Renewable Energy Advisory Council Meeting Notes

March 20, 2018

Attending from the council
Erik Anderson, Pacific Power
Peter Weisberg, The Climate Trust
Bruce Barney, PGE
Kendra Hubbard, Oregon Solar Energy Industries Association
Les Perkins, Farmers Irrigation District
Adam Schultz, Oregon Department of Energy
Frank Vignola, University of Oregon
Dick Wanderscheid, Bonneville Environmental Foundation

Attending from Energy Trust:
Shelly Carlton
Becky Engel
Matt Getchell
Jeni Hall
Jed Jorgensen
Betsy Kauffman
Dave McClelland
Dave Moldal
Josh Reed
Lizzie Rubado
Zack Sippel
Greg Stokes
Jay Ward
Peter West
Rachel Wilson
Whitney Winsor
Robert Wylie

Others attending:
Rob Del Mar, Oregon Department of Energy
Lindsey Hardy, Energy Trust board
Alan Meyer, Energy Trust board
John Reynolds, Energy Trust board

Executive Summary:

- Solar market current state and forecast:
    - Questions about impacts of the RETC expiration and import tariffs on solar panels, as well as the future pace of projects and incentive trends.
- Wallowa Lake County Service District hydro project:
    - Overview of proposed project in Wallowa County area.
    - Questions about project scope and prioritization of incentive funds.
- Public comment:
    - Questions about changing the name of the Other Renewables program; and availability of RAC for a tour of Farmers Irrigation District over the summer.

1. Welcome, introduction, announcements

Jed Jorgensen called the meeting to order. He discussed changes to the agenda, including a specific request from Suzanne Leta Liou to speak during the public comment period about solar + storage. He also requested feedback from council members at the meeting’s conclusion about their availability to attend a tour of the Farmers Irrigation District in Hood River.

The agenda, notes and presentation materials area available on Energy Trust’s website at: https://www.energytrust.org/about/public-meetings/renewable-energy-advisory-council-meetings/

2. Solar program updates

Dave McClelland provided a presentation about the solar program and market, in light of the RETC expiration, and post-RETC above market costs for residential and commercial.

In his overview about the current market and 2017 activities, Dave provided a summary of the Solar program's progress toward 2018 action plan goals. He acknowledged challenges in the current market, including one solar contractor's business troubles, recently featured in an Oregon Public Broadcasting story. Energy Trust has facilitated conversations with contractors to enable customer projects to move forward.

Dave McClelland provided an update about infrastructure/systems upgrades to the PowerClerk software platform, which Energy Trust uses to accept incentive applications from contractors. An upgrade to new version of PowerClerk will allow Energy Trust to develop new offerings and provide process improvements for contractors.

In the 2017 action plan, Energy Trust identified several Solar program goals. One involved expanding participation with a particular focus on participation among low- and moderate-income individuals. The organization plans work later in 2018 to operationalize its plans for this audience.

Another area of exploration by the Renewables sector has been an expanded focus energy capacity (kilowatts), in addition to energy generation (kWh) alone. Dave explained the industry is working to provide flexibility in *when* energy is available, so it can address peaks and valleys in demand. Storage and controls can be added to solar to make systems more flexible. Changes at the federal level about how solar and storage are considered together for tax credits could create opportunities for Energy Trust to explore in 2018 and beyond.

Kendra Hubbard: Are you referring to storage for both residential and commercial?

Dave McClelland: We haven't made decisions, but will look at this in Q2-Q4. At that time, Energy Trust will come back to RAC and ask for its perspective.

Alan Meyer: Our region has a lot of capacity, but Energy Trust's enabling legislation doesn't include capacity. Is OPUC thinking about looking at that, and what we're allowed to do?

Dave McClelland: Hopefully JP Batmale can join us for the discussion today, but we will come back to RAC to talk about this. It's an area of interest. Right now, our focus is on generation and getting systems installed. But there's a question of what other benefits those systems can provide, such as supporting peak demand reduction.

Dave McClelland then reviewed application trend data for solar projects from 2017 through today. The overall pace was steady for most of last year. In the last few weeks of 2017 and into the first week of January 2018, Energy Trust received a surge of project applications as people tried to take advantage of RETC. Q4 2017 was Energy Trust's biggest quarter ever for solar applications. The application deadline for residential customers to receive the Energy Trust incentive was January 8, 2018, while the state application RETC deadline was December 31, 2017.

