



**IDAHO**  
GOVERNOR'S OFFICE OF  
Energy Resources



# Idaho Statewide Wood-to-Energy Team

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# ID-SWET Scope

- ▶ Gather and provide data.
- ▶ Educate the public.
- ▶ Provide assistance for developing projects.
- ▶ Initiate a regional/statewide network of biomass collaboration.





## IDAHO GOVERNOR'S OFFICE OF ENERGY RESOURCES



# University of Idaho

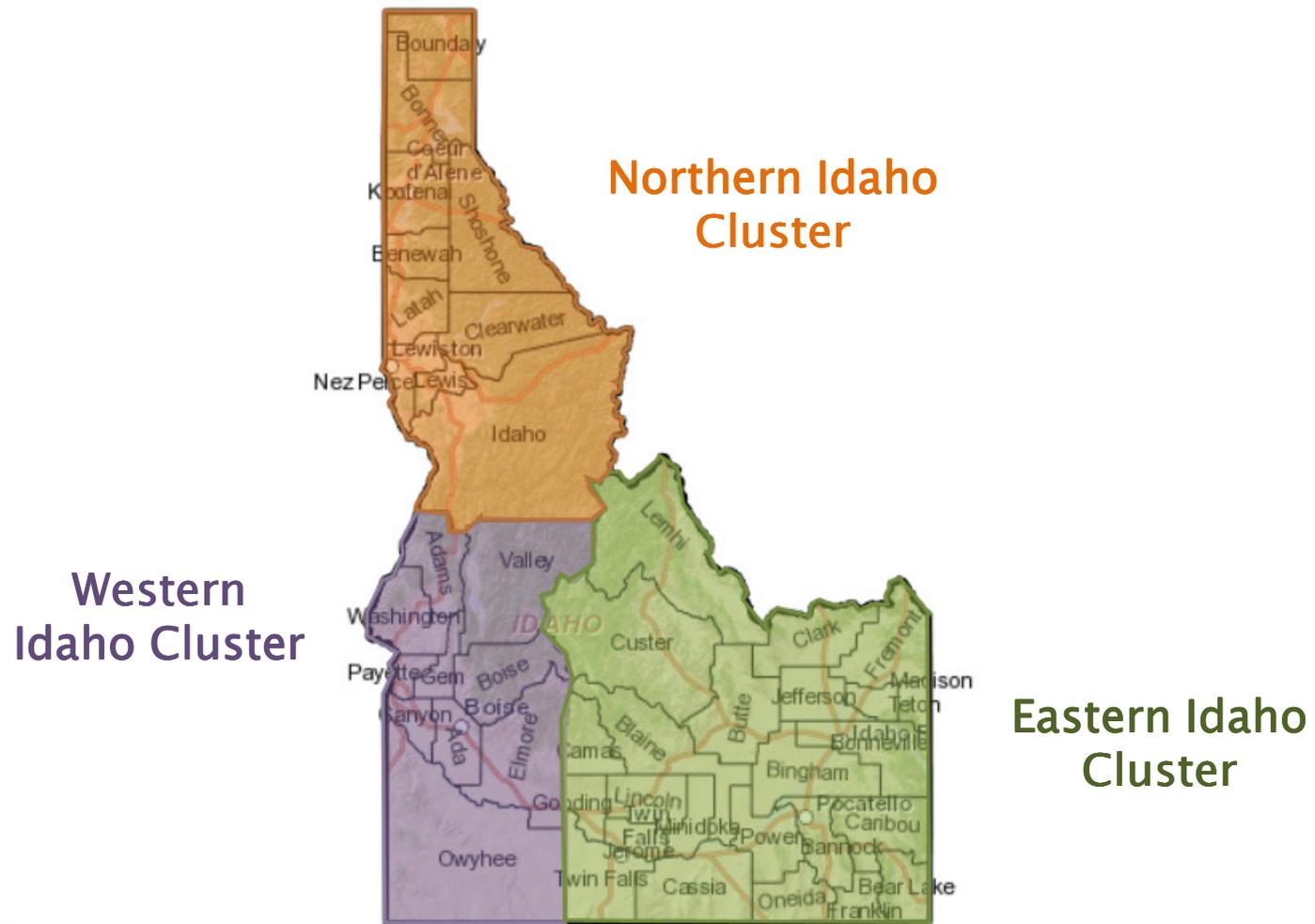
*Idaho Woody Biomass*



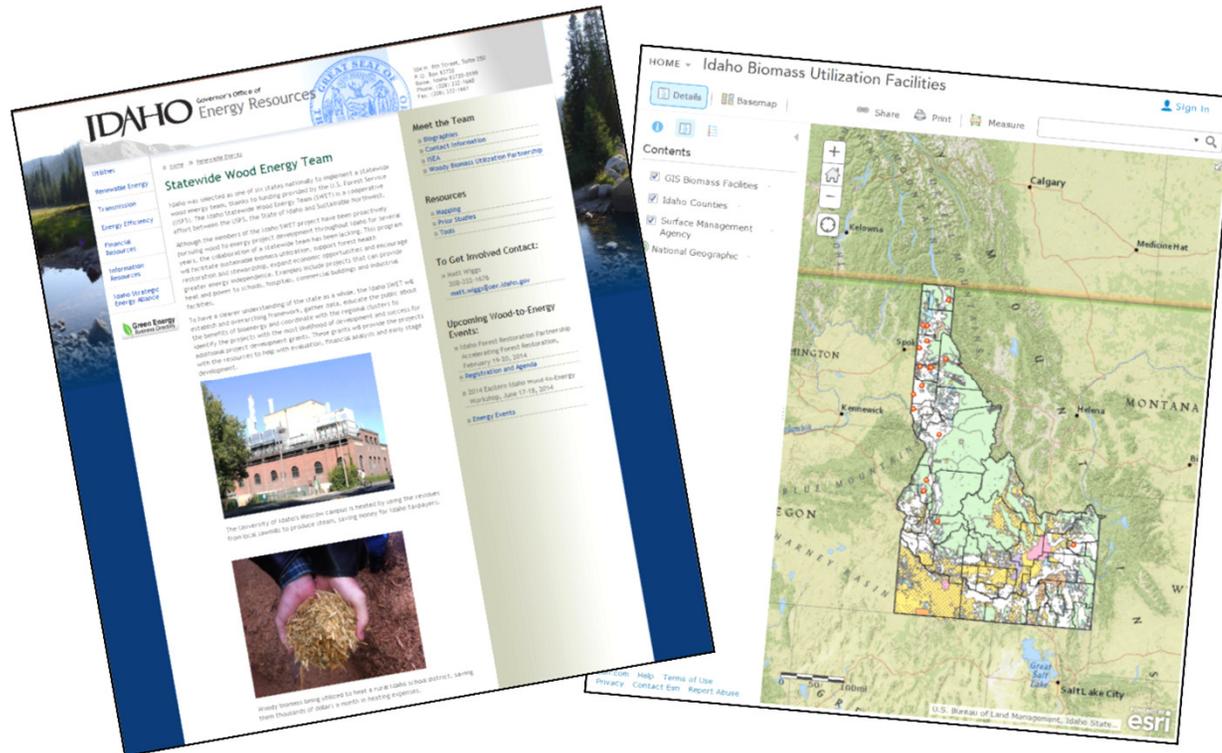
Sustainable  
Northwest



# Idaho Clusters



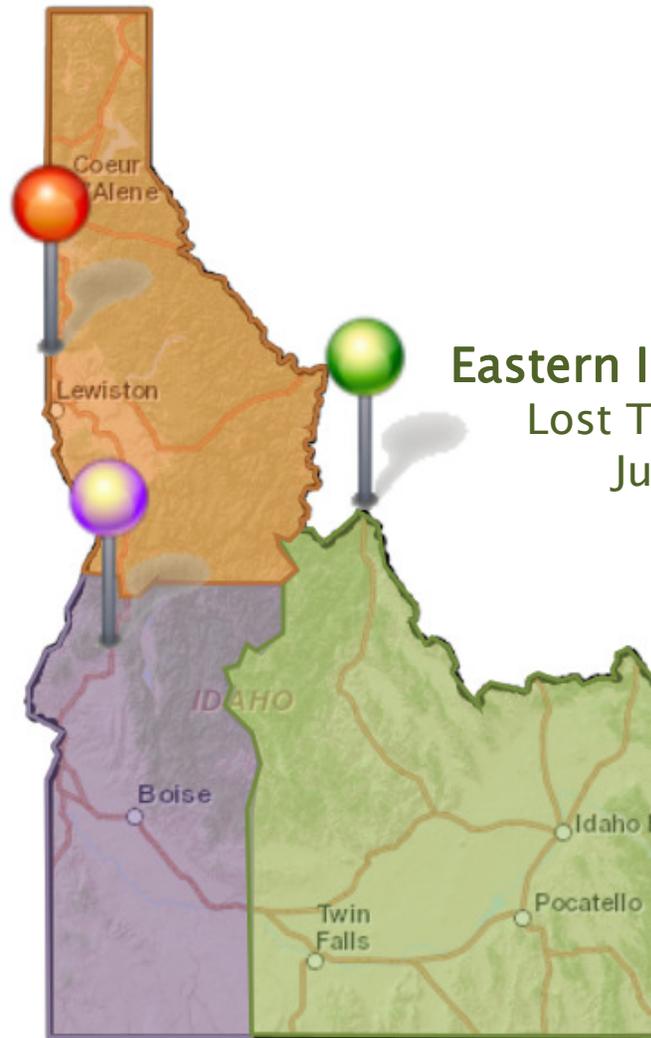
# Website & Database



▶ <http://energy.idaho.gov/renewableenergy/biomass.htm>

# Public Workshops

**Northern Idaho Workshop**  
*Tentatively: U.I. Moscow*  
September 2014



**Eastern Idaho Workshop**  
Lost Trail Ski Resort  
June 17-18

**Western Idaho Workshop**  
*Council School District*  
July 29-30 2014

# Grants

- ▶ Project Development Grants
