May 19, 2026
Meeting Minutes

Welcome, Agenda Review and Meeting Minutes
Kevin Smit, RTF Chair, began the meeting at 9:00am. Christian Douglass, RTF Vice Chair, took roll, counting 20 voting members.

Eric Miller, independent, moved to approve the day's agenda. Douglass seconded. The agenda was approved unanimously.

Mark Jerome, CLEAResult, moved to approve the minutes from the May 19th meeting. Noe Contreras, NEEA, seconded. The minutes were approved unanimously. RTF members voiced positive comments on the quality of the notes and the notetaker.

Management Update
Laura Thomas, RTF Manager Presentation
Staff presented updates. Discussion centered around website tweaks and improvements

Andrew Grant, Cadmus Group, referenced the June presentation on heat pumps asking if Council staff could review the work early to incorporate draft Plan recommendations [Slide 3].

- Douglass: We're well past that point. We already got a lot of heat pump information into the Plan with the help of Dave Bopp, RTF CAT. That's why the RTF timeline has been pushed back.
- Grant: Will the RTF see the draft Plan in August.
- Laura Thomas, RTF Manager: I'm not sure.

Grant asked if interested parties have to re-sign up for subcommittees [Slide Website/ Subcommittees].

- Thomas: No.
- Grant: A link to presentations associated with a measure workbook would be great. Currently there's some work required to get to the presentation.
- Thomas: We now have a link to the presentation on the workbook summary page. That's easier for us and the analysts, but it's also for the same reason you're bringing up. Next year we'll need to update all the workbooks for new Plan and can include that link at that time.

Jerome noted the work it takes to get to the right meeting minutes, calling the minutes informative as well. He then said he approved of the idea of renaming measures.

- Thomas: We can work on making it easier to get to the minutes.

Jim White, Chelan County PUD, noted that the Box files (.box) are difficult to work with.

- Thomas: Our IT staff can help you.

Grant pointed to the request for proposals section, asking if multiple RFPs would be listed there.

- Thomas: Yes, or a link to them.

Sunset Date Extension Small Saver UES: Level 2 Electric Vehicle Chargers
Laura Thomas, RTF Manager Presentation
After the presentation the RTF approved the extension.

Jamie Anthony, BPA, wondered why 47 aMW is considered a Small Saver [Slide 3].

- Thomas: It's the difference from the 2021 Plan versus the 9th Plan. We'll review this number. It's definitely bigger than a Small Saver based on the number in 9th Plan.

MOTION
I, Eric Miller, move that the RTF extend the sunset date of the Level 2 Electric Vehicle Chargers UES to September 30, 2026.
David Baylon, independent, seconded.

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

Sunset Date Extension UES: Residential Heat Pump Water Heaters and Consumer Heat Pump Water Heater in Commercial Applications
Ryan Firestone, RTF Contract Analyst (CAT) Presentation
Staff presented information regarding the upcoming update and need for additional time. The RTF discussed Federal workarounds, tank sizing, and occupancy before approving the extension.

Grant addressed workarounds to the 2029 standard, asking what lead staff to believe that market share will remain low [Slide 7]. He then asked about Plan assumptions.

- Douglass: We're thinking about workarounds like mixing valves, small "booster" tanks, and things like that. We left heat pump savings in the Plan's conservation potential, not the baseline.
- Grant: I would think installers would want to do the more expensive heat pump water heater than a cheaper workaround.
- Douglass: I can't really speak to that, but I think there's a lot of momentum in the trades. There is a preference for working with technologies they are already familiar with.

Baylon asked how staff handled the water heating load in the Plan baseline.

- Smit: We leave the full electric resistance load in the baseline, so heat pump water heater savings are all in the potential. In regard to the 2029 standard, this means the Plan baseline assumes a heavy use of workarounds. If the standard hits in a big way in 2029, with lots of heat pump water heater adoption, it will all count as conservation.

David Tripamer, BPA, stated that the limiting factor in consumer decisions is water heating capacity and not tank volume. He thought a consumer might rationally consider a 50-gallon electric resistance tank against a 65-gallon heat pump water heater, meaning those technologies compete against each other across size categories.

- Ryan Firestone, RTF CAT: That's why we include the "any size" measure option.

Bruce Manclark, Earth Advantage, pointed to other workarounds include changing to gas or setting a heat pump water heater to electric resistance only mode.

Baylon asked if a consumer is not eligible for an incentive if they select a 55-gallon-plus heat pump water heater.

- Tripamer: That's what BPA does.
- Douglass: Again, we have the any-size option, so programs aren't forced to do that. As far as the RTF is concerned, that logic is a program choice. They could also choose different logic. Our products support that choice as well.

Manclark asked if there is any insight into the operating mode the tanks are set to [Slide 14].

- Ben Larson, Larson Energy Research: Our recorded survey's operating modes don't align with what we see in the meter data.
- Jerome: Are we assuming a fixed consumption per person per day?
- Firestone: We have the number occupants in the HEMS data, and we have different SEEM runs for different numbers of occupants. We can align at that level, but we don't individualize water draws beyond that.

Tripamer asked if staff looked at the correlation between resistance usage and tank size [Slide 16].

- Firestone: Yes, we looked at smaller tanks versus larger tanks. Remember, the SEEM runs are meant to get at the use of resistance back-up in response to heavy draws
- Tripamer: At the poles it looks like 10% of sites are in heat-pump-only mode versus electric resistance all the time. Are there any differences in how they look?
- Larson: Yes, there is a difference associated with size. It does seem like we see a lot of four-occupant households with 50-gallon heat pump water heater tanks. Those see a lot of resistance usage. We can't be sure that's not just a reflection.

Baylon thought that the graphic on [Slide 15] could reveal occupancy better than anything.

