Northwest CHP Application Center
Combined Heat and Power for the states of
Alaska, Idaho, Montana, Oregon and Washington
in cooperation with the U.S. Department of Energy

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CHP INITIATIVE AND POLICY EFFORTS IN THE NORTHWEST

Chronicled by the Northwest CHP Application Center
Dave Sjoding, Manager

Introduction

The states of Alaska, Idaho, Montana, Oregon and Washington have been steadily pushing forward to enable Combined Heat and Power (CHP) in our region. It has become a very active effort both at a regional level and state by state. Early efforts were more regional in nature led by the Northwest CHP Initiative and an active group of industrial firms, now called the Northwest CHP Advocates (principally forest products and food processing interests). More recently state-by-state efforts have been emerging, often with funding support (Alaska, Montana and Oregon).

Regional and national

There are five regional and national efforts:

1) The Northwest Power and Conservation Council has adopted and published "The Fifth Northwest Electric Power and Conservation Plan," online at www.nwcouncil.org/energy/powerplan/default.htm. For the first time CHP is included and supported in the plan. See page 58 of Volume One and for more details. Also see Volume Two (the generating resources chapter) pages 5-5 to 5-7, which includes discussion of CHP/cogeneration, distributed generation and barriers to adoption. The federal enabling legislation for the Northwest Power and Conservation Council is an interstate compact. This enabling legislation provides a priority order of electrical resource acquisition as follows: 1) Conservation; 2) Renewable resources; 3) Cogeneration; and, 4) Central power plants.
2) The Modern Grid Initiative, sponsored by the U.S. Department of Energy's Office of Electricity Delivery and Energy Reliability (OE), held a Northwest Summit on April 17-18, 2006. Appendix A5 of the document called "A Systems View of the Modern Grid," focuses on accommodating a wide variety of generation options with a smooth "plug and play" approach. OE is looking for volunteers to work on this white paper. Information about the initiative is at www.themoderngrid.org/index.cfm. GridWeek 2007 www.gridweek.com/2007/default.asp is a major conference scheduled for April 23-26, 2007 in Washington D.C.

3) The Western Governors' Association (WGA) has adopted the recommendations of the Clean and Diversified Energy Initiative including CHP. See the final report at www.westgov.org/wga/meetings/am2006/CDEAC06.pdf and for information about the initiative see www.westgov.org/wga/initiatives/cdeac/index.htm. Three regional application centers (Intermountain, Pacific and Northwest) have helped form a CHP Taskforce and are part of other taskforces. The CHP white paper is complete and public comments received. See the January 2006 final report titled, "Combined Heat and Power White Paper" at www.westgov.org/wga/initiatives/cdeac/CHP-full.pdf. A related biopower report is also available at www.westgov.org/wga/initiatives/cdeac/biomass.htm. A July 20, 2005, WGA letter to the congressional national energy policy conference committee is supportive of CHP. For more information contact Dave Sjoding, Northwest CHP Application Center at 360.956.2004.
4) The Bonneville Power Administration (BPA) is not currently buying CHP or providing incentives for it. As a result, CHP is not a decrementing issue for BPA. It owns 80 percent of the Northwest transmission grid and has congestion problems. Grid West, the proposed regional transmission organization for the entire Western United States, has died. In its place, a smaller Northwest effort is now emerging called ColumbiaGrid (www.columbiagrid.org/). In April, 2006, BPA released a white paper on transmission congestion (www.bpa.gov/corporate/pubs/Congestion_White_Paper_April06.pdf). The comment period for this white paper closed May 12, 2006. To review the comments see www.bpa.gov/corporate/public_affairs/comment_listings/congestion_management_white_paper/ . In addition, BPA has led an effort called the Non-Wires Solutions Round Table (www.transmission.bpa.gov/PlanProj/Non%2DWires%5FRound%5FTable/). "Before BPA decides to build a line, we want to make sure we have fully considered whether Non-Wires Solutions can be used," said Vickie VanZandt, senior vice president Transmission Business Line. "We want to look at all options, not just traditional construction." (Source: BPA Non-Wires website). The types of alternatives that will be explored by the new round table include energy efficiency programs, demand reduction initiatives, pricing strategies and distributed generation. Load control at $200 per kilowatt-hour (kWh) is currently the cheapest approach. In the longer term, as the cheaper demand response and energy efficiency options are exhausted, this is an opportunity for CHP. An example of a non-wires study and the need for transmission is at www.transmission.bpa.gov/PlanProj/Non-Wires_Round_Table/NonWireDocs/Assess_of_EE_DR_DG-FINAL.pdf . See page 8-3 for an example of a distributed generation assessment.
   The Federal Energy Regulatory Commission (FERC) has granted BPA a declaratory judgment of no jurisdiction over BPA's private partners for major transmission projects under a build and lease arrangement.
5) The National Electric Transmission Congestion Study (www.oe.energy.gov/epa_sec1221.htm) required by Section 1221 of the 2005 Energy Policy Act is now available. The public comment period closed October 10, 2006. This study labels Seattle to Portland as a "Congestion Area of concern".