- ▶ Up to \$12,000 per approved application
- ▶ Existing facility retrofit or new project

# Grants

- ▶ Eligible Applicants:
  - ▶ Non-federal Government, Tribes, Non-Profits, Commercial
- ▶ Grants cannot be used for construction or equipment
- ▶ Match contributions are encouraged, but not required
- ▶ Applications will be scored by the ID-SWET Selection Committee

# The Community Biomass Handbook

## **Community Biomass Handbook Volume I: Thermal Wood Energy**

Becker, D.; Lowell, E.; Bihn, D.; Anderson, R.; Taff, S.



- ▶ <http://woodenergy.umn.edu/communityBiomassHandbook.html>

# The Wood Energy Financial App

The screenshot displays the 'Wood Energy Financial App' interface. At the top, there are navigation tabs: 'Welcome', 'Energy Costs', 'Capital Costs', 'Cash Flow', and 'Report'. A yellow box in the top right corner highlights 'Annual Fuel Cost Savings \$10,600'. The main content is divided into two columns: 'Existing Heating System' and 'Biomass Heating System'. The 'Existing Heating System' section includes input fields for Fuel Type (Electricity), Cost per kWhr (\$0.08), Cost per MMBtu (\$23.45), MMBtu per kWhr (0.003412), Annual Fuel Usage (MMBtu per Year: 750, kWhrs per Year: 219,812), Annual Electricity Cost (\$17,585), Existing Boiler (Boiler Type: Resistive, Efficiency: 98%), and Annual Heat Demand (Delivered Heat: 700 MMBtu, Substitution Percentage: 80%). The 'Biomass Heating System' section includes input fields for Biomass System (Chips), Biomass Type (Chips), Efficiency (74%), Biomass Fuel (Moisture Content: 30%, Cost per MMBtu: \$5.00, Cost per Green Ton: \$52, Cost per Dry Ton: \$74), Biomass Annual Fuel Usage (Green Tons: 66, Dry Tons: 46, Truck Loads: 3, Biomass Fuel Cost: \$3,000), and Remaining Annual Fuel (Remaining Electricity Cost: \$4,000). At the bottom, a progress bar shows the 'Annual Electricity Cost' at \$17,585.

