

Agenda - Renewable Energy Advisory Council

Friday, November 30, 2018

9:30 a.m. – 11:45am, with joint RAC/CAC lunch workshop on strategic planning following from 12:00 to 1:30

Please note Friday meeting

Energy Trust conference room Kilowatt
421 SW Oak St., Suite 300, Portland, Oregon 97204

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|--------------|--|--------------------|
| 9:30 | Welcome, Introductions, Announcements | Information |
| 9:35 | 2019 Budget <ul style="list-style-type: none">Staff will provide information on Energy Trust's draft 2019 budget for renewable resources. | Information |
| 10:20 | Break | |
| 10:30 | Oregon Dept. of Energy Biennial Energy Report <ul style="list-style-type: none">Staff from the Oregon Department of Energy will present a summary of the department's recently released report. [https://energyinfo.oregon.gov/ber] | Information |
| 11:00 | Three Sisters Irrigation District McKenzie Hydro project update <ul style="list-style-type: none">Staff will review challenges related to wheeling power that a 300kW hydro project experienced in its development. | Information |
| 11:30 | Public Comment | |
| 11:45 | Adjourn this section of the meeting | |
| 12:00 | Strategic Planning Development <ul style="list-style-type: none">A joint RAC and CAC interactive discussion about development of the 2020-2024 Strategic Plan. Discussion will center on the scenario developed using input received in October from RAC and CAC, the opportunities that exist within the selected scenario, and what Energy Trust's unique role of value could be in that future. Please read the draft scenario in the packet prior to the meeting. | Discussion |

Lunch will be provided for RAC and CAC members.

1:30 Adjourn

You can view this agenda and notes from previous meetings at:

<http://www.energytrust.org/about/public-meetings/renewable-energy-advisory-council-meetings/>.

If you have comments, please alert Jed Jorgensen at jed.jorgensen@energytrust.org.

Next RAC meeting: Wednesday, January 30, 2019

Renewable Energy Advisory Council Meeting Notes

Friday, October 12, 2018

Attending from the council

Erik Andersen, Pacific Power
Bruce Barney, Portland General Electric
Meghan Craig, Oregon Solar Energy Industries Association
Andria Jacob, City of Portland
Anna Kim, Oregon Public Utility Commission
Oriana Magnera, NW Energy Coalition

Adam Schultz, Oregon Department of Energy (by phone)
April Snell, Oregon Water Resources Congress
Tom Starrs, SunPower
Frank Vignola, University of Oregon
Dick Wanderscheid, Bonneville Environmental Foundation

Attending from Energy Trust

Michael Colgrove
Chris Crockett
Hannah Cruz
Emily Findley
Matt Getchell
Jeni Hall
Kate Hansen
Betsy Kauffman
Dave McClelland
Dave Moldal

Joshua Reed
Joshua Reid
Thad Roth
Lizzie Rubado
Zach Sippel
Julianne Thacher
Jay Ward
Peter West
Mariah Willis
Robert Wylie

Others attending

Samuel Birru, University of Oregon

Alan Meyer, Energy Trust Board of Directors

Executive Summary:

1. Low- and Moderate-Income Solar Update
 - Staff provided an update on Energy Trust's work on an initiative to expand solar benefits for low and moderate-income groups.
2. Strategic Planning
 - Staff sought feedback from members on key drivers and scenarios explored in Energy Trust's five-year strategic planning process.

1. Welcome, introductions, announcements

Dave McClelland called the meeting to order 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/>.

Dave McClelland announced the board budget workshop next Wednesday, October 17 from 1:00 pm to 4:00 pm. Renewable Energy Advisory Council members are encouraged to attend.

Lizzie Rubado and Anna Kim provided a brief update on community solar. This program was created due to recently passed legislation and is intended to help make solar accessible for

people who are not able to install the technology on their homes. Anna Kim stated that contract negotiations are taking place. Once negotiations are complete, the contract will be brought to the Oregon Public Utility Commission for final approval.

