

CONSERVATION ADVISORY COUNCIL

Notes from meeting on May 16, 2012

Attending from the Council:

Anne Snyder-Grassman, Portland General Electric
Don MacOdrum, Home Performance Guild
Juliet Johnson, Oregon Public Utility Commission
Holly Meyer, NW Natural
Stan Price, Northwest Energy Efficiency Council
Molly Robbins (For Brent Barclay), Bonneville Power Administration
Jim Abrahamson, Cascade Natural Gas
Scott Davidson, Northwest Energy Efficiency Alliance
Theresa Gibney, Oregon Department of Energy
Wendy Gerlitz, NWECC
Don Jones, Jr., Pacific Power
Charlie Grist, Northwest Power and Conservation Council

Attending from Energy Trust:

Peter West

Marshall Johnson
Oliver Kesting
Kim Crossman
Steve Lacey
JP Batmale
Elaine Prause
Amber Cole
Scott Van Swearingen
Adam Bartini
Spencer Moersfelder
Eric Wilson
Phil Degens
Fred Gordon
Jessica Rose
Kathleen Belkhatay
Shiloh Rodriguez

Others attending:

Clark Fisher, NEXANT
Becky Walker, PECC
Carolyn Farrar, NW Natural
Jeremy Anderson, WISE
Erin Rud, PECC

1. Welcome and Introductions

Peter West convened the meeting at 1:30 p.m., and introduced Kim Crossman, Industrial and Ag Sector Lead. He explained that Kim and the other sector leads would facilitate future Conservation Advisory Council meetings. He also started with a round of introductions. Kim provided an overview of the agenda. The agenda, notes and presentation materials are available on Energy Trust's website by clicking [here](#).

2. PMC RFPs for Existing Homes and Existing Buildings

Peter West gave a brief overview of the Program Management Contractor, PMC, Request for Proposals, upcoming decisions and timelines.

Peter: The RFPs are for our Existing Homes and Existing Buildings program management contracts. Along with the contract of NW Natural in Washington, this is part of a regular sequence of RFPs to re-bid delivery and service contracts over time. Next year we will rebid at least the Program Delivery Contractor, PDC, contracts. The current RFPs are on our website, and both of them close at the beginning of June. We go to the board on August 22 with finalists. The designs of the RFPs allow flexibility for the programs to be broken into modules. Responses are due to us by the beginning of June.

We are trying to offer multiple options. They can bid on the entire RFP or sub-pieces. It encourages competition and also invites potential new participants into our market. It allows us to be strategically less tethered to one organization and makes us more flexible.

Don Jones: How big is your bid list? How many does it go out to?

Marshall Johnson: We sent it to 35 or so directly, then to networks like ACEEE, CEE and others. We received intents to respond from 22 candidates for Existing Homes. We also have a list of folks who would like to team up and respond, and they are posted on the web.

Oliver Kesting: Existing Buildings received 16 intents to respond.

Peter: We also have a PMC contracting policy change going to the board next week. Right now the policy says a single organization can only have two PMC contracts, whether as a prime or a subcontractor. That doesn't work well for breaking things up, and it doesn't really look at savings as a key indicator. Even those with two outreach contracts would have been precluded from bidding. We asked the board to modify the limits and retain the two primary contracts rule, but on the subcontracting side, allow any number of contracts provided any subcontract does not control more than one-third of the savings in any one program. That policy would make it more about savings than just counting contracts. We are also asking that the NW Natural contract for Washington customers be exempt from the policy as it is relatively small and unique. The board Policy Committee was supportive of the change and will recommend it to the full board.

Jim Abrahamson: So the proposals go to the board on August 22 for final approval? Does that mean there will be some set of recommendations from the review team? Will those be available to the board and on the web in advance of the meeting?

Peter: Most likely, yes. Keep in mind that it's a bidding process, so something may prevent us from posting it, but more than likely, yes. Each program has a review committee with internal and external participants. Decisions may take place in executive session, depending on the discussion.

Stan Price: Are the contract limit rules written out somewhere?

Peter: We can give you a marked up version, and it should be posted on the web.

3. Trends in the Commercial Sector programs

Oliver Kesting provided an overview of commercial trends.

Oliver: We have three unique commercial programs with multiple offerings, and I'll hit the highlights today, but there isn't enough time to get into the same level of detail as Kim provided for the Industrial Sector. I have about 30 minutes of material, and 40 minutes on the agenda, so feel free to ask questions.