Alaska

Alaska is a state with many village-level micro-grids and several larger city systems. The villages barge in diesel to provide expensive power. In response, the Alaska governor appointed a Rural Energy Action Council. They have now completed a report titled "Findings and Action Recommendations for Governor Frank Murkowski," April 15, 2005, at

www.aidea.org/AEA/REAC/REACFindingRecommendations041505.pdf. See the *Diesel Powerhouse Efficiency Improvements* section Recommendation #7.3 on page 17. The Alaska Rural Energy Plan of July 2006 has a chapter devoted to diesel cogeneration systems (volume 2, section 2) www.aidea.org/aea/publicationAREP.html. The Rural Energy Conference is held every 18 months. The most recent conference was April 24-26, 2007, in Fairbanks. Paralleling this effort, the Alaska Energy Authority (AEA) has conducted a major assessment of the condition of each Alaska village micro-grid and needed efficiency improvements. Where appropriate, they are funding CHP waste heat recovery projects. For more information visit www.akenergyauthority.org/programsalternativediesel.html, or contact Jim Jensen at 907.269.4682.

Idaho

The Idaho Legislature has developed the 2007 Idaho Energy Plan, January 26, 2007 www.legislature.idaho.gov/sessioninfo/2007/energy_plan_0126.pdf through the Energy, Environment and Technology Interim Committee (www.legislature.idaho.gov/sessioninfo/2006/Interim/interimcommittees.htm#energy). The plan has a number of very pro CHP policies and actions. For example, on page 2 "It is the Idaho policy to encourage the development of customer-owned and community-owned renewable energy and combined heat and power facilities." See also pages 4-5 actions E-12 (tax incentives), E-13 (credit backstop), E-16 (PURPA administered to encourage CHP), and E-17 (interconnection). The plan was developed under House Concurrent Resolution 62 (See the bill history and text at www3.state.id.us/oasis/2005/HCR016.html. Idaho worked with the National Conference of State Legislatures. An appropriation of $300,000 was provided. Six bills have now been signed into law to implement the strategy. Among them is HB 30 which enables municipal electrical utilities to develop energy facilities independently or with others www3.state.id.us/oasis/H0030.html#billtext . This bill can further gateway CHP projects. HB 32 www3.state.id.us/oasis/H0032.html is a further enablement of the Idaho Energy Resources Authority (a joint electric cooperatives and municipal utilities operating agency) www.iera.info/index.html .

Idaho did not go through a major electrical power restructuring process. Ten-year Integrated Resource Plans (IRPs) are required on a biennial basis to be submitted to the Idaho Public Utilities Commission (IPUC) (www.puc.state.id.us/). Idaho Power Company's 2004 IRP includes 48 megawatts (MW) of CHP at customer facilities, with a 12 MW request for proposals scheduled for 2005. See the 2004 IRP at www.idahopower.com/pdfs/energycenter/irp/2004/2004_IRP_final.pdf. The 2006 IRP development process has been completed with an advisory committee (www.idahopower.com/energycenter/irp/2006/). It has been filed and approved on March 26, 2007 by the IPUC under IPC-E-06-24 and order number 30281 www.puc.state.id.us/search/orders/dtsearch.html . It contains 50 MWs of CHP to be developed by 2010 and a total of 150 MWs over a 20 year period.

