



Renewable Energy Advisory Council Meeting Notes

October 22, 2014

Attending from the council:

Britney Andrus (for Juliet Johnson), Oregon
Public Utility Commission
Bruce Barney, Portland General Electric
Jason Busch, Oregon Wave Energy Trust
Robert Grott, Northwest Environmental
Business Council
Elizabeth McNannay, Oregon Solar Energy
Industries Association
Michael O'Brien, Renewable Northwest
Frank Vignola, Solar Monitoring, University
of Oregon
Dick Wanderscheid, Bonneville
Environmental Foundation
Peter Weisberg, The Climate Trust

Attending from Energy Trust:

Susan Badger-Jones
Karen Chase
Amber Cole
Chris Dearth
Sue Fletcher
Matt Getchell
Fred Gordon
Hannah Hacker

Jeni Hall
Margie Harris
Jed Jorgensen
Dave McClelland
Dave Moldal
Elaine Prause
Thad Roth
Gayle Roughton
Lizzie Rubado
Julianne Thacher
Jay Ward
Peter West
Courtney Wilton

Others attending:

Diane Broad, Oregon Department of Energy
Angus Duncan, Bonneville Environmental
Foundation
Evan Elias, Oregon Department of Energy
Kari Greer, Pacific Power
Alan Meyer, Energy Trust Board of
Directors
Tim Miller, Clean Energy Works
John Reynolds, Energy Trust Board of
Directors

1. Welcome and introductions

Thad Roth 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.

A brief update was provided on the discontinuation of Energy Trust incentives and support for solar water heating systems. The deadline to submit applications is Friday, November 7, 2014, by close of business. All projects submitted by this date are required to be completed within the standard one-year reservation period.

Dick Wanderscheid: How many solar water heating projects were coming in prior to this change?

Dave McClelland: The peak was 200-220 projects per year. Last year, installations were down to 40, and so far this year there have been less than 20.

A brief update was provided on a request for proposals for custom solar projects in PGE territory. The RFP closed on Friday, October 17. Energy Trust received three applications with a

total ask of \$3.4 million in incentives. The proposals total to 4.5 megawatts_{DC}. Energy Trust will review the projects and plans to bring the selected project(s) to the November Renewable Energy Advisory Council meeting and December board of directors meeting.

2. Quarter 3 dashboard

Thad reviewed the Quarter 3 dashboard, noting larger projects that delayed completion to 2015 or 2016. The dedicated incentive funds for those projects will carry over to the update completion year, impacting the 2014 annual accounting budget. In particular, two solar projects in Pacific Power territory that were identified through a request for proposals process, one large solar project in Portland General Electric territory and a biogas project in PGE territory were delayed.

Clarifying questions

Bruce Barney: The Pacific Power committed on the chart represents projects for this year?

Thad: Yes, the majority of the Pacific Power pipeline, the committed portion of the graph, is represented by the Oregon Tech geothermal project. The majority of the PGE pipeline is standard solar.

Elizabeth: What is the percentage of solar in PGE and Pacific Power committed?

Dave McClelland: Though I don't have this number offhand, there is mostly residential standard solar in PGE reservations.

Dick: Where are the dollars reallocated to Solar represented?

Thad: This only shows this year's projects that will receive incentive funds.

Discussion

Jason Busch: Is the delta of the proposed payments and actual payments an issue? Is there a way to more accurately forecast and represent what will be paid?

Thad: Staff efforts to be more conservative in budgeting has helped avoid a large difference. As far as other new methods, your thoughts and suggestion are welcome.

Dave McClelland: Also, pushing out large custom solar project timelines will provide more realistic completion dates.

Thad: Another complication is the number of projects in the pipeline. By definition, projects can only receive Energy Trust funding if they have above-market costs, which limits the number of projects that can receive funding. It's a very small group of projects, and if a project does not complete as predicted, it can greatly swing the forecasts.

Peter Weisberg: What happens with interest from unspent funds?

Courtney: They're allocated to a reserve account, which is a backstop for all project interest.

