October 16, 2024
Meeting Minutes

Welcome, Agenda Review and Meeting Minutes
Jennifer Light, RTF Chair, greeted the room at 9:00am. Mark Jerome, CLEAResult and RTF Vice Chair, called for introductions, counting 21 voting members. Rick Knori, Lower Valley Electric, moved to adopt minutes from the September 17, 2024 meeting. Eric Miller, independent, seconded. The minutes were adopted unanimously.

Miller then moved to adopt the day's agenda. Rebecca Blanton, independent, seconded. The agenda was adopted unanimously.

Management Update
Laura Thomas, RTF Manager Presentation
Staff reviewed rules for RTF voting on motions and amendments, along with the purpose of amendments. After reviewing upcoming meeting topics, they announced that Christian Douglass, NWPCC, has been appointed for the 2025-2027 term as RTF Vice Chair in the coming session, thanking Jerome for his leadership as the current RTF Vice Chair.

Light explained that voting requirements were established by the RTF Policy Advisory Committee some time ago in response to concern about willy-nilly goings on [Slide 3]. She explained that the rules were intended to ensure that a sufficient number of people were voting on something for approval.

Eric Mullendore, BPA, confirmed that the minimum of 12 votes applies to votes on motions and amendments [Slide 4].

- Light: Correct.
- Phillip Kelsven, BPA: And it's 60% of all voting members?
- Light: 60% of the members present and voting that day.

Light stressed that amendments can be helpful for focusing the discussion on a specific issue, for example a certain assumption, but stressed that the RTF wants to avoid amendments that completely change the motion [Slide 5]. She said that is not an amendment but a new motion. She suggested letting the original motion play out and if there is a proposed amendment, the discussion should be focused on that amendment.

- David Baylon, independent: Then it's not possible to amend a proposal from the Contract Analyst Team (CAT) or wherever if you decide the motion should be rejected. You never have a debate on the voracity of the proposal.
- Light: That's not fair. The CAT only provides a proposed motion. The RTF can make a different motion than that.
- Baylon: OK. I didn't follow the presentation, but I'm good with this.
- Jerome: We pretty much follow Roberts Rules of Order. Our bylaws and charter filter out some particulars, but what we're discussing is from Roberts Rules. It gives us a process to get through motions and decisions. We're not making this up.

Thomas announced that Council staff have traditionally served as Chair and Vice Chair and due to additional Council staff bandwidth, Christian Douglass, NWPCC has been appointed as RTF Vice Chair for the 2025-2027 term. She thanked Jerome for his excellent work as Vice Chair over the past three years and expressed appreciation that he would be continuing to serve as an RTF member in the upcoming term.

- The room applauded in approval and gratitude.

Sunset Date Extension Planning UES: Retrofit Doors on Existing Display Cases and Residential Air Purifiers
Laura Thomas, RTF Manager Presentation
Staff requested sunset date extensions for two measures to balance workloads and RTF agendas. The RTF approved the extensions.

MOTION
I, Mark Jerome, move that the RTF extend the sunset date to June 30, 2025 for: Retrofit Doors on Existing Display Cases UES and Residential Air Purifiers UES.
Mitt Jones, Illume Advising, seconded.

Vote on the motion. The motion carries. (20 yes, 0 no, 0 abstain)

Update Planning/Small Saver UES: Fryers
Denis Livchak, RTF Contract Analyst (CAT) Presentation
Staff presented an update to the measure. Discussion centered around the ENERGY STAR® approach and tiers created by the RTF. The body approved the motion as written.

Baylon noted that deep vat fryers only appear in version 3.0, asking what tier these fryers belong in [Slide 11].

- Livchak: For version 3.0 the only change is the electric idle rate.
- Baylon: How does that relate to what you're proposing for tier 1 and 2?
- Livchak: We'll get to that.

Baylon stated that ENERGY STAR doesn't have tiers [Slide 18]. He asked if ENERGY STAR tier 1 is just ENERGY STAR while tier 2 is something we've made up.

- Livchak: Tier 1 would be meet ENERGY STAR but doesn't exceed our threshold. Tier 2 would exceed our threshold.
- Baylon: Saying ENERGY STAR tier 2 is misleading. It would actually be "RTF tier 1 and RTF tier 2."
- Livchak: Yes, that's right.

Baylon reiterated that the introduced tier 2 set of specs are higher efficiency, calling that reasonable. He asked why we persist in using tier 1 as a basis for savings when tier 2 is what we're interested in. Baylon asked why the more generous ENERGY STAR spec on our agenda [Slide 24].

- Thomas: I think you're asking why we are offering "any" and not just tier 2? In general, ENERGY STAR is an important brand for food service. So, we're giving this option. It's the most highly rebated food service equipment in the region. But we also wanted to give an OR/WA option. However, you could make a motion to only include tier 2.
- Blanton: If you look at the screen it shows that 68% don't meet the ENERGY STAR standard. That's why ENERGY STAR/tier 1 is relevant.
- Livchak: There are also cost effectiveness implications.

Kevin Geraghty, independent, wondered if gas is less prevalent in Idaho and Montana. He acknowledged that we don't have more data and asked if this has implications for what the program should look like.

- Livchak: Yes, we don't have more granular data. Anecdotally, McDonalds has an efficiency specification for gas and electric fryers. Depending on the cost of gas and electricity, different stores will pick different equipment. We didn't consider propane.

Josh Keeling, Utility API, asked if Livchak knew the share of propane.

- Livchak: It's less than 5% nationally.
- Keeling: Rural areas might use propane. We could estimate based on who has gas service.
- Jackie Goss, Energy Trust of Oregon: Why do we care about propane?
- Keeling: It could shift our view of ENERGY STAR versus non-ENERGY STAR market shares if the incentives are different for gas and propane customers.