Under the Public Utilities Regulatory Policy Act of 1978 (PURPA) and now the Energy Policy Act of 2005, Idaho also establishes avoided-cost rates with up to 20-year contracts for qualifying facilities. Avoided-cost rates vary based on whether the project is "fueled" or "non-fueled." For details on avoided costs in Idaho, go to

www.puc.state.id.us/ELECTRIC/on29646.pdf. Fueled rates for 20-year contracts with 2005 as the "on-line year" range from15.76 to16.80 mills/kwh (depending on the utility).

Montana

About 68 percent of Montana's deregulated electric sales are provided by (mostly) bankrupt investor-owned utilities (NorthWestern Energy and two others). Most of Montana's power transmission and distribution is provided by public utilities (BPA, Western Area Power Administration, rural electric cooperatives and one municipal power system). The public utility sector is not bound by the same regulated transmission requirements as investor-owned utilities. This results in two very distinct approaches to CHP projects. Montana provides system benefit charge funds for innovative CHP projects in investor-owned utility territory.

The Montana legislature meets every other year and its 2007 session is currently underway. In 2005, the Montana Legislature passed and the governor signed a number of CHP-related pieces of legislation:

1) House Bill 212 authorizes certain local governments to enter into energy efficiency performance contracts including CHP. (See the bill at www.laws.leg.state.mt.us/pls/laws05/law0203w$.startup);
2) Senate Bill 415 establishes a renewable power production standard including renewable CHP (www.data.opi.state.mt.us/bills/2005/billhtml/SB0415.htm);
3) SB 50 provides for alternative energy loans including renewable CHP. (www.data.opi.state.mt.us/bills/2005/billhtml/SB0050.htm);
4) SB 83 clarifies that renewable energy projects including renewable CHP are eligible for renewable resource grants and loans. (www.data.opi.state.mt.us/bills/2005/billhtml/SB0083.htm); and,
5) SJR 36 requires an interim legislative study of the benefits and obstacles to expanding distributed generation in Montana. (www.data.opi.state.mt.us/bills/2005/billhtml/SJ0036.htm)

The Montana Department of Environmental Quality has recently issued two CHP reports to the Montana Public Service Commission and the Montana Legislative Environmental Quality Council.

Oregon

The Governor of Oregon has proposed renewable portfolio standard legislation. Senate Bill 838 www.leg.state.or.us/07reg/measpdf/sb0800.dir/sb0838.intro.pdf has been voted out of the Senate Energy Committee with amendments. Check for an engrossed bill at http://oregon.gov/ENERGY/RENEW/RPS_home.shtml .

Oregon has made a very active six-prong effort to enable CHP. The different prongs are well coordinated. An initial CHP workshop was held November 30, 2004, led by the Oregon Department of Energy (ODOE), the Oregon Public Utilities Commission (OPUC), and the Energy Trust of Oregon (ETO).

1) The governor of Oregon has set a goal of 25 percent renewable energy by 2025 and assigned ODOE to develop renewable portfolio standard legislation for the 2007 legislature. He also released the "Oregon Renewable Energy Action Plan" in April, 2005

(www.egov.oregon.gov/ENERGY/RENEW/docs/FinalREAP.pdf). Pages 7 and 17-22 focus on the biomass opportunity fuel for power and CHP.

