Meeting Notes
Evaluation Committee Meeting
October 9, 2009, 10:00 AM – 1:00 PM

Attendees

- Phil Degens, Evaluation Manager
- Debbie Kitchin, Board Member and Committee Chair
- Alan Meyer, Board Member
- Dan Enloe, Board Member (by phone for items 1-3)
- Ken Keating, Evaluation Expert
- Tom Eckman, Evaluation Expert, NW Planning and Conservation Council, for items 3&4
- Paul Berkowitz, Northwest Development Director, CSG
- Kim Brown, Multi-family and Home Energy Review manager, CSG
- Sarah Castor, Evaluation Project Manager
- Amber Cole, Director of Communications and Customer Service
- Diane Ferington, Senior Residential Sector Manager
- Lakin Garth, Planning and Evaluation Contractor
- Fred Gordon, Director of Planning and Evaluation
- Steve Lacey, Director of Operations
- Maureen Quaid, Home Energy Solutions Project Director, CSG
- Brien Sipe, Evaluation Project Manager
- Adam Studdard, Operations and Data Analyst, CSG

Topics covered:

1. SB 838 Evaluation (draft)
2. 2009 Residential Awareness Survey (draft)
3. Multifamily Engineering Estimates Review
4. Discussion of impact methodology

1. SB838 Evaluation

Contractor: Research Into Action

Phil presented the results from the Senate Bill 838 process evaluation, conducted by Research Into Action. SB838 authorized utilities to propose tariffs above and beyond those set out in SB1149. PGE has filed two tariffs, $69.9 million over 5 years to Energy Trust, and $500k for PGE activities to collaborate with Energy Trust on efficiency projects. Pacific Power filed one tariff approved for $55 million to Energy Trust, with 5% going to Pacific Power to fund collaboration with Energy Trust.

The evaluation involved staff interviews, in person and by telephone, with Energy Trust, utilities, and the Public Utility Commission staff. Thus far, PGE has used its funds to partially fund 5 staff positions, while Pacific Power has fully funded one position.
Major findings:

- Performance metrics are not specified, but utilities report activities (e.g., number of outreach meetings, attendees, website hits, and mailings).
- Not currently possible to quantify savings based on the recorded metrics.
- Stakeholders generally dissatisfied with the lack of metrics.

- Energy Trust currently tracks 838 expenditures separately from 1149.
- A simple comparison of revenue/expenditures and claimed savings show a decrease in savings since the beginning of the 838 funding.

The group discussed the last finding at length:

- Ken indicated that in the short run it's difficult to identify how the additional budget has increased savings. The study did caveat that the incremental funding was received in the midst of an economic downturn.
- Debbie noted that the write up could discuss the leveraging of existing programs with additional funding, rather than simply saying that SB838 isn't producing results.
- With regard to the costs and program activity, Dan pointed out that there was no count of measures in the study, nor was there a discussion of how expensive those savings were. Fred speculated that the year to year change in the aMW savings may be due to one mega project, which is not noted in the study.
- Discussion of the pipeline for the projects – programs were already running at the time of the incremental funding. Debbie indicated that the study identified 'new programs' whereas it would be more accurate to describe these as new initiatives.
- Administrative costs can be front loaded in a ramp-up, whereas incentive costs are booked with the savings. Steve indicated that 2010 should look better from a levelized cost perspective.
- Debbie followed by identifying that larger projects have longer lead times, and we may not see savings instantly.
- Given economic conditions, Alan identified a concern that the agency would not be able to spend the incremental funding. Steve indicated that Energy Trust would likely be asking for more funding, and is currently not having a problem spending budgets.

The group consensus was that a mega project should have its own line in the year to year savings summaries.

Findings (continued):

- Processes are in early development, many agencies have not collaborated in this way before.
- Having more than one liaison at a utility was identified as difficult.
- SB838 funding has led to more administrative costs for Energy Trust.
- Funds do allow closer collaboration with Energy Trust.
- Interviewee suggestions: elimination of over 1 aMW distinction for project funding.
- Utilities would like to hire more staff using 838 funding.

