Agenda

Conservation Advisory Council
Wednesday, October 25, 2017
1:30 p.m. – 5:00 p.m.

421 SW Oak St., #300, Portland, OR 97204

1:30 Welcome, Old Business and Short Takes *(discussion, information)*
Introductions, agenda review, September 2017 CAC minutes
Review 2018 meeting dates
Information on organizational updates

1:45 Draft 2018 budget *(discussion)*
Staff will present the draft 2018 annual budget, building from the draft action plan presentation in September. The public comment period on the draft budget is November 1 – 17, 2017.

3:00 Break

3:15 Net-to-Gross methodology *(information)*
Staff will present how net and gross savings are calculated for tracking and reporting purposes.

3:35 Residential sector 2018 incentive changes *(discussion)*
Year-end incentive changes will be covered, including an update on the status of cost-effectiveness exception requests to the Oregon Public Utility Commission.

3:55 Existing Multifamily 2018 incentive changes *(discussion)*
Year-end incentive changes and sunsets will be covered, including an update on the status of cost-effectiveness exception requests to the Oregon Public Utility Commission.

4:15 Agriculture 2018 incentive changes *(discussion)*
Year-end incentive changes will be covered, including an update on the status of cost-effectiveness exception requests to the Oregon Public Utility Commission.

4:25 Commercial Strategic Energy Management 2018 incentive changes *(discussion)*
Year-end incentive changes will be covered.

4:35 Public Comment

4:50 Adjourn

The next scheduled meeting of the Conservation Advisory Council is
Friday, November 17, 2017

Conservation Advisory Council Meeting Notes

September 13, 2017

Attending from the council:
JP Batmale, Oregon Public Utility Commission
Warren Cook, Oregon Department of Energy
Brendan McCarthy, Portland General Electric (for Garrett Harris)
Lisa McGarity, Avista
John Frankel, NW Natural (for Holly Braun)
Tyler Pepple, Industrial Customers of Northwest Utilities
Jim Abrahamson, Cascade Natural Gas (for Allison Spector)
Liz Jones, Citizens' Utility Board of Oregon
Wendy Gerlitz, Northwest Energy Coalition
Eugene Rosolie, Northwest Energy Efficiency Alliance (for Julia Harper)
Brent Barclay, Bonneville Power Administration

Attending from Energy Trust:
Mike Bailey
Tom Beverly
Amber Cole
Mike Colgrove
Hannah Cruz
Lindsey Diercksen
Marshall Johnson
Judge Kemp
Oliver Kesting
Steve Lacey
Connor Morrow
Jay Olson
Thad Roth
Kate Scott
Adam Shick
Scott Swearingen
Julianne Thacher

Others attending:
Lindsey Hardy, Energy Trust board (by phone)
Alan Meyer, Energy Trust board
Audrey Burkhardt, NW Natural
Don MacOdrum
Lonny Peet, Nexant
Jeff Tambarro, NW Natural
Jeffrey Schwartz, ICF
Ed Wales
Whitney Rideout, Evergreen Consulting

1. Welcome, Old Business and Short Takes

Hannah Cruz convened the meeting at 1:10 p.m. The agenda, notes and presentation materials are available on Energy Trust's website at www.energytrust.org/about/public-meetings/conservation-advisory-council-meetings/.

This section was covered second, after the market analysis and penetration rate results, to allow additional council members to arrive due to the earlier than usual start time.

Hannah introduced Liz Jones, representing the Citizens' Utility Board of Oregon (CUB), as the newest council member. Amanda Potter was also introduced as the new Energy Trust industrial sector lead. Amanda has worked with Energy Trust programs for several years, starting at PECI, a former Energy Trust Program Management Contractor. She managed CLEAResult's northwest division before joining Energy Trust.

The council accepted the meeting notes from the August meeting with one correction: Holly Meyer should be changed to Holly Braun.

2. Penetration Rate and Market Analysis Results

Scott Swearingen presented analysis results. See Conservation Advisory Council packet and slides for details. Definitions are included in the slides.

Warren Cook: On the products slide, are these non-upstream products?
Scott Swearingen: They were only counted if they could be tied back to a physical site. So the majority of upstream products are not included.

Scott noted utility customer information (UCI) data doesn't make a clear distinction between commercial and industrial customers, so staff combined them as "business" in the participation portion of the analysis. UCI data is basic customer information Energy Trust receives from all five utilities each month, and is not Energy Trust's own participant information. The highest business participation rate is in the Portland Metro area, followed by the Willamette Valley and Central Oregon. The majority of these projects are large: 50,000 square feet or more. The lowest rate was for small properties. There were 29,000 projects included in this subset. Among businesses, the analysis shows the highest participation is along the I-5 corridor.

Alan Meyer: Is Strategic Energy Management low because it's a new program?
Scott: The program has served fewer sites, with SEM but they are working with the largest sites.

Scott said penetration rates looked at how much energy has been saved at sites that have participated in an Energy Trust program. The rate is calculated as the cumulative first year working savings divided by the cumulative first year's savings plus 2016 energy consumption. For the penetration rate analysis, staff was able to differentiate between commercial and industrial customers. For electric customers, the penetration rates are similar across commercial facility sizes, and the greatest rate came from smaller sites. There are slightly greater penetration rates in Pacific Power territory compared to PGE. On the gas side, rates are similar across customer sizes.

Alan Meyer: What does penetration rate actually mean?
Scott Swearingen: It's how much energy we've helped customers save relative to their 2016 baseload.
Warren Cook: Is this deemed savings over deemed savings plus what they used previously?
Scott Swearingen: This is the total sum of working savings over time over the total sum of working savings plus what customers used during 2016.
Alan Meyer: It's a different definition than I'm accustomed to.
Warren Cook: It's basically the savings.
Alan Meyer: To me, a better measurement of penetration rate would be how much savings we achieved out of the total possible savings to be achieved at a site.

Cascade Natural Gas has the lowest commercial penetration rate within each size category, or bin, for gas. Avista is higher than others, but as we just started serving Avista customers in 2017, there are only 33 sites so far. For industrial gas sites the size is defined by the following energy bins: small is 0-34,999 therms; medium is 35,000-149,999 therms; large is 150,000-449,000 therms; and extra-large is 450,000 therms or more. Industrial hasn't served any Avista projects yet, which is why they don't show on the graph.

JP Batmale: Am I reading this correctly that a large customer who participated in 2016 saved 18 percent on average?
Scott Swearingen: This shows that the total gas savings we have achieved with the average large customer over time would have been around 18 percent based on the previous year's consumption.

This presentation is a subset of what was provided to program staff to inform their commonly held assumptions and clarify where short- and medium-term strategy should be set for program delivery.

Hannah Cruz: This is the second large analysis we've gone through this summer. The trends analysis you heard about at the last meeting was completed in July and the penetration rate was completed in August. Going forward, we'll determine how this information gets used between planning and our programs. We want to excel at how we gather and use data.

Alan Meyer: Will there be efforts to reach larger customers where penetration rates weren't as high?

Lindsey Diercksen: Extra large customers can have a large process load that is harder to influence. Those projects can take longer.

JP Batmale: In terms of what Alan said, the participation rate for large customers seems high. What's your take?
Scott Swearingen: For the sites we could manually match using square footage information, since UCI data doesn't provide the commercial and industrial detail, we determined the majority of sites in the large bin were commercial. There are also more small sites, such as in strip malls and retail centers where a multitude of other tenants could count as individual small or medium sites. The largest projects are the most cost-effective, and PMC efforts are traditionally focused there.

3. PGE Large Customer Funding Compliance Actions
Hannah Cruz: The briefing paper is being updated and a revised version will be posted online and sent to you after the meeting. Please use today's slide deck as a reference until the revised briefing paper is available. Steve Lacey presented findings from the 2016 large customer threshold report in June and is back with an update.

Steve Lacey: In June, we discussed the results of the large customer incentive spending analysis we complete annually using a third-party contractor. Incentive spending in PGE territory exceeded that threshold in 2016. We're coming back today with a plan to bring us into compliance over the next three years.

> For background, Senate Bill 838 (SB 838) allowed the collection of supplemental funds, beyond the 3 percent public purpose charge established by Senate Bill 1149 (SB 1149), to acquire additional, achievable cost-effective electric savings. Electric customers using more than one average megawatt in a year, termed large customers, were exempted from SB 838. As they do not provide supplemental funding beyond the 3 percent public purpose charge, SB 838 requires that these customers not benefit from the supplemental funding. To determine this, an annual analysis compares Energy Trust incentive spending in each utility territory against an historical threshold set in coordination with the OPUC, utilities and stakeholders. We present the results of each year's analysis at a Conservation Advisory Council meeting. We typically haven't come close to the large customer threshold, though we have been projecting we would eventually exceed the threshold. In anticipation of this, the methodology to determine the spending threshold was discussed with and reaffirmed by stakeholders in 2008 and 2014. The 2016 analysis shows that we slightly exceeded the threshold in PGE territory, but not in Pacific Power territory. The corrective actions we're presenting today effect PGE large customers only.
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> We are also forecasting increased spending this year and in 2018, which tells us we need to implement corrective actions now. Without further action, we would spend $5.4 million on average over the next three years, which is over the threshold. To bring us below the threshold, we need to keep incentive spending at $4.2 million on average for the next three years. To do so, the maximum single PGE per-site incentive will be reduced from $1 million to $500,000 and from $1 million to $250,000 for self-direct customers. The reservation period for an incentive offer will change from 24 months to 12 months. Single customer incentives will be capped at $1.5 million per year. Incentives will no longer be provided for PGE projects exceeding the site cap. Again, this only applies to greater than 1 aMW sites in PGE territory. We are honoring all current signed commitments, so nothing is retroactive. If a customer owns sites outside of PGE territory, those sites are excluded from the changes. This doesn't change anything for customers of Pacific Power, NW Natural, Cascade Natural Gas or Avista.

Amanda Potter: We're working closely with our Program Development Contractors and one-on-one with impacted PGE customers to communicate this information. We've already spoken with the largest customer and had a good response.

Lindsey Diercksen: PDCs are out in the field and on-site with customers. They represent our programs to customers.

JP Batmale: Will you communicate one-on-one with impacted customers, or will there be a larger communication?
Amanda Potter: We are directly communicating with customers impacted by the changes.

Alan Meyer: If we do give them an incentive, will they agree not to self-direct? What's the logic?
Lindsey Diercksen: We are trying not to impact the self-direct group. We are hoping this will allow everyone to participate, instead of turning anyone away. If this doesn't work, we will have to discuss other actions.
Alan Meyer: This is a concern. If someone is paying in but seeing a reduction in the amount they can get back, and they see someone getting money without paying in, they may not look on it kindly.
Steve Lacey: This is a long-term issue. These steps are our first attempt at making corrections. We may have to take more or less action. Time will tell, and we will revise our actions as necessary.

Energy Trust's policy for self-direct businesses is available on our website. In summary, Oregon law allows entities that use over one average megawatt of electricity a year at a single site to direct their own electric efficiency and renewable energy projects and deduct the cost from the public purpose charge on their electric bills. In 2002, Energy Trust adopted a policy allowing self-directors a full Energy Trust incentive for the new project only if the self-director agrees not to use self-direct credits at the same site for 36 months. The policy recognizes that self-directors should not have the same access to Energy Trust incentives as electric users who pay the public purpose charge.

JP Batmale: This keeps you at a steady state. Would it become the max amount if revenue stayed the same?
Lindsey Diercksen: As we get more years of data and the denominator changes, that could change. We will continue to look at the max spend.

JP Batmale: How does this impact PDC services?
Amanda Potter: We're still covering the cost of technical services through PDCs to inform customer decision making, even if the customers can't act on potential energy-efficiency projects identified.
JP Batmale: That part isn't communicated in the briefing paper. Why weren't the positive aspects included?
Amanda Potter: It wasn't included in the briefing paper, but is part of the communications with PDCs and customers.

JP Batmale: How do you envision helping sites prioritize measures?
Amanda Potter: It's based on what is important to the customers, but we also encourage and prioritize lost opportunities to capture the most cost-effective savings.
Steve Lacey: The customer drives their investment decisions. We can help, but they will have the appetite to pursue what they want to do.

JP Batmale: Customers look to Energy Trust to help them make decisions. If there's a way to align certain measures with lost opportunities, it would be important to communicate that to the PDCs working with customers. Some retrofits can be put off into the future, but lost opportunities can't. I hope that's communicated.
Steve Lacey: We agree that lost opportunities are first on the measure hierarchy, and we advise customers not to sacrifice lost opportunities. However, the customer's needs drive the project focus. The importance of lost opportunities is well understood by the PDCs.

Wendy Gerlitz: With the number of changes you are making, it seems you're intending to curtail energy-efficiency investments from these customers. Why didn't you just say you won't provide incentives past the threshold and make it first-come, first-served? This approach masks the consequences in terms of lost opportunities and the reduced amount each customer will invest.

Steve Lacey: We look at what will have the least amount of impact on our customer base and attempt to get the most cost-effective savings. We can't use our programs to potentially change legislation. We're acquiring a lot of savings. There will be lost opportunities if we miss a chance when the customer is changing out a process. We don't know whether or not we can get those savings later.
Amanda Potter: The point of these changes is to spread the incentives among more customers and avoid letting one customer receive all the available funding for this customer class.

Wendy Gerlitz: The number of actions may obscure the impacts that these changes have. It's too many things at one time. It should be a simpler approach so the impact of this funding limitation can be more easily tracked. I think this is a big problem. From the NW Energy Coalition's perspective, there are several laws that govern energy efficiency acquisition, SB 838 is one and SB 1547 another. Utilities are supposed to pursue all cost-effective opportunities to acquire energy efficiency. It's required by law. This is a serious problem for Energy Trust and the OPUC. The OPUC will need to investigate this. Curtailment is completely unacceptable. I understand Energy Trust can't change public policy. This is a failing by all of us stakeholders who tried to convene to make these policy changes.

Brendan McCarthy: Have you already implemented these actions? This issue could be up for consideration by the commission as part of PGE's rate case review. Are you aware of the rate case? I would wait to do this until the commission makes a decision. At the latest that will be December, but possibly before.
Steve Lacey: We would have problems that are more drastic if we wait. These projects have a long horizon. December will be too long to wait.
Amanda Potter: We're concerned about a rush on signed incentive agreements. We want to avoid that.
Steve Lacey: I find what you say encouraging. The word is out, and now I'm worried we'll have a rush on incentives and a bigger problem in 2018.

Tyler Pepple: When will lighting incentives start to disappear?
Lindsey Diercksen: We're not projecting them to go away yet. We'll bring our lighting strategy to a future Conservation Advisory Council meeting.
Tyler Pepple: What impact would it have if they ended up disappearing?
Steve Lacey: They won't be going away, but they will be changing.

Brent Barclay: What is the average completion rate of contracted projects?
Lindsey Diercksen: I'll have to share that separately. I need to verify the number.

Eugene Rosolie: Is that from the date they sign the agreement, or start the project? In my experience with large industrial customers, projects always take longer than expected. Will this have unintended consequences of people not moving forward due to the uncertainty of time? Why not just sign up a certain amount of people? Then you know the budget is committed. That becomes your cap.
Lindsey Diercksen: The new reservation period gives us better insight to project timelines. PDCs are working with customers to have them wait and sign the commitment when they are ready to start a project, so it's less likely that they will be pushed into the next year. It helps with forecasting.
Steve Lacey: We've experienced this before. We had caps and reservations years ago and it had significant impacts in the industrial sector. It has taken many years for the negative effects from that to go away. We don't want to put the image of very limited budgets into customers' minds. We would rather limit the amount available per customer.

Brendan McCarthy: This is an important issue in the PGE rate case, and it may be the top reason we haven't settled. This rate we established in 2007 can be changed. This isn't actually about compliance, and there's nothing in the law that establishes a threshold of 18.4 percent. The metrics are raw metrics. They do prioritize new construction over retrofits. I would also like to see qualitative information. What is likely to go forward, what is most cost-effective and what won't go? The most

cost-effective projects should be the priority. Since we're analyzing the best projects, it makes sense to prioritize cost-effective projects.
Steve Lacey: We can look at that. This isn't how we've done things in the past. We have customer driven programs and customers pick their projects. We counsel them on cost-effectiveness, but don't prescribe what they should do.

Brendan McCarthy: You aren't setting a line of cost-effectiveness and encouraging them to do the more cost-effective measures?
Steve Lacey: We don't want to set up a different set of incentives that PDCs and trade allies will have to navigate. It's hard to administer and confusing to the market.
Brendan McCarthy: We are getting that with the caps. Trade allies have to decide what goes and what doesn't.
Lisa McGarity: What about tiered incentives for more cost-effective projects?
JP Batmale: Self-directs are the most cost-effective because there are limited costs. Having lots of levers to pull to make an impact is good. Odd tiers send odd shockwaves. Having lots of ways to control incentives is helpful. UM 1713 section 15131 lays out why we went down this route. It explains the logic and has been around for a while.

Hannah Cruz: Thank you for everyone's feedback and the information on the PGE rate case. These incentive spending reduction actions are being implemented because we are obligated to reduce spending given the information we have at this time.

4. Factors Impacting 2018 Measure Development and Budget
Hannah Cruz: There are multiple measures under review for cost-effectiveness as staff begin developing the 2018 Budget and 2018-2019 Action Plan. Following this presentation, feedback will be helpful. We'll return with any remaining details in October.

Mike Bailey: These are some of the drivers behind our incentive updates. First, the measure review process is a routine annual. We have 2,500 to 3,000 measures for which we have prescriptive incentives. We review and update them with new information on a regular basis. This year, the measure review is intersecting with updates to avoided costs, the expiration of the state Residential Energy Tax Credit, new codes and standards going into effect, and expiring OPUC cost-effectiveness exceptions. Much of this development is done between staff in the planning and program groups.

