Regional Technical Forum

December 17, 2024
Meeting Minutes

Welcome, Agenda Review and Meeting Minutes
Jennifer Light, RTF Chair, welcomed the room with a call for introductions. Light counted 21 voting members.

Rebecca Blanton, independent, moved to approve the day's agenda. Phillip Kelsven, BPA, seconded. The agenda was approved unanimously. Kathy Yi, BPA, moved to approve the November minutes with small corrections. Mark Jerome, RTF Vice Chair, seconded. The minutes were approved unanimously.

Management Update
Laura Thomas, RTF Manager Presentation
Staff presented updates. Discussion touched on the timing of the latest CBSA, mid-rise multi-family building height in Washington state, and recategorizing measures.

David Baylon, Independent, noted that the new CBSA should be out next year calling it a major change from what has been seen previously [Slide 9]. He asked if this will be included in the market analysis, predicting that it will be a bigger problem for us than previous CBSAs.

- Laura Thomas, RTF Manager: There's some overlap, we'll review available data as part of our measure work.
- Baylon: Will the new CBSA be out by end of 2025?
- Jackie Goss, Energy Trust of Oregon: They're just starting site visits now, so data will be published in 2026.
- Christian Douglass, NWPCC: 2025 sounds early to me. They're just start recruiting now so it will be 2026 at the earliest.

Baylon asked about the difference between "Washington" and "Current" [Slide 20/Multi-family definition].

- Thomas: Current is RTF, Washington is WA state.
- Baylon: There has been a change in WA fire code since 2018 that says all frame buildings could be built with two concrete podiums and rise to seven stories tall. So, it's more relevant to have seven stories in the mid-rise category. I don't know about Oregon. This is a developers dream! Frame to seven stories!

- Light: We're going to punt on this for now. We align with the RBSA as there's inconsistency across the region. We'll work on this with the Power Planners. For now, we looked at it, we're not going to change anything.

Sarah Widder, Resource Innovations, asked why there are no Flexible measures in the new category for measures for 2025.

- Thomas: I don't have any new measures in the queue that would be Flexible. These are current measures that we consider flexible. The DR work will focus on improving our existing DR measures first and then move on to other measures. We can look through the new measure scan for things that might qualify as "flex."

Sunset Date Planning UESs: MH Duct Sealing, Door Sweeps, Residential HPWHs, and Consumer HPWHs in Commercial Applications
Laura Thomas, RTF Manager Presentation
Staff presented sunset date extension requests. Discussion touched on the timing of measure presentations and the usefulness of Door Sweeps. The RTF approved the extensions.

Widder asked if staff are thinking about the central heat pump water heater coming up at the same time [Slide 3].

- Thomas: That sunsets in March. I'll try to get everything on the agenda in 2025.

Nick O'Neil, Energy 350, recalled that door sweeps required a good lift to put into SEEM. He noted that the measure is not cost effective, and he doesn't know anyone using it. O'Neil requested that the RTF not spend a lot of time on moving this to REEDR.

- Kelsven: BPA is using it. It's one of our last by-request measures and it is popular.

MOTION
I, Dave Baylon, move that the RTF approve the sunset date extensions as follows: MH Duct Sealing UES to June 30, 2025. Door Sweeps UES to September 30, 2025. Residential Heat Pump Water Heaters UES to May 31, 2025. Consumer HPWHs in Commercial Applications UES to May 31, 2025.
Kevin Geraghty, independent, seconded.

Vote on the motion. The motion carries. (22 yes, 0 no, 0 abstain)

Update Proven UES: Non-Residential Lighting Midstream UES
Paul Sklar, RTF Contract Analyst (CAT) Presentation
Staff presented proposed updates to the measure. The RTF discussed other LED equipment that might be used for retrofits, the upcoming fluorescent ban, and delamping protocols. The RTF approved updates to the measure as presented.

Baylon said, from the rarified area of central Seattle, he is seeing some inconsistencies with what is being presented [Slide 6]. He pointed to a move to replace linear fixtures with an acoustic panel and a single integrated LED fixture. Baylon called this a retrofit, and said it is

seen in a lot of recently upgraded spaces, reiterating that this approach does not fall in any of the presented categories.

- Paul Sklar, RTF CAT: Yes, that's a different product and others have suggested it as a possibility. We could add them. There are some parts of that analysis, particularly market information, that we know less well.
- Baylon: I would think Seattle City Light has an item for this. It appears all over the place.
- Sklar: I can reach out to them.

Goss asked Baylon if that is suitable for a midstream measure.

- Baylon: Yes, this is a retrofit, but it's quite common.
- Sklar: Our measure is for replace on burnout. If they want to do the measure earlier, or are changing the lighting levels, then the Retrofit Standard Protocol is more applicable.
- Baylon: I think this is more of a replacement measure. It's very simple to implement.
- Light: I would recommend looking first at the retrofit protocol and then we can consider adding it to this measure next time around.

