



U.S. DEPARTMENT OF ENERGY

Northwest Clean Energy Application Center

Promoting CHP, District Energy, and Waste Heat Recovery

Wood Biofuels and Bioenergy: Washington Perspectives

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**Ensuring Forest Sustainability in Development
of Wood biofuels and Bioenergy in the Pacific
Coast Region**

February 25, 2010

Washington – Initial Perspectives and comments

- **The process led by the Pinchot Institute needs the U.S. Department of Energy at the table: Includes both ITP & OBP – Outreach to them is needed**
- **Pay attention to the value of the dollar: Commodities serve as a protection against a weak dollar. The ripple effect is a much stronger drive for liquid biofuels**
- **Track the reform progress of the Commodity Futures and Trading Commissions**
- **We need a strong focus on reducing forest fire danger/forest health**
- **Washington Bioenergy Team – Weekly meetings**
- **Co-products improve economics**

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Washington Must do its own Biomass Inventory

Washington completed its inventory in 2005

- County Level
- 44 Feedstocks at sustainable levels
- With biomass chemical characteristics
- 16.9 dry tons with about half woody biomass
- Approximately 70% above the Billion Ton report
- Website

<http://www.pacificbiomass.org/WABiomassInventory.aspx>

Washington Update of Biomass Inventory

Key change is in forestry

- **Looking at 19.6 million dry tons**
 - **Thank you to Oregon State University**
 - **Logging slash is coming out of the woods on an increasing basis – Increasing supply**
 - **Wood waste demands are also increasing**
 - **Eastern Washington Biomass Accessibility Study, Elaine Oneil, University of Washington**
 - **“Investment Grade” supply study of Olympic Peninsula (excluding the national forest) by Olympic Natural Resource Center – Triggered by ARRA Stimulus funds**

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Stimulus Funds: Washington Woody Biomass CHP Wins Big!

4 projects – 114.4 MWc funded for \$26.25 million

- **Requests: 9 projects, 181.4 MWc**
 - **Mostly on the Olympic Peninsula and in the Puget Sound region**
 - **An additional 95 MWc are in the works on the Olympic Peninsula**
- **Implications:**
 - **If you own it, you control it – Long term supply**
 - **Will there be any woody biomass available for biofuels (cellulosic ethanol or drop in fuels)?**

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Washington & Stand Alone Biopower (No CHP)

An area of state concern

- **2009 Legislature ESSB 6170 Section 2 (e) “Avoid interfering with the current working area for forest biomass collection surrounding an existing fixed location biomass energy production site.” – Dept of Natural Resources enabling legislation**
 - **We have growing feedstock competition and policy competition**
 - **We should use our feedstock efficiently (drying and CHP)**
 - **Are we trading one set of green/rural jobs for another and lesser set?**
 - **Bill Carlson’s analysis is appreciated**

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Washington Woody Biomass Studies/Research

A number of studies have been done or are underway

- **EPA Region 10, WA Dept of Ecology ORCAA study: Air Quality & Climate Implications of Options for Woody Biomass - Life cycle assessment and a range of fates**
- **Wood to Energy in Washington, Univ. of Washington, 2009**
- **Washington State Pulp and Paper Mill Boilers, Univ of Washington, 2009**
- **Dept of Ecology – Beyond Waste Strategy – 8 studies**
 - **Topics include steam explosion, pyrolysis emissions, biorefinery designs, biochar, high solids digesters, pretreatment & economics**
- **Biomass Drying and Dewatering for Clean Heat and Power, WSU 2008**

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Washington & Climate Change

Washington has a very active effort

- **Dept of Ecology, WSU Climate Friendly Farming & U of W Program on Climate Change, & member WCI**
- **Northwest Power & Conservation Council Report: Marginal Carbon Dioxide Production Rates of the Northwest Power System, 2008 – Natural gas/coal**
- **Forest Fires: Recognition of huge greenhouse gas emissions with silting of salmon streams**
- **Selling Carbon Offsets from your Clean Energy Project, WSU 2009 See Northwest Clean Energy Application Center at www.chpcenternw.org**

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Bioenergy Policy choices

Which policy tectonic plate will win? Do we maximize:

- **Biofuel production – 36 BGY? – Get out of middle east**
- **Biopower production – Renewable electricity standards**
- **Pellets and torrefaction cubes for Asia and Europe – Kyoto**
- **Biochar – Carbon negative and healthy soils**
- **Maximize rural economic development – Which end use yields the most rural jobs, And, who owns?**
- **Or, are we trading one set of green jobs for another? – The forest products/pulp & paper industry can be helped or hurt**
- **Sustainability is an overriding key value – Right?**
- **What about compost and beauty bark?**



Washington Woody Biomass – Next Steps

The scramble for the feedstock is on!

- **CHP Wheeling to California will increase**
- **Gasification is coming – Nexterra & university campuses**
- **Forest Health – The need to re-start the forest products industry in Northeast Washington**
- **Biochar – “I’ve mined the carbon out of my soil”**
- **Dept of Natural Resources enabling legislation – 2SSHB 2481**



Pacific Region – A six state-based team of AK, HI, ID, MT, OR & WA www.pacificbiomass.org

\$Over 100 Million in biennial state funds

Functions as a team since 1983

**Taken together: A “Complete Program” –
Near, mid and long term research;
development; demonstration; deployment;
policy analysis & legislation; information;
outreach**

Strong ties to USDA.

Northwest Clean Energy Application Center

About the Center

- A multi-state effort – AK, ID, MT, OR, & WA
- WSU Extension Energy Program serves as lead
- 100 plus Regional CHP projects totaling over 1,300 MWc
- District energy & waste heat recovery also included
- 94% industrial projects
- Technical assistance information, reports and case studies
- Problem solving & trouble shooting
- Website www.chpcenternw.org
- Support of regional & state CHP initiatives

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