- Firestone: We do have occupancy for these, so I'm able to account for that. That gives better alignment.
- Baylon: What are we using for water usage?
- Firestone: We have hard data from an Ecotope/NEEA project from a while back.

Douglass pointed to a flag on the number of occupants reported, saying those numbers actually come from RBSA data which may have been collected five years prior to the HEMS data. He noted that occupancy may have changed since then.

- Firestone: Good point. I do want to say that we were able to get pretty good alignment between HEMS and SEEM kWh estimates by matching HEMS sites to SEEM runs based on occupancy

Manclark asked if the sites on [Slide 18] have recirculation systems.

- Larson: I don't know. We could go back and see if that's flagged in the survey data. Nothing leapt out in the kW data. But it's a good point.

Grant asked if staff are planning to revisit load shapes using HEMS [Slide 21].

- Thomas: Not for this update, but we'll have a batch of load shape stuff at some point in the future.

Baylon asked why we have to wait a year after the standard to get a compliance spec [Slide 22].

- Adam Gage, NEEA: To give manufacturers time for feedback and to adapt products.

Grant asked for anything to streamline the SEEM output, adding that it would be appreciated because it is so hard to deal with. He offered mapping and field headings as example.

- Firestone: I'm working on that. If you have specific suggestions, please send them.

Grant asked if the RTF could set the sunset to 2029 instead of the usual five-year cycle.

- There were head nods in the room.

Manclark asked if 110V models are included.

- Firestone: I hadn't thought about it.

Tripamer asked if high-level total energy usage could be validated using CEMS.

- Firestone: Maybe. We'd be looking for commercial sites with residential water heaters. But we could check for them in CEMS.

MOTION

I, David Baylon, move to extend the sunset dates of the Residential Heat Pump Water Heaters UES and the Consumer Heat Pump Water Heater in Commercial Applications UES measures to July 31, 2026.
Grant seconded.

Tripamer noted that a 25-gallon electric resistance water heater is around $200 so this is a good assumption.

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

BREAK

Discussion of RBSA 2022 Weatherization Analysis
Laura Thomas, RTF Manager, Sophia Spencer, Nauvoo Solutions Presentation
Sophia Spencer, Nauvoo Solutions, presented some recent analysis of RBSA 2022 focused on weatherization. Members asked clarifying questions about the work, and staff indicated that the full breadth of the analysis would be posted on the website.

Bob Davis, independent, asked about single glaze window [Slide 7]. He wondered if that means a home with some single-glaze windows noting that a lot of homes have a mix.

- Sophia Spencer, Nauvoo Solutions: This represents the home's average U value. We didn't look at specific windows.

Baylon confirmed that [Slide 6] says 20% of 2x4 walls have no, or hardly any, insulation.

- Spencer: The two bars of the left represent insulation levels under R11.
- Baylon: I'm not sure an audit could determine the difference between R13 and R11.
- Spencer: I can't speak to the data collection.
- Douglass: That second bin of homes are a mix of completely filled walls (R11 to R13) and uninsulated walls. The average is less than R13.
- Baylon: This slide doesn't say how many homes are "unknown."
- Spencer: It's the same as the previous slide.
- Josh Rushton, RTF CAT: The first bar is uninsulated, the second bar (R11) is insulated.
- Jerome: I have a very old home with pieces added on. I recently added a bathroom and found R3 or R4 in the walls. There must be a lot of cases like that. Homes with a few very minimally insulated walls.

Manclark asked if electric resistance covers both central and zonal systems [Slide 10].

- Spencer: Yes.
- Manclark. What is the split between the two?
- Thomas: We can look that up for you.

Baylon asked where homes with secondary heating fuels show up.

- Spencer: This graph is just for the primary heating source.
- Baylon: Does this graphic tell you what in the home is actually working? For example, is the secondary system used more than the primary?
- Spencer: We just looked at what the RBSA listed as the primary heating source.
- Baylon: We could assign what's primary versus secondary.
- Thomas: Agreed. We haven't done that, though.

Anthony asked for examples of one upgrade versus two upgrades versus three [Slide 11].

- Spencer: Two would be an uninsulated attic and single pane windows. One upgrade could be sufficient wall and attic insulation, but single pane windows.
- Thomas: We wanted to see homes that need upgrades compared to homes that don't.

Grant stated that the graph suggests that the region hasn't done much in the last 100 years. He guessed that there are secondary systems in older homes, like wood. Grant asked if the RBSA documents how much wood is used.

- Spencer: This graph is just electric and natural gas energy consumption. It comes from billing data.
- Douglass: This isn't normalized for square footage, but the average home is now twice as big as in 1950. This graph would look a lot different if it were in terms of EUI.

Miller asked if there is any differentiation in sufficient levels of insulation by heating zone.

- Spencer: This graph doesn't. But we looked into this a bit.

Anthony thought the graph would be more effective if the y-axis was EUI, not total energy.

- Thomas: We have that. Just not on this slide.

Baylon confirmed that income appears to be a small factor in whether or not homes need weatherization [Slide 12].

- Grant: Also, people with lower incomes may use less energy.
- Anthony: Regional median income is a helpful metric. That's what BPA considers for "income qualified."

Grant asked, when looking at this information, where would these homes be incorporated in RTF analyses. He confirmed that the RTF already has bins for insulation level.

- Thomas: Not in our measures. This is something we looked at as the Power Plan recommended the region continue to weatherize. Weatherization has not been cost effective in the past, but we want to call it out and consider resiliency. We wouldn't recommend "No-electric resistance" for uninsulated homes with centrally ducted heat pumps. Also, the RTF tracks regional weatherization activity in the RCP to compare with remaining potential. So, we thought this analysis was worth sharing with the RTF.

Grant asked if there is a plan to do deltas between RBSA and program accomplishments. He also asked if supply curves will use this hyper-granular data.

