

**Northwest Power & Conservation Council
Conservation Resources Advisory Committee
January 8, 2025**

Kevin Smit, NWPCC, greeted the room at 9:30. Christian Douglass, NWPCC, called for attendance. Smit then reviewed the days agenda.

**Overview of Measure Templates and Review Process for the Ninth Plan
Christian Douglass, NPWCC & Kevin Smit, NWPCC**

Quentin Nesbit, Idaho Power, asked about managing adoption rates [Slide 4]. He wondered about the consequences, and possible adjustments, of the model picking a measure in the 10th year of the Plan as opposed to the first year. Nesbit also wondered what happens if the measure is no longer cost-effective in later years.

Douglass noted that staff are still thinking about this and are leaning towards asking utilities to purchase the whole program and not changing the ramp rate based on the year of purchase. He then addressed falling cost-effectiveness in later years, saying it's hard to adapt quickly so once a measure is purchased it stays.

Smit added that the modeling team will be walking the CRAC through the new production cost model (OptGen) model at a future meeting.

Jim White, Chelan PUD, asked if this means staff will use a linear ramp rate. Douglass said no, pointing to a variety of rates. White asked where these rates are inputted into the model. Douglass said they are applied annually at the measure level.

Jeff Harris, NEEA, asked if the bundles outlined on the slide are mutually exclusive. Douglass said no, they are combined.

Nicolas Garcia, WPUDA, asked about hourly load shapes and scaling, wondering if they are differentiated by zone. Douglass said this depends on the measure and the quality of their shapes.

White asked if staff used a peak cold and hot temperatures to define resiliency in the hourly models. Douglass said staff are leaning towards having the OptGen model use an average expected shape as the reserve margin will afford extra room for peak events. He said the adequacy modeling should apply more sophisticated analysis to better mimic those peaks.

Nesbitt confirmed that the model uses incremental costs, without incentive, for efficiency. He wondered about the treatment of demand response (DR), saying finding the incremental cost a bit more nebulous. Douglass addressed efficiency, saying the incentive cost is not included.

Smit said DR is still an open discussion that will be addressed in the DRAC. Jim Lazar, independent, noted that some efficiency measures may be applied to curtailable loads on peak, meaning they would not deliver energy savings. He cautioned staff to remain aware of this interplay. Douglass agreed, saying staff are considering this.

Nolan Kelly, BPA, asked if the units in the per unit savings are clearly specified [Slide 7]. Douglass answered that they will be ideally both in the measure and sector-level workbooks.

Sarah Widder, Resource Innovations, asked if costs are also in the measure workbooks. Douglass answered that measure-level costs, including admin costs, will be in the measure workbooks while sector-level workbooks will include the overall levelized costs.

Harris asked where data about commercial building square footage or units for appliances lives. Douglass said that it is in the sector-level workbook.

Lazar stated that [Slide 8] focuses on power supply related savings shapes. He wondered about transmission and distribution system congestion that might yield different values. Douglass said staff hope that testing would show those differences and values. Lazar said half of the system costs come from delivery so it's important to rate payers.

Kelly asked if the slide represents all the shapes staff are considering. Douglass answered that these are preliminary, and staff are open to feedback from committee members and model outputs.

Harris pointed to interactivity of load flexible measures that could change shapes, specifically noting heat pump water heaters. He said these could become big over the 20-year lifespan of the Plan. Douglass agreed. Smit noted the last Plan's approach and how this approach might be different.

Angus Duncan, NRDC, cautioned that the evolution of the transmission system looks to be dynamic as opposed linear. He asked if these shapes reflect the solar and solar + storage supply side systems that promise to evolve over the next 20 years. Douglass called the shapes static and designed to reflect present conditions. He admitted they could change over time as the model reveals what it wants.

Duncan then referred to PGE's virtual power plant planning and its link to PGE's transmission planning, saying there will be both cost and non-cost interactions between the two. Smit said staff are thinking about this and are relying on the Council's new zonal analysis protocol to address concerns.

Aliza Seelig, PNUCC, noted the big picture policy decisions around bundling and wondered if transmission or distribution would be harder to build. She thought that bundling might be

important for these values and resources. Seelig thought that because of this, the discussion would be better served in a policy arena instead of the CRAC.