Since January 8, 2018, the organization has received only 99 residential applications. Dave provided a comparison of that pace to the same period in 2017, which had three times more applications.

As contractors close out RETC projects, they gain more capacity to take on new projects, which Dave cited as a promising indicator for the sector. Energy Trust saw 22 applications per week. Last year this time, we received 34 applications per week.

Kendra Hubbard: Are most of the applications getting approved?

Dave McClelland: Almost all applications will turn into funding reservations and installs. The typical turnaround for residential will be 90-180 days.

Alan Meyer: Has the average number of applications per week changed with a lack of incentives?

Kendra Hubbard: There is uncertainty in the market from the new federal aluminum and steel tariffs. These tariffs impact materials used in solar systems. I still foresee some volatility in the market until the tariff impact is borne out.

The presentation provided context for the incentive changes in 2017 and 2018, in line with RETC. Dave discussed the organization's past decision-making approach around its solar incentives levels. He reminded RAC members that last August, Energy Trust asked if it should change incentives after RETC, and whether the organization should take a "wait-and-see" approach or act quickly. At the time, there was a decision to wait and see. Dave indicated that Energy Trust still agrees with the decision to make slow and steady reductions to the solar incentive last year, and to increase them after RETC expired. However, now is a good time to reassess which approach to take in this new market landscape.

Kendra Hubbard: Those step-downs in incentives were easier for contractors to pitch to customers. It gave them a window of time when an incentive is guaranteed, so they felt some stability. Those fewer reductions with longer lengths of time between them were easier for them to deal with in residential.

Peter Weisberg: Do all applications after January receive the $0.52 incentive?

Dave McClelland: Yes. Although the average slightly varies between PGE and Pacific Power.

Dave McClelland provided background on the RETC deadlines and the current status of projects applying to receive this tax credit. The organization started 2018 with 1,200 active residential projects. Since then, Energy Trust has completed 25 percent of those projects. Another 25 percent came back and requested verification, leaving 600 applications whose status was unknown. To get a better sense for these projects' status, Energy Trust informally surveyed 10 of the most active contractors. Inputs from these contractors indicate that half of those 600 existing projects were already installed and received jurisdictional inspection. They estimate that roughly 300 projects are still in progress trying to hit the installation deadline for RETC.

Energy Trust is equally hopeful that many of those projects will be completed. However, Dave notified RAC that there will likely be some projects that don't make the deadline. Renewables team members are working with contractors and jurisdictions to prepare them for this last push before the March 31 deadline.

Dick Wanderscheid: If you don't get a RETC, are you kicked into the $0.52 incentive?

Dave McClelland: We are considering an option to push customers to that new higher incentive. We need to look at how many projects actually come through and the impact of that decision on budget.

Jay Ward: That is what the state is suggesting we do in the unhappy event that people don't make the RETC deadline.

Dave McClelland: Although doing so won't make up for loss of RETC.

Peter Weisberg: What is the shortfall?

Dave McClelland: RETC allows for up to $6,000. With the new 2018 incentives at about $0.30-0.40/watt higher than late 2017 rates, a typical system would receive about $2,000-3,000 more.

Kendra Hubbard: For a homeowner who doesn't get RETC, they view it as an extra couple years of payback, rather than 5-10 years with RETC.

Dave McClelland: The Energy Trust incentive reduces the up-front costs instead receiving a tax credit over multiple years.

Kendra Hubbard: Yes, the financing is less with an Energy Trust incentive, and homeowners see the value in that.

Dave McClelland continued his presentation with an above market cost forecast, including a chart that outlined current and future projections. As of January 9, 2018, Energy Trust incentive is at $0.50/watt and covers about 30 percent of the above market cost. Dave showed a future forecast of the Investment Tax Credit (ITC) phase-out in 2020-2022. He introduced a question about whether there will be another boom/bust cycle as the market anticipates the expiration of the ITC. Dave also provided industry context from 2013 where the industry experienced a similar step-change in cost. At that time, Energy Trust had significantly cut its incentives. Costs went up at first, then came down sharply, dropping from $5.00/watt.to $4.50/W on average. If the industry were to see a similar 10 percent reduction in cost, the market would likely grow again.

Kendra Hubbard: When we consider storage in this, storage will increase cost per watt. It will create the same production level, but require more equipment. Is storage part of this cost forecast?