We've seen a change in water heaters. All water heaters now use UEF instead of EF. Windows are not passing cost-effectiveness tests, and we are requesting an OPUC cost-effectiveness exception for multifamily windows. Direct installation of lighting and showerheads are barely passing cost-effectiveness tests.

Lisa McGarity: What are the non-energy benefits for windows?
Kate Scott: There are several that we can't quantify, including health, comfort and maintenance.
Lisa McGarity: Is this for natural gas buildings as well?
Mike Bailey: The ratio has to be over 0.5 before we can look at the non-energy benefits. We're not looking at windows in gas-heated buildings because windows remain below 0.5 on the Total Resource Cost benefit/cost ratio test.

Wendy Gerlitz: Regional consistency is one element looked at when the OPUC considers cost-effectiveness exceptions. This implies to me that measures are cost-effective in other territories. Are windows cost-effective elsewhere?
Mike Bailey: In Oregon, we are required to look at the cost-effectiveness of each measure and each program. Other regions' utilities may not look at it the same way.

Mike Bailey: We hope to finalize measure reviews and provide it with the draft budget.

John Frankel: Was there any look at the transition from end user to midstream and upstream? Will the cost-effectiveness of water heater measures improve as it moves upstream? Would it be more likely to pass?
Mike Bailey: The incentive is for an old 0.67 EF vs. 0.62 EF. The value of the gas saved isn't enough to pass.
John Frankel: Will it have a lower cost, with the loss of the Residential Energy Tax Credit, and be able to pass in 2018, with the full transition to upstream?
Marshall Johnson: Our work in retail is better than the work with distributors, so we are seeing more success there. Home Depot, Lowe's and Grover's are participating. Once one of them participates, the others tend to follow and compete.

John Frankel: From a fulfillment standpoint, it's a lower-program cost. That's why you were transitioning. Will it reach a point where you have to keep asking for exceptions?
Marshall Johnson: It may be on that path, but avoided costs are dropping, so it's still a challenge. We are providing an update to the OPUC because it seems to be on the right path.

Brendan McCarthy: So we are currently receiving exceptions, and we are asking for those to continue?
Mike Bailey: The existing OPUC cost-effectiveness exception was for 2017. We are adjusting the measure and making another request for an exception.

Audrey Burkhardt: Can you give us any information about furnaces in stacked multifamily?
Mike Bailey: We have approved it for cost-effectiveness. Program staff are now working on setting the incentive amount and final requirements as part of their budgeting. Incentives will be announced in the next couple of months.

Hannah Cruz: These changes will be finalized over the next month or so. We are holding a trade ally stakeholder group meeting in October to discuss measure changes, and this will be a key agenda item at the Trade Ally Forums in November. If you have suggestions on what other groups we should reach out to and inform, please let us know.

5. Early Draft 2018 Action Plans

Hannah Cruz: The early draft program action plans are posted online. We're going to focus on the program action plans today. This doesn't tell the full Energy Trust picture, because it doesn't cover our planning and evaluation, finance, communications and customer service, and IT action plans. All will be packaged in the draft budget in October. The budget themes are included here and will likely change as we finalize the draft budget. There are challenges in design and cost-effectiveness that you'll see addressed in the budget. Expanding participation has been a theme for the past few years. You'll also see a new diversity, equity and inclusion lens applied to our work. We're working on more refinement in our data analysis so we can better target our offerings and services.

Brent Barclay: On the lens you apply, are you giving attention to uptake across different regions?
Hannah Cruz: Yes, rural versus urban participation s part of that lens. We've completed a few data analyses and customer focus groups over the past year to understand it better. We also want to consider all communities to understand how best to reach them. The diversity, equity and inclusion lens will help us learn more about how to do that. We are working on a diversity, equity and inclusion action strategy led by our Legal Counsel Debbie Menashe. We will bring this topic back to a future Conservation Advisory Council meeting.

JP Batmale: In terms of expanding data resources, what does it mean for programs?
Hannah Cruz: We are using our operations analyst team to learn more about savings that are still left in various markets.

JP Batmale: Is this inward facing, rather than for customers to help them make decisions?
Amber Cole: We're looking at it holistically, including resources we can bring in and match with our own data. It's more important over time.

Amanda Potter presented the industry and agriculture sector plans.

Amanda Potter: We're seeing a lot of lighting savings from cannabis facilities. We expect that to continue. We are looking at continuous commissioning to keep SEM savings moving. We are seeing more projects but with less savings per project. There's a low volume of gas savings, but these gas savings are very cost-effective. We plan to expand participation in small- to medium-sized customers. We'll continue rural and cannabis industry outreach. We're planning our first commercial and industrial SEM cohort in northeastern Oregon and potentially on the North Coast.

Alan Meyer: What are the opportunities with small- and medium-sized customers? It seems incongruous with the previous presentation.
Amanda Potter: We are hitting caps, so we will continue going to small and medium customers.
Lindsey Diercksen: UCI data shows a lot of small to medium sites we haven't reached, and we sometimes need more of a presence to push small to medium projects forward. Better data will help us drive those projects and understand customer needs.

Alan Meyer: This data doesn't seem to support what we're doing. There's probably a better set of data that will make it clear.
Lindsey Diercksen: We are working on that and will bring it back to the council.

Wendy Gerlitz: The Northwest Power and Conservation Council has done a lot of work with public utilities to see who is underserved by programs across the board. They've been doing a lot of work pairing utility data on energy efficiency with other types of data to get more insights into uptake on programs and other markets where uptake is better. Energy Trust may want to participate.
Amber Cole: Thank you, we are participating in that work.

Lisa McGarity: On cannabis savings persistence, do you have any information from other states?
Lindsey Diercksen: We haven't researched persistence of facilities, but it's something we can include in market research. We've focused on what measures are cost-effective.
Brendan McCarthy: Most states have about the same age of facilities as Oregon. I would encourage the research, but I don't think you'll find much.

Oliver Kesting presented the commercial sector action plan.

Oliver Kesting: The commercial sector represents three programs, including Existing Buildings, Existing Multifamily and New Buildings. Gas measures are especially challenged by cost-effectiveness. Some measures may be eliminated, but we don't see major impacts in 2018. Multifamily has key measure challenges, and exception requests were sent to the OPUC. Existing Buildings faces cost-effectiveness challenges at the program level that may require rebalancing some activities. New Buildings growth is expected to continue, especially in office, retail, mixed use and schools. There has been a lot of new multifamily construction in Portland, and we expect it to move outward over the next year or so.

Brendan McCarthy: Why school buildings?
Oliver Kesting: Many bond measures have passed, so we expect more projects based on that.
Brendan McCarthy: How does that flow through Energy Trust?
Oliver Kesting: The Oregon Department of Energy supports retrofits for schools. We work with them to support retrofits, and we handle new construction.
Brendan McCarthy: Does that money come from the 10 percent of the public purpose charge?
Oliver Kesting: No, this is Energy Trust funding. The 10 percent is managed by the districts through the Oregon Department of Energy.

Within Existing Buildings, we'll launch the commercial and industrial combined SEM cohort. We see efficiencies in administration there and a way to bring it to a market we haven't reached in the past. We'll continue the Smartwatt direct installation offering to small business customers and promote

equitable access to opportunities. We will work with the City of Portland to support the city's benchmarking requirement and help customers improve their energy benchmark scores.

JP Batmale: Are you helping establish systems for input? What are you supporting for the city's policy?
Oliver Kesting: We've supported training and provided input into the city's requirement. Scores are not yet public for customers between 20,000 and 50,000 square feet, and we will be available to work with customers who want to improve their scores before they are made public.

For multifamily, focus groups will provide information and feedback to better serve market segments. New Buildings Market Solutions packages will be updated to meet the needs of low-income multifamily and public sector customers. Existing Buildings lighting will adapt to match the market changes, and the program will explore luminaire level lighting controls, and good/better/best approaches. We will be rolling out the next phase of the Pay-for-Performance pilot in 2017 and 2018. Depending on the results of the pilot, we plan to launch a multifamily tier two power strip offering. We have rolled out new multifamily measures, smart thermostats, small tankless water heaters, rooftop controls and flat roof insulation. New Buildings is working to accelerate the adoption of emerging technologies. We are working with other utilities and organizations to accelerate code adoption.

> If we lose measures like direct install, it will challenge the cost-effectiveness of the Multifamily program.
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> We are leveraging our internal data systems for market analysis. Our operations team has helped us dial in our data to much better effect. We are exploring how to use the new data capabilities to identify opportunities and target more effectively.

Warren Cook: The plan talks about low realization factors for gas and electric savings. Is that the new normal?
Oliver Kesting: Savings Realization Adjustment Factors are applied based on rolling three-year averages. We didn't complete an evaluation one year, and in this most recent evaluation we receive a two-year adjustment. The gas realization factor dropped significantly. We will need to do more to get the same amount of reportable gas savings.

JP Batmale: There's a big reduction in gas savings. Can you speak to that?
Oliver Kesting: The opportunities that we expected to see from gas in 2017 were optimistic. We're seeing lower gas savings, and we've updated our 2018 projection with lower expectations.

JP Batmale: What is within behavioral energy savings?
Oliver Kesting: We're using that term in Existing Multifamily for potential new approaches to operational savings and occupant behavior, but it also applies to some commercialSEM and Pay-for-Performance opportunities.

Warren Cook: Are you looking at items in the Washington and California code that could be incorporated into Oregon code?
Oliver Kesting: We look at what is being considered for potential code updates and emerging technologies and practices in Oregon as well as other states. The New Buildings program designs new approaches into the program as a way to prepare the market before the new codes are in place, proving approaches before they become code.

Thad Roth presented the residential sector action plan.

Thad Roth: This is a summary of the early draft residential sector plans. Many changes are on the horizon for the residential sector. The key issue for us in 2018 is the transition of program management to a new delivery structure. We are going from three PMCs and three programs to one PMC, two smaller PDCs and one overall program. TRC is a new contractor delivering the EPS

whole-home new construction PDC contract. Our key outcome is to avoid impacts to contractors and customers from the program and contractor changes.

> We will focus on managing a reduction in savings from water conservation devices and lighting savings. There will be significant changes in savings from retail lighting.
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> We are working with state and local agencies to leverage their efforts with programs that might complement their efforts and help us move beyond Savings Within Reach.
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> We've moved away from shell measures to heating system measures. We are able to focus on both gas and electric heating systems. We understand that we need to touch various market channels at different points to be successful. Water heating is a one example. We are focused on the customer and contractor now.

Lisa McGarity: How will Energy Trust ensure the expansion to serving low-income customers won't overlap with utility programs?
Thad Roth: We're coordinating work with Oregon Housing and Community Services and community action agencies to understand what everyone is doing.
Marshall Johnson: We are looking at different streams of benefits than OHCS. If Avista and other utilities want to coordinate on low-income funding sources, we would be interested in discussing it.

Thad Roth: We will likely reach out to Bonneville Power Administration for input about methodology for new approaches and emerging technologies.

> We want to take a look at new construction modeling and utilize billing data analysis to get quicker feedback and see if our models match up with actual savings. It would be a less formal but quicker evaluation. We are looking at weather-normalized analysis and applying it to contractors.

Brent Barclay: Does that include gathering interval data?
Thad Roth: We don't get interval data currently, but if possible, we could use it.

Thad Roth: Our current staffing structure will shift toward three units: operations and fulfillment, customer acquisition, and new technologies and approaches. At an upcoming council meeting, we will provide an update on the new roles and structure. There are no changes to the size of the team, and in some ways the roles won't change dramatically.

> We expect to see reductions in delivery costs in 2018 as a result of the new contracts. The costs will be somewhat higher than the original PMC bids because we filled some gaps in the bids, but we'll still see savings in delivery costs. Marketing and measure development activities, for example, will see some internal savings. The residential sector will be under cost-effectiveness constraints on both the gas and electric sides.

Hannah: We will be back in October with savings figures and a broader organizational view of the draft budget for 2018.

6. Public Comment
There were no additional public comments.

7. Meeting Adjournment
The meeting adjourned at 4:20 p.m. The next scheduled meeting of the Conservation Advisory Council is Wednesday, October 25, 2017.

Draft 2018 Annual Budget & 2018-19 Action Plan

October 25, 2017

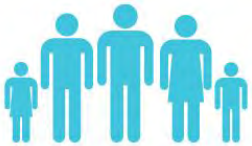
EnergyTrust of Oregon

Today's Presentation

- Projected 2017 Results
- Budget Building Blocks
- Draft 2018-2019
  Action Plan Highlights
- Draft 2018 Budget
- Next Steps
- Discussion and Feedback

15 Years of Affordable, Clean Energy

$1.5 billion investment delivers these customer benefits:



More than 660,000 homes and businesses served

10,000 clean energy systems generating renewable power from the sun, wind, water, geothermal heat and biopower

$6.9 billion in savings over time on participant utility bills from their energy-efficiency and solar investments

20 million tons of carbon dioxide emissions kept out of our air

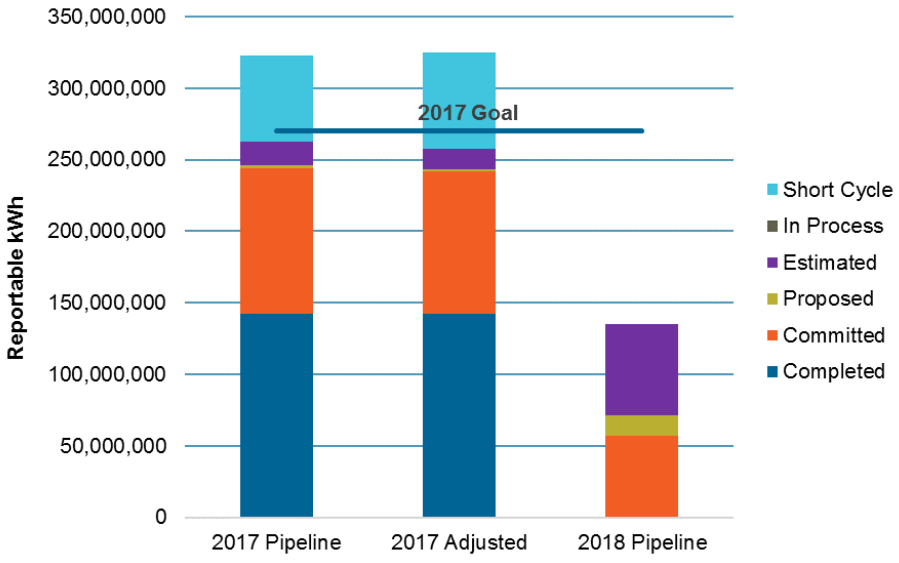
Projected 2017 Results

- Forecasting to exceed energy savings goals for 3 utilities
  - Strong activity in new construction and high demand for lighting
  - Shortfall for 2 gas utilities from project delays and delayed savings strategy
- Forecasting to exceed renewable energy generation goal
  - Strong standard solar plus completion of 2 larger-scale solar projects
  - Large pipeline of Other Renewables projects, including 3 hydropower projects expected in 2019