Seelig then addressed levelized cost and discount rates, saying you can put the value on the resource now or examine what the value will be in 10-20 years. She called these big picture, policy-level topics that deserve time in the right forum.

Widder suggested creating another bundle with loads that all have extremely robust flexibility to better test what the model wants.

Nesbitt addressed distribution costs saying distribution value varies dramatically. He noted that Idaho Power has distribution feeders that peak in the winter but pose no issues in the summer and vice versa. Nesbitt said this makes it hard to capture system-wide values. Lazar conceded that Idaho Power, and many other utilities, have both agricultural and residential feeders, adding that many other utilities have one or the other.

Harris addressed Seelig's point, asking about OptGen's order of operations. He thought the model's load shape preference could be influenced by when efficiency is inputted into the system. Harris thought that adding complexity makes it hard to figure out what it means to build resources for efficiency.

Harris thought that Puget Sound Energy's integrated system model puts efficiency in the baseload. He thought this makes sense with Power Act and should be examined. Smit said the Council's modeling team should address this with the CRAC sooner rather than later.

Ted Light, Lighthouse Energy, asked if the sector workbooks will be updated on an ongoing basis [Slide 16]. Douglass said he thought so.

Kelly referenced the expectation of a three-week turnaround, asking if changes will be formally announced. Smit said staff respond to every comment in the tracker while big changes will be discussed in a meeting.

Lazar wrote, "The very first utility conservation program I am aware of (second oil embargo, 1979) was distribution-driven. Two different utilities had substations that were at risk of failure due to oil-to-electric heat informal conversions. They provided free attic insulation and window film ONLY to customers on the at-risk feeders. It was not yet legal for public utilities to fund EE, so they booked it as "substation upgrade." In the Q&A panel.

BREAK

Agriculture Sector Updates for the Ninth Power Plan

Christian Douglass, NWPCC & Dimitry Burdjalov, Applied Energy Group

Harris asked about lighting and indoor ag [Slide 6]. Douglass said it could be included if there proved to be a lot of potential.

Duncan asked about manure management for thermal recovery [Slide 9]. Douglass answered that this is covered in the Generating Resources Advisory Committee.

Nesbitt asked why there has been a significant increase in lift/pressure [Slide 10]. Douglass was unsure. Dmitry Burdjalov, Applied Energy Group, agreed that the reason is unclear but that is what the new data are showing.

Lazar wrote, It seems like lift would have increased for groundwater-served irrigation; less likely for water sourced from irrigation ditches [Slide 11].

Nesbitt agreed with assumptions around Green Motor Rewinds [Slide 13] but said that Idaho Power is trying to add the program back in, even without a vendor. Douglass called that good even though the potential, at 1.5aMW, is small.

Kelly asked about using a dynamic weather forecast for measures with HDD/CDD components [Slide 15]. Douglass said the OptGen model will probably use a simple, expected average but the Council's adequacy assessment models will use actual future weather.

Duncan looked at the shape on [Slide 18] saying past curves would show overlaps that could be normalized to show a steady and upward sloping conservation potential as technologies evolve. He says this moves him to look at the presented availability curves differently. Douglass agreed that the Council ramp rates have been a bit conservative in the past. He said some measures mature and continue to chug along while others have a slower uptake and pointed to scenarios that ask what happens if the ramp rate is wrong.

Smit added that a reviewer can suggest different ramp rates as well.

T. Light asked about past accomplishments between the 2021 Plan and the 9th Plan. Douglass said staff have to align this with the RCP to look for shifts. Burdjalov added that some of that accomplishment data has been pulled and adjusted, saying there is still room for additional review. Smit pointed to soon-to-be-released load forecasting work that will show this data.

Garcia pointed to news about the Northwest's shrinking agricultural sector. He wondered what potential forecasts are showing about the industry. Douglass said staff are waiting to see the 20-year potential and don't have a macro-level trend to discuss right now. Smit said something should be released in the next few months.

Kelly asked about measures with both a water and energy component, wondering if the analysis touches on water savings as well as energy savings. Douglass said staff analyze water benefits, revealing that they are often bigger than energy benefits.