2011 was a great year, especially given the challenges of the economy and the retroactive sunset of the Business Energy Tax Credit. We exceeded conservative goals for all four utilities and the stretch goal for three. Sites served have increased over the last three years. The presentation slide shows any site with recognized savings. The number essentially doubled over the last three years. Existing Buildings expanded from 1,500 projects in 2009 to over 3,000 in 2011. New Buildings expanded by 42 percent from 300 in 2009 to 415 in 2011. Multifamily grew from 204 in 2009 to 581 sites in 2011.

Electric savings show a steep ramp, nearly double from 2009 to 2011. There is an anomaly on the electric side—one mega-project is a big piece of savings in 2010. It's a steady ramp even without that project.

On the gas side, savings nearly doubled in the last three years. In 2010, again we had some anomalies that primarily came from New Buildings.

Sources of savings by track are broken out on the slides to show our strategies. One thing stands out: lighting is huge for Existing Buildings at more than half of its electric savings, and a large part of the commercial sector as a whole. New federal standards go into effect this year, and limit the amount of lighting savings for future years because they raise the baseline.

The custom section for New Buildings includes a large project, which isn't typical for its share of the pie.

I'd like to walk through the different offerings shown on these next slides with specific emphasis on how we plan to grow the savings for each. Overall, the sector has worked on building the business case for energy efficiency—providing decision makers with the data they need to drive deeper savings with informed decision making. We looked at how to present energy efficiency to a CFO or CEO and get beyond discussing simple payback. We've worked on that as a whole with the sector.

The non-PMC savings slice will expand, specifically with Strategic Energy Management. Projects were launched at the end of last year, those are savings that haven't yet hit but we will start to see them this year. We are planning to grow Strategic Energy Management extensively over the next several years. Given the history we've seen in the Industrial Sector, we can estimate it can grow to a 20 percent share of the Commercial Sector's savings.

We have a lighting design pilot with NEEA, and are working with trade allies to specify and design beyond 1:1 change-outs and reach Lighting Power Density targets aligned with new building codes. This will help us retain some part of the lighting savings even with federal changes.

The custom track will have new strategies to expand regional outreach and more technically focused on energy management in Existing Buildings. Multifamily introduced a custom incentive track and study. The aim is to diversify and grow savings significantly, and bring in projects that weren't served prescriptively.

Juliette Johnson: What are direct installs?

Oliver: Things like compact fluorescent light bulbs and showerheads.

Juliette: So it isn't lighting at all?

Oliver: Not necessarily, it's an approach where with simple measures we cover installation, and customers don't engage a contractor and go through the contracting process.

Kim: It also doesn't cost anything for the customer.

Oliver: On the electric side, we put in extensive work on measure development, and we are offering midstream incentives for washing machines and are looking at this approach for refrigerators. For New Buildings, the small commercial and data center offerings are new and Jessica will cover the details later today.

On the gas side, again, we are building the business case and offering Strategic Energy Management to grow the non-PMC savings. Existing Buildings has an outreach strategy to grow custom savings, and targeted operations and maintenance, O&M, offerings. Multifamily has a deeper sales approach with customers and mechanical firms to get deeper savings. Prescriptive measure development includes steam traps for domestic water heating. The New Buildings side has new small commercial offerings. One note is

that opportunities for gas savings in New Buildings have diminished because of new codes and new envelope requirements within the new code.

For Existing Buildings we have seen steady growth from 2009 through 2011, which is a great success in a maturing market with fewer low-cost measures, and considering the economy and Business Energy Tax Credit changes. The strategy emphasizes developing existing relationships to maximize potential, and meeting customers where they are.

Our reach has become larger through outreach strategies and geographic presence. We support a network of trade allies, who historically have given inroads into lighting but not as much on mechanical. We're expanding the relationship with non-lighting contractors to get those savings, also.

Business Energy Tax Credit changes hit the market hard in 2011, but expectations are starting to adjust. Changes to the baseline I mentioned, and the economic downturn, are both challenges.

In the slides, you'll see steady ramping for all electric savings. On the gas side, there is steady ramping with one outlier in 2010, when we created a NW Natural demand-side management measure that took us over the top.

Wendy Gerlitz: What is difference between red and blue on the charts?

Oliver: It's how we track customers on the industrial utility rate.

Kim: Blue is the public purpose charge and red is a rate adjustment for large customers who didn't pay the charge and weren't served before.

Holly Meyer: There is a little red in 2009, but we can't really see it. What do we take from the fact that it's broken out?

Kim: We have to report it separately. It does create some complexity in administration, but we are required to do it.

Holly: Do we look at the red and blue portions combined for council purposes?

Kim: Yes, we show it that way on the program dashboards.