Q3 Efficiency Dashboards—Electric Utilities

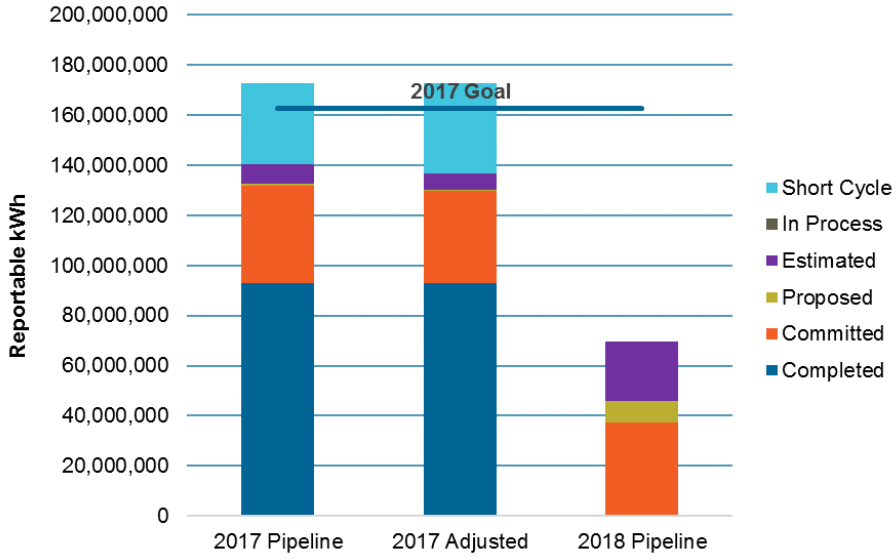
PGE

Forecast achieving 120%



Pacific Power

Forecast achieving 106%

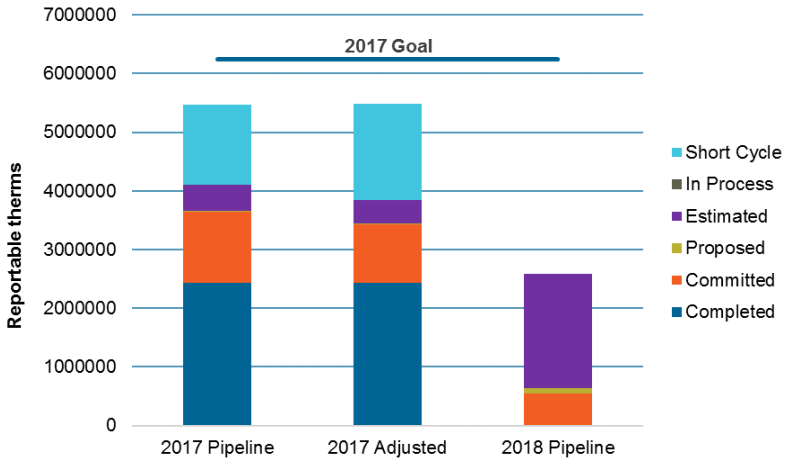


NEEA savings not included

Q3 Efficiency Dashboards—Natural Gas Utilities

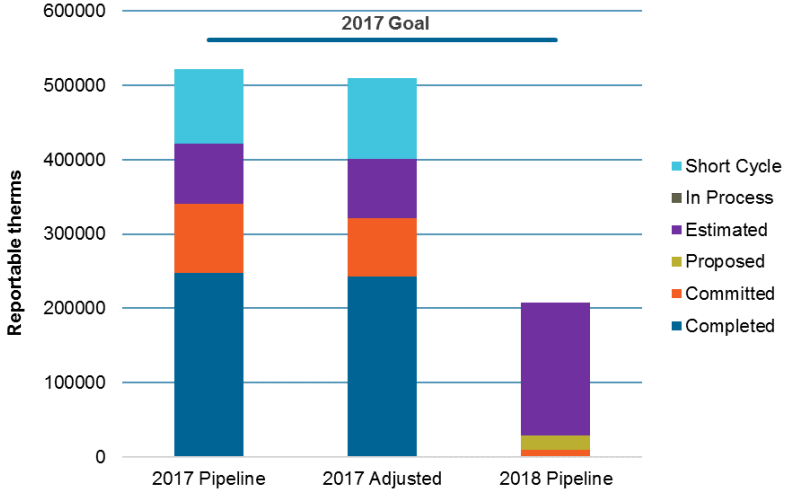
NW Natural

Forecast achieving 87%



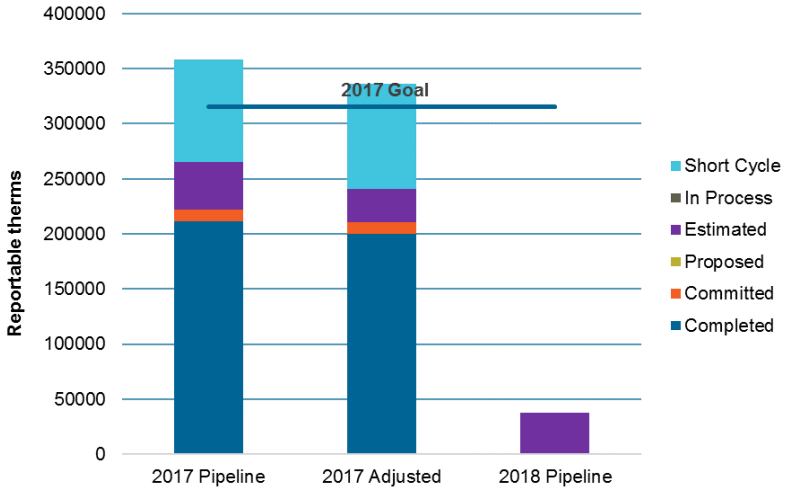
Cascade Natural Gas

Forecast achieving 90%

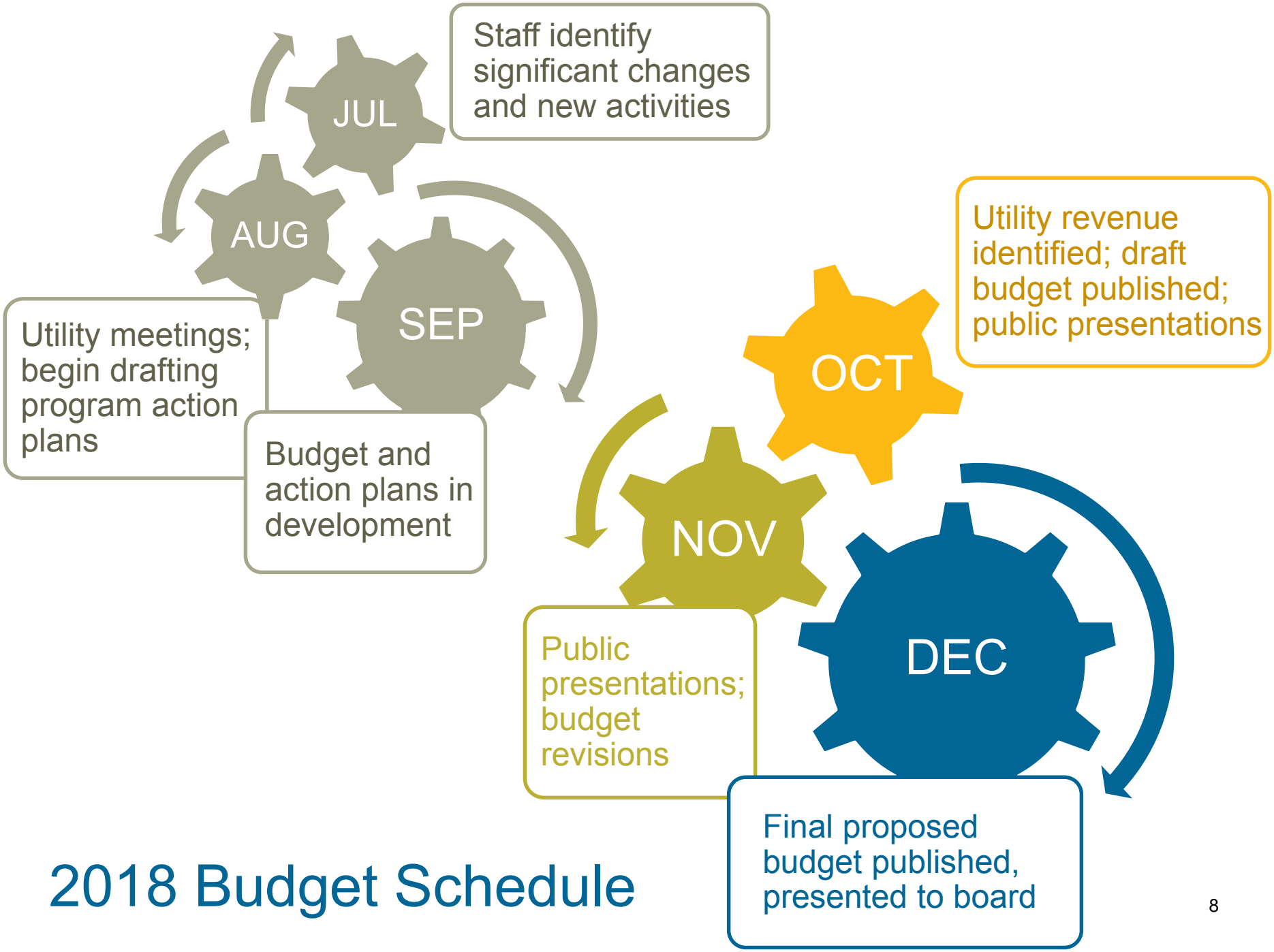


Avista

Forecast achieving 108%



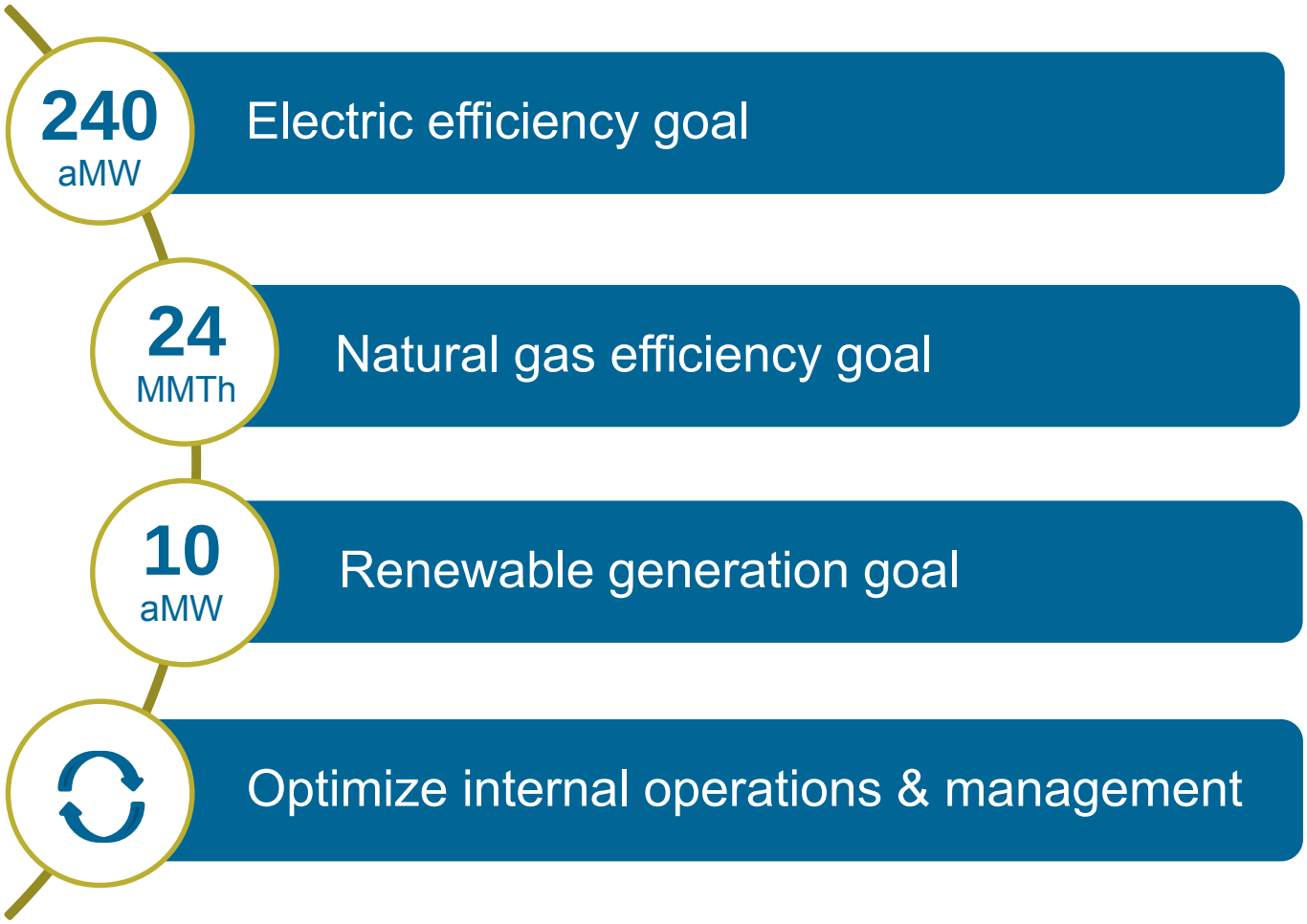
Budget & Action Plan Building Blocks



2018 Budget Schedule

Building Blocks for Budget and Action Plan

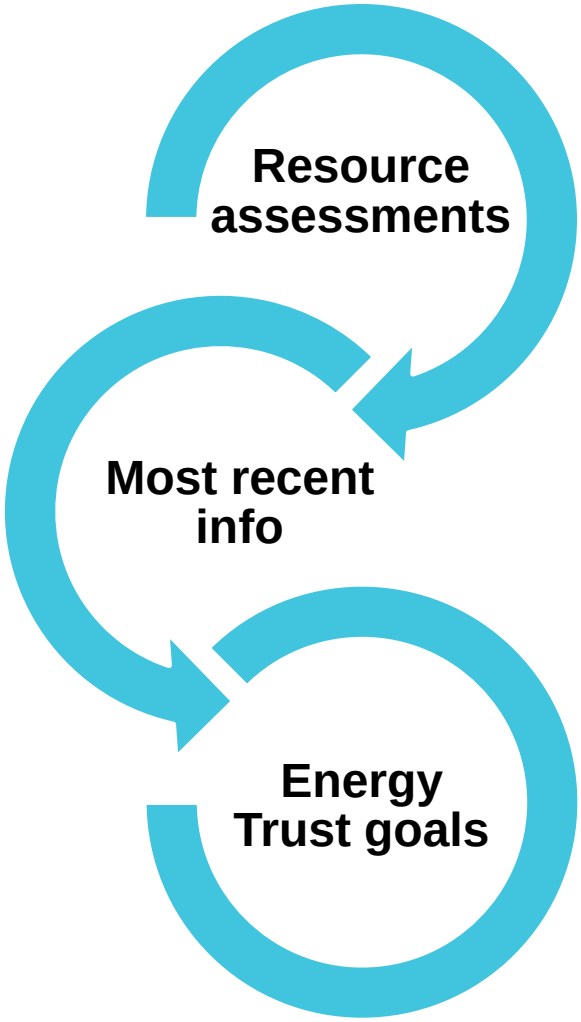
2015-2019 Strategic Plan Goals



2015-2019 Strategic Plan Strategies

- Expand participation
- Flexibly support mature renewable technologies
- New approaches, emerging technology
- Pursue complementary initiatives with others
- Strengthen operational effectiveness
- Manage transitions

Annual Goal Setting

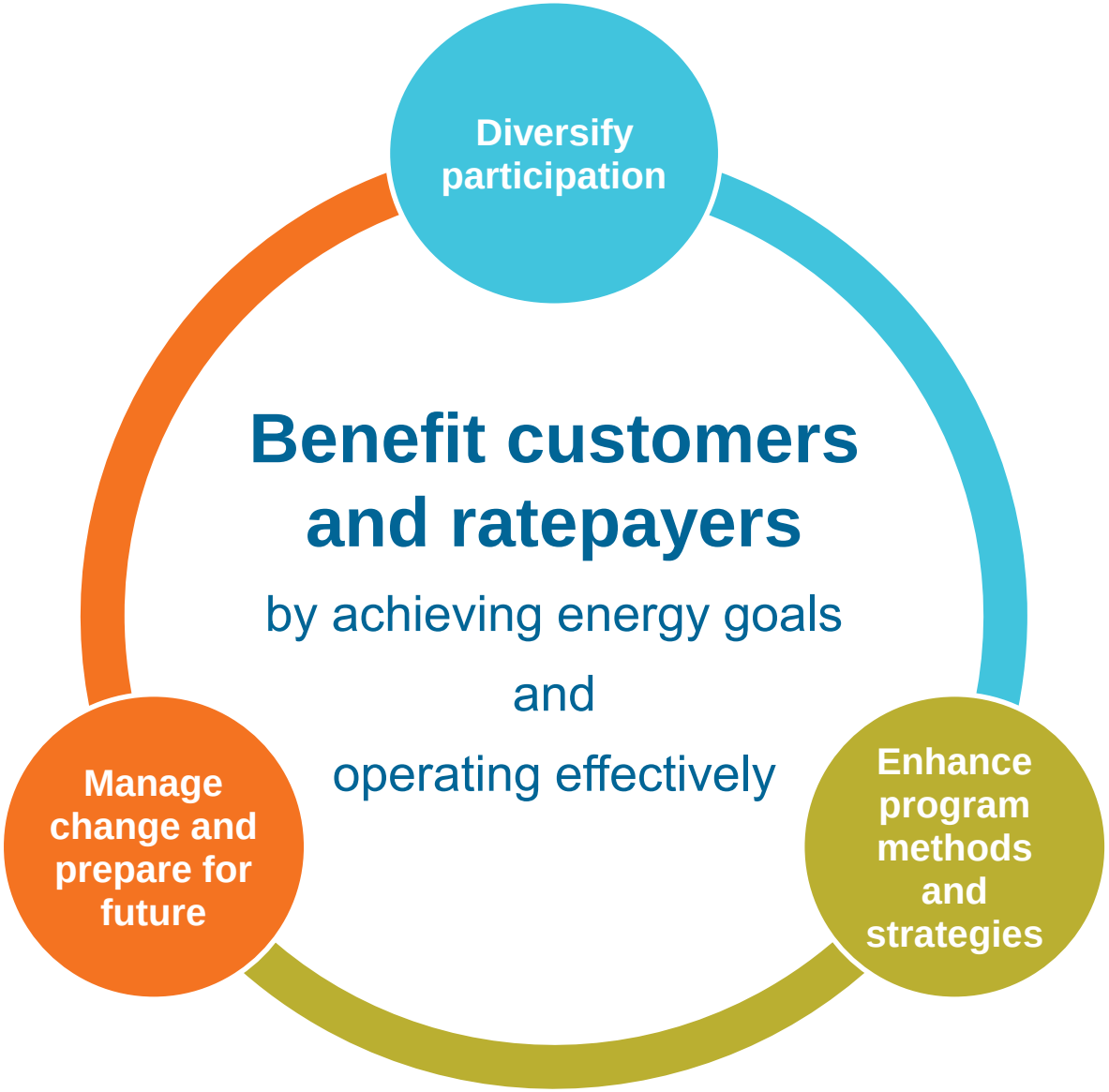


- Annual savings goals approximate each utility's Integrated Resource Plan (IRP) target
  - Staggered two-year IRP cycles
  - Energy Trust annual goals can be higher because of new information
  - Utilities file tariffs to collect funding necessary to meet annual goal
- Generation goals informed by resource availability and market drivers

Market Knowledge and Context

- 4th year of strategic plan
- Stable economy driving high activity in some program areas
- Oregon population diversifying, stakeholder interest growing
- Changing policies, markets and technologies
- Lower savings per project
- Avoided cost shifts
- Cost-effectiveness challenges

Draft 2018 Areas of Emphasis



Draft 2018-2019 Action Plan Highlights

Diversify Participation

- Increase outreach to small/medium businesses and agriculture
- Identify and prioritize strategies to increase access to solar in low-income communities
- Contract with community-based organizations to reach under-served communities
- Apply diversity, equity and inclusion lens to our internal operations and how we deliver programs

Enhance Program Methods and Strategies

- Utilize new, improved data resources in analysis and targeted marketing
- Leverage energy-related initiatives spearheaded by others
- Foster long-term relationships with business customers and support long-term project planning for communities
- Focus outreach to irrigation hydropower and biogas projects