Eric Mullendore, BPA, said in his experience, there are programs delivering lamps, fixtures, and retrofit kits like Baylon just mentioned as midstream measures. He noted that they currently don't have a path to claim savings for the fixtures, just the lamps, and BPA would like to see midstream fixture measures. Mullendore explained who uses the UES measure, saying that smaller measures offer benefits like less paperwork, even if protocol is more appropriate. He restated that many smaller projects are actually retrofits, even though they're using the midstream program.

- Joseph Fernandi, Seattle City Light: I echo Mullendore's comment. We have incentives on LED troffers including integrated LED fixtures like those Baylon referred to.
- Light: For today, let's focus on the measure as proposed. Next month we have the Retrofit Standard Protocol coming up. If you'd like more project in the midstream measure, send requests to Laura Thomas.

Baylon asked if there is or is not an LED option for the HID.

- Sklar: No, the replacement is an LED. It doesn't say it on the slide, though.

Baylon asked if there is an assessment of how or if the distribution is biased by size category [Slide 8]. He used the example of smaller firms doing more or less aggressive things, saying he can't tell if we're hurt by having a smaller number of large distributors.

- Sklar: You'd have to look at the memo to see their analysis, but they concluded that they shouldn't weight the samples based on what's shown on the slide. It's unclear what the distortion is, so it's hard to correct for. Also, this feeds into the BPA lighting market model, which takes additional steps to get to a representative sample. It's unclear from this how to weight things.

Yi understood that there will be state identifiers because of the fluorescent ban. She asked if market shares reflect the whole region or just states without the bans.

- Sklar: We have less data from ID/MT than OR/WA. It's unclear how to weight state level data so we're recommending not differentiating by state, even though we're aware that that's not entirely true.
- Baylon: It could well be that the market has moved towards LED, independent of standard, including states without the standard.
- Sklar: I think that's the case, but I can't say how different ID/MT are from OR/WA.
- Light: We've discussed whether there's data to show different baselines in different states before. BPA has looked at this before and didn't see a difference, but this could shift as state standards come into play. If we can get state-level data and we see a difference, we can reflect it in the measure.
- Baylon: I agree that this needs to be done.
- Light: Dave agrees with me!

Baylon asked if [Slide 9] is meant to be a market diffusion curve. He thought that a standard would distort this and confirmed that this says that 55% of the time a lamp turns over, it becomes an LED.

- Sklar: This brings us to 2025, when the measure implemented.
- Baylon: This diffusion curve depends on things topping out around 60%. I don't think that's appropriate given the standards and the way that LEDs are taking over the market. I get that 2025 is not that far in the future, but it seems wrong that we imply that the max will be 60%.
- Sklar: This is a raw number of sales. Less efficient lamps are replaced a bit more frequently, which affects this number.
- Baylon: So, this is the market for individual tubes, so people could stock up.
- Sklar: Yes, but also that the linear fluorescents will need to be replaced more than the LEDs. So, you'd expect a higher percentage of LEDs in the stock because they last longer and don't get replaced as frequently. 60% doesn't reflect what's in the ceiling.

Mullendore suggested not extrapolating too much beyond what is presented here linearly. He stated that the region is hitting a point in the market transformation where we're getting the pockets of population that actively resisted adoption of the new technology. Mullendore noted that this has been seen in other technologies: getting the people who need a large incentive to make the switch.

Baylon called [Slide 10] essentially extrapolation based on 2021-23. He thought this could be High Bay next time around.

- Sklar: Yes, these are very different graphs. Low Bay looks like it's transforming/transformed, High Bay isn't there yet because of slower LED adoption.

Geraghty cautioned against overinterpreting this data, saying it's not that good. He urged the RTF not to expect every bump and wiggle to mean something.

Brian Owens, CLEAResult, expected to see a response to the upcoming ban for 2024.

Mullendore did not see enough data to account for this but stated that higher wattage products are not going in one-for-one as the process often includes delamping [Slide 12]. He noted that we don't have data to pin a number on this but called it something to consider going forward.

- Sklar: The retrofits standard protocol can be used for this.
- Light: This would be hard to do in a midstream measure.
- Mullendore: You could compare the lumens of LED and non-LED products to get a sense of how much delamping might be going on.

Light confirmed that the lighter color on [Slide 13] is new.

- Sklar: Yes, the dark color is the current measure, the light color is the proposed update.
- Widder: Having different products appropriate for different applications is why we have different savings this time? Am I getting this right? And if so, where is this information coming from?
- Sklar: I'm not sure about the first. We changed the measure identifiers to reflect a 1x4 fixture, 2x2, etc. We're matching the lumen output.
- Widder: What is driving the change in savings and where are you getting that information?
- Sklar: It's the lumen output. The lumen output of a retrofit kit is more than the lumen output of the fluorescent lamps.
- Widder: Before we matched the lumens. Now do we think it's more appropriate to match to particular retrofits.
- Sklar: It's the other way around. Before we said one kit replaced one lamp, now we're matching lumens.
- Baylon: Did we inadvertently increase lumen output last time?
- Sklar: Yes.
- Widder: Where does the data come from?
- Sklar: The DLC. We compare the lumen output to baseline T8 lamp output.
- Widder: OK. I just wanted to understand how we're lining up lamps with fixtures. It wasn't obvious to me.
- Sklar: Yes, unfortunately, we don't have project data. But we do know the lumen output and we know the form factor. So, we can match dimensions of linear florescent fixtures and the kits.
- Widder: It seems like an area of uncertainty.
- Sklar: Yes.