Oliver: We hit 1,500 sites in 2009 and over 3,000 in 2011. Savings per project are down 21 percent for electric and 10 percent for gas. We are just seeing smaller projects. Custom electric numbers did grow through 2010, but fell off in 2011. There were fewer large custom track projects, because of the economy and limited capital. Custom did expand in Pacific Power territory in 2011. Lighting grew through 2010, and then really took off in 2011 with the Kick-Start bonus. 2011 gas activity fell off, with many trade allies focused on the rooftop tune-up, RTU, initiative. Those trade allies have put a huge effort into the RTU offering.

Stan Price: Have there been any trends in levelized costs to go with those?

Oliver: I don't have the exact numbers.

Spencer: For Existing Buildings, they stayed fairly consistent or saw just a slight increase.

Stan Price: Have you looked at interrelationships between the bullets you show on the slide? Average savings per project are down and have you looked at it as a relationship with other bullet points? Like having more O&M has caused fewer savings from large projects?

Oliver: We have lots of projects and savings, but you have to get more projects to get the same savings.

Kim: This is a long-term trend, and we're finding that the low hanging fruit is harder to find.

Stan: Is it a question of project financing; maybe it's difficult to find the capital to go deeper? There has been dialog by some utilities in regional forums about the fact that the well has gone dry and there doesn't appear to be conservation left on the table. Your numbers seem to say that's not the case. Can you tie those together?

Oliver: We are just getting smaller projects and smaller customers. The bigger ones aren't willing to put money into it. They are custom, primarily. You can still get small, cost-effective projects.

Kim: One way to get more savings is to get deeper savings, target harder to get and bigger projects. Another way to grow savings is to reach more customers. A main focus since the organizational redesign in 2009 has been reaching all customers, and we have successfully emphasized smaller ones who didn't receive services before, but those are smaller project sizes and transaction costs.

Peter West: In each sector, we've expanded the number of industries we've gone after, not just sizes. When working with new industries, they have to test the waters before they jump in. We're careful not to discount the economy and willingness of larger firms to deploy their capital on efficiency. How we piece all of those out would be a good thing for Fred to survey and understand.

Fred Gordon: There is a regional commercial building survey that will be in the field this fall tracking trends. Our last survey shows that remaining T-12 lighting is below 10 or 20 percent of floor space so there's not that much left. There are probably not that many big projects, the classic projects we've done for 20 years, left to get. Even lighting is showing a smaller average project size.

Theresa Gibney: I would be interested in seeing the data going back to 2005 or 2006 to see if we really are getting smaller projects overall, or if the big projects are still coming in but a lot of smaller projects have also been added, so there's a big tail going back. It would be an interesting way to answer Stan's question.

Oliver: Returning to the slides, we've seen a growth in key measures in Existing Buildings on the electric side. On the gas side, custom controls and custom HVAC are growing, but other key measures are up and down depending on the year. Gas savings tend to have lumpier trends due to project size.

The key markets for Existing Buildings are offices and retail, warehouses with lighting, and grocery with lighting and refrigeration. In education, electric savings are primarily colleges and school administration buildings. K-12 schools haven't historically been fully served by Energy Trust because of the dedication of separate public purpose charge funds for schools, with administration through education service districts and the Oregon Department of Energy. They are a small piece of the potential, about 1 percent, but savings will grow significantly in 2012 for Energy Trust because of our Cool Schools partnership with the Oregon Department of Energy.

For New Buildings, we again see significant growth since 2009 and increasing enrollment, especially electric and not as pronounced for gas. We've had tiered incentives for the last year or so, plus early design assistance offerings and revised savings tools for lighting and HVAC. We've expanded our network of allies to include architects, developers and engineers, to have their help making the financial case. We

began to integrate solar into New Buildings with solar design allies and solar ready offerings. The thought for the solar ready offering is to make buildings ready to retrofit for solar when they're ready to do it.

More projects are falling under the 2010 code, which is a change in baseline of 15 percent. About 20 percent of projects fell under the 2010 code. The economic slowdown has slowed us as well. The trends go up steadily, and there are a few outliers including one very large project in Pacific Power territory in 2010 and another in 2011. Those two outliers impact the trend. However, we've increased savings even if you take those out. In PGE territory the decline is due to market conditions. We are seeing good market penetration with New Buildings, about 70 percent, but still a decline in PGE.

Jessica Rose: Last evaluation showed about 70 percent.

Juliet: Does that mean that out of all buildings going in, 70 percent are yours?

Oliver and Jessica: It's a percentage of square footage.

Wendy: It doesn't seem like PGE and Pacific Power should be different, because the economy is everywhere. PGE savings are proportionally higher in Existing Buildings, but not with New Buildings.

Kim: Existing Buildings is a volume program, and New Buildings is kind of lumpy.

