Meeting notes
Evaluation Committee Meeting

December 10, 2010 10am-1pm

Attendees:
Debbie Kitchin, Board Member – Committee Chair
Alan Meyer, Board Member
Daniel Davis, Board Member (by phone)
Tom Eckman, Expert Outside Reviewer, Northwest Power and Conservation Council
Phil Degens, Evaluation Manager
Brien Sipe, Evaluation Project Manager
Jason Christensen, Evaluation Intern
Sarah Castor, Evaluation Project Manager
Allie Walker, PECI, New Buildings Program
Becky Walker, PECI, New Buildings Program
Fred Gordon, Director of Planning and Evaluation
Jessica Rose, New Buildings Program Manager
Kacia Brockman, Solar Program Manager
Oliver Kesting, Business Sector Lead
Pete Catching, Planning and Economic Analysis Manager
Peter West, Director of Energy Programs
Spencer Moersfelder, Existing Buildings Program Manager
Steve Lacey, Director of Operations
Sue Fletcher, Communications and Customer Services Sr. Manager
Linda Dethman, The Cadmus Group

The meeting began at 10am with a review of the agenda.

Agenda
1. Path to Net Zero Pilot Evaluation
2. Solarize Southeast Portland and Solar Energy Review Evaluation
3. Evaluation Project List

1. Path to Net Zero Pilot Evaluation
Contractor: The Cadmus Group (Linda Dethman)

Phil presented highlights from the evaluation of the Path to Net Zero (PTNZ) pilot, part of the New Buildings (NB) program.

The pilot's goals were:
- To understand the opportunities and barriers for net-zero buildings and how to encourage greater market adoption
- To better understand the design decisions, equipment, and strategies that make net-zero buildings possible
- To inform the design of future new commercial building energy efficiency programs and incentives that support and encourage the development of net-zero buildings
- To encourage the development of net-zero buildings

A total of 18 projects have joined the pilot. Four were grandfathered into the program after they were started (in the early stages), and three have dropped out so far. There is a large range of project sizes, building types and energy savings goals. To qualify for the pilot, the building had to save 50% more than code from energy efficiency **and** 60% more than code from energy efficiency and renewables.

The pilot program offered incentives for:

- Early Design Assistance (EDA) for an integrated design charrette
- Technical Assistance (TA) for modeling and energy studies
- Installation and Commissioning
- Monitoring and Reporting

So far, there are two completed buildings and two under construction; many are still in development or on hold, due to the economy. Fred noted that the time required to get these projects completed shows how hard it is to move codes quickly.

Alan asked what we know about cost effectiveness so far. Phil said we are currently monitoring costs and learning as we go. Fred said that we are providing incentives for things that we believe or know are cost effective, or will be cost effective soon with greater market adoption. The evaluation will continue for at least two more years as the projects are completed, with periodic interviews and review of costs.

The current evaluation involved interviews with 23 individuals representing 12 projects. Interview findings:

- Participants are mostly aligned with the program's energy focus and early design intervention
- EDA and TA incentives appeared to be effective in getting projects to participate
- There are some concerns about how savings goals would be reached, and if reached how to keep costs reasonable
- There is high satisfaction with EDA, but it can be a bit onerous in charrette planning and reporting
- Charrettes are good for encouraging collaboration and setting goals
- EDA helped solidify savings goals and project commitment
- Grandfathered projects felt benefits from the program and some even went back and incorporated more energy efficiency into their designs
- Participants selected the best systems they could afford, not the best available
- There is a lot of competition for roof space (for PV, sky lighting, ventilation, green roofs)

Linda pointed out that green roofs can be done in combination with solar with the right planning. All the participants were really financially challenged in the projects.

Phil feels there is an opportunity here for new technologies like building-integrated PV (BIPV) and ventilating sky lights, to avoid the trade-off between competing energy saving strategies. Passive cooling was also thought of as risky among participants. Debbie notes that this may depend on project size. Phil said that builders want reassurance that tenants won't complain on the few really hot days. Alan asked for clarification on passive cooling; it includes ducts that bring outside air in, systems to create airflow and night flushing of warm inside air. Alan asked if the risk is in not having a back-up system and others confirmed that it is.

Evaluation conclusions:

- EDA is a key benefit of the pilot

- EDA and TA may be more important than measure incentive (Phil noted that putting efficiency in the original plans means it is less likely to be removed later, and Linda noted the value of having designers and engineers in the room at the same time)

Alan pointed out that most projects are public buildings, not private; Fred said this group is made up of innovators, and is different than the general population.