Manage Change and Prepare for Future

- Support targeted demand-side management efforts with utilities
- Collaborate with NEEA to identify new measures and strategies
- Implement transitional strategies for key program areas (ex. solar, lighting)
- Implement recommendations from internal Organizational Review and Budget Review Projects

Draft 2018 Budget

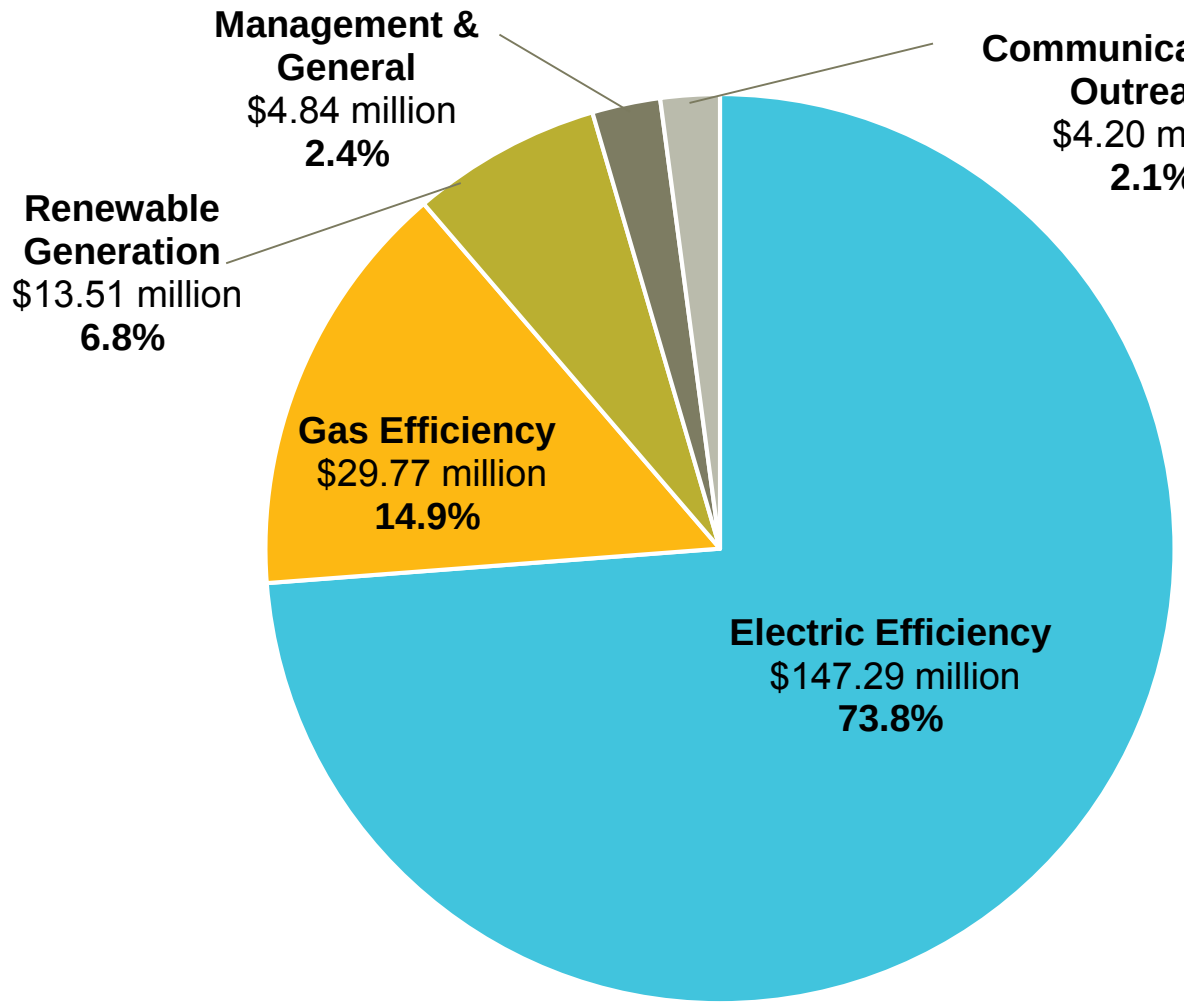
2018 Draft Budget Summary

- Investing $199.6 million
- Saving 56.52 aMW and 6.88 MMTh
  - Electric savings up by 0.2%
  - Gas savings down by 7.2%
- Delivering highly cost-effective energy
  - 3.0 cents/kWh levelized
  - 33.5 cents/therm levelized
- Generating 2.18 aMW
  - Renewable generation down 23.8%, largely due to solar state tax credit expiration, tighter budgets and timing of other hydro and biogas projects

2018 Draft Budget Summary

- Overall spending up 0.5% due to increased project volume and an increase in internal costs
- Incentives are 55.7% of total planned expenditures
- Revenue down slightly; reserves remain within targets
- Low administrative and program support costs at 6.7%
- Three-year rolling staffing costs are at 7.1%, below OPUC performance measure

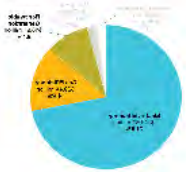
2018 Draft Budget Expenditures

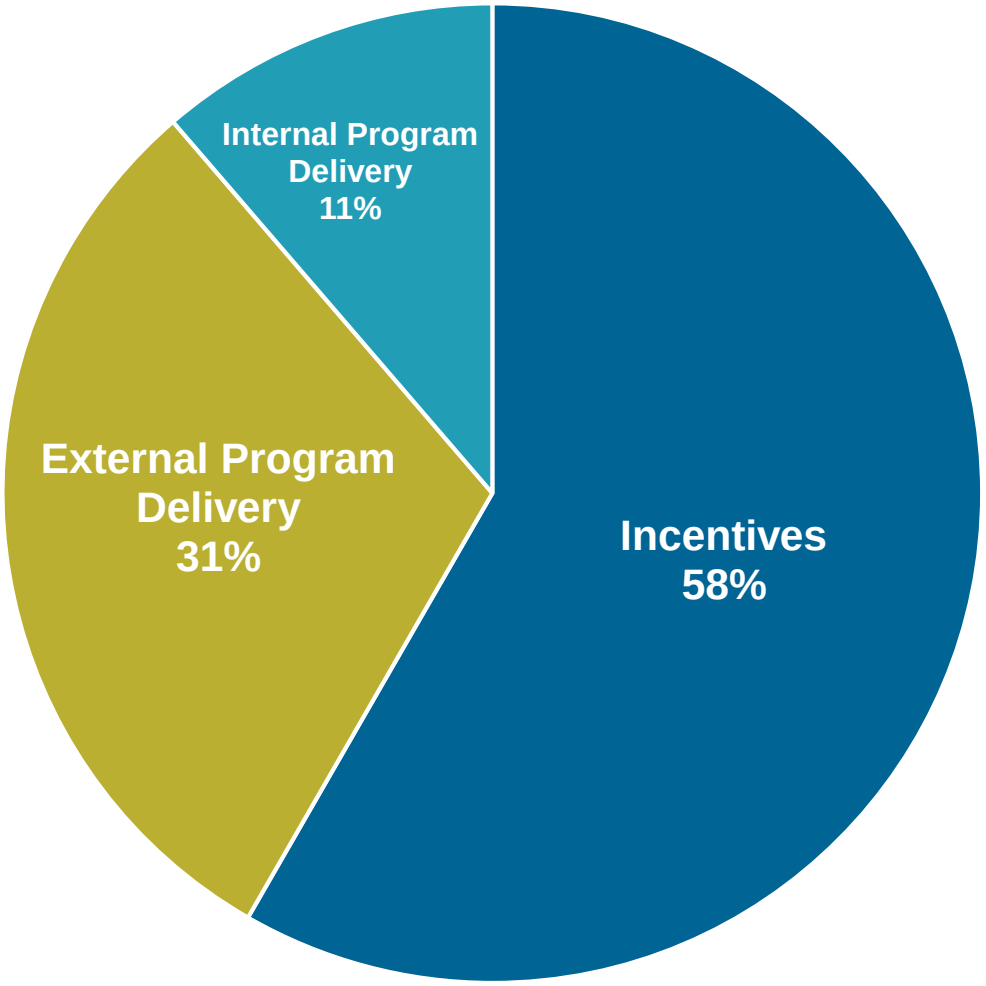


$199.6 million
Up 0.5% from 2017

The 2018 budget utilizes reserves to cover planned expenses in excess of anticipated revenue.

2018 Draft Budget Expenditures Detail





Pie chart excludes ***management/ general*** *and* ***communications/ outreach*** *expenses*

2018 Renewable Energy Programs

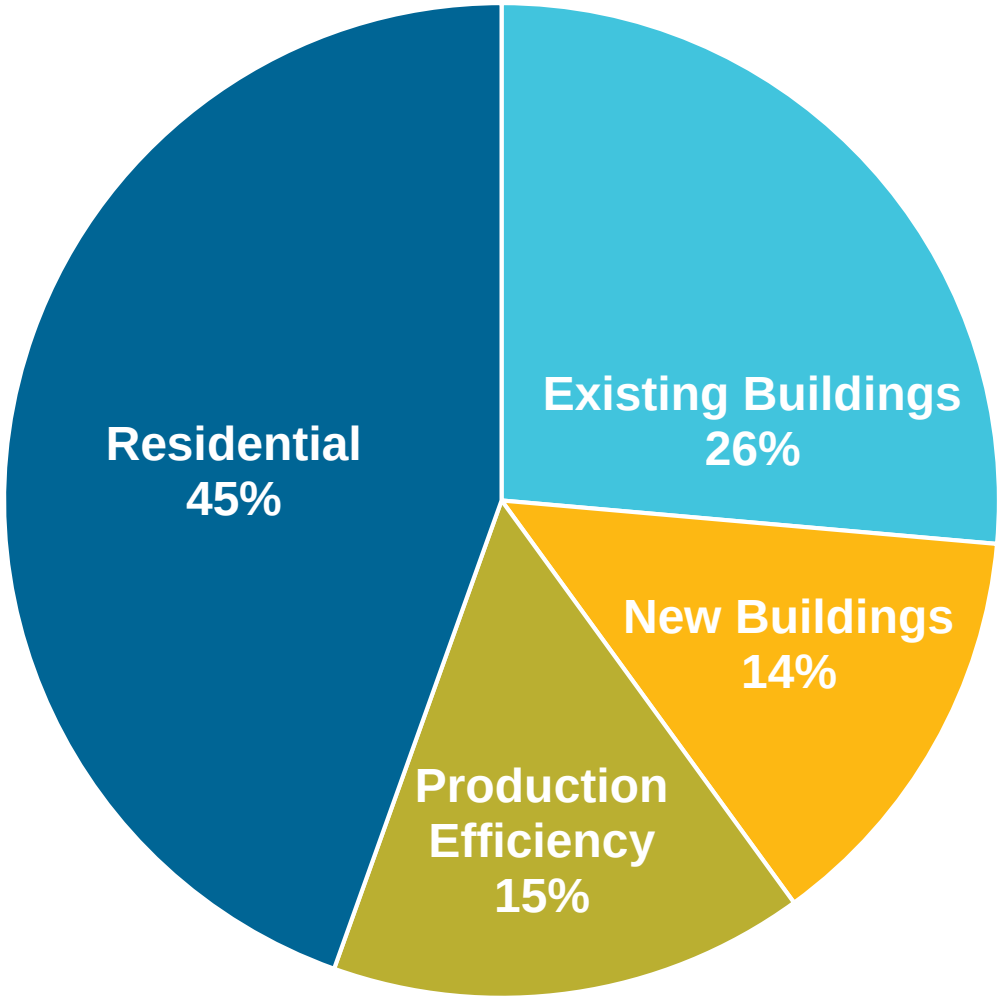
	Total Budget 2017		Total Budget 2018		*% Change*	
	$ Million	aMW	$ Million	aMW	***$***	*aMW*
Other Renewables	$6.42	0.001	$3.91*	0.00	*-39%*	*N/A*
Solar	$13.41	2.86	$10.23	2.18	*-24%*	*-24%*
Total	**$19.83**	**2.86**	**$14.15**	**2.18**	*-29%*	*-24%*

Solar down 24%

$14.15 million in customer incentives, services and delivery

* Other Renewables expenditures include:
  - Project development assistance payments for potential generation in future years (63%)
  - Staff, professional services, outreach and other allocated costs (37%)

2018 Natural Gas Savings by Program

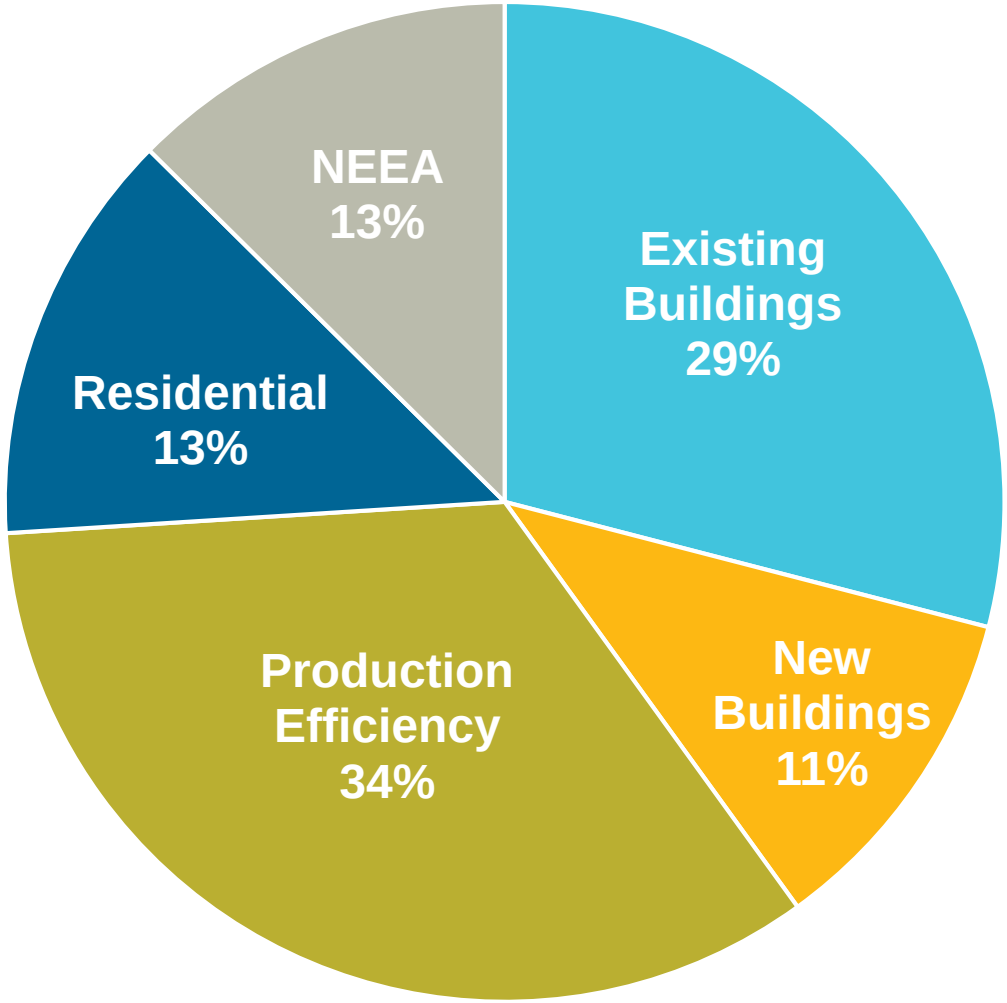


6.88 MMTh goal
33.5 cents/therm

- Down 7.2% from 2017
- $31.2 million in total costs, including customer incentives, services and delivery