Baylon asked if there are gas programs in Idaho and Montana that are using this, or any cooking equipment, as part of their conservation programs [Slide 26].

- Thomas: I only see electric fryers for Idaho Power.
- Baylon: That sounds about right. I don't think there's anything in Idaho or Montana to incent gas companies.
- David Bopp, RTF CAT: Avista has an incentive for it. That could apply to Idaho.
- Livchak: Nationwide, food service rebate programs are typically centered around fryers.

Baylon asked why the large fat fryer uses the same amount of food as standard [Slide 30].

- Livchak: I'm going to go through that now (explained the slide).

Mullendore stated that resale is high in these units, asking if Livchak tried to quantify that share of the market [Slide 34].

- Thomas: The RTF PAC guidance has been that due to insufficient data secondary markets are not something that can be considered at this time. I'm not sure if there's data on this for fryers, but it's typically pretty high in food service overall. That said, without more data and further PAC guidance the current practice baseline can't include secondary market.
- Goss: Energy Trust of Oregon is currently researching this.
- Thomas: We can always take this back to the PAC if we have data. Also, the PAC has a memo on their webpage.
- Goss: Our measure assumes a longer measure life than what would be expected in one location. This implies that they do go to more than one place.
- Jerome: Is that about all food service or just fryers?
- Goss: Our research is about all food service measures and possible future measures.

Adam Hadley, RTF CAT, asked if all the data for the baseline is from new units.

- Livchak: Yes, we're only considering new units in our analysis.
- Mullendore: My point is that the current practice efficiency could be higher than the market average if the secondary market is significant. Though I understand reasons for excluding them.
- Livchak: In my experience, fryers are one of the less resold products because they aren't that expensive. New fryers are around $2,000. McDonalds might resell used, high-end products on eBay, but these are complex and expensive to maintain. They need specialized technicians to replace parts. So, I don't think it would be a huge market.

Jim White, Chelan County PUD, wrote this is just an observation that the gas fryers use three times more idle energy than electric fryers do. Gas friers have huge energy improvements potential that go way beyond the existing ENERGY STAR standard in the chat.

Baylon asked if the bar graphs on [Slide 37] reflect savings from idle plus cooking efficiency.

- Livchak: Yes.
- Baylon: And it's based on the fraction of time in idle?
- Livchak: Yes. Based on production capacity and food cooked per day, we get to two hours of cooking and 10 hours of idle. Idle rate has bigger impact on energy consumption than cooking efficiency.
- Thomas: That's why we're proposing just an idle rate spec.
- Livchak: Yes, and typically efficiency and idle rate move in tandem.

Baylon called the approach to estimating EUL good, and rare [Slide 39].

Baylon pointed to the idle rate for gas on [Slide 47] asking if that is the big determinant of energy consumption.

- Livchak: Yes. Gas fryers do range in efficiency more than electric.

- Baylon: My question is if efficiency determines energy use. Is idle rate proportional to efficiency?
- Light: We'll put this into parking lot.

Goss asked if the cost analysis accounts for any bells and whistles found on higher end/higher efficiency models [Slide 42].

- Livchak: Yes. Bells and whistles include features like a time controller and automatic filtration. We didn't factor this in because low-end units are only available with basic features and high-efficiency products only come with high-end features. We don't pull out the cost of the features because you can't buy a unit that doesn't have these features.
- Light: That's consistent with other RTF work products.

Baylon asked if there is an enforcement mechanism in Oregon or Washington and if so, what [Slide 52].

- Thomas: The RTF baseline is code or current practice. We don't consider non-compliance.
- Baylon: So, if there is a lot of slippage, then our current practice is entirely wrong?
- Light: We use what is more efficient, code or current practice. We deal with non-compliance in other measures.

Baylon asked what is meant by "can't do both options" wondering if that means the RTF or the utility [Slide 55].

- Light: Utility programs have to pick which to offer.
- Baylon: So, we can provide them the option, no matter how foolish it might be?
- Light: Yes. We do it in other measures, too.

MOTION

I, Eric Miller, move that the RTF approve the Fryers UES as presented, and: Set the Category to Proven for gas and keep Small Saver for electric. Keep the Status at Active. Set the sunset date to May 31, 2028.
Knori seconded.

Amendment

Baylon proposed removing tier 1, making the measure only tier 2 across the board for the region.

- There was no second.

Vote on the motion. The motion carries. (17 yes, 1 no, 2 abstain)

After the vote Halle Senger, Applied Energy Group, wrote: is this fryers measure presentation asking a question of if there should be an "Any" tier only or a Tier 1 and Tier 2? It didn't sound like this was answered in the question pane.

- Light wrote: The RTF approved both options. A utility must choose which path it would offer.

BREAK

Update Proven/Small Saver UES: Ductless Heat Pumps for Zonal Heat SF and MH
David Bopp, RTF CAT Presentation
Staff presented proposed updates to the measure. After discussing screenings, supplemental fuels versus the effects of vacant/vacation homes, and equipment life, the RTF approved the measure updates as presented.

Bopp alerted the room that he added consideration of tax credits last night, urging members to download the updated materials.

Baylon pointed to manufactured homes being an all-electric sector and single family being 20% electric. He asked how Bopp got a two-orders-of-magnitude difference in potential [Slide 4].

- Bopp: The manufactured homes' potential is for electric resistance zonal homes, but manufactured homes are almost all eFAF/central, not zonal.
- Baylon: Okay.

Goss asked if any programs have figured out how to use these screens [Slide 7].

