Notes from Renewable Energy Advisory Council
September 19, 2007

Attending from RAC
Kyle Davis, Pacificorp
Carel DeWinkel, Oregon Department of Energy Trust of Oregon
Angus Duncan, Bonneville Environmental Foundation
Troy Gagliano, RNP
Thor Hinckley, PGE
Jeff King, Northwest Power & Conservation Council

Attending from Energy Trust
Kacia Brockman
Danielle Gidding
Fred Gordon
Betsy Kauffman
Jan Schaeffer
Adam Serchuk
Peter West

Others attending
Sven Anderson, ODOE
Dave Bugni
Jim Deason
Dan Dettmer, Advanced Energy Systems
Joe Esmonde, IBEW #48
Alan Hickenbottom, Tanner Creek Energy
Mark Olson, Dynaelectric
Maia Ozguc, MO and Company
Robin Rabiroff, E.C. Company
Cliff Schrock, E.C. Company

1. Welcome and introductions

Peter asked for self introductions. There were no comments on the agenda. July meeting notes were approved without changes

2. Large-scale solar electric project

Peter reviewed a proposal by ProLogis, a worldwide owner of distribution facilities, proposes to install solar electric systems on up to 17 of its buildings in PGE territory with capacity of 3.5-4.7 MW. The project requires $3.4 million from the Energy Trust. Funds would come from unspent funds in the 2007 Utility Scale budget. It would be contingent on the project meeting the minimum size proposed, commissioning the installations and acceptance by PGE.

PGE supports the project both to help customers access more green power and as an effective source of peak power. The installations would provide power directly to the distribution system and will not be net-metered

The project could more than double the 2.5 MW solar PV Energy Trust has installed since inception.

Carel DeWinkel said it's an exciting proposal. Since it's the first very large solar installation, it would be good to monitor its output. Thor Hinckley said PGE intends to do this. They want to monitor it to see how it fits into its model of distributed generation.

Kyle Davis said it's a terrific project. He hopes to learn if there is anything unique a utility needs to integrate such a large project into its operations. Peter said there is a report describing the interconnections to every substation. He will ask ProLogis if they are willing to disclose this.

Peter concluded the sense of the group is one of strong support for the project. All agreed.

Carel said ODOE is working on some other large central station projects, in the Christmas Valley area, for instance. He asked if these developers were to ask for Energy Trust funds, would there be limitations related to the ProLogis project. Peter said if the project were to come in as a Pacific Power project, we would have less available funding, and supporting the project would be more difficult. If it were a PGE project, we have more funding. We have a master agreement in place with PGE that would allow fast-tracking the project. Adam Serchuk noted that money collected starting Jan. 1, according to SB 838, would be available only to projects 20 MW and less.

Robin Rebiroff asked if the ProLogis project is considered one aggregated project or separate projects on each building. Peter said we are considering it to be one project.

Alan Hickenbottom asked if funding ProLogis would constrain funding for other, non-solar programs. Peter said it would not.

Peter said the proposal will go to the board Oct. 3. If the board approves it, we intend to negotiate a contract by the end of October.

Jon Miller asked what would become of the green tags. Peter said PGE would receive them and retain them on behalf of Energy Trust for the benefit of ratepayers. At this point Energy Trust is paying the entire above market cost and the cost per tag exceeds current market value. Consequently, per our green tag policy, Energy Trust ensures that all the tags are retained for benefit of ratepayers. If we do not provide all the necessary funding for a project to reach financial viability or the effective price for the tag from our funding is less than market value, we will take proportionately fewer tags.

3. Small Scale Hydro Project

Betsy Kauffman introduced David Bugni, a professional engineer, who proposes to install a 4.4 kw system on his property on Suter Creek. The project is expected to be completed in January 2008. Mr. Bugni previously obtained a water right for 1 cubic foot per second (cfs) from the creek. He uses this to support a small aquaculture operation. He has applied for and received an additional water right for 3 cfs that he will use to operate the microhydropower project. Betsy noted Suter Creek is not a protected stream.

The project will provide 25,000 kWh of electricity and will be net-metered. Project cost is $52,799, including $27,869 in cash and $25,930 in donated labor and engineering services from Mr. Bugni. Energy Trust will offer a $13,391 incentive. The project has been reviewed by 20 agencies and met all requirements of those agencies.

Betsy noted benefits of the project to Energy Trust include serving as an example to rural landowners of a grid-tied, properly permitted microhydro project. It allows Energy Trust to fund hydroelectric generation in a safe, fish-friendly fashion. It also allows Energy Trust to fund a non-solar renewable power project in PGE service territory.

Kyle Davis suggested doing a case study to document all that David had to do to obtain these approvals. Betsy said Energy Trust intends to do a case study on the process and the project. David said he originally intended to write a paper on the technologies selected, as they are not commonly used. He intends to construct the project and then test it for a couple of months to optimize its production. David and several RAC members discussed the technologies employed and opportunities for exploring their optimum function.