Holly: Is the market share only in your territory or is it all of Oregon?

Jessica: As far as I know it's only our territory.

Oliver: We are again ramping up for gas, but there are some outliers in 2010. We still had large projects, but a higher volume of small projects. Staff indicated that in 2010, these projects were on accelerated timelines to lease space due to the economy. 2009 was PECL's first year doing this, so there may have been some lag.

Peter: Did the code change and the deadline drive anything in 2010?

Oliver: I'm not clear on motivation to finish in 2010.

Jessica: The economy shifted things dramatically, but in 2009 there was a lag and a new program PMC was getting up to speed. At the time there was the downturn, but due to the timeline of projects and the lag for when they close, the savings we book show results later. Also, smaller projects were motivated to finish construction and begin leasing their space to turn a profit on the new space.

Oliver: For key trends, we saw a record number of projects in 2011, 415 for the year. Completed projects increased. Mid-size and smaller projects were 84 percent of the 2011 project count, but were less than half the savings of the larger projects. We started to see code transition, with 20 percent of projects under code. By 2013, nearly all will be under the code, but there is a lag with the permitting process and projects being grandfathered in. LEED® dropped in 2011. Enrollment trends for last three years show a big increase in enrollments, especially toward the end of 2011.

New Buildings employs a whole-building approach, so not much measure-level detail is readily available in our database. We look at custom and standard together to see the trends. It leveled off despite the increased number of projects. Key markets were data centers, hospitals, grocery for lighting and refrigeration, and colleges for electric and gas.

Multifamily savings are up in all territories with rapid growth from the program's transition in 2010 and new outreach in 2011. Market conditions are great for multifamily, we're seeing historically low vacancy rates, but that means less opportunity for major renovations. There is an emphasis on increasing efficiencies because customers are savvier, and are more interested in high performance and green features. Existing spaces have to compete with new ones with green features. We always have the issue of owners not seeing the savings if tenants pay for the utilities.

We saw a big ramp up in 2011, with our new strategic approach to the market; relationship building, restructuring the multifamily Trade Ally Network and the focus on training for tenants. We also increased our emphasis on previously underserved low-income rentals. On the gas side, growth wasn't as dramatic, but there were more opportunities as we moved to a custom approach, and we are developing more custom projects in the pipeline.

2011 savings were double those in 2010. We are more active with trade allies to refocus and better engage them. There is more activity per trade ally and an increased number of sites served. Average electric savings are up and gas savings are down. We are increasing savings through affordable and low-income housing from 2010 to 2011, and those projects are up 15 percent in electric and 131 percent in gas.

For gas, water-saving devices drive our savings. Insulation dropped because we removed wall insulation as a measure, and removed the requirement to bundle windows and insulation due to cost effectiveness. There was a drop in boilers in 2011, but an increase in custom. We are moving more of our prescriptive boilers to a custom approach to get more comprehensive solutions. On the gas side, we are getting more diverse. Overall savings are slightly down, but they are growing on the gas side.

Peter: If you move more into custom incentives for boilers in 2009, we're still down in 2009 but up in 2011. Is it the move to custom?

Scott Swearingen: 2009 was because of one big, custom boiler project.

Peter: How much are your boilers dependent on public housing agencies?

Scott: They're increasing because that type of building stock has more custom boilers in it. It's an increase in custom gas.

Don Jones: What are "stranded savings?"

Oliver: Those are savings that we have trouble accessing.

Scott: There are savings out there in low-income or affordable housing that we aren't able to get because they don't have access to capital or debt financing on their balance sheets. We have to get creative to reach them.

Don: It has yet to be done or recognized?

Scott: We are unlikely to achieve them without innovation.

Juliet: If it's New Buildings, how do you know what they would have done without you?

Oliver: We determine incentives based on how far they exceed code, and have to take in evaluation factors for what they would have done without Energy Trust. However, because of the new code, what some customers would have done is not achieve code. As the new code is an aggressive shift, the market needs time to come up to speed.

Juliet: Who is negotiating these? Is it trade allies who know the program?

Oliver: Our PMC is often working directly with the building owners' design teams to provide design assistance.

Peter: It's the architect community and building modelers, and we help them model and redesign. Some of it is answering questions for the owner. It's as much about relationships as about engineering.

4. Evaluations of Strategic Energy Management offerings

Kim played a customer video about Strategic Energy Management, SEM, impacts on the customer's business.

Kim: Thank you to PGE for selecting this customer for the video. It's a great example of Industrial Energy Improvement, IEI, and shows what happens when you go deep into savings.

Phil Degens covered the evaluations.