2) The Governor's Advisory Group on Global Warming published the "Oregon Strategy for Greenhouse Gas Reductions," in December, 2004 (www.egov.oregon.gov/ENERGY/GBLWRM/docs/GWReport-FInal.pdf). It also supports renewable CHP. See pages 66-74.
3) The Oregon Public Utility Commission (OPUC) completed a study titled "Distributed Generation in Oregon: Overview, Regulatory Barriers and Recommendations," in February, 2005 (www.egov.oregon.gov/PUC/electric_gas/dg_report.pdf). The OPUC 2005-2006 Objectives (www.puc.state.or.us/PUC/commission/2005_objectives.shtml) are very supportive of enabling CHP. A major current focus of the OPUC is interconnection (www.oregon.gov/PUC/admin_rules/intercon.shtml). A kick-off workshop was held on June 20, 2006 with a follow-on workshop to be held on October 18-19, 2006 at the OPUC. Following the DG study, the OPUC has worked to eliminate these barriers as they came before the commission in regulatory proceedings. In March, 2005, Order No. 05-133 (UM 1066) (www.apps.puc.state.or.us/orders/2005ords/05%2D133.pdf) set forth a pathway to resolve new generation issues. In May, 2005, Order No. 05-584 (UM 1129) (www.apps.puc.state.or.us/orders/2005ords/05%2D899.pdf) updated Qualifying Facilities rules under PURPA by increasing the size from 1 to 10 MW and changing the contract duration from 5 to 20 years. UM 1056 focuses on Integrated Resource Plans (See Portland General Electric as an example, (www.apps.puc.state.or.us/orders/2005ords/05%2D1138.pdf). Competitive bidding guidelines for resource acquisitions over 100 MWc with a life span greater than 5 years have been adopted under Order 06-446 (www.apps.puc.state.or.us/orders/2006ords/06-446.pdf). Other filings and rate cases continue on topics such as standby charges.
4) The Oregon Department of Energy provides Business Energy Tax Credits to help finance CHP projects (www.egov.oregon.gov/ENERGY/CONS/BUS/BETC.shtml).
5) The Energy Trust of Oregon manages a 3 percent public benefits charge for investor-owned electric utilities and a smaller percentage for non-industrial natural gas. It has a biopower program (www.energytrust.org/RR/bio/index.html) that is focused on renewable CHP. A recent RFP resulted in 25 submittals of which 16 were selected for round two responses in October 2005. Five CHP proposals were selected and are in final negotiations. Up to $4.7 million is available in financial incentives. A broad ETO review of CHP program options in February, 2005, resulted in the delay of further CHP program development pending: 1) The results OPUC dockets that are shifting the ground rules for CHP in Oregon; and 2) The results of a CHP resource/market assessment and related budget implications. A follow-on presentation was made August 17, 2005 (www.energytrust.org/Pages/about/activities/rac/2005/050817/CHP.pdf). The initial briefing paper for the ETO was prepared in September, 2004 (www.energytrust.org/Pages/about/activities/board/2004/040908/2_1_CHP_status.pdf). On September 7, 2005, the ETO Board of Directors approved a new CHP industrial incentive policy and program with an initial budget of $3.5 million per year (www.energytrust.org/Pages/about/activities/board/2005/050907/05a_CHP.pdf). The fossil energy based CHP program is being developed with the Conservation Advisory Council (www.energytrust.org/meetings/index.html). This is an energy efficiency program and financial incentives will be based on "low fuel input generators." A pilot project will be developed with an industrial plant. For more information contact Fred Gordon at 503.493.8888, Ext. 202.

6) The Climate Trust established under Oregon law (www.climatetrust.org/aboutus.php) provides funding for greenhouse gas offsets including CHP. A CHP example is a Collins Pine lumber mill in Lakeview (www.climatetrust.org/offset_mill.php).

The combination of governor-led action plans and strategies, revised OPUC ground rules for CHP, and financial incentives from three Oregon energy and climate change state agencies or state established nonprofits is very powerful. It is resulting in significant advancement of CHP.

Washington

Washington has 62 utilities (three are investor owned). On a customer basis, Washington is approximately half public power utilities and half investor-owned utilities. To ensure equal treatment of all utility types, a legislative pathway is often chosen for utilities. Washington also has a strong voter initiative culture.

