

Renewable Energy in Wallowa County: 2009



This working document creates a baseline to track renewable energy investment and its impact in Wallowa County. A new wave of investment was initiated by Wallowa Resources, its for-profit subsidiary, and 15 local investors in 2005 with their investment in a small log manufacturing company – Community Smallwood Solutions LLC. This was the first step toward the development of an Integrated Wood Utilization Campus which would incorporate a combined heat and power plant at its core. Over time, a number of local organization and companies, including Renewable Energy Solutions, have contributed to the development

of new renewable energy projects. These efforts provide jobs, enhance municipal tax bases, support stewardship activities for the region's forests, diversify the region's energy sources, hedge against fossil fuel prices, provide new revenue opportunities for farms and ranches, and promote a strategic model of sustainable community-based economic development.

We offer a special thanks to Energy Trust of Oregon and Oregon Department of Energy, whose programs and incentives have helped community-based renewable energy projects in Wallowa County and across the state of Oregon prosper.

Energy Summary

In 2009, Wallowa County imported approximately 244,500 MMBTU in heating fuels (primarily heating oil and propane) and 206,984,124 kWh in electricity. The total cost of these imports was approximately \$20.5 million.

Small-scale, distributed renewable energy projects have made a noticeable impact on the County's total energy supply. New and projected energy projects utilize a variety of renewable energy technologies and applications, including:

- Woody biomass heat for the Enterprise School Biomass Boiler
- Solar photovoltaics for hay barns, outbuildings, municipal buildings and residences
- Micro-hydroelectric on an irrigation conduit owned by SPS of Oregon
- Combined heat and power biomass system at the Integrated Wood Utilization Campus in Wallowa, Oregon
- Firewood and firelog heat for residences

Since 2005, the efforts of small businesses, farms and ranches, municipalities, and homeowners have resulted in installed capacity of 11,740 MMBTU in heating fuels and 84,728 kWh in electricity – worth over \$230,000 annually. Projects are now underway to produce an additional \$724,000 worth of homegrown energy each year by the end of 2011 – retaining over 4.5% of the County's energy dollars.

Definitions

MMBTU means one million British Thermal Units, a standard energy unit for heat energy.

kWh means one thousand watt-hours, a standard energy unit for electric energy.

Existing Renewable Production is any renewable energy efforts undertaken before 2005, and industrial-scale efforts. This includes sources such as the East Fork of the Wallowa River Hydroelectric and existing residential heating with forest products.

New Renewable Production is augmented energy production since 2005 by locally-owned companies. This includes technologies such as solar electric, solar thermal, new production of biomass heating fuels, new micro-hydroelectric facilities, and cogeneration. It is assumed that all biomass energy used in the County comes from County forests.

Project Renewable Production is the units of energy projected to be "on-line" by December 31, 2011.

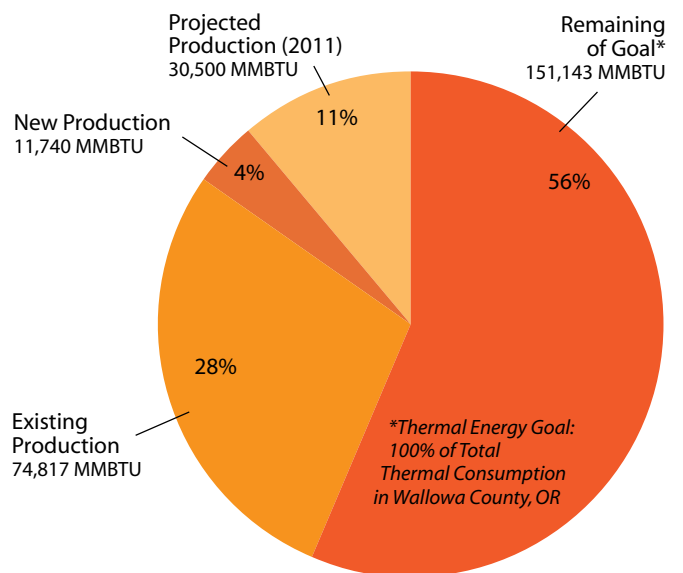
Remaining of Goal is the amount of energy that community leaders believe can be produced locally from renewable sources that is currently supplied by fossil fuels and/or conventional sources of energy.

Sources

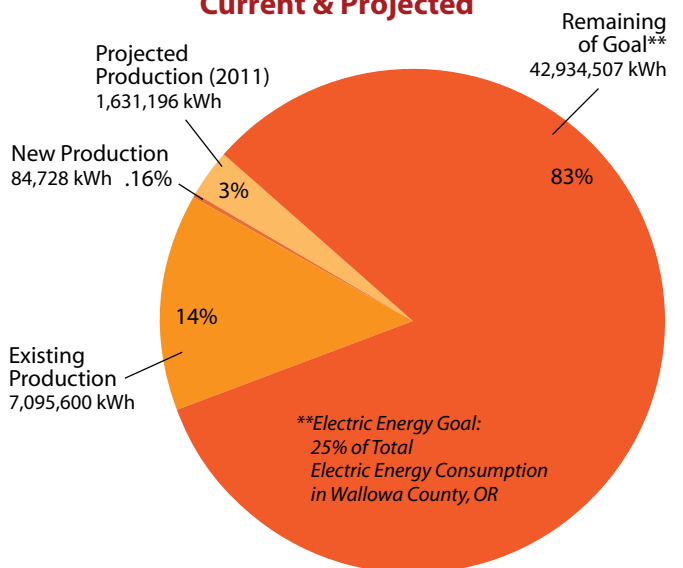
Electricity statistics calculated using information from Oregon Public Utilities Commission Statbook 2008, and using figures from private industry personnel and Federal Energy Regulatory Commission.