Baylon confirmed that the 12 years shown on [Slide 17] is based on data from a decade ago.

- Sklar: Yes. It's probably different now, but we don't know a new one.

Owens asked if you assume ballast bypass cost for type A/B [Slide 15].

- Sklar: Type A is through the ballast; we don't apply the cost. For A/B, we assume 50% bypass the ballast.
- Owens: Is turnover applied to warehouses?
- Sklar: Yes, it might be different for warehouses. This is the number we have.

Baylon confirmed that [Slide 18] says that LED type A is becoming the baseline, and it shouldn't be there. He asked if it's so popular that it effects the incremental cost of everything else.

- Sklar: Yes.

Andrew Grant, Cadmus Group, asked if staff looked at the general service lamp federal standard that takes effect in 2028 [Slide 20]. He said it includes "long GSL" which is over 45 inches. He thought that it makes LEDs the federal standard at that point.

- Sklar: I'm not aware of that. We can take a look at it.
- Thomas: We'll look at that for 2026.

Parking Lot

Light addressed parking lot issues saying:

- Staff can look at other applications in the retrofit protocol and consider adding some to this measure.
- Staff can also consider de-lamping practices for next time around.

Goss addressed delivery verification, asking if there's no requirement to verify that products are sold through a retrofit program.

- Light: It says, "verify that savings are not claimed in another program."
- Widder: Did we add "state" as a measure identifier?
- Sklar: Yes, it's missing from this slide.
- Light: We'll add that in.

MOTION

I, Rebecca Blanton, move that the RTF approve Non-Residential Midstream Lighting as presented and keep the category at Proven, keep the Active Status, Set the sunset date to December 31, 2026.
Owens seconded.

Vote on the motion. The motion carries. (21 yes, 0 no, 0 abstain)

BREAK

Update Planning, Prove, Small Saver UES: Residential Lighting
Ryan Firestone, RTF CAT Presentation
Staff recommended deactivation of the measure, but provided the details regarding how the measure would be updated in the presentation. Prior to reviewing the proposed measure updates, the RTF voted to deactivate the UES.

Baylon asked if the presentation is about midstream or residential [Slide 4].

- Ryan Firestone, RTF CAT: Retail is both midstream and direct install. Both are covered here.

Mark Rehley, NEEA, asked about data on compliance rates for OR and WA, adding that he understands that compliance is pretty lax [Slide 8].

- Firestone: There is no data that we know of, but the Oregon standard is pretty new. Absent any data, the Guidelines are clear that we should use the standard.

Baylon stated that [Slide 9] shows that we don't not have a one-to-one lamp change-out.

- Firestone: Correct. These bi-pin, non-MR lamps and the TLEDs are the only ones remaining in our measure. Other forms have dropped off over the past few years as different standards came into effect.

Goss said that [Slide 14] shows a worsening problem as sometimes if one lamp out of six fails, you have to replace all six for the space to match.

MOTION

Baylon moved to deactivate the non-pin-base lamps.

- Thomas: We should hold off on partial deactivation until the end of the slides.
- Geraghty: I second Baylon's motion.

Josh Keeling, Utility API made Amendment to deactivate the entire measure.

- Blanton: I second.

Firestone moved to [Slide 27] for further discussion noting that it shows a build-up for wattage of integrated LEDs and comparison products, to account for efficacy. He stated that Delta-Watts is low, adding that integral LED fixtures make up a large fraction of the current practice baseline, so first-year savings is really very small.

- Kelsven: Our problem is that it doesn't pencil out to do any kind of program delivery for only this narrow slice of measures.

Amendment
Add the following to the motion: Deactivate the integral-LED fixtures portion of the Residential Lighting UES measure.

Vote on the amendment. The amendment passes. (19 yes, 0 no, 1 abstain).

Discussion moved back to original motion including the approved amendment language: Deactivate the pin-base lamps portion of the Residential Lighting UES measure & Deactivate the integral-LED fixtures portion of the Residential Lighting UES measure.

Vote on the motion. The motion carries. (17 yes, 0 no, 1 abstain).

Update Standard Information Workbook Part 3
Logan Douglass, RTF CAT, Adam Hadley, RTF CAT Presentation
Staff presented SIW updates. After discussing labor rates and timeline for future SIW updates, the RTF approved the proposed updates.

Baylon confirmed that fringe rate includes taxes, unemployment, Social Security, etc. [Slide 8].

