RENEWABLE RESOURCE ADVISORY COUNCIL
Notes from meeting on April 14, 2010

Attending from the Council:
Theresa Gibney, OPUC
Robert Grott, Northwest Environmental Business Council
Thor Hinckley, Portland General Electric
Suzanne Leta-Liou, Renewable NW Project
Robin Straughan, Oregon Department of Energy
Frank Vignola, University of Oregon
Jeff King, NPCC
Sandra Walden, OSEIA
Tashiana Wangler on behalf of Kyle Davis, PacifiCorp

Attending from Energy Trust:
Doug Boleyn
Kacia Brockman
Tara Crookshank
Pete Catching
Hannah Hacker
Jed Jorgensen
Joe Krauss
Debbie Menashe
Elaine Prause
Lizzie Rubado
Brien Sipe
John Volkman
Peter West

Attending from the Board:
John Reynolds

Others attending:
Tim Connolly, Pioneer Renewables
Brian Crise, NIETC
Michael Early, ICNU
Jill Kolek, City of Portland
Andrew Koyaanisqatsi, Solar Energy Solutions

Welcome and introductions
Betsy Kauffman called the meeting to order at 9:30 a.m. Everyone introduced themselves. Tashiana Wangler updated the council on Kyle Davis taking a new position at MidAmerican Energy. The minutes from February were approved.

1. Update and history on Solar Pilot Feed-in Tariff
Theresa Gibney presented an update on the Solar Feed-in Tariff (HB 3039). She expressed her appreciation for the collaborative working relationship with Renewable Northwest Project and Energy Trust on this rulemaking. Final comments were closed Feb 12, 2010, for the rulemaking, program design and rate elements. However, comments were reopened on two issues: impact of legislation passed in 2010 special session, and setting rates that acknowledge decreased system installation costs. No date announced yet by the commission for their decision; however, the commission could issue an order on the rules and elements, and then issue a separate order on rates. Utilities have asked for 90 days from such an order to when pilots are required to launch. The solar industry also wants an order to come sooner rather than later. The pilot must launch by July 1, 2010, however, there is no deadline beyond July 1 for the OPUC to make their final decision.

History of HB 3039
HB 3039 passed in July 2009, seeking to incent photovoltaic solar installations. The bill established a requirement for investor owned utilities (IOUs) — including Idaho Power — to establish volumetric incentive rates, commonly referred to as a “feed-in tariff” pilot program. Such incentives are in lieu of other Oregon solar incentives. The pilot program is required to start July 1, 2010, and end no later than March 31, 2015, with the goal of installing 25 MW of solar.

The purpose of the pilot program is to test the efficacy of volumetric incentive rates (ratepayer subsidies instead of taxpayer subsidies) and contracts are only executed with customers of

IOUs. Customers may be paid at least the resource value, which must include the avoided costs of generation, transmission and distribution and the value of renewable energy certificates (RECs). The commission is allowed to truncate the program at 0.25 percent rate impact. Seventy-five percent of total pilot capacity is to be installed as smaller systems.

There were areas of disagreement in the comments on the rulemaking. The commission will make the final decision about these areas, but here were the viewpoints presented in the comments:

1. Pilot length and distribution of the 25 MW by system size. There are two points of view, which differ based on how the legislation is interpreted and its intended impact on size distribution:
    a. The majority of capacity should be installed in Year 1 and Year 2, with 52 percent in systems 10 to 100 kilowatts, 24 percent each of up to 10kW and 100 to 500kW
    b. There should be a ramping up of residential and smaller commercial installations over four years, with 50 percent of systems up to 10 kW in size, 30 percent from 10 to 100 kW and 20 percent from 100 to 500 kW
2. What the incentive rate should accomplish. There are four main points of view:
    a. Rate should match existing incentive rates over 15 years
    b. Rate should replace “up-front money” but include cost of borrowing
    c. Rate should be stable; an established rate to build market security
    d. Rate should include a return on investment, not just the cost of borrowing
3. How often, and when, the rate should change. Two main points of view:
    a. Quarterly rate adjustments to achieve 25 MW in two years, with the initial rate based on current costs and recommendation lead by Energy Trust. These rates would be adjusted more “mechanically” to achieve the capacity quickly
    b. Semi-annual rate adjustments done with more stakeholder interaction to achieve the desired four-year ramp up
4. How to deal with Federal Energy Regulatory Commission jurisdictional issues. The pilot must be designed within commission authority.
    a. Smaller systems could be net metered (no net sale between the customer and the utility). But volumetric incentive rate net metering differs from traditional net metering. In a volumetric system the customer trades one kWh generated for one kWh sold by the utility. The utility incents the trading by paying a higher incentive rate for each kWh generated by the customer and charges the retail rate for each kWh sold to the customer
    b. Alternatively, the Commission could create a special “Feed-in Tariff REC” and establish a value for the special REC. Utilities would be required to purchase these RECs from systems generating under contract in the pilot program and the price would be set high enough to accomplish the purpose of the feed-in tariff

2. Hydropower pipeline-building initiative

Jed Jorgensen presented on Energy Trust’s current activities in pipeline development for hydropower projects larger than 1 MW in capacity. He gave background on the hydro program. In the past, the hydro program waited for projects to come to Energy Trust, there was very little proactive activity. A need was seen for a systematic approach to understand and proactively go after the resource potential in this sector.

Energy Trust contracted for a study documenting hydro potential in Oregon and the processes of and barriers to project development. Results from the study indicated significant resource potential for hydro but large project barriers. Barriers being regulation at the state and federal level; which, in turn, directs us in the types of projects we can bring to development in a reasonable amount of time. In general, the regulations guide us to conduit projects (water

already in a pipe) that take 9-12 months to move through the federal permitting process. On the flip side, projects at existing reservoirs can take 7-10 years and natural stream projects are mainly off limits due to natural resource conservation laws. Since conduit projects have a water right, we can look at the Oregon Department of Water Resources to see who owns the water resource, and the estimated flow.

Irrigation districts and municipalities become our target market, yet tend to not have expertise in all required development areas: navigating the permitting process, utility interconnection, construction management and technology application.

Energy Trust has worked to address development barriers. For permitting issues we created guidebooks to state and federal permitting processes. To address shortfalls in expertise we opened our feasibility funds to cost-share for any activity that will help move a project forward in the development process (i.e. interconnection issues, permitting expert, grant writing).

Next step is to be proactive in building a pipeline of projects. Our current initiative started with holding a competitive RFP to look for resource potential greater than 1 MW at irrigation districts and those with large water rights. We believe it is possible to bring online five to 10 aMW of conduit projects over the next 10 years. The study will estimate power potential and development costs at particular sites. At the end we expect to have a list of 30-50 sites that merit in-depth feasibility and design evaluation.

Determining a good hydro resource takes into account proximity to interconnection, good head and flow, and minimum capacity of 1 MW (though the program is able to go back once the surveys are in and decide to go to 500 kW).

Results of the RFP: We selected Black Rock Consulting due to their experience with irrigation districts and hydro projects. Black Rock has done the initial water rights research and approximately 29 districts are seen as having potential for projects. Black Rock is now determining sites at the districts. While we are in the field we are also looking for potential energy-efficiency measures (particularly pumps) that could be installed.

We expect to complete the study end of June 2010. Once the study is complete, we'll report the results back to RAC. So far, there has been a very positive industry reaction to the study.

There will be a public report at the end that will include the sites and cost/power estimates but some things (flow, water rights) may not be included in the public report to maintain confidentiality with the irrigation districts. Most sites will be qualifying facilities and they would typically interconnect or wheel power to Portland General Electric or Pacific Power.

Past irrigation district hydro projects have ranged from 800 kW to five MW. By comparison, municipal projects around pressure relief valves range from 10-100 kW, and tend to be qualifying facilities. With this survey, system sizes will fit in the range that Energy Trust can provide an incentive but also large enough to absorb construction and development costs — most likely around one to six MW.

