

**Northwest Power and Conservation Council
Conservation Resources Advisory Committee
July 25, 2019**

Charlie Grist, NWPCC, began the meeting at 9:30 with a call for introductions. Jim Lazar, RAP, commented about the agenda, saying that the presentations looked long but the time for comments looked short. Grist promised to be mindful of the time and encouraged him to speak up.

Administration Cost for EE

Tina Jayaweera, NWPCC

Lazar asked if the cost of saved energy is computed on a utility cost basis or on a total resource costs basis [Findings – Portfolio Level.] Jayaweera answered that it was a utility cost basis. Kurtis Kolnowski, AEG, stated that the ESource data was broken out by the utility admin and incentives spend and the \$0.24 is actually a sum of the two. Jayaweera thanked him for that information and crossed out those numbers on the slide.

Angela Long, PacifiCorp, asked for the range of the levelized cost on [Slide 8.] Jayaweera pointed to the LBNL study for more data but said it's wide.

Bobbie Wilhelm, Idaho Falls Power, stated that she didn't think using a percent of incremental costs was a good idea [Slide 9] because a program with a big incremental cost would be assigned a big admin cost. She theorized that this could make the program not cost effective even if it didn't have a big admin cost. Jayaweera countered that generally things with bigger incremental costs have bigger savings.

Lazar called this an old issue for WA state, adding that they settled by applying the admin costs to programs but didn't apply them to individual measures. He called the cost per first year kWh metric useless. Lazar added that the admin costs should not be applied to codes and standards but should be applied to a measure that may become a code or standard to signify the substantial administrative/R&D startup costs. Lazar suggested that 10% of the total should be a part of R&D and not subject to a cost effectiveness test.

Jeff Harris, NEEA, agreed with what Lazar said about admin costs for codes and standards and programs that get you to codes and standards. Harris said the real issue is the marginal decision the RPM may make. He asked to look at how the RPM makes decisions around the margins particularly as low-cost energy comes into play.

Jayaweera stated that enacted codes and standards are in the baseline and Council staff is agnostic about how savings are procured. She said the part of her struggle is the inability to assign, a priori, acquisition mechanisms to a measure. Jayaweera noted that the Council does planning not programs and the RPM looks at bins by costs which washes out individual measure information.

Harris reiterated his point that measures are bundled by costs and adding admin costs might prevent a measure on the margin from being picked. Jayaweera stated that the Power Act says all system costs must be incorporated. Harris challenged if a 20% incremental cost is the right way to view the margin.

Jayaweera asked utility representatives their thoughts. Lazar recalled that for the first Plan it was decided to not look at incremental admin costs because it wasn't there.

Long said applying an average cost at the program/portfolio level makes sense because admin costs are usually flat. She pointed to their approach which applies actual costs to future planning and wondered why people would want to get away from a percent-of-admin approach.

Wendy Gerlitz, NWECA, asked if today's methodology uses the cost of admin directly from utilities noting that codes, standards and momentum savings have no admin costs. She agreed with Long that aggregating the higher-level costs makes sense and asked if the Council discounts those costs for momentum, codes and standards. Jayaweera answered no, adding that the 20% minimum is missing some costs.

Gerlitz suggested taking a more analytical approach and looking at what percentage of savings comes in through codes and standards and momentum savings and then look at the measures to see where the savings fall.

Ted Light, EES Consulting, saw two points, to quantify admin costs with a percent or dollar per kWh and finding the right level to quantify. He spoke to the first issue saying that as programs change there will be more data available which will allow for more quantifying. He then said, it's okay to be on the lower side for codes and standards as measures may shift to codes and standards over the 20-year life of the Plan.

Lazar suggested that the bundle level should be the most granular level for applying admin costs. Jayaweera argued that it might not make a difference as she starts at the measure level to get to the bundle level. She agreed that there are admin savings by doing multiple measures at one site but there might be a very different mix of measures in any one bundle. Lazar then suggested the program level is right but certainly not the measure level. Jayaweera reminded him that the Council doesn't do programs, just measures and bundles.