Phil: This is an evaluation of the first cohorts with IEI, multiple years after they completed it. We did a one-year process evaluation of both of these, which is on the web already. It looks at the first cohort of IEI folks one year after participating. We are in the fourth cohort; following up on how things are going.

The effort was a one-year continuous improvement process, and involved 10 customers, with monthly workshops and support between those meetings. It looked at meters and not sub-metering. Incentives are for O&M only, and not measures through traditional production efficiency. Savings were 8 percent of total electric, or 13 million kWh for the year. We followed up after the first year and also followed up with the PDCs. Six participants have maintained savings, based on our interviews. One improved. Most had no changes to operations or production levels. One had moved everyone over to a new O&M department. One decreased production due to the recession. We found that IEI wasn't the end, but was the beginning of continuous improvement. Many had additional plans for savings.

These were behavioral changes, altering operations of equipment. Capital projects were lighting controls and upgrades, and some equipment changes. Energy Trust capital projects increased after IEI and participants planned additional ones. Their teams still met regularly after IEI, and all still tracked energy use. Six used Monitoring, Targeting and Reporting, MT&R, and one used PGE's E-manager. The PDCs indicated that only one participant had stopped tracking energy use.

We also found that similar efforts have spread to other plants, but we can't claim savings outside our territory. Some are pursuing LEED and ENERGY STAR®. Some of the first cohort facilities were offices. In later ones we wouldn't have put them in this group.

Holly Meyer: Why not?

Phil: Most of their facilities were office spaces, so they weren't industrial.

Kim Crossman: They have manufacturing on site, so we consider them industrial, and I would disagree with Phil's statement, we may want to select them anyway. These are weather driven sites, and it's a harder modeling task than production driven loads. It's an extra challenge, but we need a different approach to model them.

Phil: People liked success stories, presentations and case studies, and we are recruiting people to do that and to host field trips, which are also popular. People also liked help developing

presentations for management. We are having participants try to track energy before entering the first workshop, so they can look at it in advance.

Management support was needed in order to be successful. Employee involvement and education was mentioned. They said that coursework relevant to their facility should be the only coursework. Resources required are pretty intensive, so they need ways to reduce that.

Participants valued IEI and maintained savings. Most continued to track energy usage and maintain their teams, plus planned additional measures. Most planned projects in other facilities. Most low-hanging fruit is picked, and they want help finding additional ways to save. They will work with us mostly on capital projects, and most are satisfied and would recommend IEI to other firms.

Recommendations included:

- Continue the initiative
- High-level management support is required
- Face-to-face meetings are preferred over webinars
- Folks should bring their metering and records of energy consumption from before they started, or the TS provider should have them bring it as soon as possible
- Leverage the enthusiasm of past participants to have them speak at current trainings, host follow-up meetings and initiatives
- Continue MT&R functionality
- Workshops to continually present results to each other and peer groups

Our take is that most of these things have been adopted as a program. It's currently a service we offer and in its fourth year. Maintenance services to help people from earlier studies are still going. We're also doing a small industrial IEI pilot.

Don Jones: What was the decision on not going back and just grabbing second year meter data?

Phil: We reviewed MT&R for people from the first year, and it seemed to be adequate. The program has also gathered that data and impact evaluations will look at this.

Holly Meyer: This wasn't an impact evaluation, but a process? Is impact going to be conducted? Also, what is MT&R?

Phil: It's part of an impact evaluation of the whole Production Efficiency program. We're monitoring, tracking and reporting 15 minute load data, which goes to the level they can use and find useful. We had many engineers reviewing data from us, PDCs and the companies. We primarily looked at it from the customer standpoint. Is it sufficient for the customer to make decisions and for us to use it?

Kim: Keep in mind the importance of asking customers if they are using their models. Persistence is the concern, and the worry was that they would go back to their old habits. Using the models means they aren't back-sliding, and the same is true with maintaining the teams. Is the culture changing? Are the models accurate? We feel pretty good that they are, based on four levels of engineering review. They have a critical eye and push back if the fit isn't right.

Holly: How does someone get into the program and how do they learn about it?

Kim: We do one a year, and we recruit companies into it. The next cohort of the IEI will be recruited in August, and JP Batmale will be managing it. We have people in other parts of the

state to help also. The cohort model needs a start and end date. We are always looking for people to enroll, but I'm worried we'll run out of customers.

Charlie Grist: When did this cohort start?

Phil: 2009.

Kim: So this is almost 2 ½ years after completion.

Stan: Persistence looked good. Will you look again, later?

Kim: We only count a three-year measure life, so probably not.

Phil: One of the things is to see if everyone is participating in year three. Probably not with this group, but probably later on.

Charlie: It's worth considering a long follow-on because we just don't know the persistence. How much was office vs. industrial?