- Thomas: We already use the RBSA a ton at the RTF. The intent of this is to not have that analysis buried in a measure assessment. We can provide value to the region by lifting up this analysis and showing others how they could use it. We're working with NEEA on how to do just that: highlighting the analysis of regional data sets.
- Douglass: That would be amazing in a perfect world. But realistically, we don't have the statistically significant data by balancing authority. Really, it's just at the state level.

Grant stated that weatherization, HVAC, and water heating is where the savings potential is. He suggested that the RBSA focus on that potential.

- Douglass: I'm on the NEEA working group for RBSA design and this is being discussed now. I'm definitely in the camp of focusing on fewer things.

Tripamer restated that, as a region, we agree that weatherization is not cost-effective but is still a good thing to do. He asked if the non-energy benefits should be more explicit.

- Smit: There's a range of insulation levels and cost-effectiveness. Going from R-0 to high insulation has a higher cost-effectiveness than just upgrading from decent to good insulation.
- Tripamer: But Thomas said that "knowing that they're not cost effective, but we need to do it…"
- Smit: Yes, in the 2021 Plan the Council emphasized the importance of finishing off the remaining 20% of homes that aren't insulated. So, we wanted to look at this in the RBSA to see if there's been progress. There are still uninsulated homes out there and poorly insulated homes. There's still work to do.

Geraghty recalled that both Baylon and Davis mentioned data quality issues. He stressed that he does not trust the weighting in the RBSA. Geraghty said this means the region should forget about granularity and just look for big signals as small signals could be data artifacts. Geraghty agreed that there are a lot of uninsulated homes left, because it's in no-one's financial interest to do it. He noted that there are lots of uninsulated, pre-1940 homes in Seattle metro, stressing that the RTF should be aware of this. Geraghty said they are mostly on the west side with low financial incentive to complete the work because of the mild climate and prevalence of gas heat. He implored the group not to overanalyze this data because the weighting can't be trusted.

- Anthony: Regardless of the quality of the data, this type of thought exercise is good for determining what to do and why. I appreciate this work.

Update Planning UES: Single Family Weatherization and Manufactured Home Weatherization

Laura Thomas, RTF Manager Presentation

Staff explained that this update was mostly administrative given no new data to inform savings analysis. After hearing the presentation and discussion on a few clarifying questions, the RTF approved the updates.

Tripamer built off what he heard at the last Council meeting: that weatherization programs don't produce as much savings as expected from modeling [Slide 10]. He recalled that Douglass said we calibrate to actual data, but another Council member said that it's still conservation if they raise their thermostat setpoint. Tripamer said this shows that there's some debate as to if savings should be relative to the new thermostat setpoint, or the old one.

- Douglass: NWPCC Council lawyer John Shurts made the point that if there's no savings on the grid, because the thermostat went up, it's still conservation. But we still need to know the impact on the grid for our cost-effectiveness calculations.
- Tripamer: We don't penalize the grid when you do a heat pump conversion and add A/C.
- Douglass: We do, but our load forecast shows that people are adding cooling over time. We can discuss more offline.
- Smit: This gets into the definition of conservation under the Power Act. We can cover that at another time.
- Baylon: This definition is 50 years old and may have outlived it's useful life.

Samantha Taylor, CLEAResult, asked if staff will look at using REEDR for updating savings for existing homes or just new homes [Slide 17].

- Thomas: That's to be determined. We'll be bringing HEMS v10 homes into REEDR later this year and determine what's needed to reflect existing homes in the region in the model.

Grant recalled that labor costs were developed in 2023, but the RTF updated these costs in 2024 or 2025. He asked if this easy update was considered [Slide 20].

- Bopp: We actually use program cost data, which included labor. So, we don't use the SIW labor rate.

Grant asked why Multifamily wasn't considered [Slide 25].

- Thomas: That's next month.

MOTION
I, Christian Douglass, move that the RTF approve the Single-Family Weatherization UES and Manufactured Homes Weatherization UES: Remove the tax credit, Change the measure name to Weatherization Single Family UES and Weatherization Manufactured Home UES. Keep the Category at Planning, Keep the Status at Active, Set the sunset date to May 31, 2029
Miller seconded.

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

Update Small Saver UES: Irrigation Hardware Maintenance
Paul Sklar, RTF CAT Presentation
Staff presented the update. After discussing the studies and proposed savings the RTF reduced savings to 15% before approving the update.

Baylon asked if the region actually has a measure that relates to maintenance and the quality of maintenance [Slide 7]. He noted that Sklar said that whatever the result, it wouldn't qualify for utility programs.

- Sklar: We're trying to see a difference in uniformity between participants and non-participants.
- Baylon: But they would have used the program to upgrade their system in all cases?
- Sklar: Yes. This measure is for replacing components. There are other aspects of maintenance, but our measure is for replacing components more frequently.

Grant asked about the non-energy benefits of water savings.

- Sklar: We don't consider the non-energy benefits for water. Irrigators typically aren't paying a volumetric rate for their water. They pay for the cost of pumping it.
- Smit: And we've discussed this in the past.
- Thomas: We'll bring back a research strategy in a few months. We can look into it then.

- Jerome: We include a cost for municipal pumping, but not agriculture. For agriculture, it touches on water rights and gets very complicated. It's more straightforward for municipal water.

Baylon asked what a "leaking" sprinkler is [Slide 11].

- Sklar: It's water that drips straight down from the sprinkler and doesn't get distributed by the sprinkler.

Jerome pointed to the name Kyle Clark on [Slide 13] saying it's Kyle Chase, adding that he's a voting member.

Grant asked for a definition of uniformity saying he thinks of it as distribution [Slide 14].

- Sklar: I'll cover that later in the presentation.

Contreras asked where the savings come from if there is a leak.

- Sklar: For leaks, water is wasted because it's not delivered to the right place. You save water and the energy required to pump the water if you remove the leak.
- Smit: We can come back to this if it's not clear later in the presentation.

