

Renewable Energy Action Plan: Update on Goals

5-30-06 Working Draft

LONG TERM GOALS: 2007-2025

Electricity Generation

	Goal	Status
1	<p>New (post 1999) renewable generation will meet 10 percent of Oregon's total load by 2015, which is roughly about 1 percent growth in renewable generation per year. This will increase to or exceed 25 percent of the load by 2025.</p> <p>Note: Currently, hydro meets about 44% of load, wind and geothermal 1%, biomass and municipal solid waste 3%. These are pre-1999 resources except for some wind. Sites of new renewables do not have to be within Oregon's borders.</p>	<p>Oregon's total load is over 5,000 average megawatts (aMW). (For wind, 1 MW = approximately 0.3 - 0.4 aMW).* Assuming a 1 percent growth rate, total load is estimated to be 5710 aMW in 2015 and 6307 aMW in 2025.</p> <ul style="list-style-type: none"> Orion Energy's proposed Bigelow Canyon wind farm (450 MW peak generating capacity) in Sherman County is in the final stages of the state's Energy Facility Siting Council review for potential issuance of a site certificate. The first phase (126 MW) could be online by the end of 2007. The stipulation for the acquisition of PacifiCorp by MidAmerican Energy Holding Company (March 14, 2006) contains several provisions related to renewable energy. MidAmerican agreed to spend roughly \$88 million to upgrade transmission from the Walla Walla and Yakima areas to the Mid-Columbia area at Vantage in Washington. MidAmerican recommitted to acquire 1,400 MW of renewable projects for PacifiCorp's six state territory by 2015, with at least 100 MW within one year and 400 MW by 2010. <p><i>See also Short Term goals on p. 3 (to be achieved by the end of 2006).</i></p> <p>* An average megawatt (aMW) is the average number of megawatt (MW) hours produced over a one-year time period. For example, a typical wind turbine runs 30-40 percent of the time. So a 100 MW wind farm generates about 30-40 aMW annually.</p>
2	<p>Twenty five percent of state government's total electricity needs will be met by new renewable energy sources by 2010 and 100 percent by 2025.</p> <p>Note: This goal is dependent on funding. See discussion of purchase of renewable resources under State Government Goals.</p>	<p>The Governor has moved the 100% state government renewable goal to 2010.</p>

Transportation Fuels

	Goal	Status
1	All diesel fuel sold in Oregon will contain 5 percent biodiesel (B-5) by 2010, growing to 20 percent (B-20) by 2025. All biodiesel will meet applicable American Society for Testing and Minerals (ASTM) standards.	Currently less than one million gallons of biodiesel are used each year in Oregon. To meet 5 percent by 2010 would require 38 million gallons of biodiesel to be used by Oregonians in 2010. The two facilities under construction in 2006 will produce in excess of 30 million gallons per year in 2008.
2	All standard gasoline sold in Oregon will contain 10 percent ethanol by 2010.	<p>In 2005 nearly 50 million gallons of ethanol was used in Oregon gasoline as an oxygenate and additive. In 2006 that amount is expected to drop due to California's mandate for ethanol, which will reduce available supply. To meet 10 percent of gasoline fuel replacement with ethanol in 2010 will require the use of 160 million gallons of ethanol.</p> <ul style="list-style-type: none"> • Cascade Grain Products, LLC received approval for a \$20 million state energy loan (SELP) in May '06 to help finance the 100-million gallon/year ethanol production facility in Columbia County. Construction to begin June '06. Production is expected by 2007 or early 2008. Feedstock is corn from the Midwest transported by rail/truck. 60% of product expected for local use, 40% for export.
3	Five percent of all gasoline sold in Oregon will be an E-85 blend of ethanol and gasoline (85 percent ethanol, 15 percent gasoline) by the year 2015, growing to 15 percent by 2025.	<p>American motor vehicle manufacturers are providing more E85 ready vehicles. Several Ford and General Motors models on the road are designed to use E85.</p> <ul style="list-style-type: none"> • BioSequential will open Oregon's first E85 retail station in the summer of 2006 in Eugene. Meeting 5% E85 use by 2007 is not likely given the low number of retail facilities.
4	One hundred percent of the diesel used by state government's fleet vehicles will be B-20 by 2010.	<p>The Department of Administrative Services fleet(s) currently use B20 for diesel vehicles at their motorpools. Forestry, Lottery, Fish and Wildlife, OUS, Parks and Recreation, Transportation, and Liquor Control operate independent fleets by statute, and the use of biodiesel is not reported from those fleet vehicle operations.</p> <p>(continued...)</p>