Lizzie clarified that the program administrator is the implementer of the program. She directed people to the request for proposals for the program administrator for a complete description of the role and scope of work.

Andria Jacobs: Will Energy Trust be part of the program administration team?

Lizzie Rubado: Energy Trust participated in two proposals as a subcontractor, one of which was selected through the RFP process. Nothing is final, including Energy Trust's role, until contracting is complete. There is another role within the program administration team, called the low-income facilitator. This party will support the successful delivery of the low-income portion of this program. Community Energy Project is the potential implementer for that work.

2. Low- and Moderate-Income Solar Update

Betsy Kauffman presented updates on the low- and moderate-income solar initiative. The goal is to increase solar deployment for families with low and moderate incomes. Energy Trust is one of many entities working on this contract through a grant from the U.S. Department of Energy.

Alan Meyer: What are the other participating states?

Betsy Kauffman: Rhode Island, New Mexico, Minnesota, Connecticut and District of Columbia.

Betsy Kauffman reviewed program efforts in 2017, the first year of the grant. She described findings regarding housing stock for low- and moderate-income people, explaining that many low- and moderate-income families are renters.

Andria Jacobs: What was the source of the demographic data?

Zach Sippel: 2015 American Community Survey census data for Oregon.

Lizzie Rubado: These efforts are in partnership with Oregon Department of Energy and Spark Northwest, who provide additional information and context for the entire state. That is why we did not limit this analysis to Energy Trust's service territory.

Betsy Kauffman highlighted findings about average electric bills for renters and homeowners, emphasizing that low- and moderate-income customers typically bear a greater energy burden relative to their incomes.

A stakeholder group was formed and met throughout 2017 and 2018. In early 2018, staff travelled throughout the state to meet with 35 organizations and agencies. This outreach led to refined strategies and the creation of an implementation plan. The next steps will be to build capacity, develop program models and promote the offerings.

Energy Trust will offer a new Low- and Moderate-Income Innovation Grant that provides funding to help organizations develop replicable program models for promoting solar opportunities for low- and moderate-income residents.

Alan Meyer: Is funding from the Low- and Moderate-Income Innovation Grant from the U.S. Department of Energy grant?

Betsy Kauffman: It's from Energy Trust.

Alan Meyer: So, public purpose dollars?

Betsey: Yes. Applicants must be in Pacific Power or PGE territory to be eligible for the grant.

Betsy Kauffman discussed plans for 2019, which is the third and final year of the plan. Energy Trust will help organizations develop program models. Staff will also figure out how to apply these learnings to the traditional solar program and incorporate the organization's diversity, equity and inclusion efforts into low- and moderate-income solar activities.

Bruce Barney: You must ask if adding solar is the best step for a particular location, and if there could be more value added through efforts to weatherize or insulate the home. How have you dealt with that?

Betsy Kauffman: It depends on the circumstances of a home or building. We want to make sites as energy efficient as possible. Solar provides the opportunity for long-term bill reduction. All customers of PGE and Pacific Power pay the public purpose charge, part of which goes to renewables. We want to be sure that our funds are supporting low- and moderate-income communities.

Lizzie Rubado: We see solar as a tool that can help buildings that have been weatherized go further or, in some cases, uniquely address energy challenges that are problematic for weatherization or energy assistance programs. Solar is not an end in and of itself; it is a way to tackle other issues. We have asked community group members to identify circumstances where solar can uniquely address a need or provide value to their customers. Community solar, for example, may be a solution that can provide long-term bill reductions that are independent of the condition of a customer's home. Resilience and disaster preparedness are another long-term benefit solar can provide. We have participated in conversations about the best use of time and dollars. For example, Spark Northwest has expressed interest in ownership of renewable assets as a tool to build wealth in low-income communities.

