February 20, 2025
Meeting Minutes

Welcome, Agenda Review, and Meeting Minutes
Jennifer Light, RTF Chair, began the meeting at 9:00 by explaining how to best interact with the Zoom Webinar platform. Light asked Christian Douglass, RTF Vice-Chair, to take roll. Light counted 23 voting members.

Douglass moved to adopt the minutes from the January 23, 2025 meeting. Mark Jerome, CLEAResult, seconded. The minutes were adopted unanimously.

David Baylon, independent, moved to adopt the day's agenda. Bob Davis, Ecotope, seconded. The agenda was adopted unanimously.

Management Update
Laura Thomas, RTF Manager Presentation
Conversation centered around equipment specifics for commercial unitary heat pump water heaters which is set to be on the March RTF agenda. Based on discussion, staff will set up a subcommittee meeting to further discuss this technology and proposal for March meeting.

Davis asked if the equipment on [Slide 4] is the AO Smith CHP product.

- Adam Hadley, RTF Contract Analyst: Yes.
- Davis: It's a good idea to deactivate.

Baylon was confused by the system, saying he didn't understand why the RTF has a commercial heat pump water heater measure that doesn't include central water heaters.

- Hadley: This is the AO Smith 120-gallon tank with an almost three-ton heat pump on it. The RTF approved this as a measure in 2022 with ENERGY STAR® as the spec, not NEEA.
- Baylon: There are around 100 central heat pump water heater systems in the Seattle area.
- Hadley: This measure is only applicable to the AO Smith unit. It's not the central heat pump water heater measure. That's a separate topic on the agenda for March.

Light stated that the RTF has multiple heat pump water heater measures, adding that March's discussion will center around both this and the central heat pump water heater.

Jamie Anthony, BPA, confirmed that the RTF is looking at deactivating the measure based off of findings from industry experts that see the equipment operating in electric resistance mode. Anthony noted that the regional potential is 20-30 aMW, asking if there is a plan to get this potential from something else.

- Baylon: Who are these "industry experts?"
- Davis: I'm the main one. This is not a good product.
- Light: Interested parties should follow up with Laura Thomas and recommend staff set up a subcommittee meeting.
- Thomas: Yes, we will get a subcommittee meeting on the calendar before the March meeting to discuss this topic further. We appreciate the feedback and this is why we wanted to flag this measure and proposal early.

Sunset Date Extension Planning UES: Commercial Secondary Glazing Systems
Laura Thomas, RTF Manager Presentation
The RTF approved the sunset date extension.

MOTION
I, Ben Mabee, BPA, move that the RTF extend the sunset date to October 31, 2025.
Baylon seconded.

Vote on the motion. The motion carries (25 yes, 0 no, 0 abstain)

Update on the Upcoming Power Plan
Christian Douglass, RTF Vice Chair, Kevin Smit, NWPCC Presentation
Council staff presented updates on the upcoming Ninth Power Plan. Discussion centered around commercial building performance standards, heat pump controls, EV opportunities, and adding a change log to the workbooks.

Baylon asked if the renewables that have been added since the Plan is mostly wind [Slide 6].

- Kevin Smit, NWPCC: Wind and solar.
- Baylon: Do you have an estimate of the capacity factor for the renewables in the Plan?
- Light: We have a range of profiles to represent the renewables. The 3,500 MW wasn't specific to a type of renewables. It's all "renewables." In every single run of the 2021 Plan, this was the least amount that was bought. In most runs, it was like 6,500 MW. And it accounts for a capacity factor.
- Smit: There's a Generation Resources Advisory Committee (GRAC) that touches on this topic. There are different profiles for resources depending on type and location within the northwest.

Light stated that another challenge is the cost of EE has gone up while savings are going down [Slide 8]. She said this is why they're addressing costs and not just improving savings.

Baylon said his biggest concern is commercial building performance standards (BPS), noting that they've been talking about this for most of the last decade [Slide 15]. He asked how the data from active jurisdictions are going to be incorporated in the resource assessment.

- Smit: We've concluded that we can't include that in the baseline. Typically, we put a standard or code in in the baseline. We've met with people from WA and OR state and they don't know how much of this is going to happen. So, we can't build it into the baseline if we don't know. We're thinking about doing what we did last time: leave it out of the baseline and accelerate ramp rates to account for the activity.
- Baylon: I don't expect the baseline to change, but this EUI targeting is actually an EE measure. If you treat BPS as something that will lay a giant egg and hand it to you, that's not going to happen. It only works if states, utilities, and the Power Council are engaged. At this point, we're just standing on the sideline. Yes, we're running out of measures. And there are substantial savings available from a whole building approach. Engineers across the U.S. are achieving this. I'm mystified why we haven't done anything in 10 years.
- Light: In the interest of time, let's move on. We can follow up offline on anything in these slides after the meeting.