5	Ten percent of the gasoline used by state government's fleet vehicles will be E-85 by 2010. This percentage will grow to 25 percent by 2025.	The Department of Administrative Services fleet(s) use E85 at this time while fueling E85-ready vehicles at their motorpools. Analysis is needed to determine the various fleet gasoline fuel use to determine if the DAS E85 fleet accounts for 10% of State agency-wide gasoline motor fuel. E85 requires specific fuel handling equipment. Forestry, Lottery, Fish and Wildlife, OUS, Parks and Recreation, Transportation, and Liquor Control operate independent fleets by statute and the use of E85 is not reported from those fleets vehicle operations.
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SHORT TERM GOALS (to be achieved by the end of 2006)

Electricity Generation

	Goal	Status
1	<p>Three hundred megawatts of new wind energy resources will be developed of which 10 percent will be from community or locally owned wind energy projects.</p>	<ul style="list-style-type: none"> • Klondike II (75 MW peak generating capacity) came online in August 2005. • Klondike III in Sherman County (272 MW peak generating capacity) is in the final stages of EFSC review for potential issuance of a site certificate. It could be online by the end of 2007. • PPM announced that phase one of the Leaning Juniper project (100 MW peak generating capacity) near Arlington is under construction. Completion is likely by the end of 2006. It is not yet known what percentage of the output will be used in Oregon. • Community wind projects are stalled due to a delay in setting appropriate PURPA rates and a shortage of available wind turbines.
2	<p>Find <i>and implement effective</i> solutions to the transmission capacity bottleneck(s) between eastern and western Oregon to provide access from renewable and other resources in eastern Oregon to load centers.</p> <p>Note: Non-wire solutions can be implemented in a relatively short time frame.</p> <p>Delivery of renewable resource energy from locations in eastern Oregon to the Willamette Valley will also require additional north-to-south transmission capacity on BPA's grid.</p>	<ul style="list-style-type: none"> • No real implementation • Finding solutions includes several processes, e.g., Columbia Grid is being formed, NW Powerpool is conducting planning studies, and BPA released the findings of its study of real-time congestion and reliability studies in April 2006. It identifies problems and solutions, some of which would be helpful for wind. • The stipulation (March 14, 2006) for the acquisition of PacifiCorp by MidAmerican Energy Holding Company contains several provisions related to renewable energy. MidAmerican agreed to spend roughly \$88 million to upgrade transmission from the Walla Walla and Yakima areas to the Mid-Columbia area at Vantage in Washington. • BPA borrowing cap needs to be raised. Good regional support to do so.
3	<p>All utilities in Oregon will offer customers a "stable-price" renewable energy product.</p>	<ul style="list-style-type: none"> • Eugene Water and Electric Board is the only utility in the

	Note: Currently, only one Oregon utility offers such an option.	<p>state that currently offers a stable-price renewable energy product.</p> <ul style="list-style-type: none"> • According to the Renewable Northwest Project, PGE is the only other utility in the state seriously considering a stable-price product. • PGE is currently finishing talks with stakeholders and should be filing soon for a tariff for a stabilized renewable energy product for residential and small non-residential customers.
4	Five hundred additional solar photovoltaic electric systems will be installed in the years 2005 and 2006 for a total of about one-megawatt.	<ul style="list-style-type: none"> • 2005 was a problem year because tax legislation was passed that encouraged people to wait until 2006 to build new systems. • No more than 100 systems were installed in 2005. • As many as 150 will be built in 2006. • Goal of 500 additional systems likely will not be met, but goal of about one megawatt likely will be.
5	Five megawatts of new biogas generation facilities will be obtained from wastewater treatment, dairies and landfills.	<ul style="list-style-type: none"> • Two MW of electric generation from landfill gas are under construction at Findley Butte landfill. • A Gervais and Tillamook dairy are both installing a total of 1 megawatt of electric generation capacity. • A business plan is developed for Pilot Butte landfill gas recovery and electric generation of one megawatt.
6	Twenty-five megawatts of new biomass-fueled electric generation will be built or under construction, in addition to the aforementioned 5 megawatts of biogas facilities.	<ul style="list-style-type: none"> • Five biomass thermal and electric energy generation projects of nearly 12 MW are planned, permitted and in some stage of construction at wood products facilities across the state.
7	Twenty-five megawatts of new combined heat and power generation systems that are at least 10% better than the State standard for siting exemption will be built or under construction.	<ul style="list-style-type: none"> • A 5,000 BTUH/kWh combined heat and power project is complete at Georgia Pacific container-board plant in Toledo, providing 6 megawatts of capacity.
8	Two hundred 5-kilowatt fuel cells will be installed. Note: Some fuel cells will use renewable fuels but others will use fossil fuels to reach this goal.	To be provided.
9	Twenty megawatts or more geothermal electric generation will be in the process of being developed.	<ul style="list-style-type: none"> • Nevada Geothermal Power, Inc. continues to explore the resource at Crump Geyser, just north of Adel in Lake County. • Pacific Gas and Electric Co. (PG&E) entered into a renewable power purchase contract in March 2006 with the Military Pass-Newberry Volcano Project, LLC southeast of

		Bend for 120 MW of geothermal energy.
10	One to four megawatts of new environmentally sustainable hydroelectric generation will be on line or in the process of being developed (primarily irrigation piping channels).	<ul style="list-style-type: none"> • A one MW irrigation district micro-hydroelectric project is underway in Crook County. • A dated feasibility study for as much as 0.5 MW is being re-opened at the City of Astoria water district to replace pressure-reducing valves with micro-hydro generation.
11	An assessment of the feasibility of a renewable portfolio standard (RPS) for the state will be completed.	<ul style="list-style-type: none"> • The Renewable Energy Working Group is currently assessing the feasibility and design of a RPS.

