

Renewable Energy Advisory Council Meeting Notes

March 15, 2017

Attending from the council:

Erik Anderson, Pacific Power
Bruce Barney, Portland General Electric
JP Batmale, Oregon Public Utility
Commission
Kendra Hubbard, Oregon Solar Energy
Industries Association
Suzanne Leta-Liou, SunPower
Matt Mylet, Beneficial State Bank
Adam Schultz, Oregon Department of
Energy
Frank Vignola, Solar Monitoring, University
of Oregon
Dick Wanderscheid, Bonneville
Environmental Foundation

Attending from Energy Trust:

Susan Badger-Jones
Amber Cole

Hannah Cruz
Jeni Hall
Mia Hart
Jed Jorgensen
Betsy Kauffman
Dave McClelland
Joshua Reed
Zach Sippel
Jay Ward
Peter West

Others attending:

Jeff Bissonnette, Oregon Solar Energy
Industries Association
Gillian Charles, Northwest Power and
Conservation Council
John Reynolds, Energy Trust board
Alan Meyer, Energy Trust board
Jason Zappe, Portland General Electric

1. Welcome, introductions and updates

Jed Jorgensen convened the meeting at 9:30 a.m. The agenda, notes and presentation materials are available on Energy Trust's website at: <https://www.energytrust.org/about/public-meetings/renewable-energy-advisory-council-meetings/>.

2. Solar wrap-up of 2016 and a brief look ahead

Dave McClelland presented on results and market trends for solar in 2016 and summarized expectations for 2017. Energy Trust's focus is on distributed solar. Third-party owned solar in the residential market has been dropping off over the last few years due to the two major lease providers pulling their third-party owned models from the market in 2016. Simultaneously, direct-owned systems installations increased last year. As solar becomes more affordable, payback is better under a direct-owned model. Commercial solar installations decreased when the Business Energy Tax Credit expired, and this year we expect demand to decrease. In 2017, we expect a continuing trend of decreasing total incentive expenditures and increasing capacity.

Suzanne Leta-Liou: What do you expect to see outside of your direct incentive market for large commercial solar systems of 300 kilowatts to 2 megawatts in size?

Dave McClelland: Incentives are currently capped by a total dollar amount and not by capacity, except for the 2-MW limit on net-metering projects, so some larger commercial projects have received our incentives. This past year, we didn't run a competitive process for custom solar incentives for Pacific Power or Portland General Electric. We don't currently have good data on projects happening outside of our incentive program.

Suzanne Leta-Liou: It would be good for Energy Trust to know when larger commercial systems are getting installed and if they're getting installed without utility programs. It would also be good for Energy Trust to collect some information about these systems.

Alan Meyer: At what point do we question whether there are free riders?

Dave McClelland: We had that question in mind thinking about the future of the residential solar market. As costs come down, at some point there won't be above market costs for solar, which is currently our free rider test. On the other hand, the Residential Energy Tax Credit covers a substantial part of the above market costs and if that expires, projects may need higher incentives from Energy Trust to move forward. This year, we're focusing on managing volume while thinking about where we're going in the next two years.

3. Solar plan for Oregon from OSEIA

Jeff Bissonnette from the Oregon Solar Energy Industries Association (OSEIA) presented on the organization's draft solar plan for Oregon, exploring the next 10 years of solar potential and how to achieve that potential. The plan expects that solar has the potential to provide 10 percent of electricity in Oregon. The plan recommends that Oregon maintain current policies supporting solar and fill in the policy gaps to support a stable solar market, grow the solar workforce by 8,000 workers by 2027, align land use and energy policies to support large-scale solar and examine transmission issues.

Erik Anderson: How many of the distributed solar projects in Oregon did Energy Trust incentivize?

Dave McClelland: 80 percent would be a conservative estimate given the feed-in tariff.

Adam Schultz: Have you examined transmission issues in next 10 years given the economics of solar and its growth in Oregon?