Dave McClelland: If we were providing incentives for storage projects, then yes, it would need to be part of the conversation. Our focus is above market cost of solar alone.

Kendra Hubbard: Not including storage above market costs?

Dave McClelland: Correct.

Dave McClelland described a current market dynamic at the beginning of 2018 whereby there are significant cost reductions happening with contractors. Some low-cost contractors are at $2.50/watt, representing a small portion of market. Some contractors are still at $5.00/watt.

Dave McClelland proceeded with his presentation by providing a summary of the current program status. Residential activity is down 66 percent from Q1 2017, although things are picking up. Current incentives cover 30 percent of above market costs. Energy Trust expects above market costs to stay high. Dave then requested feedback on the "wait-and-see" strategy from 2017.

Kendra Hubbard: Energy Trust made the right decision of half-and-half between residential and commercial. My conversations with contractors focus on how to take away risk in the market. I haven't seen the residential market become impacted yet by the aluminum/steel tariff, which could make modules and equipment more expensive. Going forward, tariffs could impact larger projects—not just utility scale, but larger commercial projects. I recommend monitoring what the split is. Things like the availability of material, price of equipment and where is it manufactured will all be factors to watch. From my opinion, it's good to have 50/50 split.

Dave McClelland: Last year, we saw equipment prices decrease in the first half of the year, and price increases in the last half.

Kendra Hubbard: Manufacturers will change prices expecting that material costs will change. These changes are not necessarily a reflection what is actually happening with costs, but a speculation of what could happen to the cost of modules and availability.

Dave McClelland: Our assumption is that the tariff costs are already included due to speculation.

Dave McClelland completed his presentation with a summary of the non-residential market. New incentives and caps were introduced for the commercial market. Activity has been slow and steady, and Energy Trust has not seen the rush that it experienced last year. The focus for commercial has been on the reintroduction of incentives for voluntary grant programs, specifically Pacific Power's Blue Sky program and PGE's Renewable Development Fund (RDF).

Energy Trust is considering two incentive offerings for voluntary grant programs. First, Energy Trust may offer up-front development assistance incentives. Although they are relatively small, these incentives remove risk from contractors who have to provide this type of up-front support today. Design work is not an eligible cost for an RDF or Blue Sky grant, so it is an area where Energy Trust incentives won't be duplicative.

Kendra Hubbard: These incentives could be important as contractors move into residential space, but lack the staff and expertise to do design.

Dave McClelland: Energy Trust hopes to get the development incentive out next month. We can learn what customers need from us and what they need from the grant, so we don't duplicate the grant.

Bruce Barney: Will this offer increase the number of projects or just make greater competition for grant funds?

Dave McClelland: The feedback from PGE staff is that they haven't spent all the RDF grant dollars and are looking for more qualified applications. Blue Sky may be funding constrained, but this could provide opportunities for projects that wouldn't happen otherwise.

Dick Wanderscheid: How will we determine how much money people get?

Dave McClelland: We do a cost share for early design work, similar to how we approach our new buildings program. We pay a percentage of the up-front work. However, we propose to pay no more than $1,800 for early design work. We will also take that into consideration for the installation incentive. The design incentive will come out of the installation incentive.

The second incentive Energy Trust proposes to voluntary grant programs is to offer an installation incentive for public entities and nonprofits. It is a lower incentive than the current offering, but includes a two-year reservation period that is twice as long as the current reservation period.

Peter Weisberg: How are grant projects different from other commercial projects?

Dave McClelland: Voluntary grants are dollars that come from voluntary green power customers. The leftover funds are used for grants. A couple years ago there was a concern that Energy Trust incentive plus grant funds were too much, and OPUC asked us to step back from offering incentives for grant projects. But with a new review from OPUC, we now can offer incentives again.

Kendra Hubbard: Is there any way we can announce incentive decreases on a monthly basis? Can we tell contractors what the changes are for incentives, so there is consistency when changes will occur?

Dave McClelland: We avoided setting a date for project changes so we avoid the start-stop of contractors rushing to get applications submitted. We are not expecting many incentive reductions in 2018. We hope to extend the current rate because of low activity in Q1.

Kendra Hubbard: Speaking for my own personal project, incentives went down 10 cents over a period of five weeks. That was a big change. I'm just thinking from a contractor perspective. Step-downs can be communicated to the industry to help them.