- Bopp: Not that I know off. No one has asked for help developing a calculator for this.
- Goss: And beyond this, you'd need access to the billing data?
- Bopp: Yes.
- Christian Douglass, NWPCC: We do have the option of no supplemental fuel versus supplemental fuel. You can tell if they have a wood stove.
- Bopp: Yes. I used that at Flathead Electric. Google Maps can find this 90% of the time.
- Light: This could also be used on the back end to see where your program is getting savings. Maybe this could help refine program implementation going forward.

Baylon asked if there are any details on if programs screened participants [Slide 11].

- Goss: Energy Trust evaluation covers many years and requirements have changed during that time. At no time did we have minimum consumption requirements.
- Bopp: I don't think EWEB did either. For both programs, pre-conditions should have been verified on at least a sample of homes.
- Goss: [Nods head "correct" for Energy Trust.]

Goss stated that the Energy Trust evaluation does have a comparison group, saying it generally compares to other customers that bought A/C at some rate [Slide 17]. She said this shows some cooling savings in that evaluation, and some savings in summer months, but not load growth. She added that the summer savings are small, about 15 kWh, not negative 118 kWh.

- Bopp: Goss is saying that adjusting the Energy Trust savings by 118 kWh to account for load growth is probably too much.
- Goss: The error bands are also large, though.

- Bopp: So, this is probably noise.

White called out the high heat and low heat consumption and bins on [Slide 25].

- Bopp: Yes, we have total usage and Variable-Base Degree Day (VBDD) differentiation. You could have high usage but low VBDD heat usage.
- Baylon: The fundamental assumption in the low energy bin is the low heat consumption group is because supplemental fuel is making up the heating. The DHP uses more energy there. Is there a basis for changing the signs?
- Bopp: We're not saying it's necessarily supplemental fuel. It could be secondary/vacation homes, summer homes with not much winter usage.
- Baylon: But savings go negative.
- Bopp: That's what we see in the data. Houses with 20,000 kWh, even with supplemental fuel, show savings.
- Baylon: The point of my question is that the way you get low heating consumption is with supplemental fuels.
- Bopp: It could be supplemental fuel or vacant homes in the winter.
- Light: I think we're basically saying that homes without much electric heating aren't going to save energy.
- Bopp: The values I'm showing are actual field data. They're not simulated.

C. Douglass asked if it could be caused by any non-electric heating, like gas, and not necessarily supplemental fuel.

- Baylon: Low energy consumption could also be because the home is a more efficient, newer home. Those homes wouldn't increase load with a DHP.

Geraghty asked if in high electric = VBDD R2 > 0.8, supplemental fuel equals a chimney.

- Bopp: Yes.

Kelsven asked about the source of the cost data [Slide 30].

- Bopp: You! BPA, Energy Trust, Chelan, Tacoma Power. There were over 12,000 units.

Baylon asked why tax eligibility doubles the cost of installation, from $4,000 to $8,000.

- Light: It's not just a tax change when going from v6 to v7.
- Bopp: Right. Overall, costs are just much higher in the region than they have been historically.

Jerome presented some new information from California, saying they're proposing to move to 23 years [Slide 32]. He didn't know the source, but thought there may be other studies out there with higher lifetimes.

- Bopp: Got it. I thought it might go down, not up, given the complexity of variable speed.
- Jerome: And the California data is still a draft proposed to CPUC, not finalized.

Baylon noted that the region is 15 years into this as a full-fledged utility program, pointing to 12,000 to 17,000 units installed since 2009 with good tracking information. He was surprised

that we don't have definitive information on what fraction of installed equipment is no longer operational, and how equipment is holding up as we approach 15 years. He said that seems like it would be useful information.

- Light: Yes, that would be useful.
- Baylon: This is a BPA program. They could collect this data. We have such bad information in all cases on lifetime, but we could do something about it here.
- Keeling: It's effectively impossible to collect empirical data on this because it will be out of date by the time you collect it. DHPs today are completely different than the ones installed 15 years ago. The lifetime will be different.
- Baylon: I disagree.

Bopp offered a side note [Slide 41], saying as the tax credit gets settled in the future, we may be able to say that all units are tax credit eligible. He thought this could simplify the measure.

Baylon addressed using screening criteria saying none of the evaluated savings include this screening.

- Bopp: Our screened savings are based on the evaluation data, but the evaluations didn't screen.
- Baylon: So, we're able to categorize the participants?
- Bopp: Yes. For the screened results, we use the granular data in the evaluations.
- Baylon: But we don't know if there's supplemental fuel or not…?
- Light: We talked about this earlier. There could be a variety of reasons. But homes with more electric heat see more benefit.
- Baylon: That's true.

Geraghty thought that using R2 alone is an odd criteria. He thought that an annual heating consumption would make more sense. Geraghty also thought that a lot of these bins are junk, with no savings. He asked why they are in the program.

- Bopp: That's so programs can offer a rebate to everyone and not have to say "no." They could target other bins, though.
- Light: And it's important for the RTF to show which measure applications look better or worse.
- Geraghty: Okay.
- Baylon: So, we're 15 years in and still trying to find a reasonable measure.
- Geraghty: Some things take time.

MOTION
I, Mark Jerome, move that the RTF approve the Ductless Heat Pump for Zonal Heat in Single Family and Manufactured Homes UES as presented, and: Keep the Category at Proven, Keep the Status at Active, Set the sunset date to March 31, 2026.
Blanton seconded.

Goss asked if we have a plan for what we'll do in 2026 if no one is doing screened measures. She asked if we can we save time and budget in 2026 by not doing them again.

- Thomas: We'll look at our measure suite and we'll consider if what we created is filling gaps or not.
- Light: With respect to preparing for the Power Plan, in the 2021 Plan we only used screened, in order to find where there's potential and not.
- Thomas: I'm working with Council staff to see what is needed for the coming Plan.
- Light: I think it's useful for the RTF to show the analysis of both where there's good potential and where there's not. When we bundle too much, we lose that. It's a good use of this technical forum to be granular and not have too many "any" measures.
- Jerome: I agree with Light. We've seen savings go up and down. HVAC isn't simple. We need to pay attention to the details to have a cost-effective measure.
- Goss: I appreciate wanting to show the difference. There are more useful ways to show this than making UES measures that we need to vote on. A long list of UES measures and complicated workbooks makes it hard for implementers to understand everything.