- L. Douglass: I'm only aware of the benefits portion of this.
- Baylon: 1.5 seems low if it includes more.
- Bob Davis, Ecotope: There's some ambiguity to this, but the key is that the final multiplier was bumped by about 50% to get us to about $180 per hour, which is a lot closer to market rate.

Baylon said that [Slide 12] still looks a bit low, but said it's at least not by a factor of three.

- Davis: I think this is a considerable improvement. Yes, there are more locations we could explore for rates, but this is an improvement.
- Goss: To clarify, this is what customers pay, not the prevailing labor rate?
- L. Douglass: Yes.
- Thomas: We can clarify that in the SIW.

Blanton stated that it is know that, in Seattle, costs are going up more than 5% per year [Slide 16]. She asked how often the SIW will be updated.

- Thomas: I'm hoping we can update the SIW more frequently going forward, like when it gets used for a measure. Perhaps in 2026 if a measure leverages these values. We'll also be updating it once the new Power Plan comes out.

Baylon said that energy will be far less important than the water at this rate.

- Adam Hadley, RTF CAT: Yes!

Baylon confirmed that [Slide 19] is the value of the energy, not the cost to the wastewater system.

- Hadley: Yes.

Yi confirmed that from 0.093 to 0.039 dollars is correct.

- Hadley: Yes. Firestone and I think that 0.039 makes more sense.
- Baylon: This is the marginal cost?
- Hadley: Yes.

Baylon confirmed that there is not any incremental efficiency for ammonia systems [Slide 21].

- Thomas: We are not going to do it as part of the SIW as ammonia is currently only in one RTF measure. We're still working on this, but we wanted to wrap up this work. We don't need the ammonia system value in the SIW until we get to the high speed doors.
- Baylon: We should look into industrial refrigeration (warehouses). Ammonia systems are important for this.
- Thomas: Yes, we're aware of that. Going forward we'll try to update the SIW as we update measures.

MOTION

I, David Baylon, move that the RTF approve the updates to the Standard Information Workbook, as presented for the following tabs: Labor Rates, Water and Wastewater Rates, Water Energy. O'Neil seconded.

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

LUNCH

Discussion: Efficient Electric Vehicles Next Steps
Laura Thomas, RTF Manager, Presentation
Staff presented possible next steps in Electric Vehicle work. The RTF asked staff to take another look at the potential to develop a specification for efficient EVs and bring back to the RTF for discussin in 2025. The RTF supported pursuing a study to complete a commercial EV market characterization. The RTF also supported staff's recommendation to focus on updating the demand response work for electric vehicles.

Goss noted that the RBSA shows close to eight times the amount of EVs [Slide 4]. She thought it likely that the RBSA is wrong but asked staff to note that there are drastically different estimates of this in the region.

- Keeling: This is stock, not sales.
- Thomas: And this data is a year old.
- C. Douglass: We should be careful with the RBSA. That's the number of households with EVs. Some households have more than one car and only one EV. We have to be careful with how we interpret the data.

Baylon said that the ACEEE did a study on this a couple of years ago [Slide: Project explored Two Options…] and found that the kWh/mile varied by about 30% based on weight, battery, design, etc. He did not suggest getting into car types, like SUVs and others as it's a design question that the manufacturer puts on the market for range.

- Thomas: The Apex study looked at a lot of that, and we'll go through some of those findings today, including relationship of wheel size and other things to efficiency.

Keeling asked how trim physically affects efficiency [Slide: Trim differences can Result…].

- Widder: Trim packages are like all-wheel drive, larger battery, different size tires. It's not just chrome, leather, etc.
- Keeling: Got it. I'm not sure how HVAC factors into this.
- Thomas: There are two tests: two-cycle and five-cycle. Two-cycle doesn't account for HVAC, but the five-cycle test does include HVAC use and aggressive driving.
- Bopp: From the data we have, the two-cycle test looks like a better estimator of real-world efficiency.

Baylon stated that you don't want anything less than a heat pump for HVAC, otherwise you really mess with the efficiency [Slide: Preview of Study Findings].

- Jerome: Yes, EVs have gotten quite smart about thermal management.
- Keeling: It's mostly thermal management.

- Baylon: Tesla messes with this so the range number on the marketing brochure can be adjusted by combinations of battery and drive. You could have the same car with ranges varying by 25% because of options.
- Keeling: Right, like drive mode. This whole class of problems is all of the stuff we've dealt with in lighting and appliance testing.
- Baylon: But like lighting, we do boil it down to one efficiency.
- Josh Rushton, RTF CAT: It's hard to come up with "comparable utility" between cars.
- Keeling: We've had this conversation with refrigerators, like "it's a premium product" or "configuration."
- Rushton: But the difference between through-the-door ice and not is not as significant as luxury sedan versus compact.
- Keeling: This is a new space, and we feel weird because we're not used to thinking about cars as appliances, but they are. This is the biggest appliance we're going to see for residential.
- Jerome: Takeback could be an issue here, too.
- Keeling: I am much more wasteful with my vehicle now that it's electric.

Widder asked what realization rates mean [Slide: Option 1: Ex Per EV Unit Annual Savings].