Initiative I-937 (www.secstate.wa.gov/elections/initiatives/text/i937.pdf) is a portfolio standards bill that requires both cost effective energy efficiency and new renewable energy. It was passed by the citizens in the November election and is now law.

CHP fits in two ways within the initiative:

1) Efficiency measure – CHP can be an efficiency measure if a third of total energy is for thermal use and for a facilities' own needs. (Neither electricity nor thermal energy can be shared with a neighbor for this calculation.) [Section 4(1)(c)]. The high efficiency language came from the Oregon Energy Facility Siting Council's definition. Qualifying utilities (above 25,000 customers) can help fund a portion of this kind of project up to the limits of "being cost-effective, reliable and feasible." [Section 4 (1)] Technically the initiative is silent on non-power attributes of efficiency measures. It does not establish a credit trading program as is done on the renewable energy side (It is viewed as far too complex for energy efficiency)—but neither does it specify who owns those attributes. CHP, like most efficiency measures, would likely be funded in part by the utility and in part by the customer, so there does not appear to be a clear ownership answer, and;

2) Renewable CHP – Renewable CHP is subject to the definition in Section 3(18) and would include: 1) Sewage treatment facilities (assumes they use the waste heat in the digester and/or for buildings); 2) Anaerobic digestion from manure; and, 3) Burning wood waste/hog fuel, if not from old growth forests or treated with chemical preservatives. Neither burning black liquor in paper making nor burning municipal solid waste qualifies as renewable. In addition, if a project is not more than 5 MW capacity, and the utility owns, contracts for the power produced, or buys the renewable energy credits (in all cases the power must come from the Pacific Northwest or arrive on a real-time basis—unshaped or integrated), then it gets double credit for the standards. See Section 3 (9) for the definition of distributed generation and Section 4 (2)(b) for the double credit.

An explanation of several underlying renewable CHP rationales is as follows:

1) Double credit for DG not above 5 MWc:

It promotes multiple renewable energy projects not just a few or one; 2) It promotes distributed power (less brittle/greater energy security); and 3) It encourages resolution of interconnection issues up to 5 MWc; and,
2) Burning black liquor in paper making is excluded from renewable CHP:
State, regional and national experts on energy efficiency and renewable energy participated in drafting the initiative. There are a variety of opinions among those experts about whether byproducts of pulping or wood manufacturing processes, i.e., black liquor, should be considered a renewable resource. In particular, individuals raised concerns with the emissions produced by generating power using black liquor.

The national renewable products certification group called Green-E recently decided, despite opposition from many Northwest stakeholders, to allow black liquor to qualify as a green power resource as long as the wood byproducts were not chemically treated or coated. The Green-E board intends to adopt emissions criteria for this resource by the end of 2006. Presumably not all black liquor will qualify.

Two Washington Administrative Code proceedings are now underway to implement I-937. The Department of Community, Trade and Economic Development is in rulemaking for the public utilities http://www.cted.wa.gov/site/1001/default.aspx . Initial comments were filed by the Center. The Washington Utility and Transportation Commission (WUTC) has a rulemaking procedure underway for the investor owned utilities. It is Docket UE-061895 http://www.wutc.wa.gov/webimage.nsf/0/C25D4AA3150B053B88257274006025D1 . The Center also filed initial comments for this rulemaking. The Cogeneration Coalition of Washington http://www.a-klaw.com/attorneys/specialists03.html is also involved.

King County has adopted a goal for county government to obtain half its electricity from renewable sources.