Category	Parameter	Value
Existing Heating System	Fuel Type	Electricity
	Cost per kWhr	\$0.08
	Cost per MMBtu	\$23.45
	MMBtu per kWhr	0.003412
	Annual Fuel Usage (MMBtu per Year)	750
	Annual Fuel Usage (kWhrs per Year)	219,812
	Annual Electricity Cost	\$17,585
	Existing Boiler (Boiler Type)	Resistive
	Existing Boiler (Efficiency %)	98%
	Annual Heat Demand (Delivered Heat)	700 MMBtu
Biomass Heating System	Biomass System	Chips
	Biomass Type	Chips
	Efficiency (%)	74%
	Biomass Fuel (Moisture Content)	30%
	Biomass Fuel (Cost per MMBtu)	\$5.00
	Biomass Fuel (Cost per Green Ton)	\$52
	Biomass Fuel (Cost per Dry Ton)	\$74
	Biomass Annual Fuel Usage (Green Tons)	66
	Biomass Annual Fuel Usage (Dry Tons)	46
	Biomass Annual Fuel Usage (Truck Loads)	3
Biomass Annual Fuel Usage (Biomass Fuel Cost)	\$3,000	
Remaining Annual Fuel (Remaining Electricity Cost)	\$4,000	

▶ <http://woodenergy.umn.edu/BiomassCalculator/>

# Northern Idaho Developing Projects



**Wood Products Campus**  
*Smelterville, Idaho*  
Biomass Heating



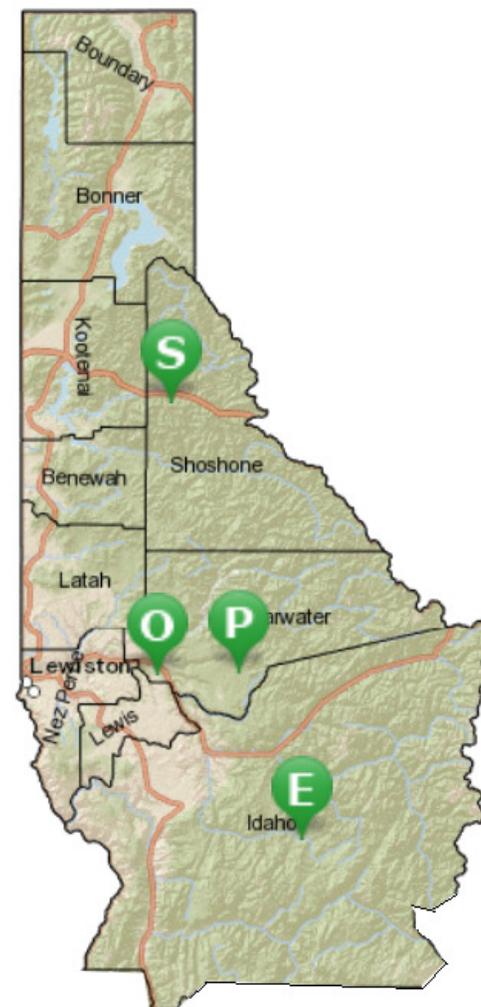
**Government Facility**  
*Orofino, Idaho*  
Biomass Heating