Kim: Only two of the 10 had office buildings. A random guess is that it's a small part of it.

However, putting up signs to turn out lights would be part of IEI.

5. New Buildings: Scaling up program innovations

Jessica Rose presented information about a data center initiative, including potential strategies and savings.

Jessica: Oregon has seen unprecedented growth in data centers, and this affords the program with the opportunity to capture large savings. The full potential may be missed without making some changes to the program. I want to emphasize that this is a series of incremental changes focused on how we're addressing a wide range of customers, and that there is a major focus on IT design, not just the design of mechanical systems.

Oregon has great site selection from a customer standpoint, partly because our climate is moderate, so we're just right to take advantage of free cooling. Data centers operate 24-7 and in the Northwest we have reliable, inexpensive power and we have economic enterprise zones.

Our 2012 savings are weighted toward Pacific Power and a small handful of projects. In 2013 we made some bigger assumptions in project savings. It also starts to split more evenly between PGE and Pacific Power. Across the board, from 2012 – 2014, we're looking at 30 million annual kWh for three consecutive years. Data center savings for one year might equal total program savings for the 2010 or 2011.

Holly Meyer: What are the numbers showing?

Jessica: Those are numbers of projects to achieve the total savings, which is very few projects with huge savings potential.

Wendy Gerlitz: Are these existing facilities?

Jessica: These are all new construction. There is a big shift to Oregon.

Wendy: What do you use as a baseline, then?

Jessica: That's in the slides, and I'll look at who they are, what they need and their motivations.

Jessica: Another way of looking at them is by ownership type, business model and size.

Ownership type is mostly private, and of those, the business model is mostly corporate, and the

size is more enterprise. The category is based on how big they are and how many servers they have. The enterprise category would be on the order of 500 servers.

Holly: Are the bar codes showing only classifications for Energy Trust programs?

Jessica: No, this is a general classification of the industry.

Jessica: An enterprise class load can be 10-250 MW, an Internet company. Mid-tier would be something like a facility or hospital up to 10 MW.

To put the size of data centers into perspective, a 10 MW load is about 60 percent of the homes in Hood River. That would be one small enterprise data center.

As for their motivations, up-time is the top priority, and they need lots of backup and reliability to maintain mission critical operations. Also, protection and security of data, maintaining mission critical operations, compliance with federal mandates and upholding customer service and contracts. There is a real need to move to electronic filing, especially in hospitals, and storage of documentation. Hospitals have very specific legal needs. The point of this slide is that all of these primary motivations are focused on data, not energy, not energy efficiency.

Looking at our program design, we want to look at how we build influence when data is the number one priority for the customer, not energy efficiency. The chain of influence starts with the owners and looks at levels of influence. The owner, IT and project team can be influenced by sustainability consultants and IT consultants, which there are a small number of firms doing this work and are significant in terms of their high level of influence. Equipment vendors and suppliers are next, along with architects, designers and trades. IT design firms are one of the most significant players.

Looking at the market and pipeline, we can easily split out smaller projects and make a straightforward prescriptive offer. Bigger savings are the challenge. There is some competition in the market around efficiency and we are a vehicle to help them achieve their goals. But we need to encourage analysts to complete the full analysis and we need to work on standardizing baselines. Code is relevant for most projects in our program, schools, hospitals, etc, but it doesn't exist for data centers. Our custom projects have tiered incentives that are based on code, but it doesn't resonate with data center owners because these projects are based on code.

With this in mind, we're reshaping to adapt and position the program to achieve significant savings. The new offer keys in on how do we change their focus to energy efficiency? We need to speak their language in a big way and address perceived risks from things like widening the temperature ban on racks, in centers and in server closets. We need an IT advisor who can help and we need modeling to increase efficiency. We're revamping the custom approach to support highly innovative projects as well as those who don't want bigger risks but will strive to increase efficiency.

We currently have early design help at \$2,500 for any building to go beyond code and this helps many projects like schools, multifamily buildings and we made about 40 payments last year. For data centers we plan to bump up the cap to \$10,000 to facilitate designing for deeper savings and help prove the design and address perceived risks. As for innovative projects, one or two might come through, and we want to raise the cap to \$15,000. We currently have a modeling floor of 50 percent of project costs and we should go up from \$25,000 to \$50,000. Innovative projects should go further. Modeled

savings, or installed savings, are paid at \$0.15 per kWh up to \$0.20 in the tiered structure. It's easier to have a flat incentive for data centers, \$0.20 per kWh for most projects and \$0.30 for innovators. The project cap is \$499,999.

Mollie Robbins: How do you make the distinction between innovators and normal projects?