Baylon then said that HVAC Heat Pumps are a controls problem, not a technology problem. He asked if staff are accounting for that in HP assessments.

- Douglass: Yes. Both for new systems and for retro commissioning of existing systems.

Jim White, Chelan County PUD, saw an EE opportunity in EV standby energy use. White called his EV and it is a pig when it's in security mode, saying it drains 10 to 15% of the battery overnight! White thought that a standard could address this. White then addressed heat pumps for cold climates, saying testing shows mixed results, irrespective of commissioning.

Poppy Storm, 2050 Institute, understood that a lot of HVAC package measures (VRF, DOAS) don't show as much savings because it's hard to model alternative systems, especially VAV systems. Storm said the baselines are too efficient, causing the region to miss a lot of savings. Storm asked if the Council or the RTF addressed this.

- Douglass: We try to rely on empirical data from pre/post studies to capture these savings.

Light apologized that there was not more time for this agenda item [Slide 31]. Light encouraged the RTF to review the slides and reach out to us soon with thoughts. Light also urged the body to get on the lists for the Advisory Committee meetings of interest.

- Andrew Grant, Cadmus: Thank you for the updates. Based on my initial reviews, it would be useful to have a version history or change log for the workbooks. In the past, there was a record of what changed as workbooks get reviewed, revised, and re-reviewed.
- Douglass: Thanks. We could consider adding that to the measure workbooks. We already have it in the sector potential workbooks.

BREAK

Resiliency Valuation
Noah Lieb and Justin Spencer, Apex Analytics, Presentation
Consultants from Apex Analytics presented resiliency valuation work. Discussion centered around using a diesel generator as a proxy, why the work is not tied to weather events, the length of outages analyzed, values for a gas-heated home, and the marginal costs of storage systems.

White said that "resiliency" must avoid what happened in Texas, which requires standby generation [Slide 10]. White said that macro-level resiliency (generators) should be accounted for as that's what his utility considers.

- Noah Lieb, Apex Analytics: This is meant to apply a commonality across the range of approaches. We know there are benefits to resiliency, like avoiding death and health concerns. You can take direct valuation of damages, ask participants to value, or use the avoided cost of backup system. We're not assuming that anyone is purchasing a backup system but rather saying that this would be the avoided cost in the hypothetical case.

Justin Spencer, Apex Analytics, asked if White is talking about grid-size generators.

- White: Yes. That's how we value resiliency.
- Spencer: We thought about this during the initial phase of this work a few years ago. That's a reasonable way to value to cost. But the problem is that most outage events are local distribution issues, not a lack of resource. For instance, if power lines go down during windstorms. Adding more generation capacity doesn't help with these distribution-based outages.
- Thomas: That was out of scope with this project. The Power Plan's Quantifiable Resource Framework values grid resiliency separately from building resiliency. This work is just on the building resiliency. Grid resiliency is accounted for in the Plan and the framework provides further details around this.
- White: You might also consider propane generators, instead of just diesel.

Noe Contreras, NEEA, asked if this work is for both commercial and residential. Contreras also asked if outages from faulty equipment/human error is considered.

- Lieb: All the modeling was for residential buildings. No commercial. We'll cover the equipment question in the coming slides.
- Jane Hammaker, Energy Trust of Oregon: Does residential include multi-family buildings?
- Lieb: We did not model any multifamily prototypes, but I think residential should be applicable to small multifamily.

Jackie Goss, Energy Trust of Oregon, asked if the outages on [Slide 14] were only caused by weather or if wildfires or other non-weather emergencies were considered.

- Lieb: We did not filter out outages based on their cause. These are *any* long duration outage lasting more than six hours. And these are county-wide outages, meaning it would need to impact more than one customer. We have short duration outages included in our data, but we didn't include them in our valuation process.

Baylon was struck by [Slide 14] and [Slide 13], pointing to the substantial increases across the temperature bins in non-winter, and not much in the winter. Baylon asked about the summer month outages, asking if they can be tracked to their source, or if Apex Analytics just depended on Eagle Eye with no independent data.

- Lieb: The analysis includes all outages greater than six hours. The joint probability of weather and outages is an uncertainty in the analysis. We didn't develop a model for outage conditional on weather, which could be used to forecast outages going forward. Instead, we're just relying on the historical record and assuming the future will look like the past.
- Baylon: Did you find something indicating the cause of outages in your exploration?
- Lieb: You could look at outage correlation to data. Can you use this to predict future probabilities? This is uncertain. But this was out of scope for this project. It warrants more research.