Long suggested rolling this up at the measure category level, like all of the heating in HVAC. Jayaweera said they presently bundle by cost and could maybe re-examine how they bundle.

Kolnowski called the 20% across all regions and states a big finding and suspected that a planning number would be very similar. Grist confirmed that even with all of the diversity, over time it ends up in the middle. Kolnowski admitted that lighting may make it go up but for regional-level planning you will come up with something between 18-25%

Long countered that the number goes to 45% in some instances. She said her utility aligns with the Council's methodology but does not have to use the 20%. Jayaweera said the admin costs are applied at the RTF level.

Mohit Singh-Chhabra, NRDC, said it might be fine to spread out the admin costs if there is a portfolio-level cost effectiveness requirement. He also noted that it would be good to vary admin costs by program type but agreed that it might be too much work. Jayaweera said this comes down to program implementation, which is out of the Council's purview.

Danielle Walker, BPA, explained that BPA looks mostly to the measure category level for cost effectiveness. Chhabra asked her if they have any non-cost-effective categories. Walker answered yes. Chhabra suggested applying an average number and have a higher number for certain measures. Jayaweera agreed that is an option but requires agreement around when and why to apply a higher number. Chhabra then voiced agreement with using an average.

Harris reiterated that he did not want to include admin costs at the margin where the RPM makes a decision. Jayaweera countered that every game in the RPM has something else at the margin. Grist explained that each bundle contains a varied mix and last time ½ of the total savings potential was in lost opportunity.

Harris suggested that programs with a steep ramp rate look similar to codes and standards and might be a way to differentiate admin costs compared to programs with a long, slow adoption rate. Grist called correlating the cost effectiveness with ramp rate an interesting possible solution.

Jayaweera said staff will ruminare and come back with ideas at the next meeting/webinar.

Maximum Achievable Limits for Conservation Potential Charlie Grist, NWPCC

Gerlitz asked about the source for the 15% market adoption barriers [Slide 4.] Grist said he will go over some of the pieces later in the presentation.

Deborah Reynolds, WA UTC, asked if the programs were as big of drivers as the standards [Slide 10.] Grist said it was different for every case.

Lazar called the data around incandescent lamps on [Slide 14] somewhat deceptive and suggested looking at the weighted average of burn hours for lamps.

Lazar called [Slide 18] the most important slide in the deck. He said the lack of technology forecasting accounts for the low EE forecasts in the Plan. He suggested 125% of realization as an appropriate number insisting that 85% is clearly wrong.

Jayaweera noted that the 95% compliance from Montana on [Slide 20] is based on average household usage.

Harris called the results on [Slide 21] due to a strong NW commitment to adoption and training by trade allies.

[Discussion & Feedback]

Gerlitz asked about the justification for leaving the retrofit number at 85% even if there is no data. Grist called the 85% a safe number as there is not good data. Gerlitz argued that the Hood River study is both narrow and dated while ramp rates have evolved quite a bit and we now track momentum savings. She called these just a few of the good reasons to remove the 15% decrement and moving to a system where the ramp rate addresses these issues with a finer grain.

Jayaweera asked if Gerlitz would support ramp rates that climb to less than 100%. Gerlitz said that might make sense for some cases but going to this approach will allow for more finely-grained decisions. Gerlitz pointed to most of the work left in residential spaces, particularly in underserved populations, as another argument for getting rid of the blanket 15% decrement and moving to a more sophisticated approach.

Harris voiced support for the Staff proposal and pointed to consumer electronics where the ramp rate climbs quickly to 100%. He then said some traditional retrofit measures, like HPWH, where the utility pays the full cost have large uptakes.

Long confirmed that ramp rates are updated for each plan and then voiced support for Gerlitz's idea.

Jessica Aiona, BPA, asked if the technical feasibility factor would be still be captured if we went to 100%. Grist answered yes. Aiona pointed to the current state of DOE and asked if it will continue to be a big driver in overachievement. Grist said they are available and could still happen. Jayaweera added that the Plan spans 20 years. Harris pointed to states like CA developing their own standards.

Dave Hewitt, Building Decarb Central, said it took electronics three years to ramp while "box" items like refrigerators take five to seven years. He said the speed of the ramp rate continues to accelerate.