Alan Hickenbottom asked how far systems like this one might scale up. David said he knows of successful installations of up to 100 kW. Most of the work has been done in British Columbia and in developing countries in Africa and Asia.

Thor Hinckley said PGE has installed a microhydro system in Opal Creek that has worked very well.

Peter concluded the that the group is highly supportive of this project. All agreed.

As it is under $50,000, Margie can sign the contract without board approval.

4. SB 838 rulemaking

The rulemaking will cover the definition of costs eligible for renewable public purpose charge funding. While SB 1149 said funds could cover the above-market costs of renewable energy, SB 838 says "constructing and operating" costs of renewable energy systems are eligible. Most stakeholders involved in creating SB 838 recall the intent was

to make the definition of eligibility more inclusive. ICNU and some others think otherwise.

Sven Anderson mentioned more rulemaking workshops on BETC and other matters, and noted there is information on the ODOE website on rulemaking procedures, schedule and staff positions on rules.

Adam noted yesterday Energy Trust hosted a meeting of clean water operators that drew 35 attendees. Attendees were curious whether projects starting today would be eligible for the increased BETC passthrough amount. They concluded it would be safer to wait. Sven Anderson said the amount will be retroactive and said they will work to get that message out.

5. Renewable program activities 2008-2009

Peter noted the budgeting process has begun. Today staff will present the program areas of focus, without attaching dollars.

Biopower. Adam Serchuk presented his expectations for 2008, which include beginning commercial operation at Rough and Ready and Columbia Blvd projects; rolling out the dairy initiative, including a standard incentive offer; developing a strategic partnership with the wastewater sector, including exploring potential for an "energy independence" campaign for wastewater treatment plants based on best efficiency practices and onsite generation.

He noted risks inherent in working with the wood products industry.

Adam emphasized the importance of strategic partnerships. For the dairy initiative, he has created a partnership among Energy Trust, the OSU Dairy Extension Agency and the Dairy Association. Energy Trust will fund a position in the association to reach out to dairies to explore potential for biomass projects; the Dairy Extension Agency will oversee that individual's work. He said we hope in 2008 to have 3-6 dairies seriously looking at these products. He said we expect to work with NW Natural on its new Smart Energy product, intended to fund new biopower projects at dairies.

Kyle noted the issue is not the technology but commitment at a dairy to provide the necessary care and service. He asked if it is a more economical use to clean up the methane to put it into the gas distribution system or to use it to generate electricity. Adam said this depends on many factors yet unknown. Our position is to support whatever is best for the dairy.

Adam described the opportunity to build a regional bio-waste management solution to deal with animal byproducts, including carcasses, and food wastes. Currently there are no rendering plants in Oregon. He is exploring whether dairies or wastewater treatment plans might accept such wastes in a quest for energy independence. Sven

Anderson asked if Mark Kendall is involved; Adam said he is not aware. Sven said Mark is interested in digesters; he will inform Mark.

Angus Duncan observed that the looming threat of regulations driving dairy operations to rationalize what it does with manure has had the perverse effect of stalling cooperation from dairy operators. Adam noted that when we first made contact with the dairy association two years ago, they indicated need for only a dozen digesters. Now they anticipate need for 48, based on their sense that regulations are coming soon, either through the legislature or legal action. Angus noted the cleaning up of methane for use as gas is a better solution than generation. Operating and maintenance costs of generation are high. Also, suppliers of cow manure can come and go, affecting generation potential. The gas company could moderate these effects by blending methane gas with natural gas. He thinks Intermountain Gas in Idaho may be further along than others in developing consumer-ready methane. Adam noted that few dairies have access to gas; running a pipeline may not make financial sense.

Angus noted Three-Mile Canyon Farm couldn't make generation pencil out. Peter said his impression is that the biomass project there did pencil out, with Energy Trust's incentives, but the owners had other reasons not to move forward. Since then the transmission opportunity with PGE has dried up, and the farm has chosen to seek different technology without Energy Trust support.

Carel recalled Wisconsin was successful in getting Farm Bill grants for dairy biomass, but they were unable to get anything in the ground. Adam said Wisconsin tells us there are a half dozen projects being built.

Adam noted the dairy projects are orders of magnitude smaller than wood biomass. Wastewater projects will be on the same scale as dairies – 100 MW. The Columbia Wastewater project is 1.4 MW.

The sense of the group was the program was heading in the right direction with the right activities, while noting this is a difficult set of sectors to tap.

Open solicitation. Betsy Kauffman said she has different intentions for PGE and Pacific Power.

For PGE, 2008 will be a pipeline-building year. She is exploring potential for pressure reduction valves in municipal water treatment systems. She wants to issue an RFP for feasibility studies for municipal hydro projects. She also wants to explore better utilizing the state's Renewable Energy Feasibility Fund (REFF). During the first two rounds of REFF, there were few applications from PGE service territory. She will examine sharing the cost of grant-writing consultants, and offer cost-share for municipalities applying for REFF funding.