Jeni Hall: We intentionally don't publish the dates, but we try to be as transparent as possible to contractors. We do a weekly status report for them with current and projected incentive rates, and forward-thinking contractors put the current and future incentive rates in their contracts to inform customers.

Kendra Hubbard: Not every installer is doing that, but that would be helpful. They fear setting incorrect expectations.

Jeni Hall: We are trying to give contractors as many tools as possible.

Alan Meyer: Could we review the chart of the spike again? I'd like to see mean calculation prior to the last two months, and then how long it would take to get back to the mean, to see if projects rise up or if there has been a change. There is some level of demand that didn't change absent this incentive that should continue.

Peter Weisberg: Is this 66 percent reduction going to continue?

Dave McClelland: We are hopeful because it has shrunk to a one-third year-over-year reduction for March. Looking back to 2013, we dropped from 1,200-1,300 projects to 800 projects with a similar incentive reduction. We have 1,000 projects projected this year. It could be more.

Lindsey Hardy: What is the distribution of projects across state? Are they with top contractors? Spread out?

Dave McClelland: Current data show no more than 10 projects from any one contractor. There are 30 contractors represented in the Q1 project numbers. Projects are located around the state. The activity in Pacific Power territory has been a significant part of the total.

Kendra Hubbard: Contractors are busy getting through March 31. Their sales teams are trying to rethink how they are going to sell going forward. They are figuring out how to get through their backlog. I believe a better look at the universe is after March 31. OSEIA predicts that there will be a contraction in the market, which could come from out of state or local contractors.

Frank Vignola: Do you expect the soft costs for solar to change?

Dave McClelland: This is still an area of interest. Customer acquisition is a major cost, and becomes higher as the project financials become less optimal for customers. It becomes harder to sell a 15-year payback than an eight-year payback. The leads we provide to contractors will continue. We should think about other marketing to let people know about existing solar incentives.

Bruce Barney: Is there any way Energy Trust will recognize issues or warn people so they don't experience the problems we have right now with one contractor? What role can Energy Trust play in consumer awareness?

Dave McClelland: It is not unusual in the construction industry for companies to go out of business. In the few cases where solar contractors went out of business, they had high volume and lots of customer interest, but had cash flow issues. Those are challenging issues for Energy Trust to predict. If you have ideas of indicators, we'd be interested in that feedback.

3. Wallowa Lake County Service District hydro project

Jed Jorgensen introduced Dave Moldal to give a presentation on Wallowa Lake County Service District hydropower facility. Jed reminded RAC participants that projects requesting less than $500,000 in incentives can be approved by staff only. Over that amount, RAC gives feedback and then Energy Trust's board evaluates the project. This Wallowa project doesn't require RAC feedback or approval, so it is being shown for informational purposes.

Dave Moldal then shared his presentation about the proposed project, including an overview of the project, evaluation points, above market costs and overall budget.

The Wallowa Lake County micro-hydropower project has been under consideration for many decades. The project involves generating power on a municipal drinking water system that draws water from a spring on U.S. Forest Service land and delivers it to water users in the valley south of Wallowa Lake. This system delivers water for 330 accounts including the Wallowa Lake State Park.

The new project will install a powerhouse (small shed), replace 800 feet of existing 4-inch pipe and install a turbine and generator. This micro-hydro project will generate energy from the head and flow of water in the existing pipeline, and in the process, will offset through net-metering for about 75 percent of the water district's pumping load. The project must take into consideration protection of water quality because it is a drinking water source. Therefore, in addition to the regular permitting involved in such a project, Wallowa County must also obtain review by the Oregon Health Authority to ensure water quality standards are met. Wallowa County aims to complete permitting and construction this summer, with commissioning in late 2018.

The project would offset approximately $12,000 in retail power. Financing is not yet complete, and Dave mentioned that the state drinking water revolving loan fund is under consideration. Additionally, Wallowa County received a Pacific Power Blue Sky grant for $60,000.

Overall project costs are estimated at $212,000. The cost for the turbine and generator are based on a bid, and other cost estimates in the capital stack are based on similar projects that have been recently developed. Energy Trust proposes an incentive of $80,000 for this project, which is estimated to generate about 134 megawatt-hours of renewable electricity per year. To calculate above market costs, Energy Trust factored in an 8 percent risk-adjusted rate of return on a 20-year project, and factored in the Blue Sky grant that will offset a portion of the project's cost. The final above market cost estimate is approximately $100,000.