1. Development of Energy Trust 2020-2024 Strategic Plan

Lizzie Rubado led an exercise to develop future scenarios that can be used to test potential strategic plan strategies. What will be the key drivers in scenarios? What is a plausible future? Prior to the meeting, members completed a survey about what kinds of events will have impact or influence in the next five years.

Most participants predicted a relatively positive future. Members described a positive future outlook as having robust state and federal tax incentives, new technology, better waste capturing stream, policies that overcome split incentives, aggressive building codes, higher costs for fossil fuels, lower costs for distributed renewables, better financing for affordable housing, cheap storage, fully integrated delivery for targeted load management, a smart grid, proliferation of electric vehicles, seamless aggregated net metering, high valuation of solar as a resource, success of community solar, monetization of non-energy benefits, a carbon tax and high carbon costs, market potential created by extreme weather, successful utility regulation, policies that increase funding to community-based organizations, authority to prioritize equity and carbon, a mandate requiring solar on all new homes, and changes to land law allowing solar to be used in agriculture.

Members described a negative future outlook as having lower energy prices, negative market impacts from California, a recession leading to a shrinking workforce, diminished access to raw materials, loss of national efficiency standards such as ENERGY STAR®, loss of consumer confidence, loss of investment appetite, extreme success of large-scale renewables, trade wars, a saturated market for energy efficiency, failing storage technology, loss of the public purpose charge, high costs for integration, unsuccessful commercial solar, and low carbon costs.

Renewable Energy Advisory Council members discussed the policy outlook for distributed-scale renewables. Most predictions were optimistic.

Andria Jacobs: I expect that consumer demand is strong and will pull policy along. Big market players continue to advocate and show up at the OPUC. However, I don't see Oregon leading in innovative policy. We've lost that over the last seven or eight years.

April Snell: That matches what I thought. My prediction was barely more optimistic than current conditions. Existing programs will be enough to produce progress.

Oriana Magnera: Oregon is poised to be a leader in energy and equity, and that will affect distributed resources and who can access them.

Chris Crockett: What are considered distributed-scale renewables?

Lizzie Rubado: They are not utility-scale, and typically deployed within the built environment, or our communities.

Dick Wanderscheid: It's on the customer side of the meter.

Anna Kim: There is work being done now so things can happen in next five years.

Meghan Craig: If we can move away from financially based policy, we will have more positive potential. Currently as we look at state budget, we are told there's not money. If we can move away from that, we can have things like community solar or the California mandate.

Tom Starrs: I agree, but I'm less optimistic that will happen. I've seen declining commitment to net metering and affordable rate design. I would like to think that community solar could offset that or other policies could reduce the soft cost of solar, but I'm concerned over loss of economic incentives.

Lizzie Rubado: What do you think is the driver?

Tom Starrs: A conservative campaign by Edison Electric to deter utilities from net metering.

Dick Wanderscheid: There is an ongoing decline in the cost of renewables. Uptake will increase if policy encourages it and costs are low.

Frank Vignola: Small, non-investor-owned utilities are worried about the costs of solar. Smaller utilities have not supported solar legislation because they are worried about being required to run solar programs that they feel would be too costly to administer.

Erik Andersen: As compensation gets tied more to the grid, the actual energy value could be less than the net metering rates, which would negatively impact people's compensation. If we're tying the value of solar to what it provides to grid, there will be less value for what's provided.

April Snell: While I'm still optimistic, one thing that argues for things staying the same is lack of leadership at state and Federal level to push policy forward.

Jeni Hall: Does anyone have thoughts on the California independent system operator or energy imbalance market?

Erik Andersen: That makes it worse. We get negatively priced solar energy and use that to serve our customer. Millions of dollars of savings are coming to the state, and we must deal with the duck curve of our own. Since we can take less from California, energy imbalance market benefits go down as we get more solar in Oregon. The benefit energy imbalance market produces will be smaller for customers as we build more solar here. I don't want to overestimate

the benefits ancillary services and carbon signals will provide. That's why I'm on the slightly negative side.