3. Draft 2015 annual budget and 2015-2016 action plan

Thad highlighted the major budget themes for the draft 2015 budget and two-year action plan. Energy Trust is attempting to improve the volume of activity each year and boost the pipeline, which has been impacted by cancelled projects. For the Renewable Energy sector budget portion, the 2014 budget has not been fully allocated. Remaining funds will carryover and be available in future years. There are unallocated funds in the 214 budget, which have been reallocated to larger scale solar projects based on market intelligence and some experience gained in the most recent solar RFP. Energy Trust aims to support all renewable energy technologies, and can shift incentive funds among the technologies to support projects as needed. For instance, shifting funds from the Other Renewables program to the Solar program in the second half of 2014.

Jed highlighted strategies for hydropower in 2015. Irrigation hydropower projects are still the target, and staff will release a request for qualifications in the next few weeks to continue moving forward with planning and outreach efforts. Key pieces in the scope are creating a process to work with irrigation districts to assess their total water conservation, energy conservation and hydropower potential, and determine the best sequence to build out based on the identified opportunities and finding funding for the projects. Overall, the goal is to create a development roadmap while completing projects.

Thad: The expectation is that Other Renewables projects will be more expensive when measured in dollars per average megawatt, and this is why the budget increases across years. As other state and federal incentives and tax credits become smaller or sunset, Energy Trust will need to provide a larger incentive for Other Renewables projects.

Discussion

Peter Weisberg: Will there be full allocation of funds in 2015?

Thad: Yes, that is the goal.

Peter Weisberg: How much of the \$16 million comes out of the \$23 million?

Thad: It's not an easy calculation offhand, and it can vary across years. \$16 million encompasses this year and previous year dedications. Activity funds are projected separately from accounting funds.

Bruce: Can you clarify where the funds are from and where they are moving?

Thad: \$16 million is what we will write checks for in 2015. All of the budgeted funds for a project aren't always paid in the year that the funds are dedicated as some projects receive milestone payments based on meeting generation targets and other factors. The remaining funds to be paid will roll into the next year.

Diane Broad: Does all of that funding still fit into the 80 percent of the renewable budget going toward incentives?

Thad: Yes.

Peter Weisberg: How is the allocation of funds between Solar and Other Renewables determined?

Thad: We allocate funds based on our funding priorities. We know we have a pipeline, and we know that we need to have incentive funds available for future projects. The competitive process makes it difficult to target when projects in the pipeline will land in the pipeline. Ensuring that the non-solar project owners know there is funding available is the main driver of the allocation. We don't want to limit our allocations between programs. We want to allow the market to decide, and will allocate funds to encourage the market. We have an ambitious goal for the Other Renewables program, and if projects aren't available, we will shift funds to where the project are, like the Solar program.

Robert: Are you seeing a trend of biogas going to fuel?

Thad: We'd like to show a path for electricity generation from biogas projects.

Dave McClelland reviewed major 2015 themes for the Solar program. The Solar program currently has the largest pipeline since 2010. The goal is to maintain the momentum of the current pipeline, and the incentive funds that were reallocated from Other Renewables will allow this. As soft costs decrease, a higher volume of projects can be supported. As solar continues to come down in cost, Energy Trust is able to lower the project incentive, and in turn, gain the ability to fund a larger volume of projects.

Alan: Solar has become less expensive, but has the cost effectiveness changed?

Dave McClelland: No, there's still a significant gap between Solar and Other Renewables. Some Other Renewables projects are able to secure state tax credits for efficiency. Solar projects average \$4 million to \$5 million per aMW while biopower, for example, averages \$1 million per aMW.

Alan: Do we have current metrics for soft costs?

Dave: We did a soft cost survey of our most active contractors, and are working with National Renewable Energy Labs to compile the report, which will be published in Quarter 1.

Robert: It sounds like trade allies are still weak in their marketing, is this the case?

Dave McClelland: The key finding from the soft costs survey was that contractors don't know what their costs are. A lot of them aren't as strong as they could be because they're focused more on survival than business development. Our goal here is to provide assistance in creating a strong business.

Kari Greer: Is the soft costs survey public? This is a great idea. Is this stretching beyond renewable energy?

Jeni Hall: It will be released to the public, and is focused on solar. The trade ally assistance is modeled off the Existing Homes program.

Kari: The Small Business Development Center has contacted us to see what Pacific Power can do to assist in contractor development. Can they be pointed to Energy Trust?

