Renewable Energy Advisory Council Meeting Notes

November 21, 2014

Attending from the council:
Bruce Barney, Portland General Electric
Kari Greer, Pacific Power
Robert Grott, Northwest Environmental Business Council
Juliet Johnson, Oregon Public Utility Commission
Elizabeth McNannay, Oregon Solar Energy Industries Association
Matt Mylet, Beneficial State Bank
Frank Vignola, Solar Monitoring, University of Oregon
Dick Wanderscheid, Bonneville Environmental Foundation
Peter Weisberg, The Climate Trust

Attending from Energy Trust:
Chris Dearth
Juliett Eck
Sue Fletcher
Matt Getchell
Fred Gordon
Jennifer Hall
Mia Hart
Jed Jorgensen
Betsy Kauffman
Dave McClelland
Elaine Prause
Thad Roth
Lizzie Rubado
Peter West

Others attending:
Rob Del Mar, Oregon Department of Energy
Bill Eddie, OneEnergy
Shawn Foster, Portland General Electric
Alan Meyer, Energy Trust board
John Reynolds, Energy Trust board
Laysan Unger, Cascade Policy Institute

Welcome and introductions

Betsy Kauffman called the meeting to order at 9:30 a.m. and reviewed the agenda. The agenda, notes and presented materials are available on Energy Trust's website at www.energytrust.org/About/public: meetings/REACouncil.aspx.

1. 2015 annual budget and 2015-2016 action plan

Thad Roth presented a summary of the 2015 annual budget and 2015-2016 action plan and minor changes that have occurred since the last presentation. This budget will go to the board for approval on December 12.

> In 2015, the renewable energy sector budgeted $16.2 million in expenditures. Other Renewables represents $4.7 million of that budget and Solar represents $11.5 million. The total generation in 2015 is forecast to be 3.47 aMW. Energy Trust cannot fully predict when projects will come online, and some dollars may shift from one budget year to the next when projects are delayed.
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> New renewable energy funding for 2015 has increased by $1 million, split evenly between the two utilities. This is the result of an increase in forecasted revenue and more dollars available as a result of a canceled project.
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> On an activity basis, the 2015 budget is just over $12 million for Other Renewables and just under $12 million for Solar program. For Portland General Electric, the budget in 2015 will be heavily weighted to support solar while continuing to provide resources for

other technologies. This is reflective of the opportunities in the territory. For Pacific Power, the allocation between technologies is the opposite. More opportunities exist for Other Renewables projects. We are committed to having a viable Solar program in Pacific Power territory, and we have flexibility to distribute any unallocated Other Renewables incentives to support the solar program.

Alan Meyer: Solar costs per average megawatt look lower in 2015 as compared to 2014. Are they lower?
Thad: The costs of solar projects are declining both for standard and utility-scale projects.

Peter Weisberg: How has the 2014 forecasted budget compared to performance?
Thad: It has been on target. Some dollars allocated for Other Renewables have shifted to standard Solar.
Alan: Can you shift money from solar to non-solar if demand shifted?
Thad: Yes, we can shift funds either way.

Juliet Johnson: Is the total budget lower in 2015?
Peter West: The total budget is slightly higher in in the round two budget than in the round one budget. This change reflects a little more money for renewables, and more money for residential energy efficiency with increased demand for LEDs. The overall budget is $3.6 million less than last year.

Thad: The Other Renewables budget will include incentives for four projects currently under contract and expected to complete next year. We expect ribbon cuttings for a number of these as a result. Two requests for proposals are scheduled. If we do not allocate all dollars through these efforts, we will shift Other Renewables resources to the Solar program. Outreach efforts will focus on hydropower and biopower projects, where we see the most opportunity for other funding. We will focus on building a pipeline of projects in these areas. We will also execute the first year of a hydropower initiative.

Bruce Barney: Will Other Renewables generation mostly be in Pacific Power territory?
Thad: Hydropower projects are more concentrated in Pacific Power territory, but wastewater treatment plans are located in both PGE and Pacific Power territories.

Juliet: Can you talk in detail about your hydropower initiative?
Jed Jorgensen: This is a continuation of what we have done with irrigation districts. We see other opportunities to promote hydropower as a strategy for water management. Last week, we closed a request for proposals for consultants to develop the next piece of this hydropower strategy. This approach will bring together the irrigation and development community. We want to include opportunities on farms and within pipes.
Kari Greer: Where are the respondent consultants based?
Jed: Most are in the Northwest and some are in the Southwest. Respondents included individual consultants and larger teams.