T. Light suggested looking at Lower Wasco PUD for low-income program ramp rate information.

Kolnowski voice approval for Gerlitz's idea but cautioned that ramp rates that go to 85% include factors that are outside of programs. He asked if there is a way to attribute savings between these two buckets. Grist said that will be difficult but the Council is very supportive of identifying the maximum available and treats EE just like any resource.

Jack Cullen, ETO, agreed with Gerlitz that the Hood River study is based on weatherization and not appropriate for all measures. He called this a measure issue best dealt with at the measure level with ramp rates. Jayaweera cautioned that staff does ramp rates at the measure category level so there will be some washout and there are a limited number of ramp rates.

Gurvinder Singh, PSE, went “all Debbie Downer” by asking about showerheads where they can’t even give them away or embedded data centers where third parties can’t get uptake. He said the future will be challenging now that all of the low hanging lighting fruit has been plucked and is skeptical about the 85% number for retrofit and lost opportunity through programs.

Eli Morris, Independent, agreed with Kolnowski that the 85% comes in through various ways and we don’t know if it will be programs, codes, standards or the like. He said carving out an explicit assumption about codes and standards will be necessary and difficult. Morris then moved to the discussion about admin costs saying they are closely linked.

Reynolds liked the idea of moving to 95% saying that we might not get there in terms of every unit but we will in terms of savings. There were lots of nods of approval in the room. Reynolds then said that a five- to 10-year ramp rate gives the region plenty of time to get there.

Kolnowski said other places in the country, like CA and Hawaii, that look to future codes and standards and might offer a methodology for the next Plan.

Bing Liu, NEEA, pointed to a NEEA RFP for a technical road map study for future WA codes and costs to meet legislative reequipments for a 70% baseline reduction by 2031. She then said that we are seeing savings from the last eight years of Plan standards work, that federal standards are long-term work and there will be a new administration in four years.

Harris addressed how the Fourth Plan used market bundles to separate codes and standards from local programs.

Building Codes and Appliance Standards

Kevin Smit, NWPCC

Long [Slide 8] stated that Montana hasn’t yet adopted the 2018 codes and standards and suggested looking closely at code cycles. Lui agreed that Montana had a delay and left energy codes for last. She said the board has been convened and she expects some movement in adoption next year. Jayaweera said Staff doesn’t assume anything until it’s codified and this could be tricky. Smit said whatever isn’t captured in the baseline will be quickly captured by NEEA in the potential.

T. Light [Slide 9] said that some of WA’s EE standards were adopted by other states and asked if any have reached critical mass and manufactures are ready to shift. Chuck Murry, WA Dept of Commerce, answered that not many states have adopted them but CA did and they are big which may help with the push.

Washington State Codes and Standards

Chuck Murry, WA Dept of Commerce

Smit asked about the number of buildings in play on [Slide 14.] Murry said the slide looks at square foot estimates and not buildings. Reynolds asked if the target will change over time. Murray answered that there will be a target review in 2028 and hopefully the number will inch down.

Lui said that [Slide 15] is the first time a state has set a performance target and this will be hard. She added that there is already an established fundamental methodology and owners, tenants and utility programs will become more aligned.

Long asked how to prevent building owners from passing a penalty on to the tenant. Murry said you can't.

T. Light asked if the legislation includes a role for utilities. Murry answered yes, saying the incentive program is modeled to the building owner much like the solar production credit and the utility acts like the bank. Murry called this a great opportunity for utilities to bring more customers to programs. T. Light asked how utilities will claim savings. Murry said 1937 is agnostic about where savings come from but there is language in the Bill so utilities understand they are to keep doing what they do in this sector.

Hewitt asked if any thought was given to advanced HPs coming through to meet requirements. Murry said they haven't told building owners how to get there but admitted that an advanced HP is one way to reduce site energy EUI.

Kolnowski noted that utility admin costs can't exceed 8% of the incentive. Long said the incentive would be proportional to the incremental cost. Murry confirmed that all they are asking is the utility administer some money, not programs.