After admitting knowing nothing about this, Douglass said, on a high level, it makes sense [Slide 17]. He said a really new system might need fine tuning: you could have issues at the beginning and at the end, but not in the middle. Because of this he did not think this was crazy.

- Baylon: I do think it's crazy. The older systems require fewer extra passes.
- Eva Urbatsch, Puget Sound Energy: They may have left the older systems that worked in place and replaced that ones that didn't work well. That could explain this trend.

Grant asked how uniformity was known in the study, wondering if it was a bucket in the ground. He asked if crop, elevation, or wind speed was considered.

- Sklar: Yes, that's how it's measured. There is a control for wind speed, so we don't take wind measurement if speeds are above three or five mph. I don't recall the specific number, but it's low.

Urbatsch asked if the fields on [Slide 20] were selected because of poor uniformity.

- Sklar: I don't know how these fields were selected.
- Douglass: This being Michigan state university, we'd expect these fields to be more Spartan to begin with 😊.

After reviewing the multiple reasons for poor uniformity [Slide 21] Manclark admitted that he also suffers from a "broken wobbler."

Douglass asked about the 33% on [Slide 22] noting that the CAT feels it's closer to 1 than 100%. He said that if it's not, he'd prefer the "classic Firestone approach" and go with 50%.

- Sklar: There's nothing quantitative about this. Any number is equally defensible. I have no preference of 50% over 33%.

- Grant: The program doesn't tell us what the improvement to uniformity is. It can't be solved by program design. So, are you trying to bake in an evaluation adjustment factor?
- Sklar: Basically yes. But you could modify program design to target poor uniformity.

Grant asked Thomas how often program design influences savings adjustments. He said he's hesitant to say, "wait for better data."

- Thomas: We often account for uninstall rates and other findings from programs.
- Grant: Is everything cost-effective?
- Sklar: No, there's variation.

Baylon stated that this looks like current practice. He said the first thing a farmer does when something is wrong is to fix the problem and not to call the utility. Baylon insisted that this is the current practice.

- Sklar: That's correct.
- Baylon: The 10-year-old Idaho study has a lot of problems. They have nothing to do with our measures. Idaho water problems are legendary and that could complicate the findings. The Michigan study didn't have those issues. And they found improvement in the uniformity.
- Sklar: Yes, the subcommittee recommended this paper for that reason. We're suggesting less savings than what's shown in Michigan because of other issues irrigators would do independent of the program influence. And other problems that wouldn't be resolved by a replacement.

Firestone addressed Grant's earlier question, saying the CAT use evaluation results all the time in measures. He said it inherently reflects program design and doesn't feel out of place.

Contreras asked why this is Planning versus a Small Saver.

- Sklar: The savings potential increased after we presented the measure. The increase is based on analysis changes that the RTF instructed us to do.

LUNCH

Update Small Saver UES: Irrigation Hardware Maintenance (Continued)
Paul Sklar, RTF CAT Presentation

Jerome asked if the numbers on [Slide 31] are per horse power.

- Sklar: No, this is specific to the component being replaced. The pumping energy is calculated based on the parameters set in the farm and ranch irrigation survey.
- Grant: You're combining wells and surface water into a weighted average product. You don't have a measure identifier?
- Sklar: True. We don't have a measure identifier for this. But the energy implications are quite different. The measure identifier is the state, which would capture a lot, but not all, of this differentiation.

Baylon asked how Montana is calculated and if it's just the Bonneville territory [Slide 34].

- Sklar: We only have state-wide level data from the survey.
- Baylon: The Bonneville portion of the state is very different from the rest. It's not flat.
- Sklar: Yes, that could make a difference.
- Thomas: We could consider this for the next update.
- Baylon: I'd suggest that we don't use the data if we don't have more granular data for Montana. I don't see any advantage of using it. We could lump it in with Idaho.
- Smit: Even Idaho is different than western Montana.

Baylon addressed "well water versus surface water," asking if staff think we have adequate data on the water source [Slide 40].

- Sklar: From what you said about Montana, maybe the uncertainty here is higher. Nevertheless, we're not going to redo the Farm and Ranch Irrigation survey.
- Baylon: But shouldn't we do something with the fact that there's a very large difference in energy implications for well versus surface water?
- Thomas: We could bring to the Research and Evaluation subcommittee to discuss.

Geraghty addressed the well versus surface water distinction, guessing that Washington is mostly from the Columbia Basin Project. He called this raised water delivered as surface water.

- Sklar: We don't count the pumps on the Columbia river. Just the pumps at the farm.

Grant pointed to the line on [Slide 23] that says "subcommittee recommends no change to methodology and values" for uniformity. He asked if there was an adjustment factor previously.

- Sklar: No.
- Grant: Then I recommend splitting the difference between 33% and 0%.

MOTON
I, Ben Mabee, BPA, move that the RTF approve the Irrigation Hardware Maintenance as presented, and: Change the Category to Planning, Keep the Status Active, Set the Sunset date to October 31, 2028, Savings reduced for uniformity applications by 33%.
Anthony seconded.

Amendment
Baylon proposed reducing the adjustment from 33% to 15%.
Miller seconded.

- Mabee: I'll take that as friendly
- Urbatsch: We're not irrigation experts. The subcommittee said zero. I support this amendment.

Vote on the amendment. The amendment carries. (14 yes, 3 no, 1 abstain)

Amended MOTION
I, Ben Mabee, BPA, move that the RTF approve the Irrigation Hardware Maintenance as presented, and: Change the Category to Planning, Keep the Status Active, Set the Sunset date

to October 31, 2028, Savings reduced for uniformity applications by 15% rather than as presented.