Baylon noted that this analysis is largely residential, but pointed to larger, more significant impacts in the commercial sector. Baylon then said that weather isn't the only factor, pointing to fire, flood, other "non-weather" events.

- Lieb: We explored an EIA/DOE dataset for outages which includes cause. But the data isn't as granular, meaning we couldn't look at county level data or customer impacts. I don't recall the details, but the granularity didn't allow us to tie it to weather.

Andi Nix, Energy Trust of Oregon, asked about the temperature associated with outage wondering if it is an average over the whole outage. Nix pointed to Oregon's ice storms in 2020-21.

- Lieb: This is the daily average temperature.
- Spencer: An outage of multiple days with different temperatures would be allocated accordingly.

Baylon asked about a 4.7-hour outage [Slide 16].

- Lieb: This reflects the typical and is just an example. But we use the specific outages in each region to compute how to use the method in this table.
- Baylon: But a long duration outage would be more like a day or two. Why not look at a battery-only system? It could cover 4.7 hours, but maybe not a couple of days.
- Lieb: That's the issue with batteries.
- Baylon: This work seems to emphasize the two-to-three-day outage, which is rare, versus the four-hour outage which is not rare. There's an extra benefit to handling two to four days, but it's not the only analysis you could consider. You could look at a much less expensive, one-day solution, which would cover more common events.
- Douglass: We set this up using resources that cover short- and long-term outages. You're right, we could look at resources for short outages only. But it's currently not in the framework.
- Baylon: It strikes me that the solution is very dependent on the duration of the outages. If it happened a lot, you might see a lot of private, backup generators.

- Douglass: It was hard to get a generator after those ice storms in 2020-21.
- Baylon: It's true that Portland sees an ice storm every now and then.
- Spencer: See [Slide 12].

Baylon confirmed that short-duration outages were not considered.

- Lieb: Yes, we didn't consider outages less than six hours. We don't expect frozen pipes, people dying, other issues for short duration outages.
- Baylon: Then you should only consider long-duration outages in your annual expected outages.

Baylon asked if only ceiling insulation was considered [Slide 18].

- Spencer: No, we considered many types of weatherization measures and tiers. This is just an example.

Baylon asked if the populations shown on [Slide 24] are weighted.

- Lieb: Yes, we use the census populations for weighting in each balancing authority.
- Baylon: So, a lot of the variation is based on the population of the balancing authority?
- Lieb: Weather is also a factor. If the weather is mild, there's not as much opportunity for resiliency.
- Spencer: The bars are independent of population. People shouldn't read too much into these. The smaller your group, the less representative you can expect the data to be of the future. That argues for not using a BA-specific value.

Baylon voiced concern with the gas value. Baylon agreed that there aren't many kWh savings, but stressed that if you don't have the kWh, you don't get any heat [Slide Resilience valuation sensitivity (HVAC System Type)].

- Lieb: Noted. We're only valuing the electric part in the gas home, not the gas benefit.
- Thomas: This is because we're addressing the Power Council's (electric) needs for now.
- Spencer: This is just saying that the cost of providing backup power to keep a gas furnace home heated is much lower than for an electric home.

Douglass explained that Baylon's point is that we're not valuing therms.

- Baylon: To keep a gas furnace running is a 300W operation, which you can do with a battery quite well. You don't need an $18,000 genset for this.
- Spencer: That's why we're doing the incremental cost approach. We don't assume the full cost of the diesel generator, just the cost of the incrementally larger generator or battery.

Douglass asked what the rough variability of valuation across measures are.

- Spencer: See [Slide 25]. Note that some measures are more common than others.
- Goss: Is this $/kWh consumption or savings?
- Lieb: Savings.

Kasey Curtis, Puget Sound Energy, addressed solar value being the value for a home with solar and storage. Curtis called this counter intuitive as the ceiling doesn't provide resiliency because the solar provides the backup.

- Spencer: This is a marginal calculation. If your home has solar and storage, and if I insulate the envelope, you can install a smaller battery. For example, needing one Powerwall versus two. That's the savings.
- Lieb: And we're just looking at the marginal cost of the backup system, not valuing health or other benefits.

Davis thanked Apex Analytics for their work, calling it interesting [Slide 31]. Davis appreciated the care taken with the different elements, saying a modern gas fireplaces will run without a circulation fan during power outage. Davis asked if the value of a warm room versus a warm house was considered.

Davis then asked about a DHP versus CDHP, saying a DHP can keep one part of the house comfortable because the load is much smaller than for a central system.

- Spencer: We didn't think too much about this. Two years ago, we considered what the counterfactual should be. Realistically, a wood stove is a cheaper and more common backup system in many places. It's difficult to turn this into a quantifiable answer. That's why we went with the avoided cost approach, which is traceable and repeatable. If we were asking what the cheapest way to keep people from dying during outages, it might be to add a fireplace or wood stove.
- Davis: Yes, it's a gray area. But this discussion is useful in urban areas.

