

# Woody Biomass Joint Venture

A partnership between the USDA Forest Service  
and the U.S. Endowment for Forestry and Communities

## The State of Information Databases Tracking Wood-to-Energy Facilities

### Summary

#### [The Woody Biomass Joint Venture](#)

(JV) – a partnership between the USDA Forest Service (USFS) and the U.S. Endowment for Forestry and Communities (Endowment) - hosted a roundtable of knowledgeable professionals to explore the content and quality of information tracked by existing woody biomass infrastructure databases. The session represented a first step toward ensuring that up-to-date, usable and relevant data exists on the wood energy sector.

This group agreed that the most exhaustive wood-to-energy database, albeit incomplete,



resides with the University of Tennessee, [Wood2Energy Project](#). The database, funded by USFS, Endowment, Natural Resources Canada and others, is available publicly - [www.wood2energy.org](http://www.wood2energy.org).

Therefore, the Wood2Energy system will be utilized as the starting point for cataloging all non-residential facility types - combined heat and power (CHP),

electric and thermal for both public and private entities.

Currently, private electric and CHP at or above 10 megawatts are tracked by a combination of sources. The institutional thermal segment, e.g., schools and hospitals is not thoroughly documented.

Members of the group estimate that approximately 600 thermal facilities, without connection to some form of forest product industry, exist in the U.S.

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The JV has engaged Eric Kingsley of Innovative Natural Resources Solutions, LLC, to work in collaboration with the Wood2Energy team to use the Northeastern United States as a pilot, refining the database for both content and user interface. The goal is to ensure the system is up-to-date, easy to maintain, and user-friendly.

Over time, additional partners will be engaged to ensure all regions are populated to the greatest degree of accuracy feasible and that workable protocols and procedures are developed. An end-point under consideration involves building a map-based portal and inviting critique through a “crowd sourced” (open to any source with information supplied by volunteers) approach but managed by a curator (someone tasked with ensuring data quality and integrity).

The final system and associated mapping tools are expected to reflect the following information:

- Forest products facilities where energy is a by-product versus dedicated energy production facilities

- Type of fuel
- Facility and equipment size classes
- Installation date

USFS State and Private Forestry created an internal working database of facilities (schools, hospitals, etc.) that were built in part with funding from USDA. Endowment and USFS staff are working to refine this information and ensure that it is included in the Wood2Energy system.

Further discussions will take place to determine a balanced partnership approach to developing and maintaining some form of comprehensive database long-term. The purpose is to provide reliable data that helps managers, brokers, policy makers and builders make informed decisions based on sound information.

Trade organizations, such as Biomass Thermal Energy Council (BTEC), and their peers who would derive a direct business benefit from a well-maintained system with sound information, might be looked to for modest on-going funding support.

An up-to-date, interactive database housed in an environment such as the University of Tennessee, BBI International or Vermont Energy Investment Corporation (formerly Biomass Energy Resource Council) would provide needed consistency and credibility as well as aid in curator roles and awareness promotion.

**Existing Database Matrix - U.S. Endowment for Forestry and Communities & U.S. Forest Service December 2012**

Public						
Owner	Content	Curator	Geography	Format	Frequency	Facility Type
<a href="#">Wood2Energy</a>	22K commercial-scale facilities, including wood yards, furniture, power, sawmills, paper mills, etc.	Internal	U.S. and Canada	Map and spread sheet	Intermittent, grant funded, 2 yr interval	Industrial and Institutional
<a href="#">Vermont Energy Investment Corporation (former BEREC)</a>	55 case studies on community-scale wood-to-energy projects plus 174 projects of 500K btu/hr to 30 mil btu/hr., includes system performance, savings, oil gas off set.	Open to public	U.S., Canada, and Europe	Searchable database	On-going as info provided	Institutional
<a href="#">Biomass Magazine/ BBI</a>	180 biomass power plants 1 MW or greater. Includes feedstock, nameplate, parent co, location. Host parallel data base on pellets, biodiesel, and ethanol.	Internal	U.S.	Interactive Map and spread sheet, exploring thermal mapping	Real Time Annual, survey, media analysis	Industrial
<a href="#">U.S. Energy Information Administration</a>	Conducts modeling on energy use based on consumption survey data (most recent 2003).	Internal	U.S.	Reports	Intermittent	Residential, Commercial, Industrial end users
<a href="#">U.S. Energy Information Administration</a>	Conducts comprehensive surveys (EIA forms 923 and 860) of US power plants with 1 megawatt or more (over 6000 facilities) in electric power, industrial and commercial sectors. Data includes capacity, location, electric power generation, fuel consumption, and distribution of power.	Publish on-line	U.S.	Spread-Sheets and reports	annual/ monthly	Electric power, industrial, commercial
<a href="#">Forest Inventory Analysis</a> <a href="#">Timber Product Output</a>	This system is a census of saw, composite, fuel wood, post pole, misc products. National estimate of wood cut and growing.	Internal	U.S.	On-line report creation tool	Survey every 2 to 5 years in partnership with state forestry organizations	Industrial
<a href="#">Forest Products Locator.org</a> <a href="#">Southern Group of State Foresters</a>	Mills in the Southeast.	Internal	U.S.	Spread Sheet, Maps	Intermittent	Industrial
<a href="#">USDA - FSA Biomass Crop Assistance Program</a>	Approximately 250 facilities participating in the past BCAP program.	Internal	U.S.	Spread-sheet	Static	Industrial