Vote on the motion. The motion carries (19 yes, 0 no, 2 abstain)

Update Small Saver UES: Walk-in Evaporator Fan Motor Controllers
Denis Livchak, RTF CAT Presentation
After the presentation the RTF updated the UES. Discussion focused on run time, safety factor adjustment, advanced controllers, and building types, before the RTF approved the updates.

Baylon stated that in the case of a low temperature system the fan runs when the compressor is running, which is most of the time [Slide 10]. He said the controller isn't so helpful in that case.

- Denis Livchak, RTF CAT: For low temperature, the compressor runs 70% of time. That's 30% savings for a fan controller.

Grant questioned why the currently posted workbook shows no savings difference between two-speed and advanced controllers [Slide 14].

- Livchak: They're different controllers. We're confident in the savings for a two-speed. For advanced controllers, we know that the motor savings are likely lower. But there are potential refrigeration savings. We don't know what they are, so we're assuming that they compensate for the reduced fan savings.
- Grant: I get it. It seems suspicious. Maybe we should drop the advanced motor controls and save the region from a more expensive measure.
- Firestone: Livchak looked into this. It's hard to tell which products are two-speed versus "advanced."
- Livchak: That's correct. The documentation can be vague.
- Baylon: So, there's not much difference between the two?
- Livchak: I recommend including both because there are potential savings from both.

Jerome struggled to understand how the compressor run time is reduced, wondering if the coil was colder. He said that is regulated by the thermostat in the box. Jerome wondered how the advanced controller reduces refrigeration operation.

- Livchak: You have the same amount of BTU removal required, but it could reduce short cycling by reducing stratification. I still can't explain why the total compressor run time would be reduced.
- Baylon: The short cycle explanation is worth discussing.
- Anthony: So, you're not claiming that it magically reduces compressor load. It's only because of the reduced heat from the fan motor.
- Livchak: That's correct. We're claiming the two-speed controller for the advanced controller.
- Jerome: Someday we might get data to differentiate the two.

Anthony asked if there is any evidence of the 10% safety factor [Slide 20].

- Livchak: No.

- Anthony: These are packaged systems. I don't think the motor would be oversized at all.
- Livchak: We've already made this decision for the motor retrofit.
- Anthony: I'll put this in the motion.
- Jerome: For retrofits, you might end up with variable motor sizes. You probably put in a controller when you put in a new motor. So, this might be more retrofit conditions than "as-built" conditions.

Grant asked if there would ever be a substantially different number of fans in walk-in for grocery versus restaurant versus school [Slide 30]. He noted that this is only grocery data.

- Livchak: Walk-ins can vary in size. Bigger ones have more evaporators and more fans. We have two size bins, which hopefully capture variations in walk-in size.

Paul Kuck, Energy Solution, wrote, This is for retrofits only? Why not include integrated systems for new evaporators since you're using EC motors as the default, on the question pane.

- Livchak: That would be a current practice measure. We don't have data on what percentage of new systems have controls. Plus, proprietary integrated OEM controllers are prevalent, and we don't know how they impact energy consumption. They may have other capabilities like demand defrost and expansion valve (EV) control.

Baylon addressed the -13% to +117%, asking why anyone would buy an advanced controller [Slide 37].

- Livchak: That's what the NRM study showed. This doesn't show the compressor duty cycle. This says that these fans could be on when compressor is on, or twice as much. This is an older study.
- Thomas: The CAT and I are trying to document uncertainty in our measures better. That's what Livchak is showing.

Grant addressed school use in the summer [Slide 41] wondering if walk-ins were unloaded. He said if they were the hours of use need adjusting. Grant also noted that the potential hasn't changed from the last Plan to this one, wondering if there wasn't much uptake.

- Anthony: We have a program for this. People do it. It saves our program people time to not have to do a custom project.
- Livchak: Some schools do have summer activity. It would be good to have some data.

Kuck wrote, I've heard from schools that they leave walk-ins operating over the summer because of summer programs. Walk-ins will fail on start up in the fall so they decided to just pay for running them all summer rather than repairs in the fall, in the question pane.

Miller praised the presentation but said [Slide 34] shows that this isn't close to cost effective.

- Livchak: That's correct for advanced controllers. They might be used more for monitoring than energy savings.
- Miller: That's a nice bell and whistle, but it's not energy savings.

MOTION

I, Jamie Anthony, move that the RTF approve the Walk-in Evaporator Fan Motor Controller as presented, and: Keep the Category at Small Saver, Keep the Status at Active, Set the sunset date to May 31, 2031.
Jerome seconded.

Vote on the motion. The motion carries. 18 yes, 1 no, 3 abstain.

BREAK

Discussion: Ninth Power Plan Conservation Program Recommendation
Christian Douglass, RTF Vice Chair Presentation
The RTF provided feedback on proposed recommendations in the Ninth Power Plan's Conservation Program.

Grant asked if it was too early to talk about decisions around multiple targets [Slide 5].

- Douglass: Yes. We haven't presented that yet.
- Jennifer Light, NWPCC: We're still working on the approach to conservation targets with the Council. Next week's webinar will have more detail.

Grant referenced Spencer's slide deck from earlier in the meeting asking if it will that be posted in full [Slide 8].

- Thomas: The slides you saw are all we have, but we can post all of the graphs.
- Grant: What about weatherizing gas homes that will eventually become heat pump homes?
- Douglass: Yes. That's come up.

Anthony asked about improving ducts for heat pump homes. He wondered about the benefit if that work is done without making the ducts bigger.

- Douglass: We don't go into that level of detail. You want to think about this holistically. You don't want to do ducts and then find out they are not appropriate for heat pump.

Jerome piggybacked off the last comment on heat pump ready homes, saying both heat pump sizing and duct sizing are crucial. He cautioned to take care and provide guidance on reducing auxiliary heat. Jerome revealed that some IRA programs around country provide good guidance, some poor or no guidance which can result in inappropriate sizing.

