



# WOOD<sup>to</sup> ENERGY



## Biomass Ambassador Guide

### Get Started

#### Selecting Communities

The South leads the nation in population growth, with 64 of the 100 fastest growing counties between 2003 and 2004. Several states (Florida, Texas, and Virginia) had ten or more counties on the list. And it is not just the increasing population that is driving the growth in land development. In many areas of the South, new homes are larger and building lots are bigger than they were twenty years ago. This new development is bringing communities closer to working forests and increasing the need for energy resources.

As communities wrestle with providing resources to meet the projected needs, community leaders may be anticipating new power plants; expanded schools, prisons, and hospitals; and new industry. All of these require energy for heating, cooling, electricity, and perhaps operation.

Some of these communities may find that local wood resources can help answer their anticipated energy requirements. As you begin your outreach efforts to help residents and community leaders become aware of the possibilities of woody biomass, it would be wise to focus on regions of the South where wood is more likely to be an economically viable resource—areas where forests are close to growing populations.

Using county-level data from national sources, we combined a number of resource and socioeconomic variables to rank southern counties that might reasonably consider using wood for energy (see “Economic Impact Analysis of Woody Biomass Energy Development,” in the USDA Forest Service General Technical Report, *Wood to Energy: Using Southern Interface Fuels for Bioenergy*, in press). We chose this process to be able to identify growing counties in forested portions of the wildland-urban interface, where an active forest industry might be close enough to reduce transportation costs of hauling wood, and where energy would be needed in the near future. We were not able to predict where paper mills might close or open, or where development would likely remove all nearby forestry operations. We could not factor in the current cost of energy or the availability of sources in the future. By ranking the counties we were able to identify some areas in each state where woody biomass might present a feasible energy resource.



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**A community is an area where people live and interact with one another. The area may be defined by a town, city, county, or region. For this program, we are speaking of the people affected by a proposed wood-to-energy facility.**

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Following are the variables and the assumptions that we used to generate the ranked list:

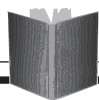
- **Forest biomass** – The counties must have trees that can be harvested (such as timberland and public forests, but not parks or wilderness areas).
- **Electric power generation per capita** – Counties that have existing power generating capacity may be likely to expand or change fuel sources.
- **Population growth** – Where counties are growing, forests are being converted into urban land uses, and energy will be needed.
- **Population density** – As population density increases, wood resources are converted from forests to urban forests.
- **Personal income per capita** – This is a way to measure privately held wealth.
- **Personal income change** – This factor indicates that economic growth is occurring, and may suggest a need for energy.
- **Urban wood waste** – A measure of one type of wood waste (tree and yard trimmings, the commercial tree care industry, utility line clearings, and greenspace maintenance) available within the county, based on an average from state waste management agencies in seven of the southern states.
- **Wildland-urban interface** – The percentage of the area that has a mixture of housing and natural vegetation.

The indicators for each county were ranked on a scale from zero to one and the variables were combined to begin to identify the most suitable counties for woody biomass energy production. These criteria identified fast-growing counties with forest cover and above-average wealth.

We contacted local foresters and community leaders in several selected counties in each state to learn if our analysis had picked counties that were indeed likely to find woody biomass as a reasonable source of fuel. We discovered that the majority of selected counties were realistic selections. In a few instances, the anticipated population growth is so great that it will be difficult to guarantee a source of wood for the life of a facility designed to use wood. In those counties, wood may supplement other fuels or be used in a combustion chamber designed to accommodate other types of fuel, such as coal or natural gas.

In other counties, the price of coal is so low that it will be difficult for wood to compete. However, if a carbon tax is applied to coal-burning facilities, those utilities may be interested in co-firing with wood.

Because we selected at least ten counties in each state, for example, the listed counties in a less forested state could be less suitable for biomass than some forested counties in heavily forested states that did not make the top ten.



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A complete chart of all the counties and their ranking can be found at <http://www.interfacesouth.org/woodybiomass>.

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In each state we selected from one to five counties that collectively represented a variety of population sizes, ecosystems, and situations (such as university towns or bedroom communities near metropolitan centers). The final group of 28 coun-

ties for which we conducted economic analyses (supply curves and regional economic impacts) does not represent the 28 most likely counties to successfully use biomass. It represents a diversity of possibilities. This diversity will help you provide scenarios that might be similar to the other counties that were not analyzed. This information

is provided in the community economic profiles, and background details on how supply curves are produced is in the “Appendix” and on the Web site, under *Assessing the Economic Availability of Woody Biomass*

According to our analysis, the counties listed in Box 1 could reasonably consider using woody biomass for local energy needs. The counties marked in bold are those for whom we have conducted economic analysis that is presented in the community economic profiles.