MMTh: million annual therms
Cost per therm is levelized

2018 Electric Savings by Program



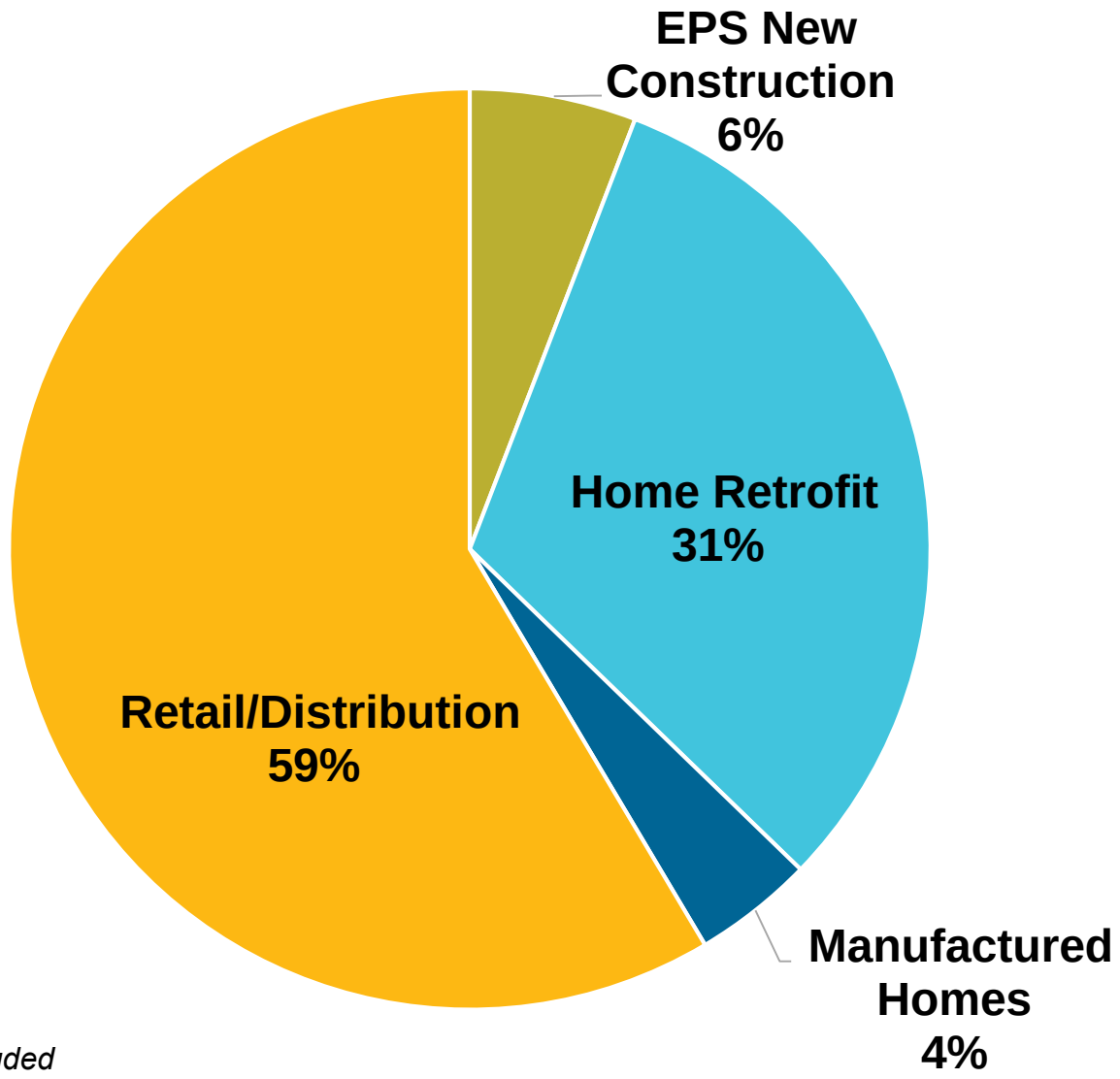
56.52 aMW goal
3.0 cents/kWh

- Up 0.2% from 2017
- $154.3 million in total costs, including customer incentives, services and delivery

aMW: average megawatts
Cost per kilowatt hour is levelized

Draft 2018
Budget by Sector

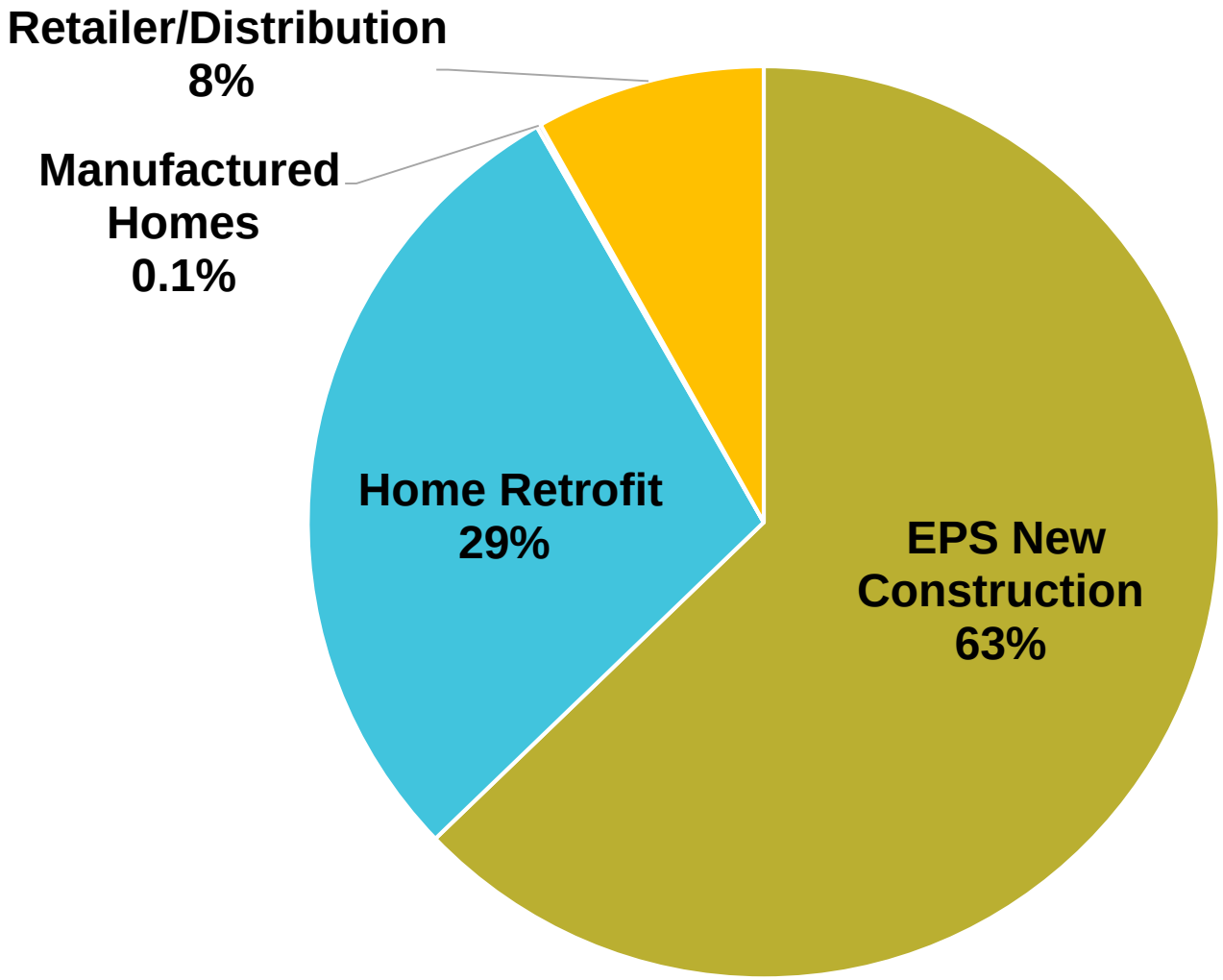
Residential Sector: 2018 Electric Savings



NEEA savings not included

Net savings

Residential Sector: 2018 Gas Savings



Ro1 *Net savings*

Residential Sector: Goals and Budget

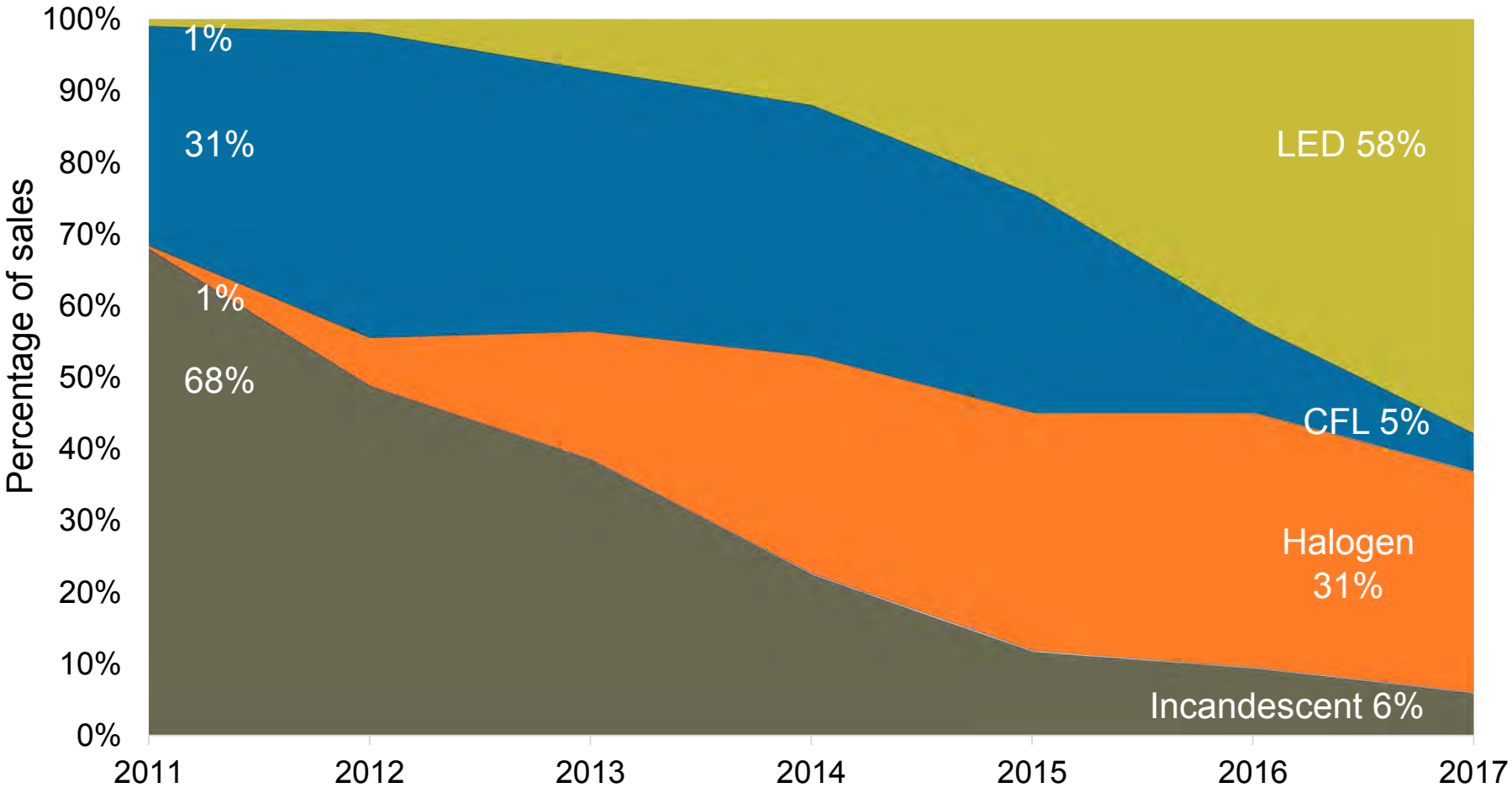
	2017 Goal	2017 Forecast	2018 Goal	2018 Budget ($ Million)
PGE (kWh)	79,258,257	93,612,772	37,624,400	$21.16
Pacific Power (kWh)	50,407,893	58,394,221	25,692,414	$13.31
NW Natural (therms)	2,586,876	2,725,161	2,635,051	$14.80
Cascade Natural Gas (therms)	194,421	203,807	208,828	$1.15
Avista (therms)	256,684	243,402	220,995	$0.50

NEEA savings not included
Net savings

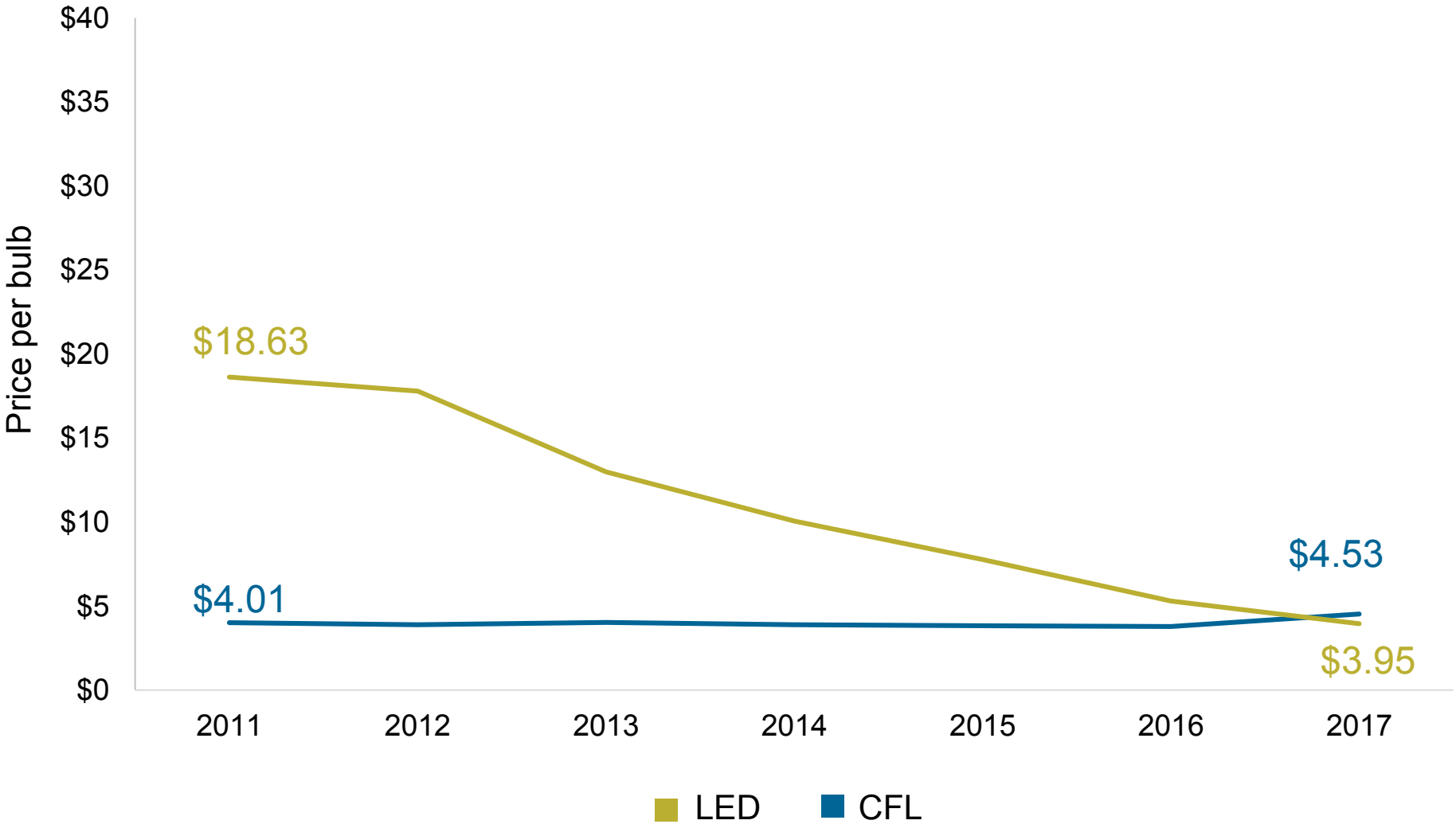
Residential Sector Redesign Launches

- First year of single PMC contract structure
  - Implemented to address market changes, and declining and shifting savings opportunities
- Primary benefits of redesign
  - A more robust, diversified portfolio
  - Improve flexibility to adapt to future savings opportunities
  - Maintain cost-effective offerings for customers and trade allies
- Consolidated program work resulting in cost savings, increased efficiency and in-house staff assuming key management tasks

Changes in Retail LEDs: Regional Market Share



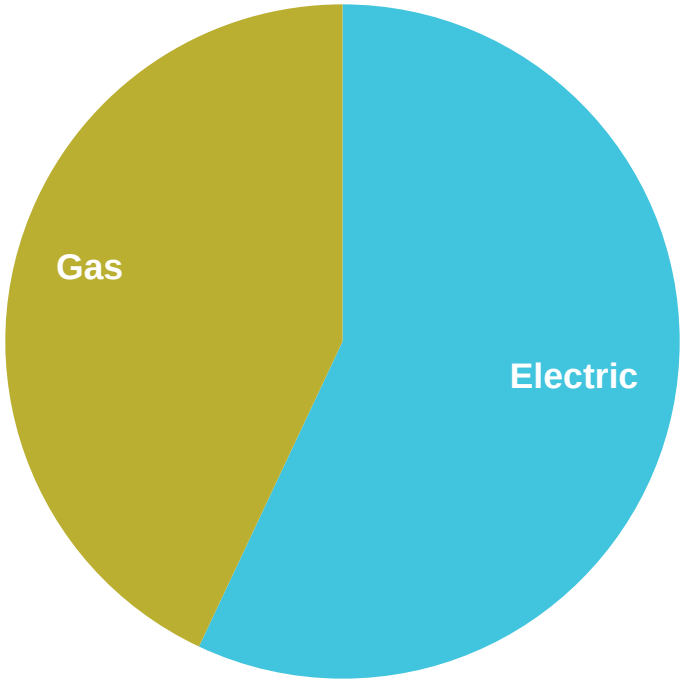
Changes in Retail LEDs: Regional Pricing