Baylon reminded the room that DHPs are now a part of a transition to efficient heating or, more likely, cooling. He said there are a lot more DHPs being installed in utility programs. He called this important for regional planning, adding that we might be getting savings, it's just a question of what and where.

Vote on the motion. The motion carries. (17 yes, 0 no, 2 abstain)

DHP for eFAF (SF and MH) Tax Credit Correction
David Bopp, RTF CAT, Presentation (following previous measure)
Staff sought RTF decision to include the tax credit for the DHP for eFAF UES approved in September. The corrective measure passed without further discussion.

MOTION
I, Dave Baylon, move that the RTF approve the addition of a tax credit identifier with the associated cost implications for the DHP for Electric Forced Air Furnaces (Manufactured and Single-Family Homes) UES as presented.
Goss seconded.

Vote on the motion. The motion carries. (17 yes, 0 no, 0 abstain)

LUNCH

Update Planning UES: Ductless Heat Pumps for Multifamily
David Bopp, RTF CAT, Presentation
Staff presented proposed updates to the measure. The RTF discussed the definition of multifamily and asked clarifying questions about the measure and analysis. The RTF approved the measure as presented.

Goss asked how buildings with two to four units are classified [Slide 5].
- Bopp: That's considered single family.
- Light: We are not entirely aligned across the region in these definitions.

White confirmed that [Slide 13] represents eFAF and baseboard.

- Bopp: Yes, we only say “electric resistance heating.”

Goss asked why electric HVAC consumption goes down so much between RBSAs.

- Bopp: I don’t know why low-rise in heating zone 1 and 2 changed so much.
- Baylon: So, you more or less ignore RBSA 2022?
- Bopp: No, consumption numbers are a unit weighted average of RBSA 2016 and 2022. That’s why the proposed values are lower than current numbers.

Goss called it important that the savings percentage Energy Trust found is lower than what the RTF is proposing, even though the savings are in the ballpark [Slide 14].

- Bopp: No, these percentages represent total consumption, not just HVAC. So, the percentage and absolute savings both line up pretty well.
- Goss: Good.

Goss thought that a lot of the differences could be because of definitions, as Energy Trust considers two-to-four-unit buildings Multifamily [Slide 17].

Geraghty asked about multi-story Multifamily buildings with an outside unit stuck to wall, asking if this configuration exists in this country.

- Bopp: Yes, they exist. But condensate can be an issue.
- Goss: They show up on decks.

Goss reminded the room that Energy Trust doesn’t have a fixed price promotion anymore, adding that it was only for Manufactured Homes [Slide 19].

- Baylon: In the Seattle market there are DHPs being put in Multifamily, but not for each unit. They put them on the roof and run the refrigerant down to the unit. It’s done rather extensively and funded by rent premiums for units with the DHP.

Goss asked if the $1135 on [Slide 23] is in 2016 dollars.

- Bopp: Yes. It’s 2016 dollars.

Baylon called the midrise numbers on [Slide 31] out of date. He pointed to 2018 fire code that changed the maximum height of wood frame buildings, saying the change effectively added an extra story. Baylon said that virtually all mid-rise buildings built in Seattle since 2018 are using the new criteria and are all seven stories.

- Light: We can look into this afterwards and see if we need to change our definitions.

White was wowed by the cost effectiveness on [Slide 28], saying it is not so great. He asked why this approach was taken.

- Light: Programs want this. It’s useful for us to have a measure even if it’s not cost-effective. That could change in a different Power Plan or for a specific utility.

- White: Right, demand savings could change cost effectiveness. Is there a plan to look at this?
- Light: We do look at the timing of savings and capacity value. The methodology could change for the next Power Plan.

Nick O'Neil, Energy 350, asked why staff cares about the heating zone in verifications if the savings are the same across all three [Slide 31].

- Bopp: The savings are the same, but the shapes are different.

Baylon said that people are making decisions in Multifamily buildings that don't reflect capacity or energy savings. He said they make decisions for other reasons but stressed that these decisions impact utilities.

- Light: The measure is framed for homes where these weren't there and are added. But if these are happening naturally, we'd reflect it in our load forecast and won't count it towards potential.
- Baylon: It may turn out that utilities don't need to pay for the installation, but only something incremental to the base installation.
- Light: Yes, but there are issues. This measure assumes units are not in place and programs put them in as a resource.

Goss asked Baylon if he is suggesting that there's a different baseline or something for new construction.

- Baylon: Both. It's much more likely in new construction, but these go in as retrofits too. It's not the utilities doing this, it's some other decision process. We should be telling utilities to not intervene on the whole project, but just the incremental piece of an upgrade. I suspect Seattle City Light is foregoing the evaluation of the full first cost and savings and is just looking at incremental cost and modest savings.
- Rushton: Like with our Centrally Ducted Heat Pumps, we have retrofit and upgrade measures. We could have the same for DHPs.
- Light: That's what I'm saying about the load forecast. If these are going in naturally, then the savings are for upgrades.
- Bopp: We looked at this a few years ago and didn't see savings from an "upgrade" measure.

MOTION

I, Rebecca Blanton, move that the RTF approve updates to the Ductless Heat Pump for Multifamily UES as presented, and: Keep the Category at Planning, Keep the Status at Active, Set the sunset date to September 30, 2028.
Knori seconded.

Blanton stated that things are changing rapidly and 2028 is a long time away.