Evaluation conclusions (continued):

- There were both financial and non-financial motivations for participants (Linda noted that this is a passionate group)
- For grandfathered projects, the pilot helped reduce the risks associated with innovative design strategies
- Integration of energy systems is necessary for a net-zero building
- Baseline and metrics used for energy targets and incentive in the pilot may not be the right approach for net-zero buildings, since there is no one baseline

Tom noted that the goal is really net zero carbon - we don't want to save just energy if it means shifting electric load to night time coal burning. There was some disagreement about whether net-zero energy or carbon was the goal, or whose goal. Becky said that some participants are looking at the Architecture 2030 Challenge and carbon.

Evaluation's take:

- The pilot was successful in recruiting projects and proactive in filling open slots when projects dropped out
- Moving resources upstream in the design/decision process is beneficial in getting efficiency adopted
- We need to follow up with pilot drop outs - several just entered the regular NB program (Debbie hopes we are still claiming some savings on these)
- There are opportunities for developing hybrid systems/technologies

Alan said we can and should work with people with different goals (net-zero carbon), but we must remember our goals. Phil said the pilot is a laboratory for code and for trade allies; we are experimenting with new technologies and strategies that may be adopted throughout the market. Phil also asked Rick Kunkle (a subcontractor on the evaluation) where the big changes were in design strategies with the aggressive savings goals and Rick said they are in the building envelope.

Linda said that these will be very visible buildings and should be influential in the market. Tom asked whether the criterion was 50% better than code-regulated load or total load. Becky said that it depends, and sometimes current practice is used instead of code. Fred said that this process is also trying to determine whether renewables can be cost effective. Phil said the pilot is looking at long term monitoring and maybe continuous commissioning.

Pete asked whether others around the country are doing this type of pilot. Becky said that California has a framework and are trying to develop projects, but have not defined it as a pilot program. Oliver said the California utilities are more constrained in their budget for such a pilot. Fred noted that we talked to California a couple of years ago; bottom line is we're smaller so we can do it more easily than they can. Becky said that US Department of Energy is looking at prototype buildings for big box. Fred asked whether anything is happening with the Living

Building Challenge. Becky and Allie said yes, there are three completed projects, all very different from one another.

Daniel noted the net-zero carbon conversation and that if coal has to be burned at night it might as well be used, since nothing else can be done with the electricity. He also said that carbon capture is easier to do on a coal plant than on a gas plant. Fred said we should have a sidebar on carbon later.

Daniel also asked if there were any more details on the projects and measures used in the pilot. Phil said there will be more information released when there are more completed projects; most are still under construction. He also noted that the final report will have site names removed to be anonymous, but still reference building types for context. Debbie also asked that the executive summaries spell out acronyms to make them clear.

2. Solarize Southeast Portland and Solar Energy Review Evaluation

Contractor: The Cadmus Group (Linda Dethman)

Brien presented results from the evaluation of two related initiatives, Solarize Southeast Portland (Solarize SE) and the Solar Energy Review. The evaluation included interviews with staff, community partners, surveys of participants, and analysis of follow-though with solar measures.

The Solar Energy Review (SER) is like a Home Energy Review (HER), but focuses on solar opportunities. It provides third party perspective and is not sales oriented. The reviewer looks at the age and condition of the home's roof, the customer's understanding of solar and solar potential. It came about because of the 2007 Smart Power study; we wanted to see if we could speed people's decision making, since typical time then was 2 years from interest to installation. Alan asked if the SER covered PV only. Kacia said that it covered both PV and solar thermal (no passive solar); for Solarize SE, it was PV only.

Staff interview findings:

- Staff feel SER is a good tool for consumers
- There was uncertainty about whether it accelerated time lines
- The SER was less cost-effective than the HER until they began installing CFLs and water measures

Participant survey findings:

- 34% response rate (32 people) was better than expected
- Participants expressed a high interest in solar and felt that the SER would speed their installation, but they often had low potential for solar generation

Debbie noted that the City of Portland used to do a form of this, and look up your potential online (phone call instead of visit), and suggested we should be doing something similar. Kacia said that was a learning for us, and we should probably do that in the future. Tom noted there are several websites that you can use to look at roof orientation and shading. Brien said we are looking at developing a self-assessment tool available through our website. Debbie suggested that we help them, not just offer a self-assessment.

Kacia said that in the beginning we were thinking we just need to get people off the fence about solar, but the real problem turned out to be whether they had potential in the first place. Brien

said that lots of people are interested in solar, and Debbie noted that this is often the wrong priority – efficiency should be done first.