Jeff Bissonnette: It's not going to help. Transmission is expensive and OSEIA hasn't waded into it much yet. It should be a regional discussion.

John Reynolds: Is OSEIA working on multiple uses for large-scale land?

Jeff Bissonnette: Large solar installation is okay on some land. There's a common perception that solar ruins land and causes ground compaction, and we'd like to dispel that thinking.

JP Batmale: Is the 10 percent solar generation goal divided into specific goals for each sector?

Jeff Bissonnette: Yes. Half of that generation is residential and large commercial generation accumulating 600 megawatts. We are struggling with community solar because we don't know how that will take shape in Oregon, but we assume it will be large commercial and small utility scale.

Erik Anderson: How much electricity generation is 10 percent?

Jeff Bissonnette: It's equivalent to 6.1 million megawatt hours or 4 gigawatts of capacity.

Frank Vignola: Are you looking at combining solar with other renewables technologies to balance the renewable generation potential?

Jeff Bissonnette: Solar can be a part of a larger scheme. We're also looking at solar + storage, demand response and electric vehicles. We're interested in combining opportunities to ultimately install more solar that results in a cleaner grid.

4. Underwriting and risk analysis for renewable projects

Matt Mylet, vice president and relationship manager at Beneficial State Bank, provided an overview of how he analyzes project finances from a lending perspective. Beneficial State Bank

focuses on community-scale renewable energy lending, including solar, dairy digesters and low-impact hydroelectric power. The underwriting considerations for a loan include sources of repayment, capacity of the borrower and character of the borrower. The primary source of repayment is cash flow, which is impacted by the operating performance of the system, the power purchase agreement, revenue sources and operating expenses. A key consideration when assessing a project is the owner's experience and resources, equipment reliability, projected cash flow versus debt, utility requirements and financial reporting quality.

JP Batmale: When you work with Energy Trust, how do custom studies lower due diligence for Beneficial State Bank?

Matt: It's helpful, but we still need to do our own internal feasibility analysis.

JP Batmale: What's a comfortable level of cash flow to debt size?

Matt Mylet: The maximum loan to value is 65-80 percent. Often developers want to see a 10-15 year maturity of the loan, meaning the payments are stretched out and it's easier to make the loan pencil out. The further out loan payments are extended, the higher the risk for the lender.

Alan Meyer: What is the range of interest rates?

Matt Mylet: The last one was 4.5 percent for six years, but it could be as high as 6-10 percent.

Frank Vignola: There's sometimes uncertainty in solar as a resource. What does that do when you consider a loan?

Matt Mylet: That's captured in the feasibility scenario along with the stress case, which adjusts revenues down and examines how well the system performs in that stress case.

Betsy Kauffman: How do you deal with Renewable Energy Certificate sales as far as cash flow?

Matt Mylet: It's determined by the length of whatever contract is in place. If there's not a signed contract, there's not enough certainty to include it as a revenue source.

5. Update on the legislative session

Jay Ward and Hannah Cruz provided an update on legislation being considered in Oregon's 2017 session that could impact the energy market in Oregon and Energy Trust's work. Energy Trust does not lobby or take a position on potential or proposed legislation, but staff track and monitor legislation that is related to our work.

The legislature is primarily focused on budget and transportation. Energy is of lower concern. There are seven bills related to the public purpose charge, and six of those would change how Energy Trust works or how funds are received. Energy Trust has been asked to present at a hearing on March 29 about how the sunset of the Residential Energy Tax Credit would affect our solar and efficiency programs. We are tracking 110 bills, some of which will get a hearing April 7-18. A legislative briefing paper will be provided in our April 7 Board of Directors meeting packet.

6. Public comment

There was no additional public comment.

7. Meeting adjournment

The next scheduled meeting of the Renewable Energy Advisory Council is on Wednesday, May 3, 2017, at 9:30 a.m.