- Light: We can always bring it back sooner.
- Thomas: We will be looking at all Heat Pumps next year, so this could be reviewed then.

Vote on the motion. The motion carries. (18 yes, 0 no, 0 abstain)

BREAK

Update Small Saver UES: Strip Curtains
Paul Sklar, RTF CAT, Presentation

Staff presented updated to the measure with a recommendation to deactivate. Discussion centered around removal rate, hours of operation, and the efficacy of curtains versus doors. The RTF voted to deactivate the measure.

Baylon referred to another measure that competes with this work: an actual door [Slide 4]. He said he's seen doors in cold storage and in relatively new groceries, stressing that staff are not going in and out as these spaces are mostly used for storage.

- Paul Sklar, RTF CAT: I'm not sure how you'd have a measure for just a door. We used to have an auto door closer measure, but it was deactivated. We have a few options for how we deal with losses.
- Baylon: I think the door closers for low temperature storage are pretty much current practice, so there's not much savings.
- Thomas: It was deactivated in 2012 for being out of alignment with the guidelines.

Light explained that the RTF should not be deciding if things are sticky or not [Slide 6]. She said that is a Council/modeling policy question. Light stressed that if this work is not a measure, then it's not a measure and should be deactivated.

- Goss: We have lots of measures that are replace on burnout. We could be putting in something new after an efficiency device burns out.
- Light: So many of our measures have lifetime less than 20 years. In the Plan and in RTF/ProCost methods, we assume that the same thing gets installed again. That's the resource.

Goss confirmed that the previous removal rate was high [Slide 10].

- Sklar: It was 25%. We're proposing 50%.
- Blanton: Is there any data to understand the removal rate for situations with lots of traffic versus not much traffic?
- Sklar: I don't have data, but that's the issue. If the strips are inconvenient, they get removed or modified.

Jerome recalled that the quick door closer went away because people would prop the door open when stocking. He asked Brian Owens, CLEAResult, if he thought the proposed removal rate of 50% is too high and what actually happens.

- Owens: I have no data. But in discussions, store operators say there is a significant amount of removal to make them permanently less inconvenient.

Blanton thought that, if what we're hinting at is true, the places where the strips are penetrated are going to be retained and those are the high through-put locations.

- Light: The challenge is that we don't know this in advance and programs can't effectively screen for who's going to use them the most.
- Jerome: As with DHPs, the effectiveness is important. If used properly, it's effective. But how often is it used properly? We have a good sense that they get removed frequently.

Goss wondered if the RTF should be thinking of this more as O&M for replacing damaged equipment than as a retrofit. She said it appears that these are required with newer cases, and it seems like maintenance if they're torn down by employees and repeatedly replaced by the decision maker.

- Light: The Council assumes that all measures get reinstalled. Our question is if these stay in our not. If there's a different approach to characterizing savings, that would be a new measure proposal.
- Goss: OK. And is the 50% removal rate over four years? If we're saying 50% get removed immediately, that's a zero- or one-year measure life.
- Sklar: It's the same for us. We're saying, on average, over four years, half of them stay in place. We have at least one other maintenance measure, for irrigation. That format could be applied here. You'd want to know how much more quickly these get replaced after being removed than without the program. We'd need data on that.
- Jerome: There's also a difference between intentional damage versus wear and tear.

Light said that as the RTF cannot do a "non-sticky" measure, she thought these numbers would change [Slide 12].

- Baylon: In the beginning, it was mentioned that strip curtains back up a more permanent door used for off hours. That's what I've noticed. If there's a door there, and strip curtains are only used at certain times, is it realistic for us to say that the operating hours are 12 hours a day when they actual use is $1/10^{th}$ of that?
- Sklar: We account for that. See [Slide 8]. The data we have is the number of minutes per day the door is open.
- Baylon: This is essentially two hours per day for groceries. That's probably still pretty generous, but better than what I thought we were doing.

Jerome noted that even with door open time a lot of stocking happens out of store operating hours adding to the uncertainty [Slide 13].

Light suggested not making the judgement that these are removed and then never replaced [Slide 14].

- Goss: I can see this both ways. Even with a terrible removal rate, this is the only measure we looked at today that's cost effective. For that reason, it's worth continuing. There are also creative ways programs could encourage a longer lifetime like a subscription, holding the incentive for one year, and other approaches.
- Jerome: I want to echo what Goss said. I think it's worth keeping

Jones asked how popular the measure is, wondering if it would be more cost effective if zero savings were not assumed for the last 16 years.

- Light: We have it in the RCP.
- Sklar: We looked at it before. It was low for BPA in 2023 but higher in other years.
- Ryan Firestone, RTF CAT: It's consistent with the Power Plan. We're supposed to be modeling long-term resources. This isn't a long-term resource. No one is suggesting that these get continually reinstalled.
- Light: If we don't think these get reinstalled, it's not a measure.
- Firestone: That's my point.

MOTION
I, Dave Baylon, move that the RTF deactivate the Strip Curtain UES.
Geraghty seconds.

Baylon called this a fantasy measure, saying frozen food storage has actual doors and they actually use them, or it would impact the area around the door. He called it reasonable to expect that there are better solutions. Baylon reported that in large areas, the doors are used sparingly during store hours because restocking happens at off hours. He concluded by saying this is a fantasy measure that might save energy in some circumstances, but not most.

- Geraghty: Energy efficiency has a hard enough time pushing uphill against neglect and equipment failure. Pushing uphill against active user resistance is a step too far. It's like low flow showerheads. It smells bad to me.

Goss voiced confusion about Baylon's comment, asking if he's saying there's no door open time and that it's not about business hours.

- Baylon: I'm saying that the combination between forced deactivation and the fact that these are used as a backup to real doors make this an ineffective measure.