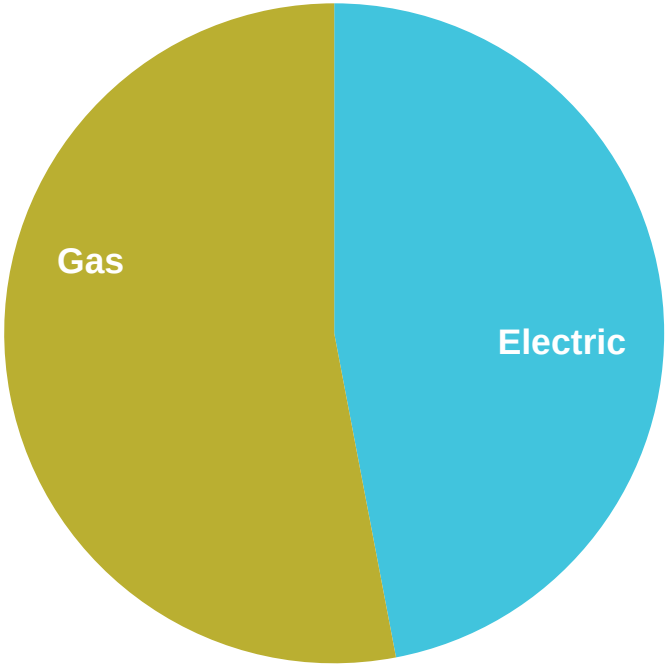
Avoided Costs Shifting Value of Savings

- Example of dual-fuel EPS new home

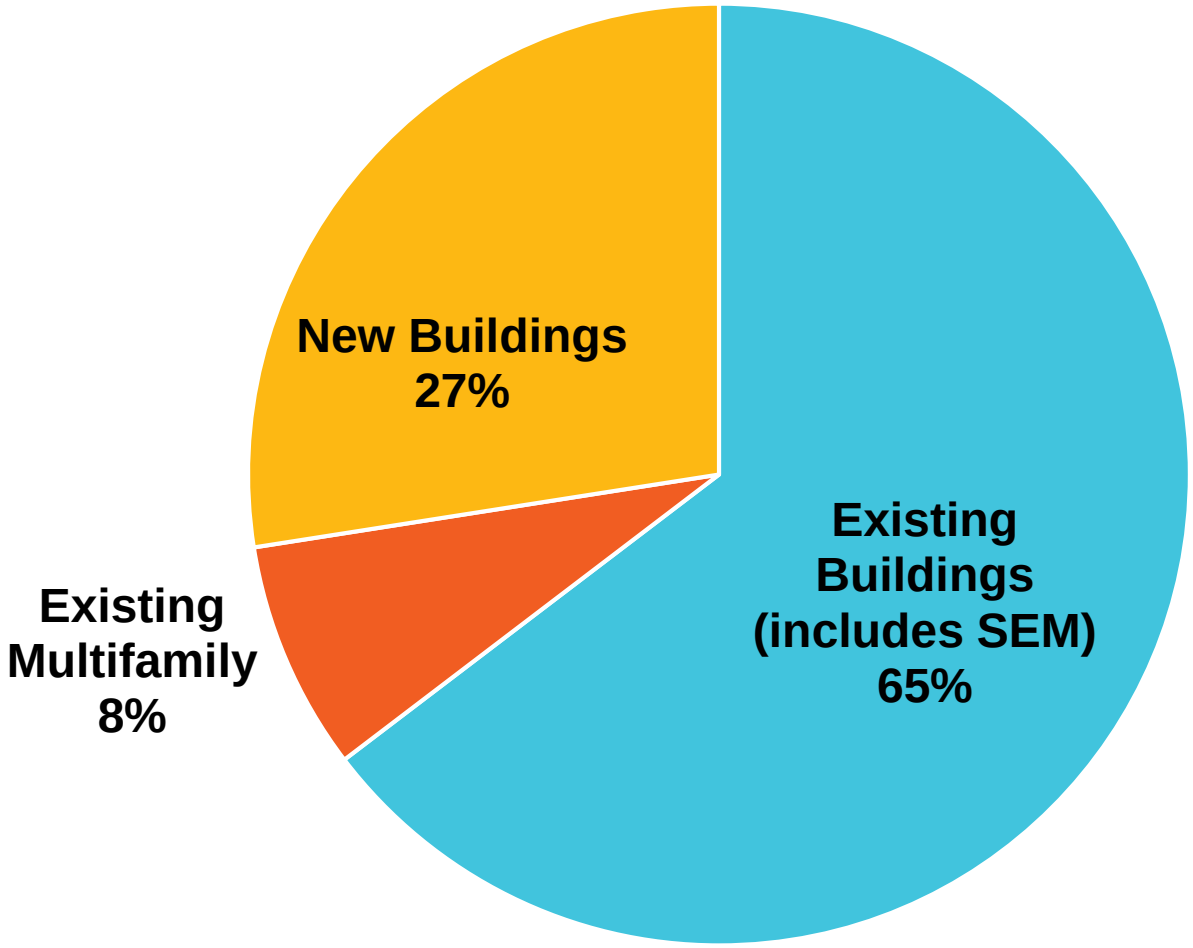
Incentive Payment Split
Before Avoided Cost Updates



Incentive Payment Split
After Avoided Cost Updates



Commercial Sector: 2018 Electric Savings

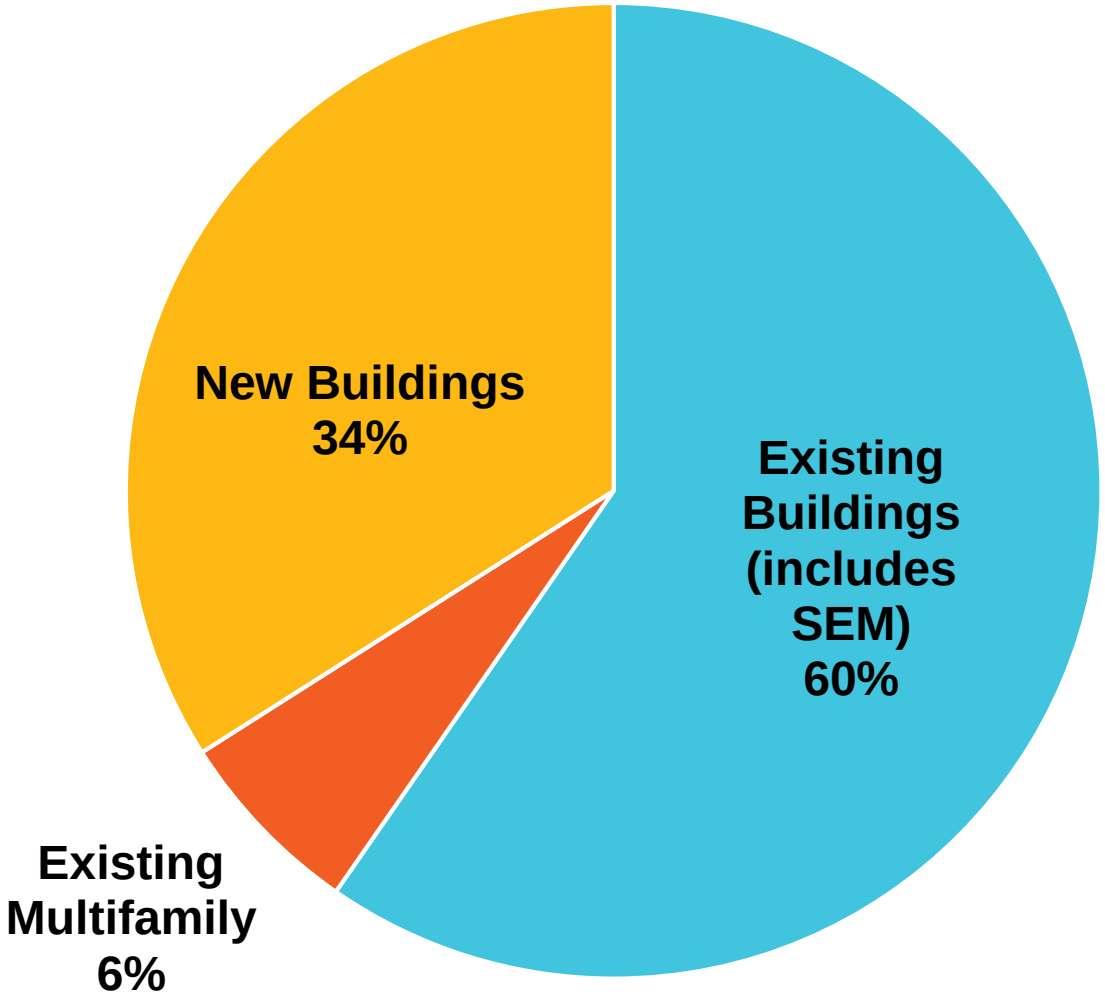


NEEA savings not included

Net savings

Ro1

Commercial Sector: 2018 Gas Savings



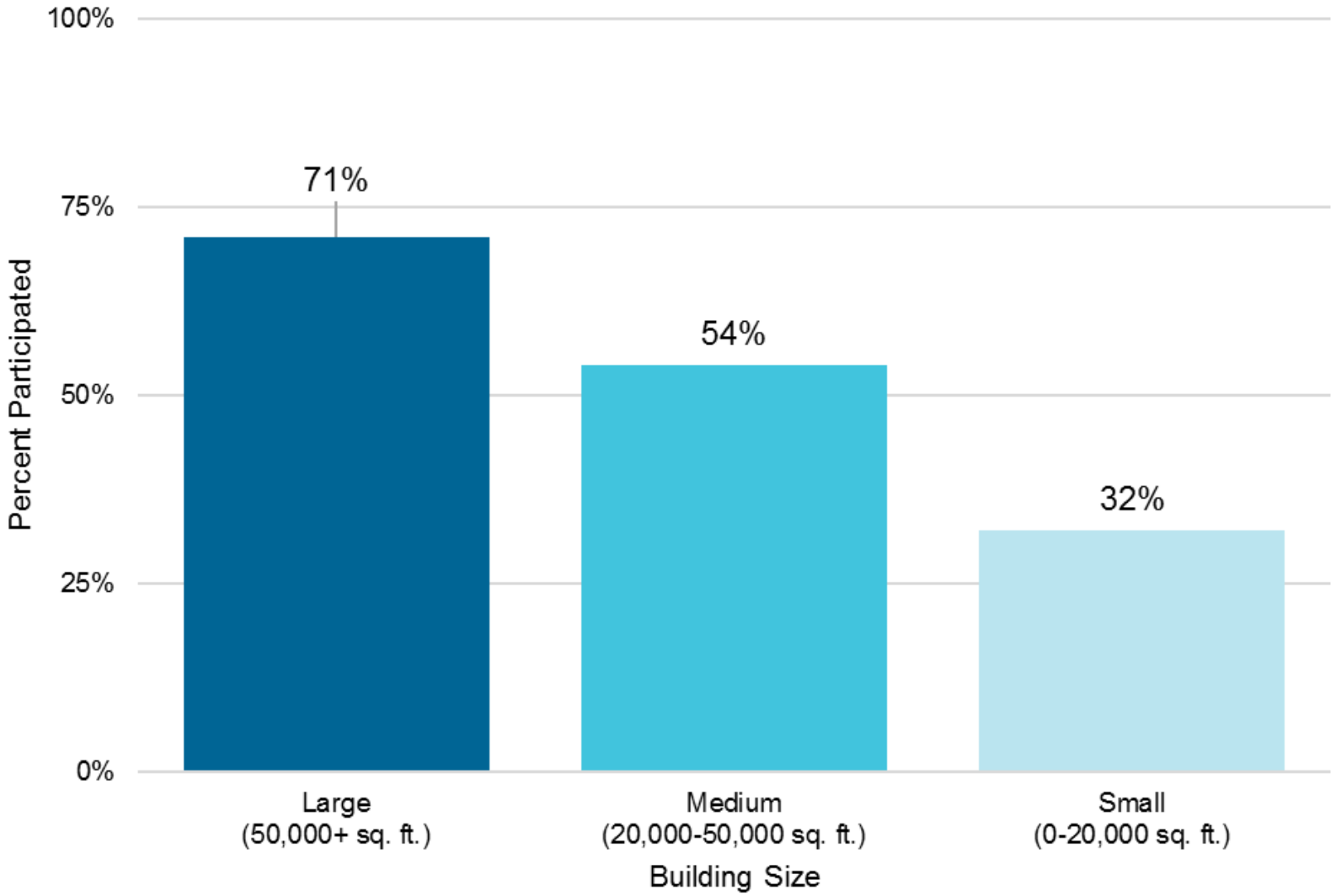
Ro1 *Net savings*

Commercial Sector: Goals and Budget

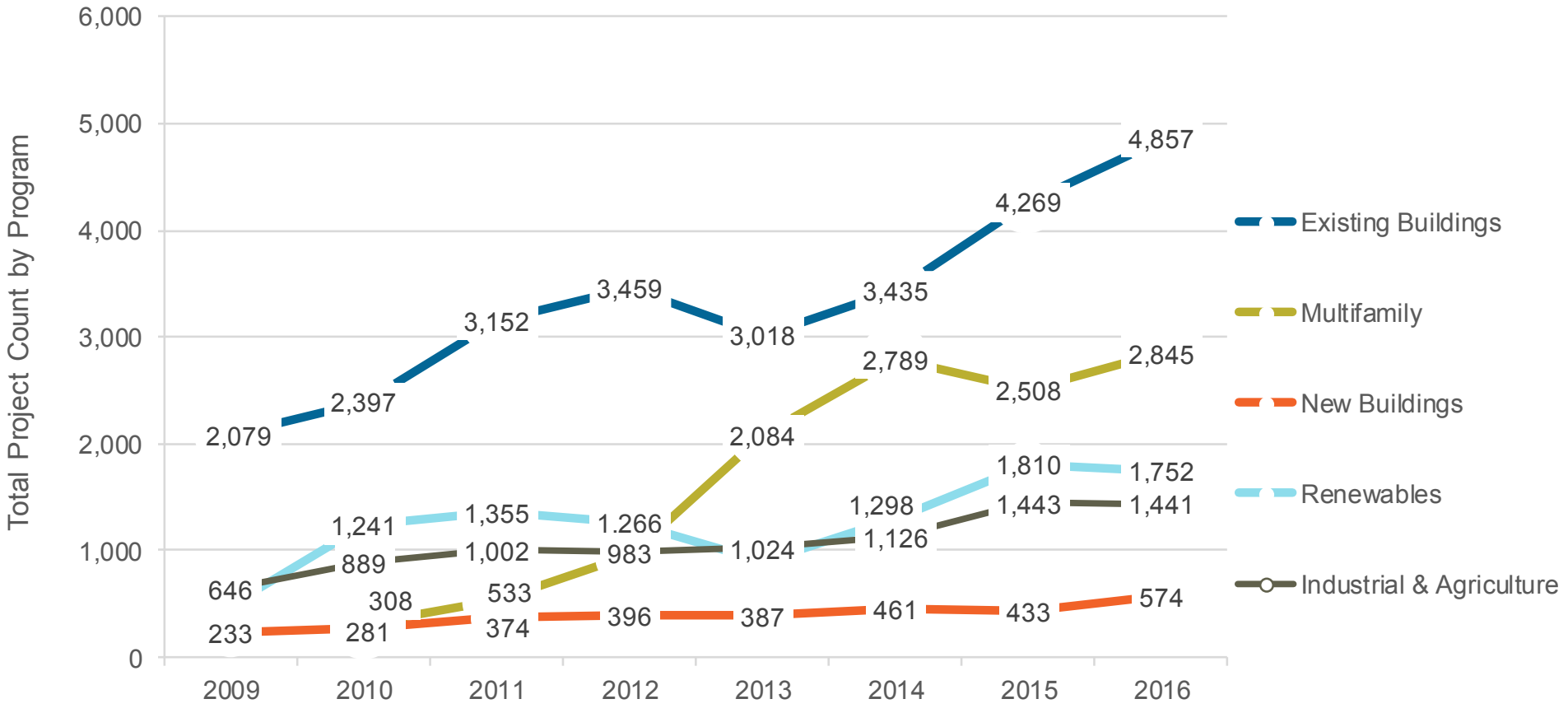
	2017 Goal	2017 Forecast	2018 Goal	2018 Budget ($ Million)
PGE (kWh)	118,715,859	128,481,054	126,398,631	$50.01
Pacific Power (kWh)	65,415,981	70,110,792	73,237,481	$27.59
NW Natural (therms)	2,923,404	2,005,162	2,337,995	$8.37
Cascade Natural Gas (therms)	328,286	266,573	297,187	$1.36
Avista (therms)	51,999	93,505	117,257	$0.59