Analysis of Fast Track data does not show that the SER speeds decision making and follow through is low.

Evaluation recommendations:

- Program logic doesn't match reality and SERs are not speeding adoption – reassess and redesign or get rid of the SER
- Provide more on-call, web-based or written brochures on the basics of solar, and where to begin
- Continue offering workshops where potential customers can self-assess their capability to install a system
- Develop self-administered screens to aid in identification of shading, proper roof orientation, availability of funds to pay for the system

Debbie reiterated her suggestion that we help them (by phone, not on site), not just have them self-assess. Kacia said that suggestion fits with where the HER is going and we will look into it. Debbie said it is a lot like sales: you have to qualify the customer first - start with facts, move to more subjective questions and walk them through the tough issues. Alan agreed and wondered whether we should put that in the recommendations. Fred said it would go in the staff response memo.

Linda said this all depends on whether you will offer the SER at all; Kacia said we are still considering approaches and nothing is settled yet.

Evaluation's take:

- Discontinue the SER as a standalone offering and integrate limited solar scoping in the HER
- Direct homeowners to solar contractors for screening, info and bids
- Continue outreach efforts such as seminars to help customers understand basics

Alan said that there may not be a good way to identify those customers with good potential to go forward. Phil said in that case we should direct customers to contractors to do this qualifying because SERs are fairly costly. Kacia said that when we merged CFLs and other instant savings measures into the reviews they were more cost effective. Fred said that the research we have done on who does solar indicates that they already have fairly energy efficient homes.

Alan disagreed with the study characterization that Solarize participants were less "green"-minded than those that did not go on to install solar; they are just more ready to go through with it. Peter also noted that the term payback may have been used incorrectly in the report. In response to Alan's comment, Linda agreed that it could be that the participants were able to be a little more pragmatic about the decision to install solar. Alan said he could see how the survey data indicate "greenness", but one could come to other conclusions.

Daniel said it sounds like we should just add a little solar information to the HER. Brien said that the question remains about how we can get the decision time down for customers. Daniel said that perhaps it just takes people a certain amount of time to think through it. Steve said we should talk with Marshall Johnson (the Existing Homes Program Manager) about what else will be happening with HERs before deciding what to do about SERs.

Brien then presented results from the section on Solarlize SE, a community bulk-buy managed by Southeast Uplift with help from Energy Trust and City of Portland. One installer was contracted to service all homes through a competitive process (Energy Trust was not involved in the selection of the contractor). The program achieved a final sign-up of 300 homes (many more than the 50 expected) and a final price of $6.90 per watt. The initial sign-up process directed people to a self-assessment tool which then led to an SER or contractor visit.

Key actor interview findings:

- The project increased consumer confidence, solar visibility, and community partnerships
- There are several spin-offs around the state already (NE and SW Portland, Pendleton, etc.)
- Organizations had to develop processes as they went, but communication was good
- Scheduling was not always timely, based on volume of interest

Full and partial (did not install solar) participants survey findings:

- Completed (full) participants were slightly older, more affluent, citing the “dollars and cents” as the primary motivator
- Partial participants mentioned being green a little more in reasons to sign up
- Both groups had similar interest in solar at the start
- Participants liked the ease of participation, third party reassurance
- There were a few “bumps” in the process: unreliability of contractor, scheduling, “where am I in the process?”

Fred said the contractor was probably unprepared for the significant volume of projects. Peter wanted the report to note that SE Uplift picked the contractor, not Energy Trust; we just helped them write the RFP. Fred added that part of our contribution was providing SERs on request.

Participant findings (continued):

- Installations met or exceeded expectations for 96% of full participants
- Follow-though was higher for those who did not receive an SER (42%) than for those who did (26%); 37% overall

Debbie noted that the SER group was somewhat self-selected, for whatever reason. Kacia said the follow-through numbers were not too surprising, we knew they were unsure to begin with. Fred asked how many of the SER participants did not go through with installation based on lack of solar potential versus other considerations. Tom added: is it about the site, or the participant not being ready? Linda and Brien will look into this.

Evaluation recommendations:

- Better coordination for sign ups, more training and preparation for call center
- Fast-track the customers who are most ready to install
- Assist potential participants with self-screening

Peter noted that if we’re not running this, the community may have different goals – the goal may be having more community engagement and someone there to talk with residents. We should still offer help while being mindful of using our resources to maximize installation.

Contractor reactions to Solarize SE:

- Some contractors did not like it; they felt the RFP process made it hard for small firms to compete and brought down prices unfairly
- Some contractors also believe the reduction in solar incentives was caused by Solarize SE projects

Kacia said the reduction in incentives was not directly related to Solarize; it was statewide activity. In addition, the evaluation noted that non-Solarize installations in Portland increased dramatically alongside Solarize installations.