Vote on the motion. The motion carries. (12 yes, 7 no, 0 abstain)

- Light: Jim White voted "no." I missed his vote earlier. Motion still carries. (12 yes, 8 no, 0 abstain).

2025 Final Work Plan and Business Plan
Laura Thomas, RTF Manager, Presentation
Staff presented the final work and business plan for 2025. The RTF discussed the scope of RTF research and ways to determine efficacy. They approved the plans with a recommendation to the Council for final approval.

Baylon asked if the CBSA is included in the Regional Coordination scope [Slide Regional Coordination (11%)].

- Thomas: Yes, it's not listed here.
- Baylon: That is the most prescient one. It will require our attention in the near future.

Baylon admitted that this might be whistling past the graveyard, but said there is a large amount of pressure to support electrification in all states, especially in Washington and Oregon [Slide

14]. He said this changes the character of the relationship between utilities and the states and by extension the Power Council and the states. Baylon asked why this hasn't been addressed.

- Light: We've talked about electrification a lot. From the Power Council perspective, we need to account for it in the load forecast and in the EE potential (number of units). The RTF perspective is at the unit level, the savings from an electric baseline to electric efficient. It is not in our scope to look at savings from a gas unit to an EE electric unit. We're doing all of the analysis that's needed.

O'Neil congratulated Thomas on getting the PAC to do some research. He asked how she plans to measure if the funds used to support primary research have been effective, ultimately wondering if this could continue with more funding.

- Thomas: That's been on my mind. It wasn't discussed explicitly. I'm not sure that, given the modest budget, we can move many measures from Planning to Proven. But we can target reducing uncertainty. I'm working with Rushton on this. See the UES page for uncertainty workbook. We're asking: what is our uncertainty today with Planning measures, and how can we change that with research? Our metric of success shouldn't only be the decrease in the number of Planning measures, but maybe reducing uncertainty overall is a better metric to measure.

Keeling called the DR stuff great, asking if regional market integration came up. He suggested considering EDAM or Markets+ saying this is where information will appear. Keeling added that these groups have established methodologies.

- Light: We don't have a lot of bandwidth at the Council to dig into different market options. We're trying to understand where folks are going with the different markets and how we can model them. Well-defined market decisions and market rules may offer clarity in how we think about some DR. But it hasn't been a focus.
- Keeling: But if you're looking at baseline methodologies you can find proxy resources at EDAM. I think there are less options than you might imagine.
- Light: The Council is interested in watching and being a reference/resource.

Kelsven did not think tracking the number of measures is the right metric for research. He said a lot of stuff doesn't get picked up by utilities and remains Planning, calling that okay. Kelsven thought a better metric would be what portion of the RCP is Planning measures.

- Thomas: Yes, we're looking at that too. We're looking at where we'd get the most bang for our buck in terms of uncertainty.
- Light: I'd also consider cost effective potential and not just what utilities want to do. And we're not going to tackle all uncertainty.

MOTION
I, Eric Miller, move that the RTF adopt the proposed 2025 work plan and business plan, with recommendation to the Council for approval.
Jerome seconded.

Vote on the motion. The motion carries. (19 yes, 0 no, 1 abstain)

BREAK

Residential Gas Furnaces Proposed Update Discussion
Adam Hadley, RTF CAT, Presentation
Staff facilitated discussion about proposed updates and continuing to use SEEM results instead of updating to the REEDR tool. RTF members commented on eventually integrating gas technology, the value of using AFUE, "realization rate" versus "calibration factor," hinting at the depth of subcommittee discussions to come. Staff indicated that a subcommittee meeting would be scheduled to discuss this more in depth in advance of the November meeting where this measure would be up for RTF decision.

Jerome asked about the potential to eventually move to REEDR for gas DR in capacity constrained areas [Slide 7].

- Thomas: Right now, the budget for DR is funded by electric utilities only, not gas utilities. We'd have to change the funding agreements to do that.
- Jerome: It's forward looking, but already happening in some places.
- Thomas: Funders have expressed interest, but it wouldn't likely happen in this funding cycle.

Keeling stated that it wouldn't just be distribution as electric peaks can also cause wholesale gas shortages. He asked if we are or are not doing forced air furnace in REEDR, wondering if it could be done in this tool.

- Thomas: Our plan is to move to REEDR measure by measure.
- Goss: There's value in consistency. Dual fuel homes and heat pumps are becoming all we talk about at Energy Trust. We need measures for heat pumps with a gas backup and I don't think SEEM can do that. The RTF needs to do gas with heat pumps in REEDR.
- Thomas: Yes. The CAT and I are definitely behind REEDR! It's just that, for this measure, there would be more time needed to move to REEDR and we wouldn't benefit much from the move given the amount of time it would take.

White thought that the of baseline 88.5 AFUE seemed high [Slide 6].

- Hadley: That's the existing measure current practice baseline.
- Bopp: It's derived from NEEA market data. It's new housing versus existing housing. This measure is existing. There're two groups of furnaces, in the 80's and in the 90's. This is an average of those groups. And we will revisit this.

Baylon asked if the Version 9 HEMS data develops gas usage as part of metering.

- Thomas: No.
- Baylon: So, how would it help us here?
- Thomas: It would be for eFAF homes.
- Baylon: And then we multiply by AFUE? That's not the best way to do it, but OK.
- Thomas: We'll have improved temperature data and a larger sample size.

- Rushton: The HEMS data probably won't help with this gas measure, but it does help with our electric measures. We don't have gas information in the HEMS dataset.
- Jerome: In 2029, the DOE will update appendix M2, which will have DFUE (dual fuel).
- Light: We'll be talking about that with Council staff in the near future.

Keeling asked what "temperature takeback" is [Slide 17].