Kolnowski then asked about the feasibility of the Commerce Department compiling data and then matching it with consumption data. Murry stated that owners do have to report the data before July 2021 but the Department doesn't have to match it.

Long asked if that information will be public. Murry said yes, but wasn't sure how it will be compiled.

Ross Holter, Flathead Electric, said most of the commercial buildings in his area are heated with natural gas and asked if the same was true in Seattle. Murry said yes and this will affect all energy uses like gas, electric and trucked-in diesel. Smit admitted that this will be an issue for Council Staff as well.

Grist said this is a building performance standard and asked if it belonged in the load forecast or if it should be treated as something outside the load forecast. Murry felt this might affect ramp rates. Smit suggested treating it more like a program than a standard.

Grist stated that building owners might just pay the penalty every year and pass that cost to the tenants. Murry said that penalty money will go to their weatherization fund

Long suggested making the energy efficiency of individual buildings publicly available so tenants can make an informed choice.

Smit asked about leakage when someone buys a product on-line from a state with different codes and standards [Slide 20.] Murry pointed to how CA blocks consumers from buying non-compliant products from Amazon and noted that Commerce will have an enforcement arm.

Lazar asked if any other states have adopted CTA-2045. Murry said no, they are the first in the nation. Lazar said Hawaii gave a rave review to this work and may join.

Hewitt asked if there is any chatter about a zero-carbon codes. Murry said there will be a revised state energy strategy and the natural gas question will be high on the list of topics.

LUNCH

Agriculture EE Potential Assessment Dimitry Burdjalov, AEG

Long added that she tried to work with irrigation contractor to provide more data for [Slide 6] but the quote came in at \$30,000. She suggested working with vendors as the data is being generated. Jayaweera added that data specific to the NW is limited and there is no RBSA or CBSA for ag.

Grist asked for an explanation for the difference between variable rate irrigation and what was known as SIS [Slide 7.] Burdjalov admitted that SIS had variability but was more feedback and behavior based. Grist said the RTF looked at SIS and decided that the region is saturated. Burdjalov added that VRI is expensive and not yet standard practice.

Grist asked about small-herd applications for stock tanks [Slide 13.] Burdjalov said the tanks are only sized for one to four cows at a time.

Geoff Wickes, NEEA, asked if green gas was looked at as a possible input [Slide 18.] Jayaweera said that wouldn't fall into this assessment but Steve Simmons, NWPPCC, has been looking at renewable natural gas.

Lazar asked if Benton PUD has time of use rates [Slide 20.] Burdjalov said the data is from around 1991/92 so probably not.

Walker stated that Tom Osborn, BPA, would like a chance to review the findings [Slide 22.] Jayaweera suggested he reach out to her directly.

Embedded Data Centers **Charlie Grist, NWPCC**

Long asked what buildings are in the CBSA's "other" category [Slide 8.] Grist said some are gyms or infrastructure facilities and offered to look into it.

Kolnowski recalled that transformers were removed from the Seventh Plan as they became code and asked about their presence on [Slide 10.] Grist didn't remember that and offered to check.

Wickes said the growing load on [Slide 12] is painful to watch. Grist pointed to our changing society using more of Mr. Electricity. Lazar asked if 5G will use more energy, noting that it may require eight times as many transmitters. Grist said he will check with Massoud Jourabchi, NWPCC.

Morris asked if enterprise data centers are being netted out of regional accomplishments [Slide 16.] Jennifer Light, NWPCC, answered that anything Grist has shown is draft and is still up for internal discussion. She said in the past anything reported was included in RCP findings. Grist reported that current practice is different between operators and many data centers are custom projects but utilities still believe they are adding incremental benefits.

Morris cautioned against excluding the potential and counting the savings. He suggested identifying and removing large projects from the reporting.

Long agreed and added that staff should be mindful of what's in the load and not overestimate. Grist said there's a forecast for data center loads that is wrong as you can't project out for 20 years. Long added that her utility doesn't always count data centers in their load as servers often phase in over time. Grist agreed that the market is very dynamic.

Walker noted that some public utilities are seeing this come on as a large, single load. Grist agreed, adding that much of the growth comes from expansion too. Holter asked how you account for cloud migration. Grist said there's a cloud component in the forecast but it's changing the required KWh calculation.