John Reynolds: Is there flow all the time? 365 days a year?

Dave Moldal: Yes. The spring flows at a consistent volume year-round. Regardless of water demand, the turbine and generator will operate year-round.

Alan Meyer: This is a very expensive project. Have we have prioritized this as the best project for this investment?

Jed Jorgensen: It is the only project that has applied at this time. Smaller projects tend to be more expensive. In that area, where there is a lot of potential for other projects, getting more projects in the ground helps get others to move forward.

Alan Meyer: Is an 8 percent rate of return and a 12-year payback correct? Is that consistent with the market?

Les Perkins: Yes. We don't have the same return requirements that a utility has. Projects need to make sense over a longer time frame.

Jed Jorgensen: This project is county-owned. That is going to be a piece of infrastructure that can last a long time, 50 years or longer.

Les Perkins: I expect the costs of retail power to go up over time. This way, the district controls their costs.

John Reynolds: There is also a resilience factor. This is a small generator, but because it's in remote place, it could be help with resilience.

Jed Jorgensen: There is a Pacific Power one-megawatt hydro plant about one mile up valley from this site.

Dick Wanderscheid: Why are they replacing the pipe, and why only part of the pipe and not the whole thing?

Jed Jorgensen: The section of pipe being replaced will have to manage higher pressures than it currently does.

Frank Vignola: Why has it taken so long?

Dave Moldal: Cost.

Peter Weisberg: Are there any headline risks where the powerhouse is loud and annoys campers? Or water quality issues?

Jed Jorgensen: Yes, they thought of those things and are addressing them. They are insulating the powerhouse building. Noise is always a concern.

Bruce Barney: It seems wrong to put in all this money to power the pump, but we aren't even powering the whole pump. Did the county do a pump efficiency evaluation to see if that is possible?

Dave Moldal: I understand it is outside of the hydro project's scope, and replacing it would significantly increase costs. However, the pump is new.

Jed Jorgensen: We can't change how the water delivery system operates. It is a capital-constrained county. It has taken 30 years to get here.

Bruce Barney: Then would the public's money be better spent on some other design?

Jed Jorgensen: The county does not have the resources available for a filtration plant.

Bruce Barney: Will this system be allowed by DEQ in its present state, or will they need to put a water treatment plant in?

Dave Moldal: The Oregon Health Authority is part of the permitting process. They have to sign off.

Les Perkins: One benefit is that no development is going to happen near the water source. It is located in the wilderness. Water quality won't change, because it is not an accessible area.

Bruce Barney: Like Bull Run, but no one can get in there.

Les Perkins: Even less accessible than Bull Run.

4. Public comment

Jed Jorgensen and Lizzie Rubado acknowledged that Suzanne wasn't able to join today, so her topic will be saved for the May meeting. Kendra said that Suzanne would likely speak to a potential tax incentive for people taking advantage of ITC. The potential tax incentive would allow current and existing solar homes to add storage as part of an ITC project. This is timely because of conversations around community resilience and how solar + storage will interact with the grid. Storage is something for RAC to think about in the context of Energy Trust's solar offerings.

Jed noted that this discussion ties into questions about definitions and statutory requirements around Energy Trust's renewable energy work. Energy Trust needs to be in alignment with the OPUC on how the organization may support things like solar + storage and how storage fits into above market costs.

John Reynolds raised the issue of nomenclature for "non-solar" program projects. He said that Alan has for some time been unhappy with "Other Renewables" as the name for non-solar. He asked if Energy Trust ever considered the word terrestrial. Jed agreed that the “other” name has been unsatisfying for a long time and for a lot of people. Energy Trust has begun conversations about a name change. This task has been assigned to Shelly Carlton at Energy Trust, who will help facilitate this discussion. Any name change will go through policy committee because of the work and disruption that it could cause.

Finally, Jed revisited the poll about dates for a field trip to Farmers Irrigation District, asking for a show of hands for which RAC members could attend on the following dates: June 13, June 27 or July 25. July 25 was identified as a board meeting date, which will not work for Energy Trust staff or board members.

Jed committed to send the poll out to others for their input. He will let RAC know about the date.

5. Meeting adjournment

The meeting adjourned at 11:17 a.m. The next scheduled meeting of the Renewable Energy Advisory Council will be held May 9, 2018, at 9:30 a.m.