- Hadley: It's when occupants raise the temperature setpoint after insulating the home.
- Keeling: How do we account for the change in utility?
- Hadley: We landed on "it's what's on the meter that matters."
- Light: At one point, the RTF did add a value for cooling comfort, but that's not in the Council's frame for EE as a resource. Our load forecast does assume those cooling loads are coming on.
- Keeling: That's a change in baseline assumption, not methodology. Here, our base principle is: if we have a measure that adds new service to a customer, is that negative savings?
- Geraghty: We don't know here. It could be gaming of AFUE.
- Hadley: We don't know. We just know what's on the meter.

Light stated that the RTF is currently bound by the Council's approach to quantifiable benefits and costs. She said that some things, like environmental benefits, are included, but comfort is not considered. Light assured the room that Thomas is connected to this work and helps categorize things but pointed to a side discussion; are there places where RTF funders want us to do analysis beyond the Council frame. Light said we could consider that, adding that they are in discussions now to see if that's possible.

Baylon called temperature takeback a bizarre macro-economic thing designed to keep the conversation out of the way of generation options. He said, in this case, we're making a marginal change in the furnace. Baylon didn't believe takeback could happen here because there isn't enough information in the bill and it's not a big enough change. Baylon suggested ignoring this one, adding that there are other things on this list to grab our attention.

Mark Lenssen, Puget Sound Energy, asked why we are talking about this, wondering if a sunset date was coming or if the analysis was broken. He said Puget Sound Energy just finished an analysis about a year and half ago that showed 36 compared to staff's 45 and now there is a correction factor. He asked what is driving that correction.

- Hadley: We had estimated savings before based just on the differences in AFUE. At the RTF, we like to look at billing data to make sure that our engineering estimates match reality. Your study is the type we like to look at and I'm proposing an 80% realization rate to true up modeled results to billing data.
- Jerome: This is a calibration more than a realization rate.

Goss addressed using a SEEM calibration saying she thought it was all electric.

- Hadley: No, we did gas as well.

- Goss: I can't tell that from the slide. I know our engineering analyses are not perfect. Models are not perfect. And there's always the need to calibrate. But this is taking one very uncertain estimate and multiplying by another very uncertain calibration factor. It's just crazy compared to using the engineering model.
- Hadley: I'll get to that.
- Light: This is a good subcommittee discussion if we need to do that.

Geraghty asked if the rates on [Slide 18] are based on house characteristics and gas use found in RBSA.

- Hadley: Yes.

Jones asked why staff are getting such a large uncertainty on realization rates [Slide 19]. He said, as an evaluator, "realization rate" means something else and suggested avoiding this distraction going forward. Jones said savings are not very uncertain and wondered why "realization rates" are so uncertain.

- Keeling: Is it a compounding uncertainty: savings and AFUE are both unknown?
- Rushton: That's right.
- Jones: Did we have the pre-case AFUEs?
- Rushton: That variation is the CAT's judgement on uncertainty of AFUE average value for pre-case in these studies.
- Jones: Regardless, that's a lot of variation.
- Hadley: We don't know the AFUE of the pre-case, which is why we picked this number.
- Jones: We don't know if the realization rate is 86% +/- 30%. That's a lot of uncertainty.
- Hadley: That's right. And if we did the obvious study, we'd probably get more of the same. It's a proposal.

Goss said she wouldn't use the 2009 study as it's 15 years old. She said most measures in the study have been reevaluated with very different results, adding that a lot has changed in the technology, our billing analysis techniques, and the weather analysis.

- Hadley: So, you'll send us new data?
- Goss: We can't do a current practice baseline with our tools.
- Light: Let's let Energy Trust off the hook here as they provided a lot of data already.
- Hadley: There are current practice measures for the RTF, but the results shown here are pre-condition savings. Your work might still be usable to us.
- Goss: Our tool for internal evaluation isn't capable of evaluating furnaces and we're not doing an external evaluation.
- Keeling: You don't need the Energy Trust data to prove your point.

Baylon recalled that, in the dark ages of the late 1990's, there was a bunch of in situ measures for gas furnaces. He said they never saw 80% combustion efficiency as there were no condensing furnaces but there were substantial reductions in efficiency because of age. Baylon stressed that these were pre-1985 furnaces with an average of about 74 AFUE with maybe +/- 4. He said these never exceeded AFUE 80. Because of this Baylon thought that the Energy

Trust estimate of AFUE might be generous and guessed that the actual error bounds could be even higher than what Hadley is showing.

- Hadley: We found an NREL study see [Slide 24].
- Baylon: AFUE was more developed by late 1980s. Older furnaces might not follow the pattern. We might not be out of the woods just due to the NREL study. 78 +/- 4 isn't right. It's more like 75 +/- 4.
- Thomas: This sounds like subcommittee material. We also have data from Puget Sound Energy that we need to consider. For now, we want to run the continued use of SEEM rather than REEDR by the RTF.

Keeling did not follow how SEEM is not a worry, calling the idea of having a very uncertain variable correlated to correlation results a very bad thing. He said we need to work through the problem if you're rated efficiency determines how your calibration works, calling it a big deal. Keeling pointed to a circular logic, saying staff is basically counting twice. Keeling said doing the calibration requires using the billing data as the anchor and that's an issue if you know that's biased.

- Hadley: I'm not following.
- Keeling: You just said the residual (SEEM versus VBDD) is a function of AFUE.
- Hadley: Yes, and the fix is 80%.
- Keeling: How is that the fix?
- Hadley: It makes the residuals go away.
- Keeling: But this is broadly an issue for all SEEM calibration.
- Hadley: So, it would be a concern for weatherization measures. It might matter there. But for this measure, it is the fix.
- Keeling. This is the "hack". And there's probably bias, not just uncertainty. I'm more concerned about the bias.
- Hadley: This is good feedback. We need to talk more about this in subcommittee.

