



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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**Northwest Clean Energy Application Center**

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

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## **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**



# **Pacific Regional Biomass Energy Partnership**

Alaska, Hawai'i, Idaho, Oregon, Montana, and Washington

## **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**

# 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**

# 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**

# 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](http://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?



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## **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**



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**Pacific Region – A six state-based team of AK, HI, ID, MT, OR & WA [www.pacificbiomass.org](http://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](http://www.chpcenternw.org)**
- **Support of regional & state CHP initiatives**

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