Anna Kim: At least in the next five years.

Renewable Energy Advisory Council members discussed the outlook for energy efficiency policy. The forecast is close to present conditions, and less optimistic.

Erik Andersen: There is more energy efficiency being built into standards, so the efficiency of new structures will go up as building standards reflect new equipment. This makes it harder to justify energy efficiency programs, but more efficiency goes in.

Tom Starrs: I'm optimistic. There is potential for innovative rate designs and PV charging to shift load profiles in a favorable direction for cost reduction.

Oriana Magenera: There is a push and pull on the policy front. Legislators don't understand the value of energy efficiency. They need to see non-energy benefits.

April Snell: When the consumer has to pay more for energy, that can stimulate positive energy efficiency policy.

Anna Kim: What would cause a cost increase?

April Snell: I don't think it would be all carbon—consumers' perception isn't always reality. If there are other similar increases, they may demand more energy efficiency policy.

Anna Kim: In the five-year horizon, the energy efficiency industry and policy is still maturing and iterating. We are analyzing and getting more granular with information, and I don't know if something positive will occur within five years. The outlook will become more optimistic in a 10-year timeframe.

Renewable Energy Advisory Council members discussed market potential for distributed-scale renewables. The outlook was generally optimistic.

Frank Vignola: Solar has proven itself. If the price continues to go down, I predict a positive outlook.

Bruce Barney: I was feeling the price would continue to rise.

Dave McClelland: The federal investment tax credit will be stepping down. How do people see that as a driver?

Frank Vignola: It is a factor.

Bruce Barney: The overall incentive picture is dismal in next five years

Erik Andersen: The cost of solar equipment has dropped very quickly, but it might not have a strong enough effect in next five years to make up for the loss of the tax credit.

Tom Starrs: Declining policy support is offset by price decline, but that won't continue indefinitely.

Frank Vignola: I think storage will come into its own in the next five years, and there will be an incentive to install it.

Bruce Barney: Innovative rate designs might feed into that as well.

Meghan Craig: I agree with Frank on resiliency, and the adoption of electric vehicles will cause solar potential to grow.

Frank Vignola: I see community solar as a driver

Oriana Magnera: I see an increased focus on equity in policy opening new opportunities for reaching underserved markets.

Samuel Birru: I predict there will be increased efficiency in land use for renewables. The increase in the efficiency of technology itself will create potential to use less space to get the same amount of energy.

Renewable Energy Advisory Council members discussed market potential for energy efficiency. The outlook was slightly optimistic.

Bruce Barney: I expect continued growth in new technology, such as the next version of the LEDs.

Andria Jacob: The easy stuff has been done, and the next things are harder and more expensive. Having tried to sell energy efficiency for most of my career, people don't want it. It's hard to sell compared with renewables.

April Snell: I was trying hard to be positive, but there are volatilities and unknowns that make it extremely hard to predict. National and global politics drive the economy and could change a lot.

Anna Kim: I don't think carbon policy will be important in the five-year period. We might decide on a policy, but it won't start tomorrow even if it is passed.

Tom Starr: There is potentially cheaper technology. Modestly increasing retail rates and decreasing energy costs could make efficiency more accessible and attractive.

Erik Andersen: I see an increase in the level of energy knowledge. It's easier to track down funding for educational opportunities like viewing a presentation.

April Snell: Going back to distributed-level renewables, the potential increase of small-scale hydropower could add to a positive outlook. Some irrigation districts I work with are looking at in-conduit hydropower. Over half of my members are interested in pursuing these types of opportunities because its tied to improving their water delivery system.

Zach Sippel: I'm wondering if we experience more heating and cooling days, if that will drive energy efficiency valuation. This is based on what I'm hearing from renters.

3. Public comment

There was no public comment.