- Smit: We'll be talking a lot more about heat pump ready homes.

Baylon said doing a heat pump-ready gas home, with insulation and air sealing, the duct sizing problem will be different. He stated that doing something to the shell will change the ducts. Baylon thought you just seal them and call it good but said they might need upgrades. He concluded by saying the important part of weatherization is getting the heat pump size down from six to three.

- Douglass: Both are important.
- Baylon: But you should use the sizing for heat pump readiness.

Tripamer addressed the cost of conservation asking what the region should be focusing on for reducing heat pumps costs.

- Douglass: That's a big question. One thing we hear about are micro-heat pumps (saddle style). They are still really expensive, but I've heard that there's a newer product coming out that could be game-changing because of its lower price. So maybe there are paradigm shifts to consider.

Contreras thought that heat pump readiness and reducing auxiliary heat are intertwined. He thought a system sized for cooling might need auxiliary heat, but the Northwest needs to design for heating.

Grant pointed to the cost of conservation saying the RTF needs to ramp up the rate of analysis. He asked how staff can accomplish this while doing new measures. Grant asked if there will be more RTF budget or a subcommittee put in place to prioritize the measure list.

- Thomas: That's on my to-do list. We work in a five-year funding cycle that currently runs through 2029. We discuss the new measures with funders. New measures are getting complex and more expensive for us to develop. We're doing a lot of new measures this year and they take longer. We're trying to be judicious on what to push to move through the things we need.
- Baylon: Measures that go into making heat pumps work should be high priority.

Baylon asked if staff are looking at ASHRAE 90.4 for data centers [Slide 9].

- Smit: Yes.

Anthony said BPA does custom projects for commercial buildings using the prior year as the baseline. He said this is easy to process and easy to evaluate.

- Smit: We're looking at building a regional database for benchmarking EUIs. There are several in the region, but they're not consistent. There are things we could do to improve and aggregate the work. We think individual utilities that have an EUI database could easily tell who's at the high versus low percentile of consumption. Also, there could be packages developed for building improvement in the region.
- Anthony: Yes, benchmarking tools make sense. Can other utilities do this as custom projects like we do?
- Urbatsch: We have programs at Puget Sound Energy, but they're not as easy as at BPA.

Manclark said he sees red flags on tuning up existing heat pumps.

- Smit: We'll get to that.

Jerome stated that data centers are looking at cost per compute. He said they care about the value proposition but are not interested in chasing incentive dollars. Jerome suggested providing them with ways to work efficiently in our area.

Jerome then shifted to commercial buildings noting that the EIA 2023 said there's more residential energy use than commercial and industrial combined. He stressed that residential conservation remains really important.

Tripamer thought that RTF evaluations should encourage process evaluation guidelines. He said often something weird happens in a sample of our projects, and we don't know why because we didn't ask.

Grant stated that Energy Intensity is "EI," and encouraged developing End-Use Intensities "EUI" for benchmarking. He also urged bucketing by age of construction, building size, etc. Grant understood that EI is probably what you want, but encouraged getting to end-use intensities comparing it to space heating kWh/sq ft, water heating kWh/sq ft.

Grant then spoke about data centers, saying the companies are thinking about tokens per kWh or similar metrics. He said this could be an interesting metric to track. We could see really big changes over the next four years.

- Smit: We're not touching that. We're considering non-electronic energy like cooling or fan energy.

Urbatsch added that EUI can also refer to Energy Use Intensity.

Contreras asked if staff are considering the environmental impacts of cooling.

- Douglass: We're looking at water use for cooling.
- Jerome: Inside the data center manufacturers are looking for labels that states their efficiency. EPRI is involved. There's an 80% plus program (now up to 97% efficiency). They keep pushing the envelope: higher voltages, DC power, etc. These are resources we could point to.

Manclark liked what was shown on [Slide 13] but called enforcement another issue. He agreed that duct modification is a huge improvement and the numbers in the checklist are reasonable and achievable. Manclark noted that manufacturers say 325 cfm/ton but said that's not where their efficiency numbers are from.

- Douglass: Thanks. These recommendations come from an RTF meeting and other comments from Manclark, Baylon, Bob Davis, independent, and Edward Louie, PNNL.

Grant addressed weatherization saying at some point in time a home switches from electric resistance to a heat pump, or gas furnace to a heat pump in a heat pump ready home. He pointed to 45 years for attic insulation EUL which changes cost-effectiveness. Grant asked how we modify our existing suite of RTF measures to model heat pump-ready conversions.

- Douglass: The R values map to RTF measures. These are the standard stopping points.
- Grant: My point is that the efficiency or fuel switch changes. For example, a 45-year attic insulation measure is five years of electric resistance and 40 years of heat pumps, not 45 years of electric resistance. That should be a thought process for the RTF.
- Douglass: This is more about best practices than cost-effectiveness but point well taken.

Baylon said that 325 cfm/ton is the sweet spot when we did tests in 2005 to 2008, adding that 400 cfm/ton came up for cooling, but we don't have a cooling climate. He addressed air leakage at ACH50 saying we should bag it if we can't do better than this. He suggested starting at 6 ACH50 as the maximum.

Baylon also urged dropping the tonnage required from five to six tons to three, calling it a big drop in cost that gives some room in the budget. Baylon warned that not doing this means people spend more money on a heat pump and don't get great performance.

- Douglass: I agree.

Tripamer asked how this work fits with current practice as almost no one is getting a heat pump ready home before getting a heat pump.

- Smit: These are retrofit measures, not current practice.

Baylon suggested not talking about weatherization when talking about heat pump ready homes but instead focusing on heat pump ready.

- Tripamer: Theoretically, you could have a retrofit that's not cost effective, but the RUL of the current practice is…
- Thomas: We have time to work through this with Council staff.

Anthony asked about considering strategies to not use the ducts and move to ductless heat pumps or using the ducts for ventilation with a ductless heat pump to create a DOAS system.