Thad: Standard solar installations were strong in 2014. In 2014, we made our 1,000th payment for a standard solar project and reached our annual generation goal. We expected to exceed goal with a total of 1200 to 1300 projects. We have the largest pipeline since 2009.

We expect that there may be challenges with Other Renewables allocating dollars to projects, and we want to move quickly to apply those dollars to bigger or more innovative solar projects. We will continue to help trade allies reduce the soft costs of customer acquisition, such as marketing costs. Mapdwell is one example of a solution that we are testing. We will create a soft cost road map for solar in 2015.

Bruce: Do we have feedback on Mapdwell's performance yet?
Lizzie Rubado: It has been very well received, but we have had to make adjustments to how information is displayed. We are working with the developers on enhancements, and we will conduct marketing efforts once this development is completed in January 2015. We have heard that Mapdwell tool is bridging the gap that exists in the market. We need to determine if it is effective at generating projects and reducing customer acquisition costs. At this time next year, we will have more information to determine if we will expand Mapdwell more broadly.

1. Solar request for proposals for PGE

Dave McClelland: Energy Trust and the OPUC identified four funding priorities for the Solar program. The fourth funding priority is to reduce above-market costs associated with innovative and custom solar projects, as funds are available. In September, resources from an Other Renewables request for proposals were shifted to Solar for this purpose. The program issued an RFP for $2 million. Applications were due in October, and staff reviewed three applications.

We selected one project for funding, Steel Bridge Solar. The developer is Bill Eddie, OneEnergy Renewables, and is in attendance today. The project is a fixed-tilt system with expected generation of 3800 megawatt hours per year. This project is in Polk County. It is reasonably advanced in the development process. The developer has a contract agreement in place with PGE. The development team includes NRG Energy as the project owner and operator and Christensen Electric as the contractor. The goal is commercial operation in Q3 of 2015.

Steel Bridge Solar will be Energy Trust's first custom solar project with costs below $2 per watt. The request is for $2 million. The above-market cost is projected to be $3.1 million. Our proposal is to move forward with the full $2 million offer. Energy Trust will take 75 percent of Renewable Energy Certificates, RECs, with the majority coming in later years. If the project developer needed more of the RECs, that would be up for negotiation. This project will go to the board for approval on December 12.

Alan: The Steel Bridge Solar project financials look to be underwater by $1 million. Why would the developer move forward with this project?
Dave: There are a few factors. There is the opportunity to sell RECs. In fact, the developer expressed some interest in having us not cover all of the above market costs so that the developer can take procession of more RECs. We also modeled the project as 100 percent equity and the developer may have lower-cost funds. The developer is working with a large portfolio of projects and may be able to take a lower rate of return. We were also conservative in estimating the energy generation.
Bill Eddie: We have contracted to sell RECs for five years. It is a positive project for our company.

Rob Grott: They were able to negotiate higher rates in the Power Purchase Agreement?
Dave: Yes they are receiving higher rates but they are not negotiated. They received a prior rate that is no longer available.

Fred Gordon: The project is located 1,500 feet from the substation. Is there added value because this project reduces future needs for peaking resources?

Bruce: As we shift from winter to summer peaking utility, we will look at that. It is an intermittent resource and you cannot count on it fully. This project would not make much difference to us in that perspective.

Bruce: I am curious about the incentive award after portions of the project are already underway.
Dave: Clearly there are above-market costs. This project needs this funding to go forward. This incentive will still be awarded prior to construction and permitting.
Bill: Our approach is to find the best sites for solar installations and advance a project so that it is viable. We assume that we have to spend some money up front to know if a project is viable.
Alan: For Energy Trust, this is a low-cost project and we see value of the investment.

Frank Vignola: Has OneEnergy completed other projects?
Bill: This fits with a portfolio of projects. We have another project in Oregon that is going to Pacific Power for compliance.

Juliet: Who will the Renewable Energy Certificates go to?
Bill: They will go through an aggregator and then to PGE's Green Power Program.

Matt Mylet: Was single-axis tracking an option for this project?
Bill: This approach doesn't pencil out in the Willamette Valley yet as compared to fixed axis. The size limitation also pulled us in this direction, and it is a sloped site.

John: Is there possible agricultural purpose for the land once the solar is installed?
Bill: You can graze sheep on the site once the solar is in place.