Opportunities identified:

- Leverage utilities' relationships with customers, leverage Energy Trust relationships with customers, deeper engagement on utility Integrated Resource Planning (IRP) processes.

Recommendations:

- Develop metrics for 838 spending – continue to include 838 funding questions in additional evaluation work
- Improve marketing collaboration
- Specify one main contact for 838 funding at each organization

Debbie noted that the one contact recommendation may result in less in-depth knowledge.

Debbie asked when the report will be finalized, given that study feedback is still coming in, the study will likely be included in the December board packet.

Anticipated evaluation cycle:

- Given that utilities can adjust their tariffs at any time, Debbie indicated it would be good to have fresh evaluation findings to defend the incremental funding during review cycles.
- Fred indicated that the value of further evaluation may depend on how much interest the evaluation generates at the stake-holder agencies.

The group consensus for SB838 evaluations was an 18 month evaluation cycle.

2. 2009 Residential Awareness Study

Contractor: Research Into Action

Sarah Castor presented findings from the second annual Residential Awareness and Perceptions Survey. The survey was conducted by telephone (randomly dialed) with a representative sample of 900 Oregonians. Respondents matched the distribution of population on region, age of respondent, owner/renter and type of home (single family, multifamily, mobile home). Some respondents were not served by our participating utilities and so were not eligible for Energy Trust programs.

Survey questions covered awareness of and participation in Energy Trust programs, as well as awareness of, and interest in, energy efficiency, renewable energy and global warming. The purpose was to inform marketing efforts and program development.

Findings:

- There was a statistically significant increase in awareness of Energy Trust from 28% in 2008 to 35.6% in 2009. This difference is even more striking considering the 2009 question was unaided while the 2008 question was aided. Awareness was 41.4% among homeowners served by one of our utilities. By region, awareness was greatest in the Portland Metro region and lowest in Central/Eastern Oregon.
- Forty percent of folks who were aware of Energy Trust indicated they did not know what the agency does; at least 27% knew we ran energy saving programs and at least another 16% knew we offered incentives for energy efficient products.
- Most (28%) heard about us through their utility (website, bill insert, etc.), 22% heard about us through word of mouth, and 19% heard about us through mass media.
- Overall, 7.1% of respondents reported participating in an Energy Trust program or receiving an incentive. This is not significantly different than last year (5.8%). Among eligible homeowners, the reported participation rate was 10.3% in 2009.
- Overall, 84% of participating respondents were satisfied or very satisfied with their experience.

Debbie questioned the higher participation in the Portland Metro area, noting that 2009 results indicate that participation is even more skewed than in 2008. Ken indicated that program records are the best indicator of regional participation, given that some respondents don't realize they participated with Energy Trust (particularly renters of multifamily units). Amber noted potential confusion for customers between Energy Trust and utilities.

As in 2008, respondents who report participating with Energy Trust tend to be homeowners of single family dwellings, and have a college degree. They are also much more likely than the

general population to be 45-55 years old, have annual household income greater than $50,000, and use natural gas for space and water heating. Fred noted that we serve a lot of electrically heated customers through the multifamily program.

Debbie expressed concern about whether we are serving lower income homeowners well. Diane noted that as of this fall, we have the Savings Within Reach track for near-low income homes not served by low-income weatherization agencies. There was a general discussion of the fact that several Energy Trust programs and initiatives are not highly visible to residential customers; for example, the multifamily program targets property owners, and the CFL buy-down is a direct discount to the consumer at the store. Thus, the survey is useful for registering awareness, but not for accurately estimating participation.

Respondents primarily get news and information through newspapers, TV and the internet. Amber reported that Communications is adjusting their advertizing to reflect the lower use of magazines and radio, and is exploring other types of media, including television.

In this year's survey, a battery of about 25 questions about attitudes and beliefs about energy and the environment was added to improve the customer segmentation.