- Douglass: We haven't considered that. It's hard to get to that level of granularity.
- Smit: We want to promote the high-level concept of getting a home ready for a heat pump before getting the heat pump.
- Thomas: Next month NYSERDA will present to the RTF. They are thinking of heat pump-ready homes so we can discuss this.

Sklar stressed that this information needs to be in a different format for homeowners, saying they won't understand this as is.

Grant suggested thinking about package measures like modeling just the weatherization, modeling the weatherization plus a properly sized heat pump, and look at the difference between the two to communicate that to homeowners to understand the importance of this.

Davis spoke about his experience with a City of Portland program that had lot of weatherization and heat pumps. He called ACH50 ambitious recalling seeing about nine after air sealing. Davis said it's hard to get below that in old houses.

Davis continued, saying the big deal in this program is insulating walls, adding that hundreds of thousands of homes in Portland, Seattle, Tacoma, and Eugene are not insulated. He said that if they do insulate, we see two-and-a-half to three-ton sizing over and over again. Daivs called that good, because duct systems can handle that, but requires $30,000.

- Manclark: I see a lot of homes. Ducts are the big use, not weatherization.

Jerome pointed to his experience in a lot of cooling tune-up programs, saying a holistic approach is important [Slide 15]. He also agreed that a systematic approach—test-in, then treatment, then test the system again—is important. Jerome admitted this requires an HVAC technician but said doing this systematically and step by step gets to real savings. Jerome warned that skipping steps might only yield 1/10th of the savings. He said that there's a good way to do this and this gets us closer than we are now.

- Manclark: There are some red flags. "Fall Cleaning Free" could be abused. You could do this on a crappy duct system and get no savings. The stuff in yellow could be done by utility staff. That might be more honest than with an HVAC contractor. Pardon my skepticism about filling out forms. There are a lot of good apps with Bluetooth technology that make it hard to fudge as they have a date stamp and geo stamp. Sending them out with paper is subject to fudging.

Anthony approved of the presentation, pointing to a utility trying a BPA open queue pilot. He said researchers are looking at the auxiliary lockout and night setback only and guessing this saves about 500 kWh.

- Baylon: Why not include compressor lockouts?
- Anthony: You could.
- Baylon: We've seen lockouts as high as 40°F, pretty often it's in the 30°s.
- Anthony: I agree that's a problem. I'm not sure that this particular program covers this. I'm interested in the cost per kWh and what if you do some and not all of this?
- Jerome: This list would cost $150 to $300.
- Anthony: That's for testing. What if you need to fix something?
- Jerome: It costs more.

Tripamer asked if the region can go lower than a 35° lockout.

- Douglass: We're trying to be conservative. You don't want to impact comfort. We have a note that if you can verify that a lower balance point is feasible, you should go lower. Note that this will be a lot more traditional single speed heat pumps, not cold-climate heat pumps.
- Bopp: Even 35°F might not be realistic for some systems depending on sizing and building shell. This is dependent on someone with knowledge going out in the field. Also, all of the items in yellow could be done by a utility without the known issues of having contractors do these.

Contreras addressed refrigerant charge, suggesting staff be more descriptive about how you check for refrigerant leaks. He thought that "compatibility" is too vague for thermostats and urged staff to be more specific.

Grant thought that some of this might not be relevant to ductless or saddle heat pumps and urged staff to consider this in their wording. He thought this will evolve more broadly over time

while the Power Plan is locked in with maybe an update in a couple of years. Grant suggested creating a website that can be refreshed more frequently in additional to the Plan.

- Douglass: Good point. I think the tune-up measure is in the queue for the RTF. This could be a good place for that information.

Anthony urged staff to not forget the thermostat droop setting. He recalled that Bopp suggested setting it to greater than 3.5 instead of 1.

- Manclark: The droop setting is highly dependent on the controls of the system.
- Anthony: We want to know this because otherwise the auxiliary lockout doesn't matter.
- Douglass: Yes, this is in on my radar.

Geraghty noted that "heat pump ready" assumes using the duct system, asking what's wrong with putting in a ductless heat pump and using the existing system as backup. He added that we all know ducts aren't a good way to distribute heat.

- Douglass: That makes sense in theory. The idea here is that you already have an existing centrally ducted heat pump.
- Geraghty: For the heat pump ready measure?
- Douglass: Good point. We could consider guidance on when to abandon the duct system.
- Jerome: We need to be careful with that. We're adding load and saving a different fuel if there's a gas furnace installed.

Baylon recalled that the original ductless heat pump model was a displacement model.

Rushton addressed auxiliary lockout, saying it's tough unless you also talk about sizing. He said unless you have AMI data, you can't check for big auxiliary problems without going to the home.

- Douglass: I don't think doing a heat load calc is off the table.
- Manclark: It should be on the table.
- Baylon: It should be on the table.

Smit called this one of the lowest cost heat pump measures in our Plan supply curves, meaning it has a good chance of being cost-effective. He said all of the other heat pump measures are very expensive and this could perhaps be a model conservation standard.

- Thomas: Bopp is considering tiers to the effort, with different levels of savings.

Jerome stressed that the RTF tries to publish measures regardless of cost-effectiveness but acknowledged that we do focus on cost-effectiveness. He asked if there a way we could change the structure of determining cost-effectiveness. Jerome stated that the cost of conservation is going up and wondered about a different way to calculate it. He admitted that this is difficult, saying once you build the Taj Mahal, you have to live in it, but thought there's a way to redo things to support the grid for the next 50 years.

- Smit: That would require a change to the NW Power Act. But jurisdictions can do more, and some do. We're constrained by the Power Act and our definition of conservation.