Industrial Sector Updates for the Ninth Power Plan

Kevin Smit, NWPCC, & Nate Baker, Resource Innovations

Lazar wrote, Is the Northwest a place to try out co-location of data center loads (source of heat) and food processing loads (application of heat)? in the question pane [Slide 2]. Staff wrote that this question has not come up but the topic can be explored in future discussions.

Lazar wrote, Think about the COP of an industrial hot water heat pump running off the hot water side of a data center, in the question pane [Slide 6].

Kelly asked for further explanation of the top-down numbers on [Slide 9-10] and how they are regionalized. Nate Baker, Resource Innovations, explained how the NAICS codes were used. Baker said regionalization will be discussed later in the presentation but previewed that some industries had good regional information while others had less or no regional information.

Kelly confirmed that there is documentation about those identifications. Baker offered to send the information.

Rich Arneson, Tacoma Power, wrote, For the segments, where would indoor cannabis growing be? Tacoma is in process of developing that segment for our next CPA and you would be welcome to reviewing/using it if you want. in the question pane [Slide 16]. Staff wrote that this would end up in the ag sector potential.

Harris asked about pneumatic conveyance systems. Baker said that will be discussed in two slides.

Harris then asked about combining some polysilicon manufacturing segments. He wondered if the industry would show up in Process Heating or Other category, calling it a high energy intensive load. Baker was not sure. Harris called it very customized and agreed it may not have it's own measure.

T. Light asked about the paper recycling process, saying it doesn't fit neatly into the TMP or Kraft paradigm [Slide 15]. Baker agreed saying it landed in Paper Conversion Plants. Smit said this needs further consideration.

White said his utility must use the same methodology as the Council to calculate the conservation potential assessments. He voiced concern with the level of complexity and wondered what T. Light thought. Smit said the methodology is the same as the last Plan. T. Light agreed.

Kelly asked if Baker talked to a total of 30 SMEs or 30 SMEs per segment [Slide 17]. Baker answered 30 SMEs in total.

Harris asked about the absence of industrial Heat Pumps on [Slide 20]. Smit said this technology was included in the 2021 Plan's decarbonization scenario and wondered if any equipment has been installed. Harris didn't think so but said they are available both nationally and internationally, especially for heat recovery. Smit said he will look into this.

Debbie DePetrus, Clark PUD, said her utility has at least three large industrial operations looking into this technology. Baker thanked her for this new information. Smit said this work is a couple years old and deserves a relook as he would like to include the devices.

Kelly asked if an Arc furnace in a new industrial facility qualify for an incentive [Slide 21]. Smit said no, this is a retrofit measure.

Frank Brown, BPA, wrote, Where do data centers fall? in the question pane [Slide 24]. Smit said they will have a totally separate forecast, and the RTF is looking into efficiency work in their January meeting.

Kelly worried about meeting deadlines for review by load when the load forecast will not be completed until the Spring [Slide 27]. Smit said the underlying data should not shift. Kelly still worried about the raw numbers changing. Smit said we have to keep that in mind, saying the workbooks will mostly stay the same.

T. Light voiced his excitement with the upcoming project.

Harris confirmed that load flexibility opportunities for the industrial sector would show up in the DRAC. Smit said yes.

LUNCH

Motor Driven Equipment Measure Updates Kevin Smit, NWPPC, & Nate Baker, Resource Innovations

Harris asked if a variable speed pump assumes a variable speed load or the ability to adjust a constant speed load in removing mechanical friction. Baker called this the difference between load matching versus specifying an oversized pump right sized by variable speed equipment. Baker said the 2021 Plan had two separate savings values and thought you would get larger savings from the load matching system. He revealed that research shows the average savings are the same for both.

Harris was not surprised by this, asking if the reduction of potential for fans and pumps is inclusive of this information. Baker said the potential reduction is driven by a few things included that shift to one savings value along with the VFD saturation potential.

Harris clarified that the eligible measures include both variable and constant loads, so the horsepower potential includes both. Baker answered yes.

Smit asked if the forecast of shipments is a function of Council load forecasts [Slide 16]. Baker answered no, it's tied to DOE's national forecast.

Kelly asked if that data is consistent with any observed regional data. Baker did not know.