Finding (continued):

- Eight-five percent of respondents reported having at least one CFL at home.
- About 40% have a programmable thermostat, but many do not use them to automatically control their heating or cooling.
- Most respondents have more than one power strip but two thirds of them report never or rarely turning them off. Energy Trust has explored smart power strips, but have found very little load that is not sensitive to being turned off (DVRs, cable boxes, etc.).
- When asked what other things they have done in the last year to reduce energy use, 25% reported using general conservation behaviors, 21% reported weatherizing their home, and 12% reported purchasing an efficient appliance.
- More than half of respondents reported that they would or might participate in an Energy Trust program in the next year, many more than last year.

Diane indicated there will be a 200 unit pilot of programmable thermostats in Home Energy Reviews next year. Ken cautioned against piloting thermostats, as many previous studies by other agencies have found negligible savings.

The segmentation is different than in 2008 due to different survey questions, and a better renter sample. The 2009 segmentation analysis identified 6 segments:

- Maybe Later (15%): young renters with lower incomes and energy use, "green" attitudes
- Show Me (11%): Eastern Oregon homeowners with low energy use and low concern about energy issues
- Hand Full (18%): middle-aged homeowners with large families, low incomes and little interest in energy issues
- Strugglers (13%): middle-aged renters with low incomes, low energy use and some concern about energy issues
- Willing & Able (24%): middle-aged homeowners with high incomes and energy use, high concern about energy issues
- Main Street Oregonians (18%): older, non-urban homeowners with low incomes, varied energy use and low concern on energy issues

As in 2008, we were unable to match energy use data to about 75% of respondent addresses. Some of the lack of use data is expected, with respondents served by non-Energy Trust utilities, but lack of data is more widespread than this. Segmentation would be more reliable with more respondent usage data.

Willing & Able segment represents 88% of highest quartile energy users, and 67% of the second highest quartile. Dan suggested that consumer feedback could be provided by utilities online. Sarah noted that Energy Trust will be engaging in a pilot of home energy reporting for households in 2010; she also indicated there is a significant amount of research being conducted by allied organizations on what messaging will motivate consumers most. Ken noted that, when we evaluate the home energy reports, Evaluation staff should clean the data for the evaluation contractor, rather than have the home energy report company responsible for data cleaning. Ken said that in other evaluations, the home energy report company provided pre-cleaned data to the evaluator without information on what had been removed or revised.

Evaluation staff conclusions on the study:

- Awareness and possible participation have improved since last year
- There may be opportunities to educate consumers on thermostats and power strips
- The 2009 survey had better questions and a better sample, leading to more credible segmentation, but more energy usage data would have made segmentation even better.
- Repeat the survey next year, with fewer questions, to track awareness and participation, but do not repeat segmentation until we figure out how to use what we have effectively.

Debbie asked if regional level segmentation with other utilities would be useful. Fred indicated logistical problems, but indicated it's worth trying with modest expectations; Northwest Energy Efficiency Taskforce is also exploring this. Debbie felt regional activities would help to leverage dollars for marketing.

Alan wants a distilled version to go to all board members. Evaluation staff will make sure the report's executive summary is available to board members.

Amber highlighted Energy Trust PR activities and the leveraging earned media; Energy Trust appears in many newscasts and articles every month.

3. Multifamily Engineering Estimates Review

Contractor: Stellar Processes

Phil presented the findings from the engineering review of the multi-family program.

Study Background:
Results from previous impact findings were presented in March 2009. A number of contractors estimated savings, ranging from 8%-49% of expected for electric savings, and 0% to 54% for gas savings. Despite the range, all findings indicated significantly lower savings than expected. Windows and insulation were the predominant measures installed to save on space heating loads.

Study tasks:

- Review recent multi-family projects using billing data to determine appropriateness of savings estimates for major measures, including windows and insulation.
    - Examine SUNDAY simulation software used to calculate savings estimates

- Initial sample of 25 buildings.
- Eleven sites were not included in analysis due to poor or insufficient billing data.
- Final study sample: 12 electrically heated and 2 gas heated sites.
- Most working estimates were deemed. SUNDAY simulations were used on only two sites in sample.