For Pacific Power, the focus will be on moving forward projects that we're already aware of. This includes funding existing applications for a geothermal and a hydro

project, and one other project that may come out of feasibility studies. She will continue outreach and communication to be aware of projects that may be coming in. She will launch a dedicated effort to improve the quality of applications from the Pacific Power service territory to REFF.

Betsy hopes to fund a solar thermal electric demonstration project. Fred Gordon asked what the scale the demonstration project would be; Betsy needs to explore this. Kyle said he has had some discussions. Thor said PGE is looking at one small project using a combined solar electric and water heating system. Betsy explained the technology she wishes to explore uses the sun to make steam to generate power.

She also will monitor developments in wave R&D. The commercial projects will be very expensive; there may be no role for Energy Trust.

The group was supportive of the program's direction.

Solar electric. Kacia Brockman said she plans to see the program ride the commercial wave with the 50% BETC. She noted folks are not signing contracts until the BETC rules are in place, so she has no commitments. She expects in 2007 to support installation of 1 MW capacity. She expects installed capacity to increase significantly in 2008, although it is very hard to predict by how much. The commercial cap on incentives has been increased from 50 kW to 100 kW; she doesn't expect to expand that further in '08. Kacia noted the upcoming launch of a nonprofit incentive to tap the educational value of solar on nonprofits, schools and nonprofit buildings. She thinks the third-party financing model will be applied in this sector. She wants to foster growth in the installer base to maintain balance between local supply and demand. In addition, she hopes to expand market opportunities to include homebuilders and commercial architects/engineers. She will continue to leverage the City of Portland Solar Now! campaign to increase participation in PGE service territory.

Kacia's plans for '08 emphasize public education and awareness building through publicity, solar workshops, new messaging informed by focus groups, solar home tours, Green + Solar magazine and NW Solar Expo. OSEIA will be engaged to support installer training. A continuing focus is to build relationships with large national integrators, including third party owners.

Mark Olson questioned the amount of money spent on business development. For instance, IBEW offers installer training. Kacia said we've been financial supporters of the IBEW training. She further noted that the LRT apprenticeship spending level is very small, as is the grant to OSEIA for installer training. Peter said we will have the expenditure levels available for discussion in October. Mark reiterated his sense that more money should be directed to reducing a commercial customer's installation costs. Peter explained we are experiencing an insufficient supply of trained installers on the residential side. The funding we re talking about is quite small, but leveraged highly by the training centers and OSEIA.RAC members continued to discuss this topic. Fred asked whether expanding Energy Trust's quality control role would be useful. Sven

asked Kacia to work carefully with Christopher Dymond and others at ODOE. Kacia noted that we have worked closely with Chris and will continue to do so.

Aside form the one installer's concerns one item, the group was supportive of the direction of the program. The dissenting issue will be addressed in review of the actual budget amounts at the next RAC.

Wind. Peter presented on this program, as Alan Cowan and Erin Johnston are in offsite meetings. He noted the community wind initiative would continue supporting USDA grants to qualify a pipeline of projects. Of the 3 project still alive from the 4 that emerged from the RFP process a year and a half ago, none are in the ground, principally due to lack of turbines. Prognosis for installation of these projects is unclear; we may need to look for other, better capitalized projects. We hope to bring 1-2 community wind projects on line next year, and to identify 2-3 PGE 10 MW projects for 2009. The second edition of the Community Wind Guidelines will be published.

The other part of the program is the small wind program, to be rolled out Oct.31. The program strategy continues to be to confirm sufficient wind resources through OSU but also to develop a simplified web-based wind resource tool for small wind. We hope to get 7-10 small wind projects operating by end of the year.

Jeff King noted RAC discussed turbine supply issues last year. He wondered what came of a move to secure community-scale turbines through John Deere. Peter said this entity did obtain turbines but changed their business model; they are now functioning as a developer. Peter agreed the issue for community wind remains the same as last year. If we can't find viable community scale projects by spring of '08, we will need to reconsider the community wind push and possibly scale down to smaller turbines. Kyle agreed and noted that, even if turbines are located, it will be challenging to find projects that can be built in time to claim the PTC by end '08. Adam asked Kyle's insights into whether the PTC will be extended. Kyle said the issue could get tangled up in presidential election politics.

Cliff Schrock is pleased at the prospect of finding small wind sites in the Portland area.

Joe Esmonde said IBEW Local 48 will install a small wind system as soon as he can obtain FAA approval.

Troy Gagliano announced he is taking a position as a wind developer at Enxco. Peter invited him to continue participating on RAC in his new capacity; the council continues to have an open position for a wind developer. He will also welcome a new representative from RNP.

The meeting adjourned at 11:25 am.