Private						
Owner	Content	Curator	Geography	Format	Frequency	Facility Type
<a href="#">Forisk</a>	Tracks 454 wood-consuming projects both announced and using state air permit databases and other screening tools. <b>Fee Service</b>	Internal	U.S.	Spread-Sheet	Real time	Industrial
<a href="#">RISI</a>	Tracks 300 wood-fired power, wood pellet, and wood-based biofuel projects in North America. <b>Fee Service and membership</b>	Internal	US and Canada	Spread-Sheet	Real time	Industrial
<a href="#">Innovative Natural Resources</a>	250 facilities in NE @ 10,000 KWh and above. No schools. Verified by NE state forestry. <b>Fee Service</b>	Internal	U.S.	Spread Sheet and Map	Real Time	Industrial and Institutional
<a href="#">Forest 2 Market</a>	Client Project based. <b>Fee Service</b>	Internal	U.S.	Reports, Lists, Spread Sheets	Real Time	Industrial
<a href="#">Biomass Thermal Energy Council</a>	List based on 2010 census data, EPA boiler list, ICF Int'l and members. <b>Membership only access.</b>	Internal	U.S.	Reports, Lists	Intermittent	Industrial and Institutional
<a href="#">U of MT Bureau of Business and Economics - Chuck Keegan</a>	Sawmill and wood products comprehensive tracking for Northwest and West. On-going survey of US manufacturing registry, SIC categories, back data out of total jobs, sales, us tax records.	Internal	U.S.	Spread-Sheet and Reports	Intermittent	Industrial

\*FIA – Suppresses raw data but available by request = facility name and latitude/longitude. Southern region analyzed on five-year rotation. North has not been analyzed fully in 20 years, 10-year cycle in the West. Analysis does not include Alaska interior. Average 20 percent of total annually.

\*Wood2Energy – Searchable by state, county, facility type, closed/ open/ under construction/ on hold/ proposed expansion. Eighteen different classes - chip producer, trust lands, pulpwood, etc. Creating GIS tool to make more functional.

\*EIA – Data for power plants that burn biomass includes all plants in the U.S. with at least 1 MW of generating capacity, although some may be inadvertently missing. The latest data for these plants is 2011 on an annual basis. A monthly sample of the larger plants is conducted (about 1900 plants and all biomass with 25 MW or more). September 2012 data are available. They estimate 200 biomass use facilities out of the electric power generators.

They model energy use into 2040 in the Annual Energy Outlook (<http://www.eia.gov/forecasts/aeo/>). “

\*RISI – Began tracking new projects in 2007 and those projected through 2015. One hundred four pellet mills are

slated for opening between 2007 and 2015. Thirty came on line as of 2012. Eighty pellet or biofuel projects are announced but not built. Their information sells to risk analysis and economic consultants.

\*Donovan - Northeast biomass program DOE funded to mid 90s. Commissioned inventory work of all renewable energy projects from 1980 - 1990, approximately 700 wood fired boilers from Maine to Maryland. She has data beginning with aftermath of 1973, how has market share changed. This history combined with Becker’s work on state-by-state policy is useful to broader policy discussions.

\*Dennis Becker, University of Minnesota, maintains a database of state energy policies and tax codes.

*Side Notes:*

NREL hosts “The Open PV Project” (<https://openpv.nrel.gov/>). A real-time status of the solar photovoltaic market in the U.S. NREL argues that wood-to-energy is already a mature market and does not need developmental support.

The [Biogas Data site](https://www.biogasdata.org/facilities/search) (<https://www.biogasdata.org/facilities/search>) collects and publishes data on all waste water treatment plants in the US. The motive is to inspire development in the biogas sector by identifying waste water

treatment plants and corresponding data (capacity, whether they have a digester or not, and if they do what do they do with the biogas).

[U.S. Biomass Facilities Map](http://www.usabiomass.org/docs/biomass_map.pdf) by the Biomass Power Association [http://www.usabiomass.org/docs/biomass\\_map.pdf](http://www.usabiomass.org/docs/biomass_map.pdf)

# Participants

*The time and expertise of participants in the roundtable discussion is appreciated.*

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