Wickes addressed Lazar's earlier comment saying 5G will require more points but they will need less power. Wickes then asked where commercial/industrial power supplies, like traffic lights and all things IoT, fit in. Grist said if there's data it could go in.

Grist said he couldn't find data of utility programs incenting ENERGY STAR equipment and asked for input. Holter said his utility embraces this simple rebate program. Wickes said

embedded server people are not interested in EE but more interested in uptime and security and a mid-stream or up-stream program might gain more traction. Long agreed, adding that most of the savings generally come from cooling.

Reynolds reminded the room that this is about technical potential and taking it out is not an option. She said part of this analysis is to come up with ideas and approaches and uncertainty should be dealt with in the ramp rates.

Michelle Lichtenfels, BPA, suggested keeping the methodology between embedded and large data centers different. She requested looking closely at the incoming technology bundles as the tech continues to change and agreed that the ramp rate is where the rubber meets the road. There are nods of approval in the room.

Lichtenfels then agreed that this is hard to do at a micro level and said the BPA is looking at this from a momentum perspective to address the issue at a higher level.

T. Light added that technical applicability should be examined closely as he doesn't predict much uptake from the Seventh Plan measures. Grist agreed.

Review of Industrial Segments and End-Use Shares

Kevin Smit, NWPCC

Long asked if Smit is looking for existing baseline information as she can offer it. Smit said yes.

Aquilla Velonis, Cadmus, asked if data from outside the NW would be appropriate. Smit said he would take it.

Next Meeting Topics

Kevin Smit, NWPCC

Holter asked if there's any plan to look at prepaid meters. Smit said no as that's more a program mechanism. Gerlitz said NWEA has done a lot of research on this and found that it's a rate mechanism and has nothing to do with EE. J. Light said this has come up before and the issue is defining the piece that's conservation and not curtailment.

Kolnowski confirmed that ramp rates will be finalized by March 2020. Jayaweera said that's the hope. Kolnowski said that might be optimistic. Smit said a new examination might not be too hard.

Long said they could incorporate new ramp rates in their CPA if it's done by March 2020. She then said getting to sit at the table as a CRAC member was a big life moment crowned by getting her own name plate.

Holter said that the town of Whitefish, MT has banned 5G because of EMF and suggested that there could be more pushback coming. Lazar said this could be an interesting legal test.

Smit adjourned the meeting at 3:30.

Attendees

Kevin Smit	NWPCC
Tina Jayaweera	NWPCC
Charlie Grist	NWPCC
Angela Long	PacifiCorp
Jack Cullen	ETO
Deborah Reynolds	WA UTC
Chuck Murry	WA Dept of Commerce
Ross Holter	Flathead Electric
Amy Wheelless	NWEC
Dave Hewitt	Building Decarb Central
Shanie Taha	UCONS
Jessica Aiona	BPA
Dimitry Burdjalov	AEG
Danielle Walker	BPA
Ted Light	EES Consulting
Adam Schultz	ODOE
Jeff Harris	NEEA
Wendy Gerlitz	NWEC
Kurtis Kolnowski	AEG
Stephanie Kruze	ODOE
Blake Shelide	ODOE
Eli Morris	Independent
Bing Liu	NEEA
Geoff Wickes	NEEA
Aquila Velonis	Cadmus
Jennifer Light	NWPCC

Attendees via Webinar

Todd Amundson	BPA
Andrea Goodwin	NWPCC
Anna Kim	ODOE
Bobbi Wilhelm	Idaho Falls Power
Brandy Neff	PNGC Power
Mohit Singh-Chhabra	NRDC
Christine Steinhoff	NEEA
Michael Coe	SNO PUD
Greg Kaleka	NEEA

Gurvinder Singh	PSE
James Vanden Bos	BPA
Jim Lazar	RAP
Garrison Marr	SNO PUD
Matthew Kozuch	Tacoma Power
Michelle Lichtenfels	BPA
Thomas Osborn	BPA
Ryan Brown	NEEA
Brian Dekeip	NWPCC