Holly: You need to speak their language, but they are also all about saving money, so it's not totally foreign to them. How do we know this won't end up being full of free riders?

Jessica: Their motives are about mitigating risk. Any data center you walk into has ice cold servers, and one way we can work with them is to demonstrate that they can widen that temperature band from 60 degrees and go up to 80 degrees, which impacts cooling load significantly. But this idea really scares most IT people, and they have the option to walk away unless we do the work to prove the savings and get to a comfortable place.

Holly: The money may not make a difference if they are so worried. It may not be logical to pay them more.

Kim: This is very similar to Production Efficiency. Codes don't apply; our current incentive level is \$0.25 per kWh. That's for new construction, but there's no code to reach here, so you're trying to get someone who doesn't have to do anything to at least do something. It looks like what we already learned from similar situations.

Peter West: Another part goes back to the baseline question. There isn't one. We're inventing it for a new industry, and it can change from customer to customer. If we convince one to operate at a warmer temperature maybe that changes the baseline for the next set of customers and you have market transformation. A server won't last as long at higher temperatures, but if the replacement rate is cheaper than the savings they are foregoing, it may work. We're looking at the incentive here, and looking at modeling cost, incentive cost and replacement cost.

Wendy: Did you make a distinction in going through the size of projects? There is a big difference between huge projects like Facebook and Amazon, and small businesses or public projects. Some have signed agreements and set goals with national environmental groups and such.

Kim: This is custom analysis and the baseline is unique to the site. What would they have done absent the incentive? It's a moving target. There's a big difference between public goal setting and what actually happens, except for the most innovative one who is testing something. It's all about the technical requirements and maintaining the temperatures, no matter what they say publicly.

Charlie Grist: Document what they are doing as you go in. You need to have something in hand about what their practice is or their engineers' practice. They do have a lot of financial motivation to reduce overall costs. Our Sixth Power Plan didn't include the big guys. Document what are the innovative strategies.

Theresa Gibney: As someone with 25 years working at a hi-tech HP facility, I agree with Kim, energy efficiency is not a focus. Any time you are bringing up a new facility, you have customers to serve, and the entire pressure is to be there for them and be reliable. The assumption is that things will be there 100 percent as you start. Later, you do cost evaluations and make changes. People who innovate on new facilities don't have much reward motivation. How do we make that argument about baseline to a skeptical world? It's worth gaining a whole lot of understanding of the reward systems for someone doing a new facility. Interview more people.

Kim: Big data centers are publicly saying that they are interested in siting here because we have cheap power. They aren't moving here to be more efficient.

Don Jones: We recognize the difference between enterprise stuff and server closets. There's a temptation to look at each, but there's always a relationship with the last one they did. California's data center initiative is a valuable resource on baselines. You look at what their last one was doing. There's room for negotiation.

Peter West: On the renewable energy side, with every solar initiative everyone promised, they came to us first to find out what incentives were available before they made any promise. Rather than having evaluations after the fact, in this data center effort we do it concurrently. It's a third-party version of setting the baseline.

Charlie: You need to have the incentive for setting the baseline.

Holly: You mentioned PUE, what is it?

Kim: It's power usage efficiency.

Charlie: It's kind of like the parasitic load.

Don: It's the potential energy use. It represents how much energy is needed to run and maintain the servers, including chillers.

Charlie: There is just enough growth now that you really have to be there or miss out. The downside about arguments over the baseline is the big risk of missing out.

Jessica: Savings overall are really a great value and inexpensive. Because we have the incentive cap of \$499,999, we will be claiming savings at a rate of \$0.15 to \$0.20 up to \$499,999 and the remaining savings at zero dollars where the cap kicks in. The customer will have skin in the game. Rough numbers show eight million kWh from incentives at a rate \$0.15 to \$0.20, and another 24 million kWh would be captured without additional incentives in 2012. This repeats in 2013 and 2014, numbers changing depending on the project. We can claim a huge amount of savings inexpensively.

Jessica also covered the small commercial offer.

About 85 percent of our total projects in the New Buildings program are small commercial. We think they can go further. They are hard to reach but we have a lot of traction. We did run a pilot, and I'll talk about results as well as feedback from two focus groups.

In 2009 we started the Small Commercial Efficiency Pilot using the Core Performance Guide from the New Buildings Institute. Anything under 70,000 square feet is considered small commercial, and they don't usually model their buildings, a deviation from custom path projects.

The pilot was successful and pilot projects installed three times the number of measures. Others are trade ally driven and are hit or miss. They got aggressive with design strategies and sought Earth Advantage for Commercial in some cases. Packaged measures tend to get higher commitment from owners and teams who need to make quick and clear decisions. They liked the square foot incentive because it was easier to figure into their designs. The pilot did feel somewhat rigid, and was a challenge. We had to do a lot of special calculations and modeling to make it work, which took a lot of time and became an administrative challenge.