- Thomas: We have a comparison of EV to real world efficiencies from the RER data.
- Widder: I find that unsatisfying as a statement if they didn't get into the specific numbers.
- Thomas: They did. It's in the memo.

Baylon asked where the 13,000 miles per year comes from.

- Thomas: It's noted in the study.

Keeling disagreed with the recommendations on [Slide 29].

- Jerome: I looked at what Apex wrote. The unexpected thing that jumped out is that personal driving styles can really impact your miles/kWh. But we don't know that. Of course that's true with gas vehicles as well. I'd encourage people to take another look at the Apex study and see if there's something there. I do like the idea of doing more research, fleet vehicles seem like a good place to start.
- Keeling: I don't see anything in the data presented in that report that this is anything more uncertain than anything else we do here. And this is a consequential end-use. Apex did not try to build the measure. They just said, here's the data, and there's lots of uncertainty. But that's every measure at the RTF.
- Widder: I agree. And some uncertainty is explained by the vehicle classification: weight, drive type, etc. The utility of the car—what Rushton is concerned about—is what the car categorization from EPA addresses. There are issues, but the worst realization rates was like 70%. That's not bad. And the worst were Tesla, Rivian, and Audi, I can make some assumptions about the driving style of those owners. This is a growing load. We have to think about DR potential. It'd be a missed opportunity to not put a measure together. It can have a short sunset data. Uncertainty has not stopped us before, nor data. I'd encourage us to consider this.

Baylon stated that he has not looked deeply at the Apex study but was disturbed that there were two standard tests that didn't agree with each other and neither agreed with the RER data.

- Widder: I disagree. There are some vehicles where the EPA and RER data agreed perfectly.
- Baylon: I agree, but there is a distribution of alignment. We need better tests or better understanding of the test. I don't see how we get a measure out of this until we believe one of the EPA tests or understand an uncomprehensible number of variations. We can't look at every configuration of every vehicle, it's too confusing. I'd focus on finding a reliable test or believing one of the EPA tests to be reliable to identify efficient vehicles.
- Thomas: At the time of study, two-cycle results weren't available for all vehicles. That may not be the case anymore. The two- and five-cycle tests aren't comparable. You get some benefits for doing the five-cycle test.
- Baylon: It would be nice to have good data, at least one believable test, that we could say, "above this value, we call it a measure."

Hadley agreed that it seems possible for us to make a measure. He pointed to making a lot of assumptions and digging deeper into the data. But he said the big issue is "utility" from an economics perspective. Hadley said whenever we look at utility, we're double checking that we're getting conservation per the Act. He said bucketing this measure into clean groups, like small SUV with all wheel drive, and giving some higher efficiency incentives troubled him as he didn't know how to account for loss of utility when tradeoffs lead to a more efficient car. He thought that the things we're controlling for would lead to very small buckets, like one bucket for each car. Hadley admitted that this scares him and feels different than our measures. Hadley suggested checking "where are the savings coming from" and "do they cause a loss of utility?"

- Keeling: I don't think this is different than our other measures. We looked the other way for heat pump water heaters, CFLs, etc., and these things are not the same as their counterparts. We did the same thing for HVAC systems. I'm all about not making people sacrifice, but I think we're raising the bar higher here than we have anywhere else because it's unfamiliar. That's concerning. Apex did not do an evaluation. They took a very biased sample of data that they happened to own to benchmark. There's more data in EVs than anything else. Most EVs have telematics, and people are willing to share it, maybe not for free. And this is a huge end-use in every house. Also, this is a new market, it will change a lot. That introduces a ton of uncertainty. The data is going to be unstable. That's a good reason to get in now, because you can have a bigger impact.

Jamie Anthony, BPA, said it's hard to figure out what types of EVs compared to each other. He suggested looking at which ones have heat pumps instead of electric resistance. He then suggested having a smaller, more clear type of measure, asking if that was considered.

- Thomas: I don't think that level of data is readily available without a detailed review of each individual product. That would be a large lift to collect that data and likely make that an unlikely path for a measure.
- Keeling: Disentangling HVAC from battery thermal management is also very dicey.
- Dave Bopp, RTF CAT: Yes, we have the data. Yes, we might not have a measure but the CAT resource relative to what we'd get out if doesn't seem worth it. Could we really

move the market? This is way more expensive than HVAC where we haven't had much impact and a similar savings potential. I think the commercial vehicle space is a good starting point.

Goss suggested thinking about the audience for our measures. She stated that some utilities have different motivations for EV incentives, and wondered how we would align the messaging. Goss then noted how emotional car decisions are for people, calling it part of their identity. Because of this she wondered how influential a utility incentive could be at the levels we could afford to provide. Goss thought the money might be better spent on fleets, where we could have greater influence on the decision.

Pace Goodman, Illume Advising, appreciated this conversation around how this is different, but not that much, from other RTF measures. Goodman asked what this measure could look like in practice listing giving an incentive at the point of purchase at the dealership for example. Goodman asked if this is realistic for operating a program and wondered if there is any utility data out there on how they would implement this. Goodman also believed that the fleet side would be easier to implement.