**Community Center**  
*Pierce, Idaho*  
Biomass Heating



**Wood Products Campus**  
*Elk City, Idaho*  
Biomass Heating



# Eastern / Western Developing Projects



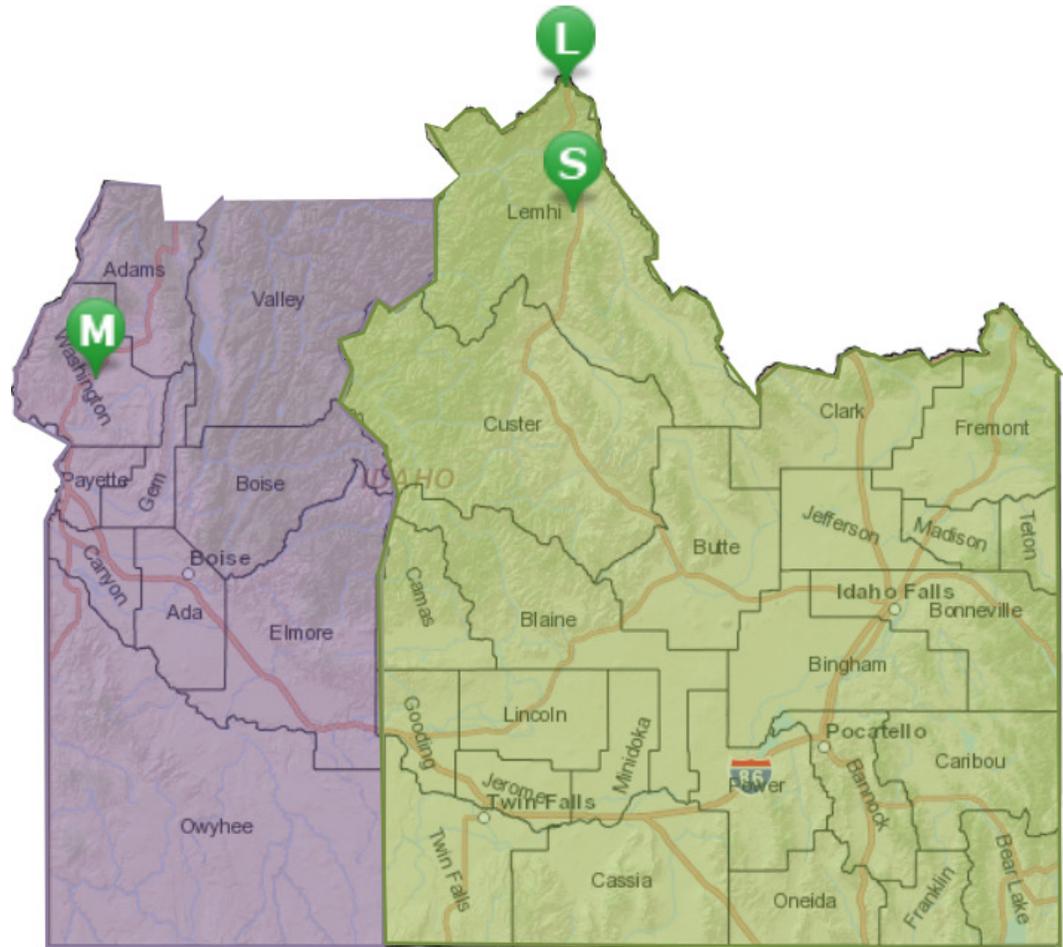
**School**  
*Midvale, Idaho*  
Biomass Heating



**Ski Resort**  
*Idaho / Montana Border*  
CHP



**School**  
*Salmon, Idaho*  
Biomass Heating



# Obstacles

- ▶ Air Quality
- ▶ Alternative Public Financing
- ▶ Building Public Support
- ▶ Finding the “Champions”



# Next Steps

- ▶ Complete Public Workshops.
- ▶ Administer Project Development Grants.
- ▶ Educate / Use Wood Energy Financial App.
- ▶ Finalize Case Studies / Development Guides.
- ▶ Continue the regional & statewide efforts to utilize biomass for energy.

# Workshop Agenda

- ▶ Project Development
- ▶ Case Studies
- ▶ Best Available Technologies
- ▶ Fuel Supply
- ▶ Emissions & Permitting
- ▶ Operations & Maintenance
- ▶ Field Tours

2014 Western Idaho Biomass Energy Workshop  
July 29-30, 2014  
Council High School Library  
101 E. Bleeker Street  
Council, ID 85612

July 29, 2014	WORKSHOP DAY
9:00am – 9:30am	Sign-in and Refreshments
9:30am – 10:00am	Introductions and Workshop Overview Matt Wiggs, Idaho Office of Energy Resources Rick Breneman, Woody Biomass Utilization Partnership Murray Dalgleish, Council School District
10:00am – 10:30am	The Idaho Statewide Wood-to-Energy Team Matt Wiggs, Idaho Office of Energy Resources • Introduction to the ID-SWET • Current Efforts • Project Development Grants
10:30am – 11:30am	Project Development Mike Oswald, Precision Energy Services, Inc. • What makes a viable project? • Feasibility Analysis • Project Management • Financing
11:30am – 12:00pm	Western Juniper Biomass Utilization: Lessons from Oregon Dylan Kruse, Sustainable Northwest
12:00pm – 1:00pm	Lunch
1:00pm – 1:45pm	Available Technologies Mike Oswald, Precision Energy Services, Inc.
1:45pm – 2:15pm	Fuel Supply Julie Kies, Montana Department of Natural Resources & Conservation • Forest biomass supply, standards, pricing • Wood Pellets supply, standards, pricing • Fuel procurement, Supplier Bids, Contracts
2:15pm – 2:45pm	Case Study – Lessons learned from Oregon Dylan Kruse, Sustainable Northwest
2:45pm – 3:15pm	Emissions and Permitting JR Fuentes, Idaho Department of Environmental Quality • DEQ Air Quality Regulations • Air Emissions and Biomass Boilers