Transportation Fuels

	Goal	Status
1	Diesel sold in Oregon will contain 2 percent biodiesel (on average). All biodiesel will meet applicable ASTM standards.	<ul style="list-style-type: none"> • To achieve 2% of diesel replacement with biodiesel will require the use of 13 million gallons of biodiesel in 2007. Two biodiesel facilities are under construction that will produce over 50 million gallons per year by 2008, making this a likely but possibly later accomplishment.
2	Fifteen million gallons of biodiesel will be produced annually from Oregon crops or products and waste oils collected in Oregon.	<ul style="list-style-type: none"> • Nearly 1 million gallons of biodiesel are produced in Oregon from Oregon feedstocks by SeSequential Biofuels. Expansion is planned at this plant in Salem. • Two other biodiesel facilities are under construction that will push total production past 50 million gallons per year by 2008.
3	Gasoline sold in Oregon will contain 2 percent ethanol (on average).	<ul style="list-style-type: none"> • Gasoline may be blended with up to 10% alcohol while still maintaining its American Society for Testing and Materials (ASTM) requirements. Construction of the Cascade Grain Products, LLC facility (see Long Term Transportation goals) will produce 100 million gallons of ethanol per year, which will nearly double the goal.
4	One hundred million gallons of ethanol will be produced annually.	<ul style="list-style-type: none"> • Greenstock Resources, LLC of New York (d.b.a. Oregon Ethanol) has submitted a proposal to EFSC for a 30-million gallon per year facility to be located at the Port of Morrow. Construction has not yet begun. Feedstock is Midwest corn.

State Government

	Goal	Status
1	Ten percent of state government's total electricity needs will be met by renewable energy sources (through green tag or "stable price" product purchases and/or direct development of renewable energy by state government).	Governor Kulongoski directed state agencies to develop a specific "roadmap" for his approval in July to accomplish this objective by 2010.
2	Twenty-five percent of the diesel used by state government's fleet vehicles will be B-20.	Diesel vehicles in the Department of Administrative Services fleet(s) use B20 at this time.
3	Seventy-five percent of the gasoline used by state government's fleet vehicles will be E-10.	DAS fleet sedans, that are not natural gas or hybrid-electric, are E85 ready. New vehicles acquired meet one of these three alternative fuel criteria. Detailed analysis of the fuel used by all state agency fleet vehicles is needed.
4	A streamlined one-stop leasing process for state lands to develop renewable energy resources will be in effect.	To be provided.

Demonstration Projects

	Goal	Status
1	Five public or private energy-efficient buildings that make use of passive solar design features.	The State Energy Efficiency Design (SEED) program is consulting on the design of no fewer than 10 building projects by December 2007. At least five will demonstrate passive solar use of day-lighting, and/or integrated design that takes into account the orientation of glazing and spectrally selective glazing for specific orientations.
2	One biodiesel plant using mustard, other agricultural products or "waste" products.	Pendleton Grain Growers Coop is constructing a canola oil seed biodiesel production-facility. It will produce 1- 4 million gallons in its first year of operation, starting in fall 2006.
3	One ethanol plant.	Cascade Grain facility (100 million gallons per year production capacity) begins construction in June 2006. Production is expected by 2007 or early 2008.
4	Projects that generate electricity either singularly or through any combination of the sun, wind, geothermal sources, irrigation district micro-hydro, biomass burning, on-farm dairy waste digesters, municipal anaerobic digesters, waste heat recovery systems and renewably fueled fuel cells.	Oregon incentive programs (Energy Trust of Oregon) and the Business Energy Tax Credit, have partnered to develop no fewer than 10 significant and diverse renewable resource projects for case studies by 2007.
5	Five sites that directly use geothermal energy.	<ul style="list-style-type: none"> An elementary school in Klamath Falls, an abandoned commercial greenhouse and a commercial building in Hines

		<p>are either being retrofitted or restored to be heated with geothermal energy.</p> <ul style="list-style-type: none"> • ODOE assisted in getting a technical assistance grant for the Herald and News building in K-Falls, enabling the GeoHeat Center to work on this heating and cooling project. Others are operating and more publicity could be generated.
6	One industrial park or renewable energy cluster that integrates renewable energy and sustainability related products or services	The Bend Chamber of Commerce, City of Bend, and the Central Oregon Intergovernmental Council have identified an enterprise zoned site and have begun specifying conditions for its use as a sustainable business development center.