BREAK

EE Policies, Codes and Standards

Annika Roberts, NWPCC

Duncan confirmed that staff were also looking at policies from the City of Portland [Slide 3]. Annika Roberts said yes.

Arneson wrote, If Power Council is interested, Tacoma did an analysis likely builder choices to comply the points required with the menu of Washington energy code requirements. Let me know if you would like to see that. in the question pane [Slide 9]. Staff and CRAC members expressed interest.

Harris asked what goes into the Plan, referencing the possibility of a Notice of Proposed Rule Making that goes nowhere for four years. Smit said that would not be in the baseline but data from the TSD might still be used.

Duncan asked about the possibility of backsliding over the next four years. Smit said the assumption is "no backsliding," as it takes time to find the loopholes that can put backsliding in place. Roberts added that federal backsliding is difficult. Duncan said he was trying to feel somewhat comforted by this information. Smit stated that some attempts were made in the last Trump administration but could not be implemented in time. Duncan then asked about state standards. Smit agreed that Oregon and Washington have their own standards, with no backsliding rules, in place.

Amy Wheelless, Washington Dept of Commerce, wrote, wooo state standards :), in the question pane.

Kim Boynton, Avista, asked for more information around Initiative 2066, the new Washington building code. Harris called it a big shift from electric to gas. Roberts said staff are aware of this. Harris said NEEA analysis shows that it will affect units available, and

even under the previous version one could still build a house with gas. Harris said the question is how the market will respond.

Boynton said his utility will be impacted as they share contractors with Idaho and have a colder climate than the west side. Harris agreed that there could be an impact.

Smit said most of this will be felt on the forecasting side in the number of units. He said there will still be some electrification in the baseline forecast but the units will be the same on the forecast side and the supply curves.

Harris said NEEA is looking at what they learned from past interviews with builders and are planning to speak with them again about their present intentions. Boynton said his utility is not anticipating huge changes in 2025 but is concerned about the future, pending future lawsuits.

Harris revealed that the last survey showed that the percentage of gas heated homes went down dramatically, while the percentage of gas connected homes only dipped a bit. He said this means the option to put in a gas furnace still remains. Smit said that data would be valuable as staff tune up the load forecast.

Lazar pointed to various pieces of litigation that will complicate predicting the future of Washington's codes. He also noted the national shift from building single family homes to multifamily homes. Lazar said 80% of home starts are multifamily and almost all are electric.

Lazar then said recent rate cases for PSE and Avista show a phasing out of line extensions for gas, meaning that builders would have to pay for the infrastructure extension.

Smit said this complicated issue is being discussed at the RTF.

**Commercial Whole Building EE and the 9th Plan: BPS, Baseline, EE Measure
Nick O'Neil, Energy 350, Kevin Smit, NWPCC, Christian Douglass, NWPCC**

Boynton pointed to an early adopter program in Washington [Slide 7] and wondered if there is any data about builders self-reporting. He revealed that his service territory has had no uptake in tier one but thought that there might be some in the less rigorous tier two. Nick O'Neil, Energy 350, said he doesn't have access to that data. He agreed that anecdotally he's heard that tier one has had little uptake.

Boynton said he anticipates tier two will have more uptake as it's not hard to file and there is a financial incentive for utilities to pay, meaning the amount of uptake will become clear. Harris said the Department of Commerce is reporting very little tier one uptake to NEEA.

Aquila Velonis, Cadmus Group, said he thought utilities could claim BPS savings and wondered if those savings will not be accounted for in the Plan. Smit agreed that's how it worked for the 2021 Plan, adding that conversation is still ongoing for the Ninth Plan.

Harris thought that the compliance assumption was the big question as interviews revealed that a large fraction of buildings will choose to pay the fine and add it as a surcharge to the lease. Because of this he did not recommend 85% for the input. Smit said there will be more conversations around this with people in Washington and Oregon.

Michael Coe, Snohomish PUD, said his utility implemented a clean buildings program 18 months ago and offered to discuss further offline.

Kelly said he has worked with five of the BPSs listed on the slide, saying compliance is an issue. He noted some issues like a carve out for K-12 schools in Oregon but not in Washington. Kelly said that compliance is not contingent on meeting EUI targets in Denver, CO to emphasize the different variety of metrics.