## Building a Team

Before arranging a meeting with key community members, we suggest that you identify a team of resource people who can assist you. The following combination of experts was helpful during our initial meetings:

1. **State Forestry Staff** – Although state forest agencies reviewed this program’s community economic profiles, there may be differences of opinion about the interpretation of the numbers. They may be able to provide newer data to make supply curves for these and other counties. Make sure you are working closely with district foresters and use their guidance for selecting counties for outreach work.
2. **Cooperative Extension Agents or Specialists** – Extension agents are familiar with the local community and may have ideas and contacts for arranging a meeting, obtaining media coverage, and engaging local leadership.
3. **Researchers** – Those who understand economic impact, wood costs, forest management, wood harvesting, climate change, combustion and gasification technology, and wood utilization can provide local research data and information.
4. **Industrial Wood Users** – Buyers and sellers of wood, generators of wood waste, and wood haulers can answer questions based on their experience about using woody biomass.
5. **State and Local Energy Staff** – People who are knowledgeable about local energy systems can provide information and answer questions about current energy use and future energy plans.

## Box 1. Counties That May Be Suitable for Wood to Energy Activity

**Alabama:** Autauga, Baldwin, Blount, Elmore, **Lee**, Marshall, Morgan, **Shelby**, St. Clair, Tuscaloosa

**Arkansas:** Baxter, Benton, Cleburne, Garland, Grant, **Saline**, Sebastian, Perry, Pope, **Union**, Washington

**Florida:** **Alachua**, Baker, **Clay**, Flagler, Hernando, **Leon**, Marion, **Nassau**, Okaloosa, **Santa Rosa**, St. Johns, Wakulla

**Georgia:** Bryan, Cherokee, Columbia, **Coweta**, Dawson, **Douglas**, Lumpkin, **Murray**, Pickens, Towns, **Union**, White

**Kentucky:** Anderson, Boone, Bullitt, Jessamine, **Laurel**, Nelson, Oldham, Pulaski, Shelby, Trigg, **Trimble**

**Louisiana:** Ascension, Assumption, Bossier, East Feliciana, **Livingston**, Ouachita, St. Charles, St. Tammany, Tangiphoa, West Baton Rouge

**Mississippi:** **DeSoto**, Hancock, Jackson, Lafayette, Lamar, Lee, Madison, Neshoba, Rankin, Stone, **Warren**

**North Carolina:** **Buncombe**, Chatham, Franklin, Henderson, Jackson, Macon, Moore, **Orange**, Polk, Transylvania, Wake

**Oklahoma:** Canadian, Cherokee, Cleveland, Delaware, **Le Flore**, Logan, Marshall, McClain, Rogers, Tulsa, Wagoner

**South Carolina:** Aiken, Beaufort, Calhoun, Dorchester, Georgetown, Greenville, Horry, Kershaw, **Oconee**, York

**Tennessee:** **Anderson**, **Blount**, Bradley, Cheatham, Cumberland, Coffee, Dickson, Montgomery, Putnam, **Sevier**, Williamson

**Texas:** Angelina, Cherokee, Hardin, Liberty, **Montgomery**, Polk, San Jacinto, Smith, Upshur, Waller

**Virginia:** Botetourt, **Chesterfield**, **Fluvanna**, Goochland, Greene, Hanover, King George, Louisa, New Kent, Powhatan, Stafford

6. **Environmental or Civic Leaders** – If the other members of your team do not also represent environmental and local perspectives, you may want to add someone who can. This may increase your credibility as you meet with environmental and civic organizations.

If you do not already know people who can represent these expert areas, you may want to find them. They will have insights about the communities you want to reach and will be able to answer questions from local citizens and leaders. The list of potential team members is a starting point and not comprehensive; the members of your team may depend on the community you are working with. If you cannot find the individuals you need to complete your team, check the “Woody Biomass Groups, Organizations, and Consultants” portion of “Resources” for ideas.

Introduce your team to the Wood to Energy Program, the fact sheets, and other outreach tools. If you wish to give them a copy of this Biomass Ambassador Guide, feel free to duplicate your copy, print from the CD, direct them to the Web site <http://www.interfacesouth.org/woodybiomass>, or contact us for an additional notebook.

The resources in this guide can be used in various ways, depending on your audience and their needs. Fact sheets, relevant community economic profiles, and a few case studies could be handed out at meetings or made available for visitors to pick up at a festival booth, for example. By using the information about the development of the supply curves as background and a few community economic profiles as examples, you could help communities assess their own availability of woody biomass with the *Do-It-Yourself Supply Curves* resource located in “Appendix” and on the Web site. Fact sheets could provide background reading for a high school debate about the United States’ energy future. A community study group may wish to use several case studies as discussion topics, and then take a field trip to a nearby wood-powered sawmill for firsthand experience. You could even assemble a press kit from fact sheets, the *Media Question and Answer Handout*, case studies, and your state profile and distribute them to reporters, journalists, and editors that serve your region.

Use the program’s list of counties and your knowledge of your region to identify communities or regions where raising awareness about using wood for energy may be useful. The next step in your “ambassadorship” is to begin planning your outreach efforts by understanding what each community is willing to consider.