NEEA savings not included
Net savings

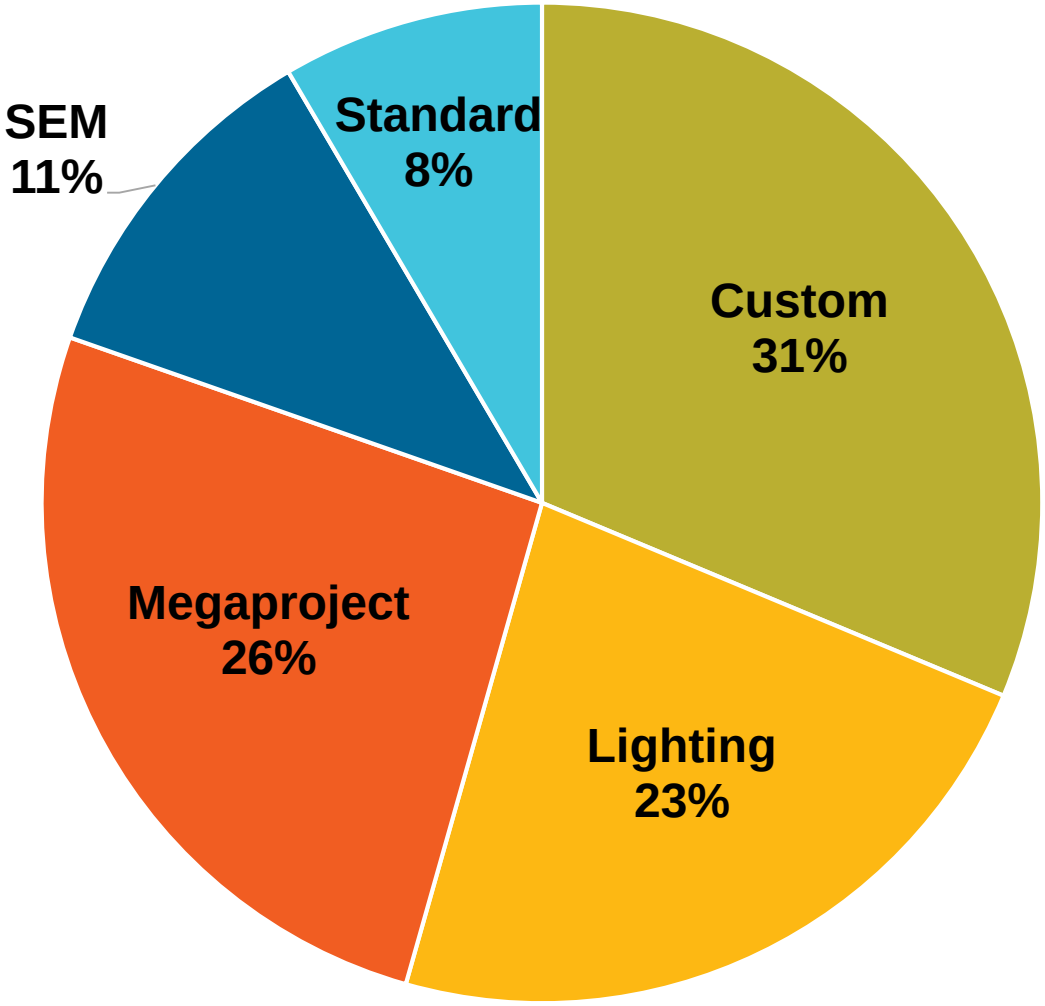
Business Participation by Building Size



Increasing Volume of Projects Continues



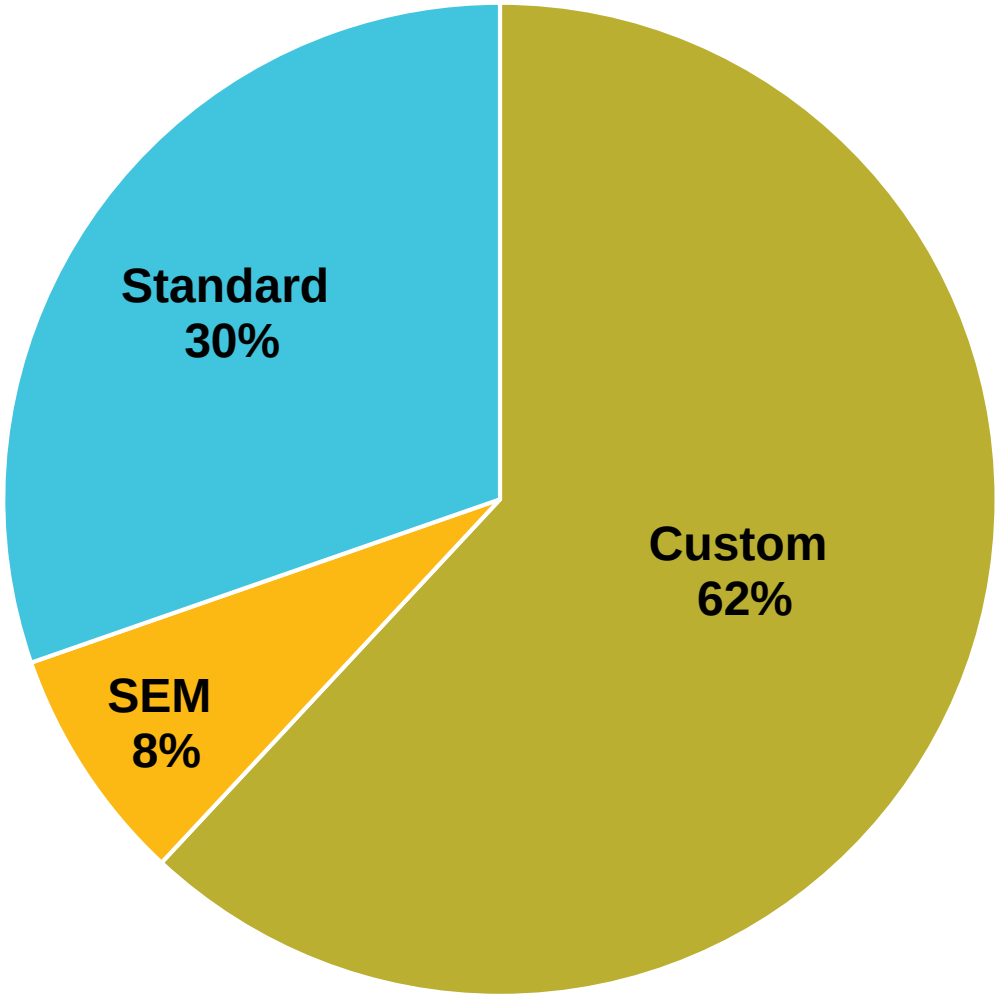
Industry & Ag Sector: 2018 Electric Savings



NEEA savings not included

Net savings

Industry & Ag Sector: 2018 Gas Savings



Ro1 *Net savings*

Industry & Ag Sector: Goals and Budget

	2017 Goal	2017 Forecast	2018 Goal	2018 Budget ($ Million)
PGE (kWh)	72,237,998	101,562,026	120,791,651	$22.04
Pacific Power (kWh)	46,788,667	43,863,776	48,606,592	$13.05
NW Natural (therms)	1,020,370	1,070,938	1,006,815	$2.64
Cascade Natural Gas (therms)	41,155	36,344	48,176	$0.20
Avista (therms)	9,649	5,476	9,762	$0.04

NEEA savings not included

Net savings

NEEA Goals and Budget

	2017 Goal	2017 Forecast	2018 Goal	2018 Budget ($ Million)	2018 Levelized Cost (per kWh)
PGE (aMW)	4.12	4.57	4.51	$4.48	1.3¢
Pacific Power (aMW)	2.87	3.17	2.65	$2.63	1.3¢
NW Natural	-	-	-	$1.39	N/A
Cascade Natural Gas	-	-	-	$0.14	N/A

- Energy Trust allocated budget to NEEA for gas market transformation activities; savings are expected in subsequent years
- Avista pays for its share of NEEA gas market transformation activities directly

2018 Utility Savings & Generation Summary

	2017 Budget Savings & Generation (Net) aMW or MMTh	2018 Budget Savings & Generation (Net) aMW or MMTh	IRP Target* for 2018 (Net) aMW or MMTh	2018 Budget ($ Million)	2018 Budget Levelized Cost per kWh or therm
PGE (Efficiency)	34.97	37.03	32.39	$97.69	2.9¢
Pacific Power (Efficiency)	21.43	19.49	19.76	$56.59	3.2¢
NW Natural (OR)	6.25	5.62	4.44	$24.82	32.6¢
NW Natural (WA)	0.28	0.36	0.36	$2.39	52.1¢
Cascade Natural Gas	0.56	0.55	0.53	$2.85	38.3¢
Avista	0.32	0.35	0.35	$1.12	21.7¢
PGE (Renewable)	1.23	1.08	N/A	$7.25	N/A
Pacific Power (Renewable)	1.63	1.10	N/A	$6.90	N/A

MMTh: million annual therms
aMW: average megawatts
Net savings

** IRP targets reflected in net savings using 2018 Energy Trust net-to-gross ratios. These net targets align with the energy efficiency potential incorporated in current utility IRP filings.*

Net and Gross Savings

	2018 Budget Savings (Net) aMW or MMTh	2018 Budget Savings (Gross*) aMW or MMTh
PGE (Efficiency)	37.03	42.09
Pacific Power (Efficiency)	19.49	21.80
NW Natural (OR)	5.62	6.15
NW Natural (WA)	0.36	0.36
Cascade Natural Gas	0.55	0.60
Avista	0.35	0.37

- OPUC requested Energy Trust begin reporting net and gross savings totals (net savings are equivalent to Energy Trust's reportable savings)
- Provides holistic view of savings acquisition
- Aligns with regional and national reporting

* *Gross savings represent all savings from program participants, regardless of whether they are free-riders.*

Summary

Customer Benefits from 2018 Investments

- **$707 million in future bill savings** from energy improvements made in 2018 with help from Energy Trust
- Improved air quality by avoiding 4.4 million tons of carbon dioxide
- Enough energy to power 45,820 homes and heat 12,800 homes
- Continued high customer satisfaction
- Expanded access and participation statewide
- Training and support for 2,400 local businesses

Budget Outreach Schedule

October & November

RAC/CAC presentations, Oct. 25

Draft budget online, Nov. 1

Recorded webinar online, Nov. 7

Board of Directors, Nov. 8

OPUC public meeting, Nov. 16

RAC/CAC updates, Nov. 17

Public comments due Nov. 17

Comments reviewed, final adjustments

December

Final proposed budget online, **Dec. 8**

Board of Directors, **Dec. 15,** Action on Final Proposed 2018-19 Budget and Action Plan

+ **www.energytrust.org/about/budget**

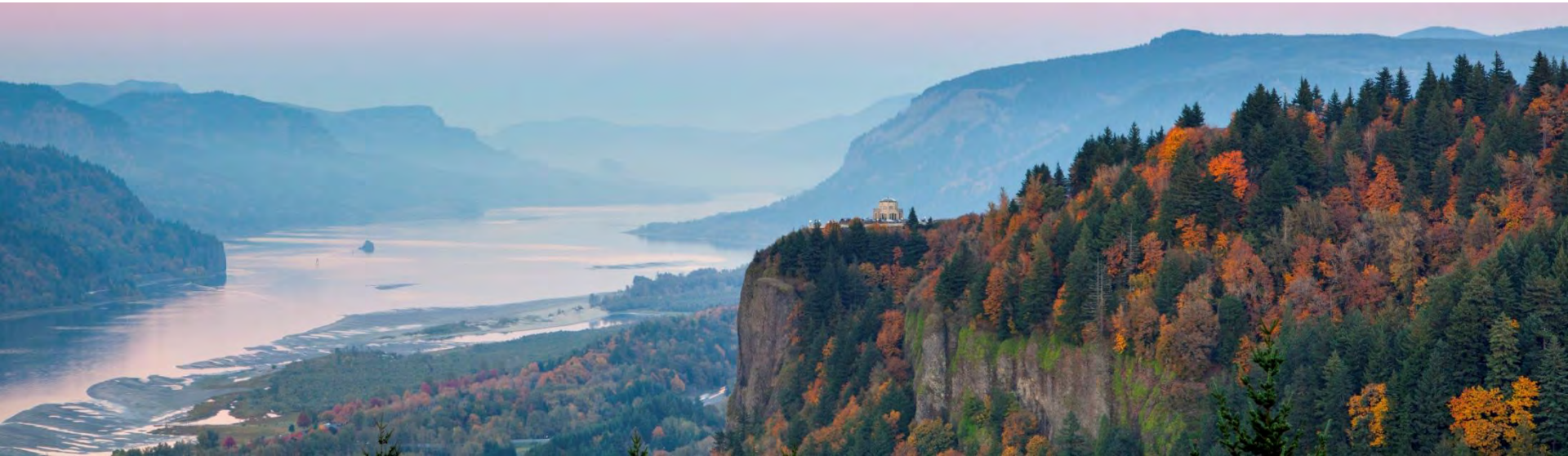
Send comments to info@energytrust.org

Discussion and Feedback

- What questions do you have?
- What information needs clarification?
- Other feedback?

+ www.energytrust.org/about/budget
Send comments to info@energytrust.org

+ Comments due November 17



Thank You

info@energytrust.org
1.866.368.7878

EnergyTrust of Oregon

Supplemental Information

Projected 2017 Results by Utility

	2017 Budget Savings & Generation (Net) aMW or MMTh	2017 Budget Levelized Cost per kWh or therm	2017 Forecast Savings (Net) aMW or MMTh	Forecasted % of 2017 Savings Goal (Net)	Forecasted 2017 Levelized Cost per kWh or therm
PGE (Efficiency)	34.97	2.9¢	41.51	119%	2.5¢
Pacific Power (Efficiency)	21.43	2.9¢	22.85	107%	2.5¢
NW Natural (OR)	6.25	32.9¢	5.45	87%	29.8¢
NW Natural (WA)	0.28	55.9¢	0.35	125%	49.1¢
Cascade Natural Gas	0.56	37.7¢	0.51	90%	29.2¢
Avista	0.32	22.7¢	0.34	108%	24.2¢
PGE (Renewable)	1.23		1.49	124%	
Pacific Power (Renewable)	1.63		2.79	174%	

MMTh: million annual therms
aMW: average megawatts

Ro1 *Net savings*

2018 Electric Savings, Budget by Program

	2017 aMW Savings Forecast (Net)	2018 Budget aMW Savings (Net)	2018 Electric Cost ($ Million)	2018 Levelized Cost/kWh	% 2018 Savings
Production Efficiency	16.6	19.3	$35.1	2.1¢	34%
Existing Buildings	14.7	14.7	$48.6	3.4¢	26%
Existing Multifamily	1.9	1.8	$9.1	5.3¢	3%
Residential	17.4	7.2	$34.5	4.9¢	13%
New Buildings	6.1	6.3	$19.9	3.3¢	11%
NEEA	7.7	7.2	$7.1	1.3¢	13%
TOTAL	**64.4**	**56.5**	**$154.3**	**3.0¢**	

aMW: average megawatts
Columns may not total due to rounding
Net savings

2018 Natural Gas Savings, Budget by Program

	2017 Savings Forecast MMTh (Net)	2018 Budget MMTh Savings (Net)	2018 Gas Cost ($ Million)	2018 Levelized Cost/therm	% 2018 Savings
Production Efficiency	1.1	1.1	$2.9	24.6¢	16%
Existing Buildings	1.3	1.6	$7.0	39.1¢	24%
Existing Multifamily	0.2	0.2	$1.1	47.3¢	3%
Residential	3.2	3.1	$16.5	34.1¢	45%
New Buildings	0.9	0.9	$2.2	20.5¢	14%
NEEA	-	-	$1.5	-	-
TOTAL	**6.7**	**6.9**	**$31.2**	**33.5¢**	

MMTh: million annual therms
Columns may not total due to rounding
Net savings

Energy Trust allocated budget to NEEA for gas market transformation activities; savings are expected in subsequent years.

Utility Detail: Energy Efficiency

PGE: 2018 Savings, Budget by Program

	2017 Savings Goal aMW	2017 Savings Forecast aMW	2018 Savings Goal aMW	2018 Budget ($ Million)	2018 Levelized Cost/kWh	% of 2018 Savings
Existing Buildings	7.7	9.2	9.0	$29.53	3.4¢	*24%*
Existing Multifamily	1.8	1.4	1.3	$6.63	5.2¢	*4%*
New Buildings	4.1	4.0	4.1	$13.85	3.6¢	*11%*
Production Efficiency	8.2	11.6	13.8	$22.04	1.8¢	*37%*
Residential	9.0	10.7	4.3	$21.16	5.0¢	*12%*
NEEA Combined	4.1	4.6	4.5	$4.48	1.3¢	*12%*
Total	**35.0**	**41.5**	**37.0**	**$97.69**	**2.9 ¢**	

Net savings

Pacific Power: 2018 Savings, Budget by Program (net)

	2017 Savings Goal aMW	2017 Savings Forecast aMW	2018 Savings Goal aMW	2018 Budget ($ Million)	2018 Levelized Cost/kWh	% of 2018 Savings
Existing Buildings	4.4	5.5	5.7	$19.08	3.5¢	*29%*
Existing Multifamily	0.8	0.5	0.4	$2.44	5.5¢	*2%*
New Buildings	2.3	2.1	2.2	$6.07	2.9¢	*11%*
Production Efficiency	5.3	5.0	5.5	$13.05	2.8¢	*28%*
Residential	5.8	6.7	2.9	$13.31	4.6¢	*15%*
NEEA Combined	2.9	3.2	2.7	$2.63	1.3¢	*14%*
Total *Net savings*	**21.4**	**22.8**	**19.5**	**$56.59**	**3.2 ¢**	

Pacific Power: 2018 Savings, Budget by Program (gross)

	2017 Savings Goal aMW	2017 Savings Forecast aMW	2018 Savings Goal aMW	2018 Budget ($ Million)	2018 Levelized Cost/kWh	% of 2018 Savings
Existing Buildings	5.7	7.0	7.0	$19.08	2.8¢	*32%*
Existing Multifamily	0.9	0.6	0.5	$2.44	4.6¢	*2%*
New Buildings	2.2	2.0	2.2	$6.07	2.9¢	*10%*
Production Efficiency	6.4	6.0	6.5	$13.05	2.4¢	*30%*
Residential	5.8	6.7	3.0	$13.31	4.6¢	*14%*
NEEA Combined	2.9	3.2	2.7	$2.63	1.3¢	*12%*
Total *Gross savings*	**23.8**	**25.5**	**21.8**	**$56.59**	**2.9 ¢**	

Ro1

NW Natural: 2018 Savings, Budget by Program (Oregon, without Industrial)

	2017 Savings Goal Annual Therms	2017 Savings Forecast Annual Therms	2018 Savings Goal Annual Therms	2018 Budget ($ Million)	2018 Levelized Cost/therm	% of 2018 Savings
Existing Buildings	728,614	547,934	720,841	$2.93	39.9¢	*18%*
Existing Multifamily	141,094	146,436	151,228	$0.95	48.1¢	*4%*
New Buildings	678,500	607,170	541,482	$1.60	25.0¢	*13%*
Production Efficiency	274,773	384,087	255,710	$0.68	25.1¢	*6%*
Residential	2,460,862	2,518,365	2,435,806	$13.47	34.9¢	*59%*
NEEA Combined	0	0	0	$1.25	0.0¢	*0%*
Total	**4,283,843**	**4,203,991**	**4,105,068**	**$20.88**	**35.8 ¢**	

Net savings

Energy Trust allocated budget to NEEA for gas market transformation activities; savings are expected in subsequent years.