Jeni: We would be glad to work with the Small Business Development Center on our trade ally development offer.

Bruce: How many trade allies are there?

Jeni: There are about 100 Solar trade allies; counting only the most active, it's closer to 30 or 40 contractors.

John: As Mapdwell expands into other Oregon cities, does the price decrease?

Dave McClelland: There are a few pricing options. Mapdwell uses high-resolution LIDAR data, which is Light Detection and Ranging, to create a 3-D model of buildings and trees. This advanced modeling, along with a great user interface and design, is what sets Mapdwell apart from other mapping solutions. The disadvantage of this methodology is that it is data-intensive, and up-to-date, high-resolution LIDAR data may not be available for all locations.

We can expand without LIDAR or we can analyze buildings using LIDAR to get the most comprehensive data. We could also reach out to cities as partners and use a more competitive approach. As lead generation becomes more successful, it could also help support costs.

Frank: Oregon State University has some data to share. The heat of the solar electric arrays affects their performance, and trying to predict the alternating current generation is complicated.

Dave McClelland: Thanks, Energy Trust will be reaching out to you for technical support for our impact evaluation.

4. EPA proposed 111(d)

Angus Duncan from the Bonneville Environmental Foundation presented on the Environmental Protection Agency's proposed 111(d) rules regulating carbon emissions from existing

electricity-generating facilities. President Obama set an executive goal of reducing emissions 30 percent from 2005 emission levels by 2030. Angus mentioned Oregon has its own set of state goals, which are more aggressive.

PGE is attempting to comply with the Clean Air Act at its facilities and has been running into cost issues when also required to be in-line with other requirements. The older Pacific Power coal plants that have been updated are the most difficult to reach compliance.

Vehicle regulations and electricity-generating plant regulations are closely tied. There is a different outcome when plug-in electric vehicles are charged using electricity from a coal plant than from a plant that is entirely compliant with EPA goals.

Oregon and Washington are relatively coal light in regards to the federal Clean Air Act. Once the two open plants close, the region looks coal free despite imported coal energy.

The most logical actions to reach compliance with the EPA guidelines are to increase the efficiency of coal power plants, shift from coal generation to more carbon efficient generation like natural gas-fired plants, develop renewable energy resources and reduce the need for generation through energy efficiency.

Compliance plans are to be submitted as a state or the EPA will devise one if it's not submitted. A rate-based standard or a mass based is allowed. Although 111(d) is at the state level, it allows multistate collaboration. State plans are due June 2016, and multistate plans are given an extended deadline.

There are some challenges and proposed changes to 111(d), including:

1. Crediting the state that initiates the energy efficiency or renewable energy
2. Allowing energy claimed in the interim; measure life is not taken into account, for example the degradation of a CFL is aggressive
3. Filling holes between 111(b) for new power plants and 111(d) for existing power plants to prevent moving directly from coal to natural gas

Fred Gordon: We already aren't getting gas efficiency. Can we trade coal for direct application gas?

Angus: The short answer is no. Because the regulations are aimed at best system of electric reduction, it's unlikely to reach beyond electric efficiency.

Michael: There should be an emphasis on the political importance of multistate agreements. The targets are based on individual states. Oregon thought renewables should be counted by who paid. Though we paid for an installation in Montana, Montana is politically tied to our goals because of the location of the plant.

Angus: In my opinion, this is not necessarily a valid argument by Montana, it's a roundabout complaint about EPA's goals.

Robert: How many other states are contesting?

Angus: Not as many as expected, eight to 10 states have indicated the EPA should only be looking within plant boundaries and is overreaching with their goals.

Peter: How does this turn into financial incentives for projects?

Angus: If you set a standard you are increasing what is cost effective as an alternative, but on a federal level, there's no economic incentive. Potentially on a state basis there are more opportunities. In Oregon and Washington, they are within reach of a cap on carbon imported or produced. If there's a carbon tax, it could be direct customer rebate for efficiency and renewable energy.

5. Public comment

No was no public comment.

6. Meeting adjournment

Thad thanked the council members for their participation and adjourned the meeting at 12:05 p.m. The next full council meeting is scheduled for Friday, November 21, 2014.