Key Findings:

- Deemed savings overestimated heating loads by a factor of 5 on average, leading to very low realization rates (20%).
    - Despite this, these structures did realize significant reductions in actual use – some buildings saved 50% of space heating loads.
- The two gas sites had slightly better realization rates of 37% on average.

Modeling estimates indicated an increase in the set-point temperatures of the building used in the analysis, which might be explained by consumer 'take-back'. The typical expectation is that, as the thermal integrity of a building increases, the outside temperature at which a consumer begins to use a heating system (i.e., the references temperature) decreases. Ken indicated that the study findings about the increased reference temperatures could be problematic. The actual pre-treatment UA (the product of U-factor and area) is unknown, and the delta UA is assuming consistent installation of measures.

Despite the debate on explanations for lower realization rates, the rates themselves were not in question.

Findings (continued):

- SUNDAY is laborious to calibrate.
    - Tom indicated that SUNDAY is fairly simple, but it's designed to calculate a thermal model. Current building audits still have many unknowns such as infiltration rate and heat loss in the buildings.
- UA analysis was found to provide simple deemed estimates (9 kWh/delta UA)

Evaluation recommendations:

- The multi-family program should adopt deemed savings using delta UA
- Repeat the study with another 40 sites, including more gas-heated sites.
- Develop a process collaboratively with program staff and IT to identify billing data for participating buildings and to provide estimates of annual consumption.

Paul asked what the program's priority should be, Fred indicated 9kWh/delta UA should be the place holder for program budgeting purposes. Phil indicated discussions to expand the sample were underway with Stellar Processes.

Tom and Ken indicated that the overestimation of energy consumption in multi-family buildings could be due to occupancy problems and small sample studies.

Fred indicated that in light of these findings windows do not currently pass the societal (total resource cost) test based on energy savings, but might if Energy Trust considered non-energy benefits.

Diane noted that the multi-family program oversight is transitioning to the commercial program in January 2010, although CSG will continue as the program implementer.

4. Billing analysis methodology (discussion)

Brien presented a discussion of billing analysis methods. Evaluations staff is concerned about certain analytical techniques – particularly fixed effects models with panel data – being used by contractors to estimate program savings. These models can produce inconsistent results in the hands of analysts who lack experience or attention to detail.

Staff proposes moving to the nearly exclusive use of "normalized annual consumption" (NAC) models. The approach involves summing utility to an annual level and adjusting for average weather patterns. Measure savings are the difference between consumption before and after the installation. NAC models make site screening easier than fixed effects models.

Also, NAC models tell a better story; we can look at the distribution of savings across households, segment by type or size of home, contractor, or pre-installation energy use.

Fixed effects models may still be useful for estimating short term savings or for sites with measures installed in multiple years.

Ken and Tom expressed some concern about sample attrition with NAC models, but noted that it is less severe when modeling gas usage. Phil noted that Energy Trust does not discard sites with non-weather sensitive data, as some analysts do; rather, we use the un-weather-adjusted data for that site. Brien presented sample sizes from a fixed effect model by a third party and an in-house NAC model for the same program which showed that attrition was roughly the same for both models.

Maureen suggested that the NAC analysis could provide more nuanced information that could be used to target specific types of home or customers.

Staff proposes:

1. Requiring impact evaluation contractors to present results from NAC models, in addition to any other models they propose
2. Conducting more billing analysis in-house, with third parties reviewing the models and/or results

Brien noted that it can be difficult to find experienced evaluators that aren't booked up with other jobs. Fred noted that resources budgeted for impact evaluations are often spent teaching contractors how analysis should be done, which leaves little left over for actual analysis. Evaluations staff already cleans and prepares billing data for contractors to the point that it is ready for models to be run.

Debbie feels that the issue of performing analyses in-house would need to be settled with the PUC. Fred suggested that Evaluation staff and committee members could set out reasonable criteria for data screening, as that is most of the work and has the big effect on results.

The meeting adjourned at 1pm.

The next Evaluation Committee meeting is scheduled for November 13th, 10am- 1pm.