Washington passed CHP enabling legislation in 2005and 2006. Chapter 300, 2005 Laws (www.leg.wa.gov/pub/billinfo/2005-06/Pdf/Bills/Session%20Law%202005/5101-S.SL.pdf) primarily focuses on solar/photovoltaic power. However, Section 3, Subsection (2) of the legislation required uniform interconnection standards and procedures:

"(2) When light and power businesses serving eighty percent of the total customer load in the state adopt uniform standards for interconnection to the electric distribution system, any individual, business, or local governmental entity, not in the light and power business or in the gas distribution business, may apply to the light and power business serving the situs of the system, each fiscal year, for an investment cost recovery incentive for each kilowatt-hour from a customer-generated electricity renewable energy system installed on its property that is not interconnected to the electric distribution system and from a customer-generated electricity renewable energy system installed on its property that is interconnected to the electric distribution system. Uniform standards for interconnection to the electric distribution system means those standards established by light and power businesses that have ninety percent of total requirements the same. No incentive may be paid for kilowatt-hours generated before July 1, 2005, or after June 30, 2014."

A staged implementation has been adopted. The first interconnection step focused on up to 25 kW for net-metered systems and has been adopted. The second stage is sized from 25 kW to 300 kW systems with subsequent stages to 20 MW.

Additional CHP and interconnection activities include: WUTC (www.wutc.wa.gov/) is reviewing electricity standards (PURPA) including interconnection (Docket No. 060649) (www.wutc.wa.gov/webimage.nsf/6c548b093c5f816c88256efc00506bb6/51122508732c88f08825718d007ab322!OpenDocument) . Draft rules have been proposed and comments received including a number of comments from the CHP sector. The WUTC is now redrafting the rules based on those comments. An additional comment period will be forthcoming. The WUTC for investor-owned utilities and the Washington Public Utility Districts Association (WPUDA) are both working to help develop joint standards for interconnection. WPUDA leads the interconnection work group. The contact is David Warren at 360.943.0932. The WUTC had an open, exploratory written comment period for interconnection until October 14, 2005, under Docket No.UE-051106 (www.wutc.wa.gov/webimage.nsf/0/2D3D53A3709B473A88257060006477CD) It focused on up to 20 MW capacity to utility delivery systems. To date, this inquiry has led to final adoption of net-metering standards up to 25 kW by Washington Administrative Code (WAC), Chapter 480-108 (www.wutc.wa.gov/rms2.nsf/177d98baa5918c7388256a550064a61e/819701051efd3bb18825712c006bd594!OpenDocument). The commission intends to continue investigation of facilities greater than 25 kW in a Supplemental CR-102. Please direct questions about the rules to Dick Byers of the commission at 360.664.1209, or send e-mail to dbyers@wutc.wa.gov. The next interconnection step is from 25 kW to 300 kW. Section 1254 of the Energy Policy Act 2005 (EPACT) federal legislation (Pub. L. No. 109-58) has also provided additional impetus to this effort. A WUTC public workshop on interconnection standards was held December 2, 2005.

Chapter 201, 2006 laws of Washington is a second law improving CHP (www.leg.wa.gov/pub/billinfo/2005-06/Pdf/Bills/Session%20Law%202006/2352-S.SL.pdf). Washington net-metering laws now include CHP for smaller systems up to 100 kW. This is in addition to renewable energy sources. Thermal energy must be “used and useful. . . from a common fuel source” [Section 1 (9)]. Section 2 caps all net metering for a utility at .5 percent of the utility’s peak demand in 1996. Section 3 includes the ability to limit net-metering interconnection on “any distribution feeder line, circuit or network.”

Chapter 171, 2006 laws of Washington is a third law improving CHP (www.leg.wa.gov/pub/billinfo/2005-06/Pdf/Bills/Session%20Law%202006/2939-S3.SL.pdf). This is enabling legislation creating the Energy Freedom Program. This program provides the framework for funding bioenergy projects, research and technical assistance. This includes biopower projects. Funds are appropriated in the capital budget. In the 2006 supplemental budget, $6.0 million was appropriated for a pulp and paper mill CHP project in Grays Harbor.

For more information, additions, corrections, and updates contact:

Dave Sjoding
Northwest CHP Application Center
WSU Extension Energy Program
925 Plum St. SE, Bldg 4
P.O. Box 43165
Olympia, WA 98504-3165
Phone: 360.956.2004

Fax: 360.236.2004
E-mail: sjodingd@energy.wsu.edu