- Thomas: To my knowledge an efficient EV measure is not being discussed in the region. Apex looked across the country and didn't find any programs for EV efficiency. Chargers yes, but not the vehicles.
- Goodman: It could be post-purchase. Or through dealer. Are these barriers to program design?
- Keeling: An upfront rebate should be manageable. Plus financing a car is way easier than financing a heat pump. And cars aren't typically replaced on burnout. If the incentive is small, like $200, maybe there's no impact, but has anyone looked at how much a rebate could be?
- Goodman: I'm pessimistic that dealers could change their system to deal with this.
- Widder: That's not an RTF concern. Utilities have relationships with their customers and customers are already used to having credits and other cost adjustments put on car costs. I agree that this is new, and we'll have to figure it out. It would be a lost opportunity to not have some influence on this growing load.

Jim White, Chelan County PUD, called the measurement of standby losses one of the areas that should be added to the list for next steps. He called his Tesla Model 3's standby loss pathetic. White thought this could be an objective measurement that doesn't show up in the telematics. White said telematics are a significant drain on the batteries in all kinds of vehicles. He insisted that this would be easy to measure and should be considered, adding that it's not a lifestyle choice and manufacturers need to be aware that this is a huge waste of energy.

Grant asked if we have sense of residential aMW potential and commercial aMW potential and if the Power Plan going to develop a measure for this.

- Light: I don't have our load forecast for EVs on the top of my head. We can get that. We're not currently planning a measure for this for the next Power Plan. We do have a

load forecast for EVs, with a wide range, which could include impacts of the range of efficiencies.

- Kevin Smit, NWPCC: We've been looking for something to include but we're not seeing it yet. If the RTF had something, we'd consider it.
- Geraghty: The big social good is getting people out of gasoline and into electric, but we can't touch fuel switching. Efficiency in EV land is a much harder product than refrigerators. People don't buy refrigerators for prestige. Some choices in personal vehicles are grossly wasteful. You could segment the whole complicated automobile market and look for efficiency within them. Range is an obvious one, people want range, and range is weight, which is less efficiency. Efficiency is way down on the list of what people are selecting for in a vehicle. And vehicles are bought as a package, where you can't just incent one feature, that's not how products are sold. I'm pessimistic about this. It's messy and would require a lot of ongoing work. DR and chargers make sense. But I don't see a good fit for the rest. Keeling is right, it's a big load and it would be nice to make it smaller. But the way to do that is tell people to not drive pickups around town. That's not somewhere we can go. I vote no on an EV measure.

Kelsven agreed that the RTF can't impact the EV market. He said most people buying EVs don't even know about the $7,500 tax credit and the RTF can't offer anything near that amount. Kelsven said this is not going to be on people's radars and felt that putting out studies like we have is what we should be doing. Kelsven said this helps consumers make decisions, adding that the RTF should focus on DR, but not pretend it can affect the market.

- Noah Lieb, Apex Analytics: Good points expressed today. We encountered all of this when we tried to line up the data. We couldn't explain the behavioral aspects. We came into the project thinking it was a slam dunk. Yes, the data is from managed charging cars, but that data reflects efficiency. And we saw big divergence in EPA versus real world. If you use EPA for incentives, you're wasting rate payer money. And how do you incentivize a behavioral measure?
- Thomas: Apex was given a challenging task. There's a lot to grapple with, plus a rapidly changing market. I think this is a good starting point. Apex tried hard and wanted the outcome to be a recommendation to develop a measure when they started. But hopefully what we have is informative to the region.

Keeling said Geraghty is right. But noted that we should also have smaller homes, etc. and we've seen ENERGY STAR products with higher consumption than non ENERGY STAR products and we don't have that problem there. Keeling called for a Planning Measure, noting that the RTF made Planning Measures for much more uncertain things. He said our bar for Planning Measures is not high at all and lamented that we have all this data here and we can't come up with a one. He called that crazy, asking why the bar is so different. Keeling noted that the Council forecast is 4,000 aMW in five years, adding "come on!"

- Light: And that's probably the low end for this coming Plan. I agree that we have a low bar for Planning Measures. But we have many Planning Measures where the research never gets down. This one is too big of a resource not to do the research.

Light asked Thomas if she has what she needs.

- Thomas: We're going to do the DR part. We can look into an EE measure more. But what about fleet vehicles? Is there support for looking to characterize the commercial EV market?

Light asked for show of hands from who's interested in commercial/fleet EV vehicle work. She saw some interest in the room and on the phone and thought Thomas could take today's feedback and come up with a proposed path forward.

Light then asked for a show of hands from those interested in further scoping of a Planning Measure for residential EVs, asking if the RTF should we spend resources.

- Most of room, plus seven on the phone, showed interest.
- Thomas: We'll put some more thought into this and consider it with the next round of new measure proposals.
- Light: Good, and maybe sooner rather than later. Also, the DR piece is really critical. We assume managed charging in the adequacy assessment because if we didn't the adequacy issue is ridiculous.