2. Solar strategic plan

Dave McClelland presented on the Solar program's new strategic plan and requested input from council members. The plan's mission is "to create a vigorous and sustainable market for solar in Oregon that ultimately can thrive without incentives."

> The goals detailed in the plan include more solar installations than in the previous five years, 5 aMW of new solar generation, changes to lower soft costs and funding for some large, low-cost projects. The guiding principles for solar incentives in the plan include: make solar a reasonable investment, support as many installations as possible, support residential and commercial market, drive and respond to price reductions, adapt to changes in other incentives and provide long-term value for ratepayers.
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> Some challenges will occur over the next five years. The first challenge is expiring tax incentives, which creates uncertainty and will change project economics. Future module pricing is also uncertain, and there has been a national debate about net-metering and the value of solar to utilities and ratepayers. There are possible policy changes being considered in Oregon. In this five-year timeframe, it is possible that the only incentives that will remain will be a federal 10 percent investment tax credit for commercial projects and Energy Trust cash incentives.
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> Looking at applications to our program, we see a decline in the average incentive rate and an increase in aMW generated.

Alan: Why did aMW go up and costs go down?
Dave: We found the right spot for our incentives to drive demand and reduce costs.

Bruce: We have seen these data trends related to the end of the Volumetric Incentive Rate program.
Dave: We do see that occurring in the second half of this year, particularly for commercial.

Alan: What percentage of solar systems are third-party leased?
Dave: Last year it was two-thirds. This year it is 55 percent. We increased the incentive for direct-owned customer systems.

Juliet: What will cost reductions come from?
Dave: To date, most cost reductions have been from hardware. We anticipate soft costs will also contribute to future reductions.

Elizabeth McNannay: What is the impact of the Renewable Energy Development, RED, grant program going away?
Dave: The RED grant program has very little impact on our model.

Bruce: Did you include an escalation on utility rates?
Dave: Yes, we typically include a 2 percent escalation rate.

Dave: Strategies to achieve five-year goals are to reduce soft costs, maintain consistent marketing, support some large projects and participate in new opportunities. Reduction in soft costs will come from process improvements at Energy Trust, Oregon Department of Energy and with trade allies, and from educational tools like Mapdwell.

> A first step for utility and agency coordination is underway as Oregon Department of Energy and Energy Trust plan to use the same application processing tool next year, PowerClerk. Solar will have additional marketing budget next year. We also want to support some large scale projects when opportunities arise. We will be open to opportunities that come up, such as community solar, but need to balance these opportunities with our cost-reduction strategy. We want to support innovation where it adds value to the solar marketplace.

Rob Grott: The SunShot initiative with the U.S. Department of Energy sees interconnection costs as a challenge, but we don’t see it. Oregon Department of Energy has a working group looking at this issue. We think a single inspection would be best. We also see integration on documentation as important. We have removed all documents that are not needed anymore. We are also following Energy Trust’s lead to Power Clerk.

Dick Wanderscheid: Do you inspect all systems?
Dave: Yes. We find issues on many systems.
Matt Mylet: Are there repercussions for quality issues?
Dave: We have quality contractors in the Trade Ally Network, and we support them in the installation process. No contractor has failed. We need to determine how we can move forward at a lower cost without sacrificing quality.

Bruce: Do you expect to see additional efforts like Solarize?
Dave: There are some Solarize efforts in progress now around the state. We won’t lead efforts, but we may provide marketing support.

Matt Mylet: Do you track on changes in racking, such as how panels are affixed to the roof? Is that information broadly disseminated?

Jennifer Hall: Changes to racking technology and approach are slowly moving into Oregon. Energy Trust can support getting that information out.

Elizabeth: What would a new opportunity for low-income customers look like?
Dave: We are interested in other people coming to us with ideas, and we will support others as they bring opportunities forward. We are going to focus on bringing down incentive costs.

Fred: Is it worth having a five-year goal to have a full dialogue with utilities about how to build solar technology into transmission and distribution planning?
Dave: I am getting data requests from utilities who want to know about our system installations over the last 10 years. That data will be important to the utilities. We are hearing from PGE that they want to look at that as part of the IRP process. We can play a role and support them.

Dick: Good job on this plan. It looks well positioned for adaptive management and to keep momentum going.

3. Public comment
No public comment.

4. Meeting adjournment
Betsy thanked the council members for their participation and adjourned the meeting at 11:45 a.m. The next full council meeting is scheduled for February 4, 2015.