- Thomas: Having gone through most of a Power Plan, I'll say that the quantifiable resource cost framework is reviewed and updated for each Power Plan. The RTF is funded by external funders, so looking at quantifying some non energy benefits could be on the table for the RTF to work on, but this would not show up in ProCost.

Tripamer asked if we choose to use something different as we choose to use some version of the TRC.

- Smit: We have a NW jurisdiction cost test, and it's defined in the Power Act. We can't change that. Our TRC is different than the California TRC.

Baylon spoke about the Power Act, which was written in 1980, saying is not what's needed for current challenges like electrification. He said fuel switching is unavoidable at this point so our approaches might need to evolve. Baylon hoped the RTF can work hard to see how much interpretation the Power Act allows to meet the new challenges. He said it's not always clear whether the Power Act itself restricts us or if the restriction comes from a long-standing element of our own interpretation.

- Grant: We should seriously weigh the cost investment of exploring or implementing different policy options (e.g., Firestone's time implementing or demonstrating alternative cost tests in ProCost). A better priority for us is to focus on finding and building lower cost measures.

Smit asked the RTF to send thoughts and documents to Douglass. He ended the meeting at 4:00 pm.

Voting Record: May 19, 2026

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 May 19, 2026 meeting. (Miller/Douglass)	20	0	0	Yes	69%	100%	20
Motion: Approve the minutes from the April 21, 2026 meeting. (Jerome/Contreras)	20	0	0	Yes	69%	100%	20
Motion: Extend the sunset date of the Level 2 Electric Vehicle Chargers UES to September 30, 2026. (Miller/Baylon)	22	0	0	Yes	76%	100%	22
Motion: Extend the sunset dates of the Residential Heat Pump Water Heaters UES and the Consumer Heat Pump Water Heater in Commercial Applications	21	0	0	Yes	72%	100%	21

UES measures to July 31, 2026. (Baylon/Grant)							
Motion: Approve the Single Family Weatherization UES and Manufactured Homes Weatherization UES, and: • Remove the tax credit • Change the measure name to Weatherization Single Family UES and Weatherization Manufactured Home UES • Keep the Category at Planning • Keep the Status at Active • Set the sunset date to May 31, 2029. (Douglass/Miller)	21	0	0	Yes	72%	100%	21
Motion: Approve the Irrigation Hardware Maintenance as presented, and: • Change Category to Planning • Keep the Status Active • Set the sunset date to October 31, 2028 • Reduce uniformity savings adjustment to 15% (Mabee/Anthony)	19	0	2	Yes	66%	100%	21
Amendment: Amendment: Reduce uniformity savings adjustment to 15% (Baylon/Anthony)	14	3	1	Yes	48%	82%	18
Motion: Approve the Walk-in Evaporator Fan Motor Controller as presented, and: • Keep the Category at Small Saver • Keep the Status at Active • Set the sunset date to May 31, 2031 (Anthony/Jerome)	18	1	3	Yes	62%	95%	22

May 19, 2026, Meeting Attendance

* Designates Voting Member

Name	Affiliation
Jamie Anthony*	BPA

Suzi Asmus	NEEA
Ed Averill	Jprise
Kathryn Bae	NEEA
Landon Barber*	Idaho Power
David Baylon*	Independent
Jonathon Belmont	BPA
Nathan Black	Idaho Power
David Bopp	RTF Contract Analyst
Ryan Bottem	Pub Gen Pool
Noe Contreras*	NEEA
Rebecca Cottrell	Idaho PUC
Bob Davis*	independent
Christian Douglass*	RTF Vice Chair
Logan Douglass	RTF Contract Analyst
Jesse Durst	Puget Sound Energy
Ryan Firestone	RTF Contract Analyst
Wesley Franks	WA UTC
Adam Gage	NEEA
Kevin Geraghty*	independent
Tom Gillman	Puget Sound Energy
Andrew Grant*	Cadmus
Jillian Greene	Brightline Group
Connor Grossman	CLEAResult
Brenda Hunt	NEEA
Aaron Ingle	NEEA
David Jagger	Energy Solutions
Mattias Jarvegren*	Clallum PUD
Mark Jerome*	CLEAResult
Chris Johnson	Benton PUD
Phillip Kelsven*	BPA
Amy Kern	Puget Sound Energy
Rick Knori*	Lower Valley Electric
Melissa Kosla	Acadis Consulting
Paul Kuck	Energy Solutions
Ben Larson	Larson Energy Research
Jack Lines	Brightline Group
Denis Livchak	RTF Contract Analyst
Hope Lobkowicz	BPA
Ben Mabee*	BPA
Bruce Manclark*	Earth Advantage
Rob Marks*	Snohomish County PUD

Eric Miller*	Independent
Lauren Mullen	Brightline Group
Nolly Mulvenon	Puget Sound Energy
Andi Nix*	Energy Trust of Oregon
Nick O'Neil*	Energy 350
Eric Olson	NEEA
Brian Owens	CLEAResult
Jesal Parekh	TRC Companies
Andrew Paul*	Avista Corp
Joe Prijyanonda	ICF International
John Purivis	Clallam PUD
Laney Ralph*	NW Natural
Ron Ramey	Energy Solution
Jes Rivas*	Swift Strategy
Emeline Rosenbloom	NEEA
Tim Runyan	NEEA
Josh Rushton	RTF Contract Analyst
Paul Sklar	RTF Contract Analyst
Kevin Smit*	RTF Chair
Susie Snyder	OTEC
Sophia Spencer	Navoo Solutions
Christian Steinhoff	NEEA
Poppy Storm	2050 Institute
Natalie Stutzman	Brightline Group
Samantha Taylor	CLEAResult
Laura Thomas	RTF Manager
David Tripamer	BPA
Eva Urbatsch*	Puget Sound Energy
Garett Valenzuela	CPlusc
Danielle Walker	Brightline Group
Jim White*	Chelan County PUD
Alysa Wiyrick	Avista Corp