BREAK

New Measure Proposals
Laura Thomas, RTF Manager, Denis Livchak, RTF CAT, David Bopp, RTF CAT,
Presentation
The RTF examined new measure proposals, voting to move forward with Heat Pump Engine Block Heaters for Standby Generators and Commercial Dishwashers.

Baylon asked how the columns on [Slide 5] are different.

- Thomas: For some it doesn't make sense to pick up the measure again, for others it does if there is regional interest because something has changed since we deactivated.
- Kelsven: There used to a be a DHP upgrade measure in the suite of DHP measures. We had some utilities asking about this because of lot of DHPs are failing/being replaced. We didn't have faith in HSPF, which is why got rid of it, but we have a new metric now.
- Laura: Noted.

Goss asked if [Slide 9] represents ID/MT, OR/WA, or a blend.

- Denis Livchak, RTF CAT: This shows savings from ENERGY STAR v2 versus ENERGY STAR v3, so it's OR/WA.
- Goss: This shows more therm savings than we estimated from the last time we looked.

Yi asked if it was possible to consider different measure identifiers for the states because ID/MT don't have a state standard.

- Livchak: Yes, those would probably mean a measure identifier.
- Thomas: At this point, we're just trying to gauge the RTF's interest in allocating resources to develop a measure. We don't need to get too deep into this.
- Baylon: What about our dishwasher savings?

- Light: We'll scope that out as we develop the measure.

Baylon asked what caused the RTF to deactivate the measure on [Slide 10], saying 4,000 kWh looks like a lot.

- Thomas: It was deactivated in 2012 because it was out of compliance with the Guidelines and there was not much interest in the effort required to bring it into compliance with the Guidelines.
- Light: When the Guidelines were first developed, we had a process of going through all of the measures to check if they complied. Some were brought into compliance while people weren't interested in others.
- Thomas: So now we're asking if the RTF is interested. Programs are offering the measure. It's been a long time since 2012.

Jerome said [Slide 14] is mostly there to provide cooling, rather than HVAC. He said the AC provides cooling and this doesn't reduce the AC. He thought this technology could be great for dry climates, kind of like an economizer.

- White: We used these in Austin in the 1980's. They were very effective. We could keep the AC off until June or July, which is great for Texas. In addition to cooling the home, it pushed hot air out of the attic. I'm not sure how effective EPlus would be for modeling this because of the need to model the attic as second zone for this to make sense. But I like this product.

Jerome thought an evaporative cooler might be more effective at a similar price point [Slide 20].

- Light: Should anyone submit something like that, we could consider it.

Geraghty asked about hours of operation, saying that could vary quite a bit [Slide 29].

- Bopp: We have estimates from one source right now.
- Geraghty: What leads to efficiency?
- Bopp: Blade design, motor, and standby.
- Geraghty: Are you only looking at models with lights?
- Bopp: No. The RBSA did that. We would consider both.

Kelsven thought that NEEA could be interested in this and could help with baseline data.

Grant asked if staff looked at CBSA ceiling fan saturation.

- Bopp: No, just residential.

Jerome pointed to a 2022 California study that found no savings in midstream because the DHPs were going into bonus rooms, or other places, and there was no appetite for data collection [Slide 35]. He said this means it is no longer allowed as a measure in CA.

Keeling asked if heating requirements are the same for diesel versus natural gas generators, adding that data centers tend to be natural gas, not diesel [Slide 38].

- Bopp: I'm not sure, but regardless you'd want a higher than ambient temperature.

- Jerome: Is this air-to-air or air-to-water HP?
- Bopp: Air-to-water.

Keeling asked about smaller scale technology, like a cell tower, calling them residential-scale generators [Slide 43].

- Bopp: Hotstart recommends a HP for about 750 kW to 1 MW and above.
- Keeling: There are a lot of those generators.

MOTION
I, David Baylon, move that the RTF allocate resources to developing the potential measures for Heat Pump Engine Block Heaters for Standby Generators and Commercial Dishwashers. And that the RTF does not allocate resources to the following: Whole House Fans, Midstream Ductless Heat Pumps, ENERGY STAR Celling Fans.
Geraghty seconded.

White argued for including the whole house fan saying it can cut cooling loads in half. He said he would vote No on the motion as made for this reason.

- Geraghty: Yes, whole house fans can save a lot of energy but require scrupulous occupant actions. If you have CAC, the default thing to do is nothing. We'll run into problems of not realizing the potential of the measure. And what about other configurations? Why exhaust to the attic only? And what about homes with heat pumps? I agree, these are great in homes with no AC, but in its current configuration, I don't support the measure.

Goss thought the proposed measure was fine but agreed that she would have thought more about ceiling fans because the potential is large. She mentioned the downside of not being verifiable through billing analysis, saying that is true for every residential measure and should not hold us back.