Jerome referenced pre-1992, saying if that was the existing condition, rather than assumed current practice, AFUE would be 65 to 75 and not 78. He asked if that change makes the problem larger. Jerome said his concern is with the pre-condition AFUE and it would make sense that it's much less than 78.

- Rushton: If the precondition is 70 not 78 the realization rate goes down, not up.
- Jerome: Okay, so you'd have a bigger delta.

Geraghty thought that the measure savings would be based on current practice, meaning the uncertainty about the installed AFUE wouldn't apply [Slide 19]. He said we're dealing with AFUE from the factory/test protocol and not knowing the AFUE after 30 years goes away.

- Hadley: I don't think so. We want to know what a delta in AFUE gets us. We're looking at a big difference in AFUE, but we're interested in much smaller range of AFUE.
- Keeling: There's a difference between "effective AFUE" and nameplate. Even old nameplate versus new nameplate is different.
- Hadley: After seeing the NREL study, we said we could take nameplate minus nameplate.

- Baylon: That's right if your base case excludes pre-1985. There was a lot of bad stuff in the 70s and 80s, but that got fixed.

Hadley summed up the presentation, saying it sounds like the guidance is to work with the subcommittee and come back in November [Slide 22].

- Jones: "Calibration Factor" would be a better term.
- Knori: You can add me to that subcommittee.

Jerome ended the meeting at 3:50pm.

Voting Record: October 16, 2024

Motion Language	Yea	Nea	Abs	Motion Passes?	Percent of Yea Votes		Number of Voting Members Present
					RTF Voting Members (40% min)	Members Voting (60% min)	
Motion: Approve the agenda for the October 16 meeting (Miller/Blanton)	20	0	0	Yes	67%	100%	20
Motion: Approve the minutes from the September 17 meeting as posted (Knori/Miller)	20	0	0	Yes	67%	100%	20
Motion: Extend the sunset date to June 30, 2025 for Retrofit Doors on Existing Display Cases UES and Residential Air Purifiers UES (Jerome/Jones)	20	0	0	Yes	67%	100%	20
Motion: Approve the Fryers UES as presented, and: -Set the Category to Proven for gas and keep the Category as Small Saver for electric -Keep the Status at Active -Set the sunset date to May 31, 2028.	17	1	2	Yes	57%	94%	20
Motion: Approve the updates to Ductless Heat Pumps for Zonal Heat Single Family and Manufactured Homes UES as presented, and: -Keep the Category at Proven -Keep the Status at Active -Set the sunset date to March 31, 2026.	17	0	2	Yes	57%	100%	19

Motion: Approve the updates to Ductless Heat Pumps for Zonal Heat Single Family and Manufactured Homes UES as presented, and: -Keep the Category at Proven -Keep the Status at Active -Set the sunset date to March 31, 2026.	17	0	2	Yes	57%	100%	19
Motion: Approve the addition of a tax credit identifier with the associated cost implications for the DHP for Electric Forced Air Furnaces Manufactured and Single-Family Homes UES as presented.	17	0	0	Yes	57%	100%	17
Motion: Approve the Ductless Heat Pumps for Multifamily UES as presented, and: -Keep the Category at Planning -Keep the Status at Active -Set the sunset date to September 30, 2028.	18	0	0	Yes	60%	100%	18
Motion: Deactivate the Strip Curtains UES.	12	8	0	Yes	40%	60%	20
Motion: Adopt the proposed 2025 work plan and business plan, with recommendation to the Council for approval.	19	0	1	Yes	67%	100%	19

October 16, 2024, Meeting Attendance

* Designates Voting Member

Name	Affiliation
Jamie Anthony*	BPA
Sofya Atitsogbe	WA UTC
Landon Barber	Idaho Power
David Baylon*	Independent
Rebecca Blanton*	Independent
David Bopp	RTF Contract Analyst
Kasey Curtis	PSE
John Davey	PSE
Christian Douglass	NWPCC
Logan Douglass	RTF Contract Analyst
Emily Donohue	Evergreen Energy
Jesse Durst	PSE

Ryan Firestone	RTF Contract Analyst
Kevin Geraghty*	independent
Jackie Goss*	Energy Trust of Oregon
Pace Goodman*	Illume Advising
Dan Groshans	CLEAResult
Connor Grossman	CLEAResult
Adam Hadley	RTF Contract Analyst
Josh Haver	Idaho PUC
Lars Henrikson	Seattle City Light
Anna Hilbruner	Elise Solutions
Aaron Ingle	NEEA
Mark Jerome*	CLEAResult
Mitt Jones*	Illume Advising
Josh Keeling*	Utility API
Phillip Kelsven*	BPA
Rick Knori*	Lower Valley Electric
Megan Kramer	Energy Solutions
Mark Lenssen*	PSE
Jennifer Light*	RTF Chair
Denis LIvchak	RTF Contract Analyst
Ben Mabee	BPA
Eric Miller*	Independent
Eric Mullendore*	BPA
Andi Nix	Energy Trust of Oregon
Alex Novie*	Energy Trust of Oregon
Nick O'Neil*	Energy 350
Brian Owens*	CLEAResult
Andrew Paul*	Avista Corp
Laney Ralph*	NW Natural
Akanksha Rawal	Energy Trust of Oregon
Mark Rehley*	NEEA
Josh Rushton	RTF Contract Analyst
Peter Schaffer*	independent
Halle Senger	Applied Energy Group
Blake Shelide*	ODOE
Paul Sklar	RTF Contract Analyst
Kevin Smit	NWPCC
Laura Thomas	RTF Manager
Jim White*	Chelan County PUD
Kathy Yi*	BPA

Amanda Zuniga	Energy Trust of Oregon