Sandra Walden asked about potential controversies over water rights in the next few years. Jed responded yes, especially in Central Oregon there is pressure between agriculture and municipalities. But district managers feel any projects going in now will be paid back before any such pressures escalate. Plus, these projects do save water (piping decreases evaporation rates) and allow for a more accurate measure of water volume sent to districts.

3. Evaluation results of PV participants and their participation in efficiency programs
Mathew Taylor presented on an evaluation of Energy Trust solar participants and their behavior toward implementing energy-efficiency measures. The evaluation compared the energy consumption of residential solar participants (both gas and electric) versus energy efficiency participants. One overarching question guiding the study was whether efficiency measures should be required to be installed before incentivizing solar electric systems.

The study analyzed 2008-2009 Energy Trust participants and used their billing data from 2007, normalized by house size and split geographically, to compare their energy usage before installing solar or efficiency measures. Billing data, geography, heat type (that which we could determine) and house size were included. Demographics (which could warrant future exploration) and age of the house were excluded. Data was obtained from internal resources only.

Across all years, there were 904 unique residential solar electric sites. Of those, 33 percent had installed at least one energy-efficiency measure that received an Energy Trust incentive before installing the solar electric system. This participation rate is higher than the rest of the residential population.

On average, first-time solar electric participants use slightly less electricity and gas than their first-time efficiency counterparts. On the surface, solar electric participants have larger homes on average than efficiency participants, so the study normalized consumption and compared kWh or therm consumption per square foot.

No Gas Account	**PV Participants**	**EE Participants**
Electricity Consumption (kWh)	7.50	9.57
Yes Gas Account		
Gas Consumption (therms)	0.37	0.43
Electricity Consumption (kWh)	4.84	6.06

From this data, an estimate of annual consumption for electrically heated homes was created:
- PV participant — 12,908 kWh/year
- EE participant — 16,470 kWh/year

This study shows that, on average, homeowners installing solar tend to be using less energy per square foot than first-time energy efficiency customers. The claim that solar electric systems are installed on homes that should be investing in efficiency first is a misrepresentation.

Energy Trust expects to survey Solarize Portland homes to evaluate other characteristics, including efficiency measures for which an Energy Trust incentive was not received and actions taken after installing a solar electric system.

In general, even based on this small sample size, we can surmise that homeowners installing solar electric systems are more energy conservation-minded.

4. Public comment
Future Energy of Conference
Robert Grott reminded the council about the Future of Energy Conference, which is being sponsored by Energy Trust, PGE, Pacific Power and others. It's a business-to-business event focused on renewable energy and energy efficiency. Governor Kulongoski is giving the opening remarks, and Margie Harris is a keynote speaker. The event is April 21-22, 2010.

Solarize Portland
Andrew Koyaanisqatsi of Solar Energy Solutions — a company of 8-12 employees that has been installing solar systems since 1987 and is an Energy Trust solar trade ally — commented to the council on Solarize Portland. Andrew expressed concern on effects he is seeing on the solar industry due to Solarize Portland.

> Background: Solarize Portland is a community-driven solar bulk-purchasing effort that was developed by SE Uplift Neighborhood Coalition in the summer of 2009 with assistance from Energy Trust. In this model, the community competitively selects a single contractor to install an unknown number of systems in the community's geographically defined area, and local advocates generate participants through outreach and education. Energy Trust provided support to the SE projects by assisting with the crafting of the contractor RFP and outreach to the community, which included informational workshops. Energy Trust did not sit on the contractor selection committee. The first effort was much more successful than imagined, resulting in 120 installations in SE Portland in six months. Solarize participants were and are eligible for the same standard Energy Trust residential incentive, as well as state and federal tax credits. They also undergo the same inspection and review process as other Energy Trust solar projects.

Andrew reiterated the good job Energy Trust has done with strengthening the solar market in Portland, but sees Solarize — a highly successful effort that installs a lot of systems quickly — as using utility money to wipe out business competition one city quadrant at a time. He said it's creating an environment hostile to local solar electric businesses and is suppressing the solar industry. He claimed Solarize Portland resulted in systems being installed at a cost 25 percent below national averages. Andrew recommended Energy Trust cease support of the effort.