Thermal energy statistics calculated using information from private industry personnel, U.S. Census Data (2007), and the Federal Energy Information Administration.

Thermal Renewable Energy Summary Current & Projected



Electric Renewable Energy Summary Current & Projected

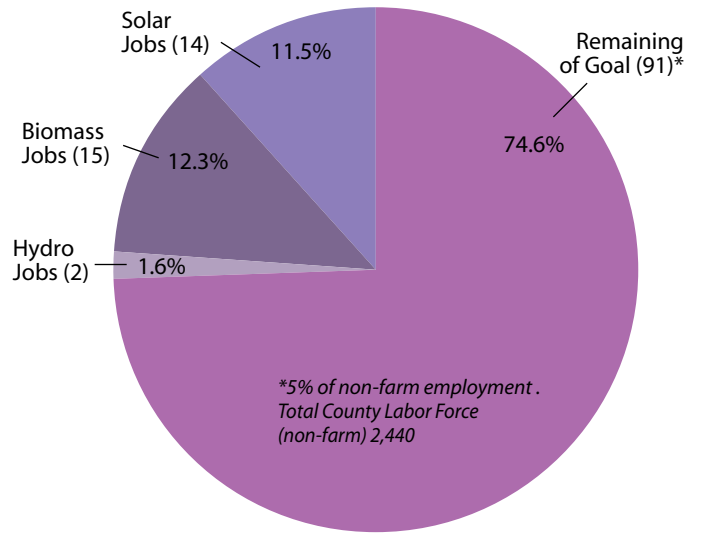


Employment

The pursuit of small-scale, distributed renewable energy production in rural communities like Wallowa County has the potential for significant job creation within our own community, as well as more broadly in Oregon. Since 2005, when the Enterprise School District began planning and designing its thermal energy conversion from heating oil to woody biomass, 31 jobs have been created in Wallowa County. Four companies, Integrated Biomass Resources LLC (Wallowa), Renewable Energy Solutions LLC (Enterprise), Renewable Energy Constructors LLC (Enterprise), and Sun Storage LLC (Joseph) account for nearly all of these new jobs.

Strategic partnerships with companies in Union (Barreto), Hillsboro (Solar World), Bend (PV Powered), and Portland (Sapa) contribute to additional job benefits in Oregon. As Wallowa County's energy companies continue to mature, it's possible that renewable energy jobs could represent 5% of Wallowa County's non-farm employment by 2015.

Renewable Energy Sector Job-Creation Goals



Biomass

The United States is currently the largest producer of electricity from biomass, having more than half of the world's installed capacity. Biomass represents 1.5% of the total electricity supply compared to 0.1% for wind and solar combined. More than 7800 MW of biomass-powered electricity is installed in over 350 power plants across the U.S.

With nearly a million acres of forest, 25% of which is in private ownership, Wallowa County has tremendous biomass energy potential. The primary biomass energy use within the County today is domestic heating in wood stoves and fireplaces. US Census data suggests that 32% of homes in Wallowa County use biomass as their primary heating fuel.

Annual Biomass Consumption, 2009

	green tons
Existing Renewable Biomass Consumption Firewood	6,113
New Consumption in 2009	
Enterprise School Boiler	582
Private Industry	5,313
Total New Consumption	5,895
Total Biomass Consumption	12,008

Two companies in Wallowa, Integrated Biomass Resources and Community Smallwood Solutions, are the primary industrial users of small pulp size logs and biomass today, producing agricultural products, firewood, and densified fuel, in addition to chipped biomass which is used to heat the Enterprise School. Woody biomass supply studies conducted by Wallowa Resources and others suggest that woody biomass utilization could easily expand five to ten times from current levels. Wallowa Resources and Renewable Energy Solutions are currently developing a small combined heat and power plant co-located with the other biomass businesses in Wallowa.

Carbon Offsets

Current biomass utilization in Wallowa County totals 12,000 green tons per year – much of this offsets fossil fuel sources of domestic, municipal, and industrial heat. This biomass utilization, in conjunction with renewable electricity production, represents approximately 1,200 tons of Carbon Dioxide (CO₂) offsets per year – the equivalent of permanently retiring about 1,600 cars from the road. We anticipate local consumption could grow to 60,000 tons of biomass per year, bringing annual carbon offsets to 6,000 tons.

Biomass utilization creates new markets and incentives supporting forest management and hazardous fuel reduction, which reduces the risk of wildfire. Carbon Dioxide emissions from wildfire in the continental United States generate 4-6% of anthropogenic emissions each year. Over the past years the frequency and severity of wildfire in Wallowa County has increased significantly. Of the 750,000 acres of wildfire since 1955, 93% of these acres have burned in the last 24 years. Hazardous fuel reduction helps prevent large-scale wildfire and sustain the carbon holding capacity of dry forest ecosystems.

Carbon Offset Equivalent – Cars Off the Road (Goal* of 5,364 cars)



Existing Production
= 1,382 cars off the road

Projected Production (2011)
= 544 cars off the road

New Production
= 201 cars off the road

Remaining of Goal
= 3,237 cars off the road

*Carbon Offset Goal is the amount of carbon offsets that would be created by fulfilling our Thermal and Electric generation goals – 100% of Wallowa County thermal energy, 25% of Wallowa County's electrical energy.