4. Adjourn

The meeting adjourned at 11:45 a.m. The next scheduled meeting of the Renewable Energy Advisory Council will be Friday, November 30, 2018.

Draft Scenario for 2020-2024 Strategic Plan Development

Consumer and community interest results in **policies that are favorable for clean energy**, including adoption of a statewide carbon policy, higher efficiency standards in codes, prioritization of equity, and better support for distribution-level planning and solutions. However, these **policy changes unfold slowly. Carbon policy, in particular, takes several years to implement and, in the meantime, has little impact on the market for energy conservation and renewable energy.**

In the early years of the planning period, the economic value of savings and generation remains the same or, possibly, declines as avoided costs and rates for renewables continue on a downward trend. **Annual efficiency savings decreases** as the forecasts of the Integrated Resource Plans prove out and cost-effective resources, as traditionally defined, decline. Growing **interest in energy resilience lessens the rate at which annual efficiency savings decline**, but without major new technical opportunities, this does not reverse or cancel the trend. **Towards the end of the five-year period, however, the economic value proposition of efficiency and distributed renewables begins to improve.** By 2024, the **new policies produce an expansion of cost-effective energy efficiency and renewable resource valuation.**

There aren't any revolutionary advances in efficiency and renewable technology that radically disrupt the market. However, **innovations in process controls, communications and solutions like software as a service** begin to change the clean energy product landscape, creating some new savings and opportunities for advanced solar. Some previously emerging efficiency equipment and other distributed resources like solar, EVs and battery storage decline in price, though these decreases are mostly offset by the phase out of financial incentives and government subsidies for these technologies.

Oregon finds itself dealing with **more frequent and intense weather and climate events.** Most summers feel a bit hotter than the one before, wildfires are bigger and more frequent and low snowpack and dwindling glaciers lead to less water for rivers and farmers. Water becomes a bigger issue throughout the region. Some **rural and coastal communities that are most directly and deeply impacted take an action-focused view toward resilience** and, in some cases, more deeply support climate-motivated energy policies. For them, there is a **much higher sense of urgency** that is driven by immediate concerns for personal safety, protecting property and economic difficulty, compounded by broader fears about what the future holds. This kindles more interest in localized energy resilience solutions, like microgrids, irrigation modernization and renewables paired with storage. These communities look for help to implement their own resilience solutions despite the lack of funding for mitigation or adaptation activities.

Utilities continue to test new rates and models through pilots, and **their business model begins to shift** in some areas. EV adoption is growing and electrification and deep decarbonization are being discussed by stakeholders and policy makers but emerging policies will take time to sort into actionable implementation structures. **Managing for peak** is a focus in the near term, but does not remain critical in the longer term. Solving for **resource and load flexibility** will be necessary to achieve the region's goals around carbon and resilience. But most new things remain limited to **small pockets of customers or limited test areas** and, as a result, don't impact the market broadly.

Housing affordability continues to be a challenge throughout Oregon, as people continue to move to Oregon from other states and the strong economy and high employment rates of the past few years spur people and families to leave shared housing and set up their own households. The pace of new housing construction increases, particularly multifamily housing. Affordable housing, in particular, is the focus of high levels of energy efficiency and some solar.

The economy slows down as the nation enters a recession. The slowdown is felt more acutely in rural communities, **emphasizing rural-urban disparities in the state, including in energy issues**. The racial and economic diversity of Oregon's population continues to grow. **Overall, disparities in income and energy burden become greater for disadvantaged communities**. These drivers stimulate the growing environmental justice movement that pushes to **prioritize equity in state and local energy policies**.

Some cities and communities forge ahead with their own, more aggressive policies. And while this creates pockets of opportunity and funding, it accentuates the differences in energy opportunity between communities throughout the state. The momentum generated to push for new policies **engages a lot of community-based organizations and customers that have not been particularly involved** in energy in the past. This creates new interest, demand and **new market potential**.