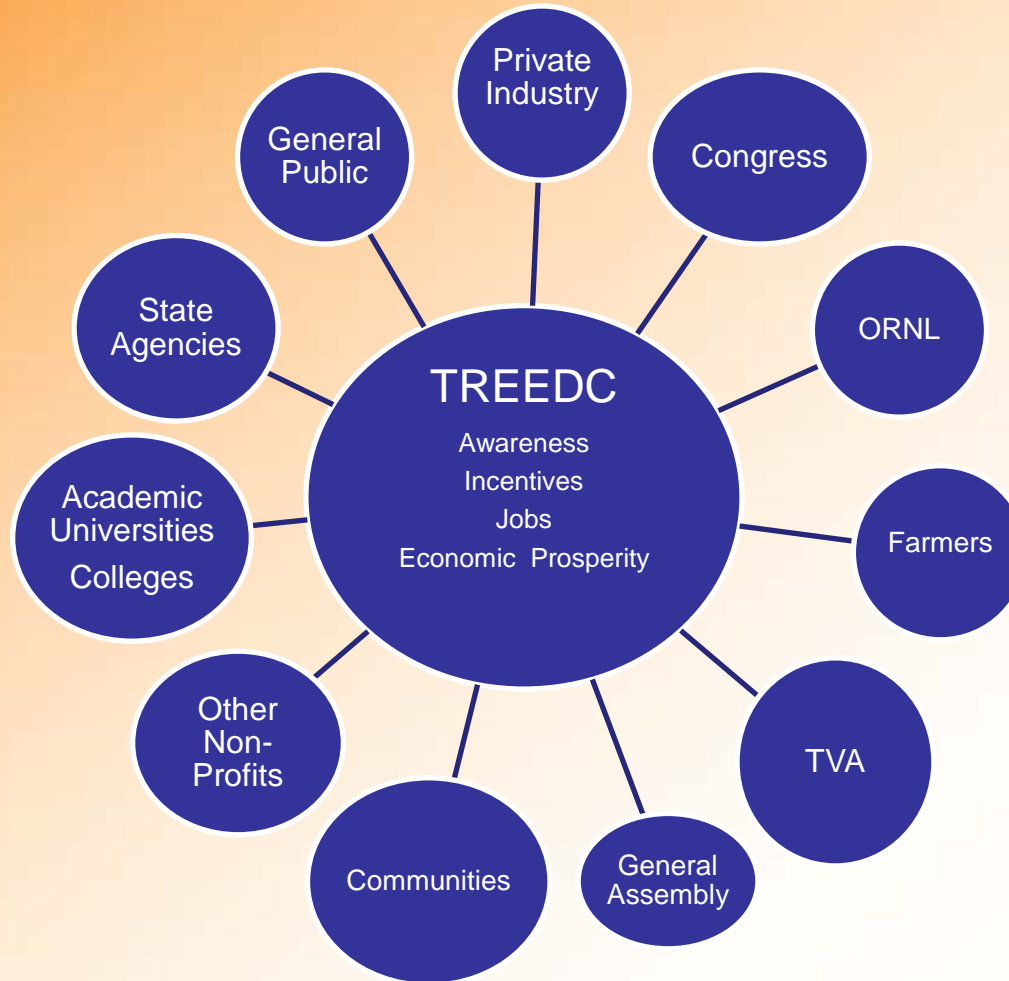
Why TREEDC

- 5) **State of Tennessee Energy Initiatives:** The State has limited resources – we need to support its goals and deliver their message.

- 6) **Research & Development:** UT and ORNL need help in translating their research and development to market.

- 7) **Coordination of Energy Needs:** TREEDC will be a tool for communities to coordinate and assess data of total energy usage and distribution of fuels and energy. We could benchmark farming too.

TREEDC Wheel



Renewable Energy: Facts Sheet

Renewable Energy & Agriculture

Farming the Wind

Up with the Sun

Growing Energy on the Farm

Renewable Energy & Agriculture

Wind Power:

- ***Wind energy alone could provide 80,000 new jobs and \$1.2 billion in new income for farmers and rural landowners by 2020 according to the U.S. Department of Energy.***
- Renewable energy can also help reduce pollution, global warming, and dependence on imported fuels.



Solar Energy:

- Solar energy can be used in agriculture in a number of ways, saving money, increasing self-reliance, and reducing pollution.
- Solar heat collectors can be used to dry crops and warm homes, livestock buildings, and greenhouses.

Biomass Energy:

- Biomass energy is produced from plants and organic wastes-everything from crops, trees, and crop residues to manure.
- According to the U.S. Department of Energy, tripling U.S. use of biomass energy could provide as much as \$20 billion in new income for farmers and rural communities and reduce global warming emissions by the same amount as taking 70 million cars off the road.