Debbie said she wants to make sure we are fair to all contractors in the RFP process, but is not really concerned with the price of solar falling and its effects on contractors. Brien noted that with a recent corporate bulk-buy, a few small contractors joined together to respond to the RFP and won the contract. Fred said that we can't take it as our problem if a few firms can't compete, especially when non-Solarize demand was rising too. Debbie said she noticed some non-Solarize contractors offering to match the Solarize price.

Peter said the price of PV was already coming down before Solarize, it just accelerated the market process - we're being credited and faulted for the change. Linda asked if we know if it was smaller firms that were complaining or whether it was medium sized firms. Kacia said it was a few sole proprietor firms. Debbie said that Solarize still created interest beyond early adopters that benefits others. Complaints did die down as time went on. Phil noted that we aren't driving Solarize, it is driven by communities so we have not caused the effects.

Other Solarize projects are going on in NE Portland, SW Portland, Beaverton, Salem and Pendleton, as well as a second wave in SE Portland. Energy Trust has taken the role of impartial advisor and pays standard incentives. Prices for subsequent contracts have been as low as $5.90 per watt (market prices were $8-$9 per watt a few years ago) before incentives.

Evaluation's take:

- Solarize is a great opportunity in the face of decreasing Residential Energy Tax Credit (federal tax credit lasts through 2015)
- We will watch these initiatives in the face of feed-in tariff participation (which doesn't earn our incentives, but could still get bulk-buy prices)

Tom asked whether the feed-in tariff applied to commercial or just residential and whether there is a kWh meter on the system. It applies to both, and does have a kWh meter. Tom also asked if we are doing impact evaluations on solar PV. Kacia said we do voluntary meter readings at the 1 and 5 year anniversaries of each system. So far realization rates are right around 100%.

3. Evaluation Project List

Phil presented the current evaluation projects lists for the residential, commercial and industrial programs, as well as general organization evaluations. Only items that inspired discussion are noted here.

- Fast Feedback: The group was asked whether they would like to see results each quarter. Debbie said if something of note is found the committee should hear about it, otherwise they don't need to see the results each quarter. The others agreed. Some of the results will be accessible in the quarterly reports.

- ISP (new IT systems) evaluation: Steve said that the system will not be live until late 2011 and won't be evaluated until mid 2012. Phil said the evaluation will deal with early issues.
- Thermal imaging pilot: Alan asked how we will use this study. Phil said we hope to target geographic areas with low instances of insulation. Debbie said we should be careful to avoid areas with lots of single family renters who can't do the measures themselves. Alan feels not everyone on the board would be comfortable with this project; Dan agrees and suggests discussing with the board before going forward. Phil will write up a background piece for board on the thermal imaging pilot for discussion at the next board meeting. *(Subsequent discussion determined a document did not need to be generated.)*
- Billing and database review: This is an ongoing project to fix lots of little problems with our data systems. Steve wanted to make sure we aren't doing things that will be taken care of with the ISP project. Phil said they are things we would have to do anyway, and IT is actively involved.
- OPOWER: Pete asked if we will use Fast Feedback to evaluate this. The answer is no, Fast Feedback is not appropriate; we will give OPOWER its own evaluation. Tom noted that PSE just released their evaluation report and it includes analysis of attribution and distribution of impacts.
- Lighting shelf survey: Tom asked whether we will be checking LEDs for certification. Phil said we will check, but most are from GE and not certified.

Fred asked whether NEEA is tracking ENERGY STAR products and market share; we need this information to claim savings. Normally NEEA only tracks clothes washers, not dishwashers and refrigerators. Phil will check with NEEA.

Pete asked why we were not doing a multifamily process evaluation. Phil said we just did a partial one and the next will probably be part of the Existing Building process evaluation.

Alan asked why we don't have any evaluations planned for biopower and other renewables. Biopower and other renewable programs are so small that there isn't much to be learned from each project about the program in general – they are each very unique. Phil said the program staff contract for some of their own market assessments; we participate, we just don't run them. Alan wondered whether there is good data in those evaluations that the board doesn't see. Fred noted that they are discussed at the Renewable Advisory Council (RAC). Alan suggested the board might want to hear about those studies once a year or so. Debbie noted that the RAC minutes go in the board packets.

The meeting adjourned at 1:05pm.

The next meeting is scheduled for Friday, January 28th, 10am to 1pm.