The council followed with questions, comments and clarifying statements, which included:

- Can we look at Solarize Portland as showcasing the recent development of a small business industry transitioning to a mainstream business opportunity? (Sandra)
- Each effort was competitively bid for the selected contractor. (Sandra)
- Understand system costs are going down through these efforts, but how about the labor cost aspect? (Tim)
- Solarize Portland uses a bidding process via RFP; Energy Trust did not sit on the selection committee. (Kacia/Lizzie)
- City of Portland's involvement was largely supportive for this volunteer-driven effort; helping with presentations, web copy, forming the RFP. (Jill)

Energy Trust staff underscored they understand Andrew's concerns, and presented data on installation trends in Portland, separated by Solarize installs and non-Solarize installs, to the council. Lizzie Rubado discussed her data analysis on what's happening in the rest of the marketplace regarding the growth of non-Solarize projects:

- The number of Portland installations <u>excluding</u> Solarize projects increased in 2008 and 2009. From September 2009 to early 2010, the market saw 50 percent growth in non-Solarize installations done by non-Solarize contractors.
- Goals of Solarize Portland were to increase visibility and awareness of solar to get more people to install, which it has successfully done.
- Even without the Solarize program, competition among solar trade allies has been sharply rising. In 2008, there were nine active residential solar electric trade allies in Portland (had installed at least one system). In 2009, there were 18 active.

Sandra requested Andrew send her an email summarizing his concerns so she can continue the conversation with OSEIA.

Suzanne Leta-Liou from Renewable Northwest Project commented that the data they have shows a general decline in costs, including those separate from an RFP process, and that the lower costs contractors are seeing are reflective of this trend.

Lizzie clarified the financial breakdown customers see regarding “out of pocket costs” does not factor in lifetime costs such as the interactive tax effect between the state and federal tax credits, insurance costs and inverter replacement.

The council followed again with questions, comments and clarifying statements, which included:

- Do RFPs preclude more than one contractor working together? (Robin)
    - In the first Solarize Portland, they chose one contractor; in Pendleton, two contractors were selected, and other Portland Solarize efforts wrote the RFPs to strongly encourage teams of respondents. (Lizzie)
- Advertising for this program benefits the selected contractor, plus the other contractors. (Frank)
- For the selected contractor, are living wages givien to employees? (Frank)
    - The batch of RFPs after the first Solarize Portland include weighted criteria which includes employment practices and provision of family wages. No lowest-bidder was selected in any of the RFPs so far. (Lizzie)
- Will these efforts lead to solar systems being installed without consideration to energy-efficiency measures? (Jeff)
    - The 2010 efforts encourage energy efficiency to be considered. Preliminary data indicates that 84 percent of Solarize Portland participants participated in other Energy Trust offerings before or after the solar installation. (Peter/Lizzie)

Peter commented that Energy Trust was consistent in its dealing with this effort as it is with every government that approaches us for assistance. Our job with solar is to push the envelope. The solar industry is transforming, a new market will open up as early as this summer with the feed-in tariff.

The council asked for clarification from Andrew on what remedy he is looking for. Andrew said he wants Solarize Portland to go away and asks the council to move on this question. When pressed for specifics, Andrew said he does not want incentives to be denied for Solarize customers. He would like Energy Trust to end marketing support or involvement with the Solarize efforts. The council asked Lizzie what marketing support looks like for Solarize versus the general Solar program. Lizzie responded Energy Trust does not directly market or advertise Solarize. To date, marketing support has included printing flyers, which is no more support than the same 33 percent cooperative marketing funds provided to any trade ally. She also clarified that all lead generation is done by neighborhood volunteers, the website was created by volunteers, and the selection committee was made up of residents of the communities.

Betsy remarked there is marketing support for all programs and trade allies and we can present on that to the RAC in future meetings.

5. Meeting adjournment

Betsy Kauffman thanked all RAC members for their participation and adjourned the meeting at 12:06 p.m.