In depth: Farming the wind

The Wind Resource

In theory, the wind could produce five times more electricity than the United States currently uses. Some of the best wind resources in the country are on farmland, especially in the plains states.

How Can The Wind Help Farmers?

Farmers and ranchers are in a unique position to benefit from the growth in the wind industry. To tap this market, farmers can lease land to wind developers, use the wind to generate power for their farms, or become wind power producers themselves.

Working With Wind Developers

Farmers can benefit from wind energy in many ways, including generating their own power, leasing land to wind developers, and becoming wind developers themselves. One wind turbine uses only one-quarter acre of land, including access roads, and can earn royalties up to \$2,000 per year.



In depth: up with the Sun

Solar Light and Heat

One of the simplest ways to use solar energy is to design or renovate buildings and barns to use natural daylight instead of electric lights.



Greenhouse Heating
Commercial greenhouses often rely on the sun for lighting, but on gas or oil heaters to maintain constant temperatures. A solar greenhouse uses building materials to collect and store solar energy as heat.

Crop and Grain Drying

Solar drying equipment can dry crops faster and more evenly than leaving them in the field after harvest, with the added advantage of avoiding damage by birds, pests, and weather.



In depth: growing energy on the farm

Energy Crops

Crops grown for energy could be produced in large quantities, just as food crops are. While corn is currently the most widely used energy crop, native trees and grasses are likely to become the most popular in the future.

Grasses:

- Switchgrass, big bluestem, reed canarygrass, and wheat grass

Trees:

- Poplar, willow, sycamore, sweetgum, and cottonwood

Oil Plants:

- Soybeans and sunflowers

Potential

Biomass currently provides about two percent of America's electricity, one percent of the fuel used in cars and trucks, and some of the heat and steam used by homes and businesses. With more energy crops and better conversion technology, it could gain a much larger portion of the market.



Rural Energy for America Program(REAP)

- Farm Bill
- 3,000 projects since 2002 Farm Bill
- Loan guarantees and grants for technologies such as wind/solar/geothermal/manure digesters/biomass
- Improvements to 2008 Farm Bill
- 1) Energy Technical assistance; 2) Feasibility studies; 3) Larger loan guarantees – from 10 million to 25 million

TREEDC Statewide Community Forums

- 1) Regional Symposiums in Pikeville, Memphis, Jackson, Kingston and Franklin TN -Attended by nearly 400 officials or designees. Starts with research.
- 2) Presentations - UT/Dupont Danisco - TVA, Maupin Gasification, Nissan Electric, Memphis Bioworks and StrataG

<http://www.mtas.tennessee.edu/public/web.nsf/Web/Economic+Development>

TREEDC Projects

- 1) TVA Fly Ash Spill/Roane County/Kingston Long term Impact Plan – help resulted in \$43 million
- 2) Technical publications : Municipal Biodiesel/Energy Management
- 3) Crossville, East Ridge and Clarksville Biodiesel
- 4) Energy Efficiency Grants- Whitwell/Ducktown/Pikeville/Gainesboro/Kingston
- 5) Genera Energy Ambassador Program
- 6) Covington wastewater sludge gasification
- 7) www.treedc.us

2011 Goals

- Expand market opportunities for energy-related feedstocks and products.
- City/County Biodiesel Community Grant Program
- Statewide Trishanol Feasibility Study
- Statewide incentives and new legislation
- City Wastewater Microhydroelectric feasibility study
- Wood waste: alternative transportation/bipower
- Renewable Energy 101 and publications
- USDA Rural Development Outreach Program
- TML Green City/County USA Program-TML
- Green Directory/Membership drive

Membership benefits

- Quarterly newsletter/ Field visits
- Contact info on website
- Discounted professional services/registration fees for forums
- Presentation/sponsorship opportunities
- Green jobs listing
- Notification of grants and industry needs

City Coordinators: Statewide

- Jackson- Councilman Ernest Brooks
- Franklin- Alderman Ken Moore
- Covington – Mayor David Gordon
- Ducktown – Mayor James Talley

Partners

- Genera Energy
- Tennessee Soybean Promotion Council
- TN Dept of Agriculture
- Divison of Forestry
- 25x"25 organization
- TVA
- ORNL
- The University of Tennessee



Grand Opening – Vonore, TN



Conclusion – TREEDC

- Who – Organization of mayors promoting renewable energy
- What – Connect renewable energy with job creation and economic development
- Where – Operate statewide- headquarters – Pikeville, TN
- When – Started by MTAS, UT and McBee Bailey in 2008
- Why – Energy independence, protection of the environment and jobs for our communities
- How – Continue building relationships with the emerging green economy in TN
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