- Kelsven: I agree. I'd like to see ceiling fans explored. NEEA has access to the market. There are C&I applications already. And there are ways to assess savings
- Baylon: Savings are about what you get from a CFL lightbulb. And this is more complicated.

Keeling pointed to all of the concerns raised in the ceiling fans measure, saying that it's the same as the EVs.

- Light: We don't know what the savings will really be, so don't be fooled by the savings potential.
- Goss: The risk of being wrong is much smaller here than for EVs because the potential is so much lower.
- Keeling: The risk of doing nothing on EVs is huge!

Peter Schaffer, independent, confirmed that the Motion includes not allocating resources to ceiling fans.

- Light: Yes.

Vote on the motion. The motion carries. (18 yes, 4 no, 0 abstain)

Outgoing Member Thank You and Pocket Protector Presentation
RTF Staff
Staff recognized the hard work of 16 outgoing RTF members and paid special thanks to Mark Jerome for his work as RTF Vice Chair.

Light ended the meeting at 3:40.

Voting Record: December 17, 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 December 17 meeting (Blanton/Kelsven)	22	0	0	Yes	73%	100%	22
Motion: Approve the minutes from the November 19-20 meeting as posted (Yi/Jerome)	22	0	0	Yes	73%	100%	22
Motion: Approve the sunset date extensions as follows: MH Duct Sealing UES to June 30, 2025 Door Sweeps UES to September 30, 2025 Residential Heat Pump Water Heaters UES to May 31, 2025 Consumer HPWHs in Commercial Applications UES to May 31, 2025 (Baylon/Geraghty)	22	0	0	Yes	73%	100%	22
Motion: Approve Non-Residential Midstream Lighting as presented, and Keep the Category of Proven Keep the Active Status Set the sunset date to December 31, 2026 (Blanton/Owens)	21	0	0	Yes	70%	100%	21
Amendment: Add the following to the motion: "Deactivate the integral-LED fixtures portion of	19	0	1	Yes	63%	100	20

the Residential Lighting UES Measure" (Keeling/Blanton)							
Motion: Deactivate the pin-based lamps portion of the Residential Lighting UES Measure and deactivate the integral-LED fixtures portion of the Residential Lighting UES (Baylon/Geraghty)	17	0	1	Yes	57%	100%	18
Motion: Approve the updates to the Standard Information Workbook, as presented for the following tabs: Labor Rates Water and Wastewater Rates Water Energy (Baylon/O'Neil)	20	0	0	Yes	67%	100%	20
Motion: Allocate resources to developing the potential measures for Heat Pump Engine Block Heaters for Standby Generators Commercial Dishwashers And that the RTF does not allocate resources to the following: Whole House Fans Midstream Ductless Heat Pumps ENERGY STAR Ceiling Fans (Baylon/Geraghty)	18	4	0	Yes	60%	82%	22

December 17, 2024, Meeting Attendance

* Designates Voting Member

Name	Affiliation
Jamie Anthony*	BPA
Landon Barber	Idaho Power
David Baylon*	Independent
Rebecca Blanton*	Independent
Jonathon Belmont	BPA
David Bopp	RTF Contract Analyst
Colleen Collins	Resource Innovations

Victor Couto	Seattle City Light
Bob Davis*	Ecotope
Christian Douglass	NWPCC
Logan Douglass	RTF Contract Analyst
Joseph Fernandi	Seattle City Light
Ryan Firestone	RTF Contract Analyst
Kevin Geraghty*	Independent
Jackie Goss*	Energy Trust of Oregon
Pace Goodman*	Illume Advising
Andrew Grant	Cadmus Group
Todd Greenwell	Idaho Power
Adam Hadley	RTF Contract Analyst
Peter Jenson	NWPCC
Mark Jerome*	CLEAResult
Terry Judge	Hot Start
Josh Keeling*	Utility API
Phillip Kelsven*	BPA
Rick Knori*	Lower Valley Electric
Noah Lieb	Apex Analytics
Jennifer Light*	RTF Chair
Denis Livchak	RTF Contract Analyst
Ben Mabee	BPA
Eric Miller*	Independent
Eric Mullendore*	BPA
Andi Nix	Energy Trust of Oregon
Craig Patterson	independent
Nick O'Neil*	Energy 350
Brian Owens*	CLEAResult
Andrew Paul*	Avista Corp
Doug Pooler	Hot Start
Joe Prijyanonda	Applied Energy Group
Laney Ralph*	NW Natural
Jon Rapose	Hot Start
Mark Rehley*	NEEA
Sam Rosenberg*	PNNL
Josh Rushton	RTF Contract Analyst
Peter Schaffer*	independent
Blake Shelide*	ODOE
Brien Sipe	PGE
Paul Sklar	RTF Contract Analyst

Kevin Smit	NWPCC
Kenji Spielman	Energy Trust of Oregon
Jason Talford	Idaho PUD
Laura Thomas	RTF Manager
Jim White*	Chelan County PUD
Sarah Widder*	Resource Innovations
Kathy Yi*	BPA