NW Natural: 2018 Savings, Budget for Oregon (Industrial DSM)

	2017 Savings Goal Annual Therms	2017 Savings Forecast Annual Therms	2018 Savings Goal Annual Therms	2018 Budget ($ Million)	2018 Levelized Cost/therm	% of 2018 Savings
Existing Buildings	1,065,568	392,741	497,146	$1.68	28.7¢	*33%*
New Buildings	153,103	164,005	267,298	$0.29	9.3¢	*18%*
Production Efficiency	745,597	686,852	751,105	$1.97	23.5¢	*50%*
Total	**1,964,268**	**1,243,597**	**1,515,548**	**$3.94**	**22.7 ¢**	

Net savings

NW Natural: 2018 Savings, Budget by Program (Washington)

	2017 Savings Goal Annual Therms	2017 Savings Forecast Annual Therms	2018 Savings Goal Annual Therms	2018 Budget ($ Million)	2018 Levelized Cost/therm	% of 2018 Savings
Existing Buildings	156,525	146,876	160,000	$0.92	53.8¢	*45%*
Residential	126,014	206,796	199,244	$1.33	47.7¢	*55%*
NEEA Combined	0	0	0	$0.14	0.0¢	*0%*
Total	**282,539**	**353,672**	**359,244**	**$2.39**	**52.1 ¢**	

Net savings

Energy Trust allocated budget to NEEA for gas market transformation activities; savings are expected in subsequent years.

Ro1

NW Natural: 2018 Savings, Budget by Program (All Programs, Both States)

	2017 Savings Goal Annual Therms	2017 Savings Forecast Annual Therms	2018 Savings Goal Annual Therms	2018 Budget ($ Million)	2018 Levelized Cost/therm	% of 2018 Savings
Existing Buildings	1,950,707	1,087,551	1,377,987	$5.53	37.1¢	*23%*
Multifamily	141,094	146,436	151,228	$0.95	48.1¢	*3%*
New Buildings	831,603	771,175	808,780	$1.89	19.8¢	*14%*
Production Efficiency	1,020,370	1,070,938	1,006,815	$2.64	23.8¢	*17%*
Residential	2,586,876	2,725,161	2,635,051	$14.80	35.9¢	*44%*
NEEA Combined	0	0	0	$1.39	0.0¢	*0%*
Total	**6,530,650**	**5,801,261**	**5,979,861**	**$27.21**	**33.8 ¢**	

Net savings

Energy Trust allocated budget to NEEA for gas market transformation activities; savings are expected in subsequent years.

Cascade Natural Gas: 2018 Savings, Budget by Program

	2017 Savings Goal Annual Therms	2017 Savings Forecast Annual Therms	2018 Savings Goal Annual Therms	2018 Budget ($ Million)	2018 Levelized Cost/therm	% of 2018 Savings
Existing Buildings	222,180	171,383	211,339	$1.08	45.7¢	*38%*
Existing Multifamily	11,336	7,721	6,053	$0.03	47.9¢	*1%*
New Buildings	94,769	87,468	79,795	$0.25	27.7¢	*14%*
Production Efficiency	41,155	36,344	48,176	$0.20	40.2¢	*9%*
Residential	194,421	203,807	208,828	$1.15	33.7¢	*38%*
NEEA Combined	0	0	0	$0.14	0.0¢	*0%*
Total	**563,862**	**506,724**	**554,191**	**$2.85**	**38.3 ¢**	

Net savings

Energy Trust allocated budget to NEEA for gas market transformation activities; savings are expected in subsequent years.

Avista: 2017 Savings, Budget by Program

	2017 Savings Goal Annual Therms	2017 Savings Forecast Annual Therms	2018 Savings Goal Annual Therms	2018 Budget ($ Million)	2018 Levelized Cost/therm	% of 2018 Savings
Existing Buildings	24,000	37,062	52,367	$0.39	60.0¢	*15%*
Existing Multifamily	8,000	17,428	17,426	$0.08	39.3¢	*5%*
New Buildings	20,000	39,015	47,465	$0.11	21.2¢	*14%*
Production Efficiency	9,649	5,476	9,762	$0.04	33.0¢	*3%*
Residential	256,684	243,402	220,995	$0.50	13.9¢	*64%*
NEEA Combined	N/A	N/A	N/A	N/A	N/A	N/A
Total	**318,332**	**342,383**	**348,014**	**$1.12**	**21.7 ¢**	

Net savings

Avista pays for its share of NEEA gas market transformation activities directly.

Energy Trust of Oregon
Working, Net and Gross Savings

October 25, 2017

EnergyTrust of Oregon

Purpose

Present how working, net and gross savings are calculated for Energy Trust tracking and reporting purposes

Energy Trust Savings Conventions

Energy Trust uses multiple savings conventions for different purposes

- Working savings: an *estimate* of how much energy was saved by a customer at a participating site
- Net (Reportable) savings: the savings that Energy Trust *claims* because they were influenced by Energy Trust programs
- Gross savings: the savings that *utilities see at the generator*

Working Savings

- Best estimate of what savings will be realized at a participating site
- Do not include savings from T&D for electric
- Different baselines and free-ridership assumptions depending on measure type

Working Savings Baselines

- Prescriptive measures
  - Market baseline (e.g. retail products)
    - Technical realization rates and free-ridership are built in
    - Sometimes account for leakage into other territories
  - Other prescriptive and semi-prescriptive/calculated measures use an existing conditions baseline
- Working savings for custom
  - Do not account for free-ridership
  - Do not include a technical realization rate adjustment for impact evaluation findings
- Market transformation
  - Working savings based on a shift in market share above forecasted baseline

Net (Reportable) Savings

- Savings that Energy Trust *claims and reports* as a result of program activities
- Include T&D savings for electric
- Do not include savings attributed to free-riders
- Include savings attributed to spillover
- Include technical realization rate where applicable
- Market transformation
  - Quantifies market shift from baseline for entire market
  - No realization rate
  - Does include T&D multiplier for electric

Gross Savings

- Savings that utilities see at the generator from participating projects regardless of free-ridership
- Include T&D savings for electric
- Do not include savings attributed to spillover
- Include an adjustment where applicable for impact evaluation findings
- Energy Trust began reporting gross savings in budget documents and annual reports in 2016

Formulas

$$\boldsymbol{Reportable\ Savings} = Working\ Savings * Realization\ Rate * (1 - Freeridership + Spillover) * Line\ Losses$$

$$\boldsymbol{Gross\ Savings} = \left(\frac{Reportable\ Savings}{(1 - Freeridership + Spillover)}\right)$$

$$SRAF = Realization\ Rate * (1 - Freeridership + Spillover)$$

Savings Realization Adjustment Factors 2017 and 2018 Budget

SRAFs from 2017 Budget		
Program	**ELE SRAF (with Line Losses)**	**GAS SRAF**
Existing Buildings	0.83	0.69
Existing Buildings - SEM	1.10	1.00
Multifamily	0.91	0.58
New Buildings	1.03	0.96
Production Efficiency - Custom Track	0.78	0.77
Production Efficiency - Streamlined Track	0.78	0.77
Production Efficiency - SEM	1.06	1.00
Residential	SRAFs calculated at the measure level	
SRAFs from 2018 Budget		
Program	**Electric SRAF (with Line Losses)**	**Gas SRAF**
Existing Buildings	0.78	0.58
Existing Buildings - SEM	1.13	0.91
Multifamily	0.92	0.69
New Buildings	1.05	0.95
Production Efficiency - Custom Track	0.87	0.76
Production Efficiency - Streamlined Track	0.87	0.76
Production Efficiency - SEM	1.06	1.00
Residential	SRAFs calculated at the measure level	

Net-to-Gross Factors
2017 and 2018 Budget

Net-to-Gross Factors from 2017 Budget		
Program	ELE Net-to-Gross	GAS Net-to-Gross
Existing Buildings	1.27	1.24
Existing Buildings -Multifamily	1.17	1.72
New Buildings	0.99	0.99
Production Efficiency	1.21	1.25
Residential	1.00	1.01

Net-to-Gross Factors from 2018 R1 Budget		
Program	ELE Net-to-Gross	GAS Net-to-Gross
Existing Buildings	1.22	1.17
Existing Buildings -Multifamily	1.20	1.45
New Buildings	0.99	0.99
Production Efficiency	1.20	1.20
Residential	1.01	1.02

Thank You

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Proposed 2018 Residential Measure Changes

October 25, 2017

Energy Trust of Oregon

Topics

- Factors influencing 2018 measure requirements and availability
- Updates on OPUC measure cost-effectiveness exception requests
- Incentive adjustments effective Jan. 1, 2018

Factors Influencing 2018 Measures

- Updated avoided costs
- Oregon Residential Energy Tax Credit expiration
- New codes and standards
- Expiring exceptions
- Changing market conditions (e.g., LEDs)
- Regular updates

Residential Measure Exceptions

Measure	Details	Status
Gas new manufactured home	ENERGY STAR® and Ecorated homes	Pending
EPS pathways in Oregon	Paths 1 & 2 electric Path 4 gas	Pending
Gas tank water heaters	ENERGY STAR gas non-condensing tank	Pending
Ductless heat pumps	Replacing zonal heat (single-family, multifamily)	Pending

Residential Measure Adjustments

Measure	Change	Current incentive	New incentive
Market rate furnaces (Avista)	Sunset Southern Oregon/Market assessment of Eastern Oregon	$200 (through Q1 2018)	N/A Southern Oregon TBD Eastern Oregon
New construction individual equipment incentives	Streamlined	$100-$500	Incorporated in EPS
EPS™ Oregon	Baseline reconfiguration	Variable	Variable

Residential Measure Adjustments, Cont.

Measure	Change	Program	Current incentive	New incentive
Heat pump (replacing electric heat – eFAF or ER)	Reduced to 8.5 HSPF, simplify incentives, add multifamily	Residential/ multifamily (2-4 & side-by-side)	$450-$700	$700
Heat pump (replacing heat pump)	Any efficiency, simplify incentives	Residential/ multifamily (2-4 & side-by-side)	$250-$500	$250
Heat pump advanced controls	Simplify incentives, increase incentives	Residential/ multifamily (2-4 & side-by-side)	$150	$250

Residential Measure Adjustments, Cont.

Measure	Change	Program	Current incentive	New incentive
Heat pump (replacing electric heat – eFAF or ER) Savings Within Reach	Reduced HSPF, simplify incentives	Residential	$750-$1000	$1000
Heat pump (replacing heat pump) Savings Within Reach	Changed requirements (financing available)	Residential	$550-$700	$250
Gas water heater/ Heat pump water heater tier 1 & 2	Shifted to midstream 10/02/2017	Residential	$100/$150/ $300 (downstream)	$100/$150/ $300 (midstream)

Questions?

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EnergyTrust of Oregon

Proposed 2018 Existing Multifamily Measure Changes

October 25, 2017

Energy Trust of Oregon

Topics

- Exception requests
- New incentives
- Measure adjustments

Existing Multifamily Exception Requests

Measure	Details	Status
Ductless heat pump	Replacing zonal heat (single-family, multifamily)	Pending
Gas tank water heaters (2-4 plex and side-by-side structures)	ENERGY STAR gas non-condensing tank	Pending
Windows (electric heat, stacked structures with 5+ units)	Single-pane replacement only	Pending

Existing Multifamily New Incentives

Measure	Change	Property types	New incentive
Heat pump advanced controls	New incentives; aligns with residential	Duplex, triplex, fourplex & side-by-side	$250
Rooftop unit controls	New incentives	All property types	Varies by control type
Smart thermostats	Added June 2017	All property types	$50
Tankless water heaters (199 kBtu/h or less)	Added June 2017	Stacked structures with 5+ units	$300

Existing Multifamily Measure Adjustments

Measure	Change	Property types	Current incentive	New incentive
Ducted heat pumps	Reduced to 8.5 HSPF, no longer has to replace central AC; aligns with residential	Duplex, triplex, fourplex & side-by-side	$450-$700	$700
Gas furnaces	New requirements; shifting to per kBtu/h incentive	Stacked structures with 5+ units	$300	$1.50-$3.00/kBtu/h
Windows	Single-pane replacement only in 2018; *phasing out double-pane replacement*	Stacked structures with 5+ units	$2/sq ft replacing double pane; $3/sq ft replacing single pane	$3 per sq ft replacing single pane; *phasing out double-pane replacement*

Measure Adjustments, Cont.

Measure	Change	Property types	Current incentive	New incentive
Gas wall and floor insulation	Removing gas $150 cap & ceiling insulation requirement	Duplex, triplex, fourplex & side-by-side	$0.30/SF, up to $150 for gas customers	$0.30/SF, no cap
Electric tank water heaters	New federal standards	All property types	$35-$75	Phasing out in 2018
Residential clothes washers	Added tub capacity requirement	All property types	$120	$120
Commercial clothes washers	Must be front-loading	All property types (must be in common area)	$300	$300

Questions?

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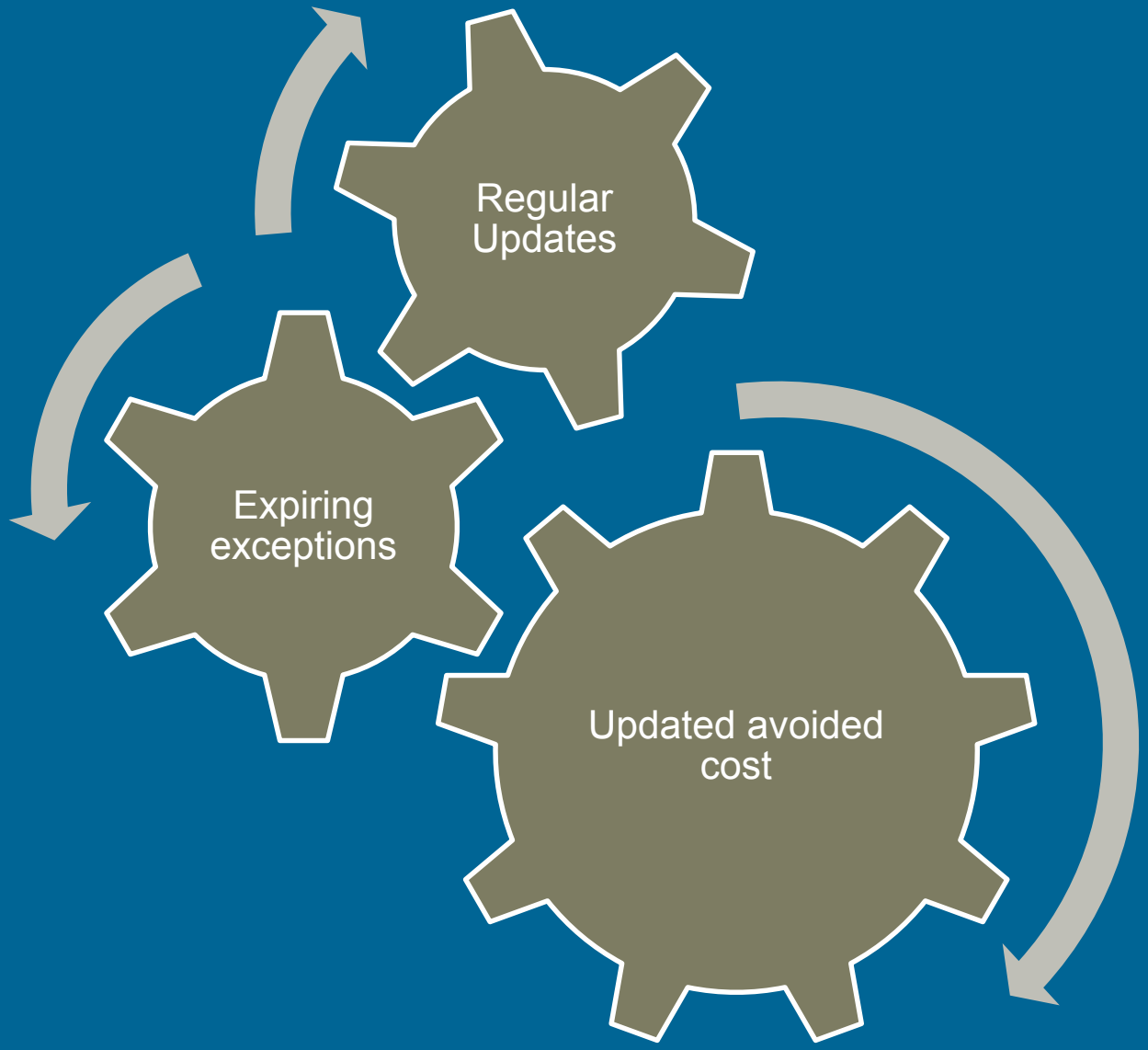
EnergyTrust of Oregon

2018 Production Efficiency Irrigation Sprinkler Measure Updates

October 25, 2017

Energy Trust of Oregon

Influencing Factors



OPUC Measure Cost-Effectiveness Exception Requests

Measures	Status
Last update to CAC: Sprinkler irrigation, select measures	*Cost-effectiveness exception requests pending*
New drop tube or hose extension for low pressure	OPUC Staff recommends: • Retire in 2019 • Retire measures after a one-year exception to sunset the measure
Rotating type low pressure sprinkler replacement	
Impact sprinkler rebuild or replacement	
New goose necks	OPUC Staff recommends: • Extend to 2020 • Two-year cost-effectiveness exception in order to align with utilities in the region
Flow controlling nozzle impact sprinkler replacement	
Multi-trajectory low pressure sprinkler replacement	
Rotating type impact sprinkler replacement	

Next Steps

If OPUC cost-effectiveness exception requests are approved:

- Irrigation sprinkler incentives would remain the same for all seven measures in 2018
- Communicate with trade allies and customers
- Coordinate with regional utilities

Thank You

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Energy Trust of Oregon

2018 Commercial Strategic Energy Management Changes

October 25, 2017

EnergyTrust of Oregon

2017 Commercial SEM Incentive Approach

- Increased incentive amount to align closer to retrocommissioning and pay for performance incentives
- Determined other incentives a greater motivator for customers
  - Coaching services
  - Intern incentives
  - Milestones

2018 Commercial SEM Incentives

- Incentives reduced
  - 2017: $0.04/kWh and $0.40/therm
  - 2018: $0.02/kWh and $0.20/therm
    - Adding a milestone incentive
- Commercial SEM incentives now aligned with industrial SEM incentives

Thank You

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Energy Trust of Oregon