Kelly asked if [Slide 14] represents single buildings or aggregations of buildings. O'Neil said it's an aggregation of 50 total buildings and these are the minimums achieved.

Duncan asked if the data was climate adjusted, and if that even matters. O'Neil said that BPS targets are static and not weather normalized. He said the benchmarking data has a weather normalized column for truing up numbers. O'Neil said they didn't find much variation between the two, so he used the site data. He didn't believe this data was weather normalized.

Harris said O'Neil might want to look at broader data set if the plan is to use this zero-energy data base as a goal post. He referred to over 200 buildings in the net-zero energy registry, adding that the numbers look similar to the graph. O'Neil said these numbers are verified and there are more emerging that can be examined.

Kelly asked if [Slide 15] represents sub-metered HVAC. O'Neil said a lot but not all, is.

Spencer Moersfelder, Energy Trust of Oregon, said his organization is in conversation with OPUC and ODOE to solidify his organizations role in the work [Slide 17]. Smit said he is interested in the outcome of the conversations.

Harris suggested moving forward with a whole building measure and suggested separating out these buildings into their own market segment. Smit agreed.

Kelly suggested running "sanity checks" of data from a portfolio manager as they rely on user competence.

Douglass said most EUI standards are all-fuel standards, and the policies are agnostic. He said that calls for care when looking at the EUI numbers and target settings. Smit said the Plan calls for a focus on electric EUIs. Smit asked for utilities to share data if available.

Velonis asked how many workbooks staff expect to post. Douglass wasn't sure but estimated around 20 measure workbooks.

Jennifer Finnigan, Seattle City Light, asked if the workbook review due dates are firm or if there is some wiggle room as it takes weeks for some affinity groups to meet. Douglass said the most important due date is in late May/June.

Arneson wrote, Tacoma Power residential new construction split over the last 10 or so years is 58% multifamily 42% single family. Multifamily new starts might be increasing at a faster rate in recent years. Unclear exactly what the split might be in the future, and I haven't had resources to make definitive analysis. My guess....70/30 split. in the question pane.

Smit ended the meeting at 3:30pm.

Attendees in person and via Zoom Webinar

Kevin Smit	NWPCC	Jennifer Snyder	WA UTC
Christian Douglass	NWPCC	Mary Kulas	Nuclear
Jennifer Light	NWPCC	Christina Steinhoff	NEEA
Kim Boynton	Avista	Landon Snyder	Snohomish PUD
Angus Duncan	NRDC	Brian Dombeck	BPA
Michael Coe	Snohomish PUD	Phillis Bernard	Clallam PUD
Aliza Seelig	PNUCC	Cecilia Arzbaecher	Applied Energy Group
Ted Light	Lighthouse Energy	Quentin Nesbitt	Idaho Power
Nolan Kelly	BPA	Jim Lazar	independent
Jeff Harris	NEEA	Brian Dekiep	NWPCC
Laura Thomas	NWPCC	Chris Johnson	Benton PUD
Peter Jensen	NWPCC	Rich Arneson	Tacoma Power
Dimitry Burdjalov	Applied Energy Group	Kasey Curtis	Puget Sound Energy
Nate Baker	Resource Innovations	Bonnie Watson	BPA
Nick O'Neil	Energy 350	Nicolas Garcia	WPUDA
Lori Hermanson	Avista	Debbie DePetrus	Clark PUD
Sophia Spencer	Nauvoo Solutions	Andy Cameron	ODOE
Sarah Widder	Resource Innovations	Jennifer Finnigan	Seattle City Light
Frank Brown	BPA	Phillip Kelsven	BPA
Sarah Harper	Fervo Energy	Spencer Moersfelder	Energy Trust of Oregon
Jim McMahon	Better Climate	Aquila Velonis	Cadmus Group
Shelly Carlton	Energy Trust of Oregon	Brad Moore	Wyeast
Jim White	Chelan PUD	Elizabeth Osborne	NWPCC
Josh Mitchell	Chelan PUD	Lauren McCloy	NW Energy
Drew Thompson	Chelan PUD	Kegan Craig	SBW Consulting
Poppy Storm	2050 Institute	Anthony Pacella	Applied Energy Group
Jennifer Langdon	Cowlitz PUD	Emily Gilroy	WA UTC

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