Holly: What was the pilot?

Jessica: Right now we have two approaches to the program: large custom projects with modeled savings and prescriptive projects that cherry pick from a list of standard measures. The pilot is for the middle ground, to customize and package measures getting more into design. They want a lot of flexibility to switch lanes and add or drop things as needed.

The new offer includes what we already had in play, and repackages it. We did a lot of modeling to come up with different packages by building type. HVAC and lighting is a majority a building's energy footprint so those two are the base package with electives and graduated savings depending on how far they go. Looking forward a year or two, we want to align the program on policy (reach code for instance). Earth Advantage is in the market with a third-party certification that is like LEED for small buildings. Our offer aligns with the Earth Advantage silver, gold and platinum certification. We're looking at increasing incentives for customers going further than standard track.

The new offer is a good, better, best approach with electives. We have three building types, modeled separately: retail, office and restaurants. Retail that's under 70,000 feet needs a good HVAC system and should do 15 percent beyond code for lighting. That's the base package. There are additional electives, and we pay incrementally more for completing two sets of electives.

Don: Is this both new buildings and major renovations?

Jessica: Yes.

Jessica: The retail range is \$0.40 to \$0.80 per square foot. This is on order with the small commercial efficiency pilot. We did eight to 10 projects in the pilot, but this one starts at two and addresses the new baseline due to the new code. For offices, we added a "very best" level, which is for the very innovative. There's a potential for radiant heating and cooling that may be cost-effective for an office but not other building types. With this measure they will have to do all the measures to capture the interactive savings. The benefit/cost ratios range from 1.5 to 2 for these. It's a great way to gain savings.

Charlie: Is there good, better and best for lighting?

Jessica: It's a flat \$0.15 per kWh for lighting through our regular program. For this offer, the base requires 15 percent lighting power density, LPD, reduction beyond code and if they go as far as 25 percent that additional is counted as an elective. They could do lighting and pick a standard measure.

Mollie: They have to do the base package for lighting?

Jessica: If they go 25 percent beyond, then they can count lighting as an elective.

Jessica: Restaurants are different from others. We are maintaining the standard path and offering a bonus. They typically do one or two things, but we offer a bonus for more, and it could go up to 30 percent. It doesn't work for them on square footage. The dining area doesn't have as much savings associated with it, so places with larger dining areas can't save as much. They can get ENERGY STAR® equipment, envelope measures, etc. Also, the Core Performance Guide had to be revamped, and a lot of envelope measures were absorbed into the new code.

Charlie: Those HVAC baselines and savings are tricky to model, and I would be curious about real performance.

Erin Rowe: We modeled multiple HVAC systems, and the savings are very dependent on what type they select. A VAV system is very different depending on the type they select. We did look at climate zones and types to come up with the square foot incentives.

Jessica: This was for both new construction and major renovations.

Erin: We tried to make the base as simple as possible. For the tenant improvement projects, it will matter whether or not they have HVAC tied to the project. Some are really into elective measures, and maybe we can substitute some for the HVAC savings.

Jessica: Project teams seemed to like packaged approaches, and owners wanted Energy Trust and contractors to drive it. It makes it easy for the owner to point to a package and move forward.

Don: A square foot offer makes it easier for them.

Jessica: The package would really work for owners who are eager to move forward and also to those who want to show something to their tenants. The impact may come after 2013.

Charlie: Some of these HVAC systems are very hard to model, and I'm very curious about how well the models follow reality with some of the special HVAC systems.

Peter: Some M&V would be helpful.

Don: An owner-developer never likes commissioning requirements.

Fred: We need to drive volume the first year.

Erin: We have a path to net zero project that has given us good feedback, so now we have some good data.

Peter: Do we have it summarized to share?

Erin: I have one school that is possibly net-zero that we can share.

Jess: High rise, grocery stores and schools potentially will be around Quarter 3.

Fred: A streamlined way of going deeper in small buildings is very difficult. Getting to this market is the hard part, modeling is easier.

Juliet: Is capital a barrier?

Jessica: They are typically designing to code, and not beyond. We are working to get them to go beyond.

Peter: Are they having trouble raising capital?

Jessica: No. They are operationally focused, but they need to see benefits, and it's tricky to get them to do it.

6. Public Comments

There were no additional public comments.

7. Adjournment

Peter thanked all council members for their participation and adjourned the meeting at 4:20 p.m. The next full council meeting is June 6, 2012, and will have a focus on residential programs.