

**Follow the 80 leaders on the landscape
Best Sustainability Practices
Website**

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http://www.nbii.gov/portal/server.pt?open=512&objID=1388&mode=2&in_hi_userid=2&cached=true

Or contact jpeine@utk.edu

Land Conservation

Easements or purchase

Non-government organizations

- Land Conservancy Alliance – lands protected the size of New England in last 10 years
- Foothills Land Conservancy – 25K acres in 25 years
- Southern Appalachian Highlands Conservancy – 21K acres
- Blue Ridge Conservancy – 15K + acres

Private developers

- Balsam Mountain Preserve – 3K acres

UTK/Private Industry Biofuels Initiative

Research and Development

- DuPont Danisco Cellulosic Ethanol LLC and the University of Tennessee Research Foundation, through General Energy, LLC are developing an innovative pilot-scale biorefinery and state-of-the-art research and development facility for cellulosic ethanol, in this case converting corn stover (stalks) to ethanol
- A prototype switch grass farming initiative is underway involving 16 farmers utilizing 723 acres in west Tennessee
- Biodiesel fossil energy ratio: 3.2 bio-energy units created to 1 fossil fuel unit required for production

East Tennessee Clean Fuels Coalition

Program Goals

- Move fleets to alternative (alt) fuels
- Open refueling stations, for both vehicles (public and private) and tanker trucks (fast, high-quantity fuel supply)
- Educate regional citizens to the need for alt fuels, which has two facets: reduce national petroleum dependence and improve regional air quality
- Network and connect regional entities so that an interconnected community of involved participants results

Green Power Switch

2010 the tenth anniversary of TVA's initiative

There are nearly 12,000 residential and 500 commercial customers signed up @ \$4.00 more per 150 kilowatts

Gatlinburg - highest % of commercial businesses

- Green Power Switch participants have purchased nearly 500,000 MWh of renewable energy.
- Kept nearly 900 million pounds of carbon dioxide emissions out of our atmosphere.
- The equivalent to keeping 85,000 passenger vehicles off the road for a year.
- Equal to planting over 138,000 acres of trees in the Tennessee Valley region.

Green Power sources

- Wind power – 1,380 megawatts anticipated - 350K homes

Wind Energy

TVA & Southern Alliance for Clean Energy

Wind energy is cheapest of renewable technologies and it can help lead the way for other renewable energy technologies.

SACE Program objectives

- Supports the DOE goal of 20% wind energy by 2030
- Focuses on market acceptance – building a network
- Conducts workshops and webinars on wind energy
- Shares info on technology, siting, financing, and impacts
- Facilitates activities of several wind power cooperatives
- Manages offshore renewable energy study

The Greening of Big Orange

Working toward becoming carbon neutral

- Student directed green fee program – now system wide
- Purchase more green power
- Replace all building transformers
- Upgrade interior lighting
- Meet 20% of vehicle fleet needs with alternative fuels
- Reduce building electricity by 10% FY 2007-8 average
- Design new building to use 20% less electricity
- Initiate sustainability courses
- By FY20-21 50% purchased electricity is nuclear, hydro and renewables

Results to date

- Power use reduced 10%
- Efforts to reduce energy saves \$1,000,000 in energy costs

Climate Sensitive Waste Management

Sevier Solid Waste, Inc.

Objectives

- Resolve the limited capacity of the landfill to process the solid waste generated in Sevier County
- Minimize amount of solid waste
- Minimize impact on the environment

Goals achieved

- Utilize new technology to maximize composting of most waste
- Process solid waste and sewage treatment plant sludge through a composting process
- Preprocess separation of aluminum, wood and commercial cardboard
- Achieved a 67 percent reduction in solid waste

I Love Appalachian Mountains

Do you?

Mountain Top Removal Mining

- Over 250 mountains have been destroyed
- Over 1,000 miles of streams lost to land fill
- Numerous toxic chemical have been released into the streams
- An estimated 800+ acres has been destroyed
- If the process continues unabated, an estimated 1.4 million acres of carbon sequestration generating forests will be lost
- See the Google Earth maps via ilovemountains.org of before during and after pictures of MTR activities and enter your zip code to see what percentage of your electric power is generated via MTP mined coal

Balsam Mountain Preserve

Chaffin/Light Associates Inc.

- A 4,400 acre tract was purchased from a paper company
- A 3,000 acre preserve and nature center was created
- There are 350 home sites averaging 2 acres in size
- Green construction techniques are required
- Environmental education is ongoing at the nature center
- 9 universities are engaged in science
- Logging records over 90 years are detailed
- Stream restoration technology: reducing sedimentation
- An inventory of species is ongoing - 1,000 identified so far
- *Training in cluster development and green construction is ongoing for various levels of government, educational institutions and the private sector*

Appalachian Sustainable Forest Practices

An NGO that sustains carbon sequestration

- In 1995, Appalachian Sustainable Development (ASD) was formed with the aim of building a more sustainable economy from networks of small, local endeavors focusing on 10 counties in TN & VA and on two central legs of Appalachia's economy: agriculture and forest products.
- The goal is to restore ecological health, create livelihoods and economic systems that are ecologically sustainable, and build the financial and physical capital needed to add value to the region's natural resources and bridge the gap between producers and the marketplace.