Curtis asked what the Power Council and RTF plan to do with this information. Curtis reporting doing PSE's cost-effectiveness of conservation, saying the utility commission wants us to do more on NEIs and it looks like we could work along with the Council on this.

- Smit: We plan to take a value out of this and apply it to measures. What value(s) and which measures this applies to are to be determined, but it would mostly be weatherization.
- Thomas: For the RTF, we follow the 2021 Plan for cost-effectiveness until the 9th Plan is approved. The resources for all of this work are on the RTF site.

Curtis confirmed that multifamily was not modeled but noted that residential should be applicable to small MF. Curtis said PSE's range of measures are applicable to all MF as the utility doesn't differentiate between small and large MF. Curtis asked if there a risk to applying this work equally to small and large MF buildings.

- Spencer: Our results apply to buildings that are similar to what we modeled.
- Douglass: This is a first step. We've considered detached/low-rise MF. You wouldn't see mid- and high-rise MF with individual backup generators.
- Smit: If we use these values in the Plan, after the Plan is finished, the RTF will then add it to their cost-effectiveness methodology.

- Light: There's room for the RTF to improve and quantify the value, even if it doesn't get baked into our cost-effectiveness yet. Thomas can consider this in her management of upcoming RTF work.
- Thomas: Noted.

Light ended the meeting at 12:10.

Voting Record: February 20, 2025

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 minutes from the January 23, 2025 RTF meeting. (Douglass/Jerome)	23	0	0	Yes	79%	100%	25
Motion: Approve the agenda for the February 20, 2025 RTF Meeting (Baylon/Davis)	23	0	0	Yes	79%	100%	25
Motion: Extend the sunset date for Commercial Secondary Glazing Systems to October 31, 2025. (Mabee/Baylon)	25	0	0	Yes	83%	100%	25

February 20, 2025 Meeting Attendance

* Designates Voting Member

Name	Affiliation
Jamie Anthony*	BPA
Kathryn Bae	NEEA
Landon Barber	Idaho Power
David Baylon*	Independent
David Bopp	RTF Contract Analyst
Gregory Brown*	Tierra Resource Consulting
Frank Brown	BPA
Kyle Chase*	Jefferson PUD
Noe Contreras*	NEEA

Kasey Curtis	Puget Sound Energy
Michael Daukoru	CALTF
Bob Davis*	Ecotope
Emily Donohue	Evergreen Energy
Christian Douglass*	RTF Vice Chair
Logan Douglass	RTF Contract Analyst
Jesse Durst	Puget Sound Energy
Ryan Firestone	RTF Contract Analyst
Wesley Franks	WA UTC
Lisa Gartland*	ODOE
Kevin Geraghty*	independent
Jackie Goss	Energy Trust of Oregon
Andrew Grant*	Cadmus
Adam Hadley	RTF Contract Analyst
Jane Hammaker	Energy Trust of Oregon
Angela Hoang	Evergreen Energy
Michael Hoch*	Energy Trust of Oregon
Mattias Jarvegren*	Clallum PUD
Peter Jensen	NWPCC
Mark Jerome*	CLEAResult
Phillip Kelsven*	BPA
Rick Knori*	Lower Valley Electric
Noah Lieb	Apex Analytics
Jennifer Light*	RTF Chair
Denis Livchak	RTF Contract Analyst
Ben Mabee*	BPA
Bruce Manclark*	Earth Advantage
Jordan Mann	Apex Analytics
Rob Marks*	Snohomish County PUD
Eric Miller*	Independent
Ken Morgan	Gensco
Jonathan Moscatello	Daikin Comfort
Andi Nix*	Energy Trust of Oregon
Nick O'Neil*	Energy 350
Cait O'Reilly	DC PUD
Brian Owens	CLEAResult
Andrew Paul*	Avista Corp
Joe Prijyanonda	ICF International
Laney Ralph*	NW Natural
Jes Rivas*	Illume Advising

Samuel Rosenberg*	Pacific Northwest National Lab
Josh Rushton	RTF Contract Analyst
Kenji Spielman	Energy Trust of Oregon
Paul Sklar	RTF Contract Analyst
Justin Spencer	Apex Analytics
Kevin Smit	NWPCC
Christina Steinhoff	NEEA
Poppy Storm	2050 Institute
Mariah Sullivan	BPA
Laura Thomas	RTF Manager
Eva Urbatsch*	Puget Sound Energy
Duncan Ward	Apex Analytics
Jim White*	Chelan County PUD