

**Attendees: TAC 3, Tuesday, April 16, 2019 at Avista Headquarters in Spokane, Washington:**

John Lyons, Avista; James Gall, Avista; Leona Doege, Avista; Amber Gifford, Avista; Kurtis Kolnowski, AEG; Ken Walter, AEG; Brian Parker, 350.org; John Barber, Rockwood Retirement Community; Doug Howell, Sierra Club; Barry Kathrens, 350.org; Ryan Finesilver, Avista; Clint Kalich, Avista; Dave Van Hersett, Avista Customer; Matt Nykiel, Idaho Conservation League; Amy Wheeless, NW Energy Coalition; Michael Eldred, Idaho Public Utilities Commission; Rachelle Farnsworth, Idaho Public Utilities Commission; Aimee Higby, Washington Utilities and Transportation Commission; Jennifer Snyder, Washington Utilities and Transportation Commission; Xin Shane, Avista; Terrence Browne, Avista; Scott Wilson, Avista; Damon Fisher, Avista; Tracy Rolstad, Avista; John Gross, Avista; Chris Zentz, National Grid; Eric Lee, 4Sight Energy; and Garrett Brown, Avista.

**Phone Participants:**

Sarah Laycock, Washington State Attorney General's Office plus two others; Mike Starrett, Power Council; Nancy Esteb, NW Energy Coalition; and David Howarth, National Grid Ventures.

These notes follow the progression of the meeting. The notes include summaries of the questions and comments from participants, Avista/Presenter responses are in *italics*, and significant points raised by presenters that are not shown on the slides are also included.

**Introductions and TAC 2 Recap, John Lyons**

Doug Howell: Request for studies, what has changed? *Some studies, such as those shutting down Colstrip at later dates, may no longer be necessary with the legislative changes.*

Matt Nykiel: Update on the RFP for wind and solar? *Already included using information from the recent RFP.*

Dave Van Hersett: What is the length of the PPA for wind? *20 years with a confidential price that we cannot make public. Lind Solar is also a 20-year PPA. The cost assumption for new wind is in the low \$30/MWh range and would roughly be the energy portion of a customer bill.*

Kathlyn Kinney: Is it cheaper than coal? *Hard to compare old/new coal and the attributes. Old coal is an existing sunk costs, lower costs to run, so can be cheaper for an existing coal plant. Also, new coal plants cannot be built under Washington law.*

## **Regional Legislative Update, John Lyons**

Dave Van Hersett: Cow power? *Cow manure in a digester that counts as biomass power.*

1444 requires new electric water storage under the water heater provision.

Doug Howell: Coal-fired provision. 11 million tons of emissions makes me concerned over resources being put into Colstrip. Provisions in the ownership contract not have to pay for, and prolonging the life of the resource.

Dave Van Hersett: I prefer reliable resources that don't raise my rates. Last 40 years effect of forest fires. AVA vs. PSE.

Doug Howell: Cleanup costs Units 3 and 4 expected to be \$780 million. Montana AG superfund site which are often 2, 5 or 8 times more expensive to remediate than expected.

Linda Faulkner Gervais: No matter where or how we will continue to discuss the capital costs at Colstrip with the regulators.

Jennifer Snyder: Have you considered modeling the IRP out to 2045? *Yes, we actually look out 25 to 30 years, but have only shown 20 years in the IRP.*

John Barber: The general thrust of Montana is opposite that of Washington. Yes.

SB 5116 also has a 2% cost cap for meeting the renewable portion of the law over 4-year blocks to help with hydro variability.

Matt Nykiel: Is there an update on the coal contracts? *Yes, the new mine owners that took over after Westmoreland are honoring the contract through the end of 2019 and we are working on a new contract.*

Dave Van Hersett: What are in the [SB] 5116 rulemakings? *Things such as the 2.5 discount rate for social cost of carbon.*

Matt Nykiel: How prices might increase with coal contract? Are you using scenarios on price for coal. *We expect a new coal contract by the end of the year.*

## **IRP Transmission Planning Studies, Tracy Rolstad**

Doug Howell: [SB] 5116 transmission reliability? *Experience of Federal rules are relatively tight and give us the mechanisms to study it. State laws are a mix of resiliency and reliability. They are probably not going to be more demanding than that table on slide 9.*

Dave Van Hersett: What is a non-wires solution? *Perhaps a battery to discharge. Install and operate series capacitors or reactors to increase power flow on lines or force power*

*flow onto other lines to maximize utilization of existing transmission capacity. We want to maximize existing infrastructure with these non-wires solutions.*

Dave Van Hersett: What is the biggest battery? *100 MW in Australia, but it is still in development.*

James Gall: Battery duration is the challenge. Currently 4 hours, maybe up to 6 hours, and we need 8 to 18 hours from a battery.

*Location specific is the issue. Placement and duration.*

Clint Kalich: Coordination – transformer sits there and performs as needed. Batteries – is this a solution to many of our problems? \$200 million versus a \$2.5 million solution. *Novel idea, will it find a place where it performs well. The policy is up against the technology. Give us enough money and we will make anything work.*

Clint Kalich: Othello/Lind? *About 800 MW in the queue in this area. There was about 2,000 MW in our RFP and a bunch if it was there.*

Kathlyn Kinney: Looks to me like it makes smaller projects easier to build. *In the past, we have posted on Oasis here are the places where you can plug in certain amounts of generation relatively cheap. Speculative developers can look at this and decide where to go. Small numbers or really powerful parts of our system.*

Jim Le Tellier: How does this work? *We have to respect the queue and layer it on to engage in queue management. On ramps/off ramps for a cluster study or look at it all together instead of first come first served. Take or pay. Can sign a contract for transmission.*

Dave Van Hersett: What is RAS? *Remedial action scheme. Only owner or developer of generation agrees to be tripped for a line loss. Done all over the northwest. It saves the need for a new transmission line. Not really at this time in the IRP process, but rotating machines have bigger impacts of those in play in northwest for 40 years (non-wires solution).*

Doug Howell: Do you have to use it [RAS] often? *It happens, but not often. BPA has saved billions of dollars doing this.*

Dave Van Hersett: Not your distribution, its transmission. How much of an addition to transmission over the next 20 years? *Good question. It depends on where it goes, shaping intermittency. California's load literally goes away during the day, but gets busy at night. BC Hydro sells energy to California to cover the ramp up which could be a challenge in the future. No empirical data yet, but very good modeling. Predictability is quite a bit less now, it's not your grandfather's utility.*

Jim Le Tellier: Fairly represent marginal cost for developers who pay those costs for us. If another utility gets it, then they pay all or some of the network upgrades. *The lumpiness of these upgrades affords opportunities for others.*

James Gall: Small portion of costs relative to the grand scheme of things. Upfront costs amortized over 50 years.

Dave Van Hersett: How does wind/solar affect the timing and different directions of our transmission capability. *It is behaving differently, but still operating. California is going to become a net exporter and we will need to manage hydro differently.*

### **Distribution Planning within the IRP, Damon Fisher**

John Barber (Slide 5, August 10<sup>th</sup>, 106 degrees): Did load end higher than it began? *The day was hotter than the last and lines cut off by software.*

Damon Fisher (Slide 8): Does the electric car load take away the ability to shift other load at night?

John Barber: You said two Waikiki feeders serve Whitworth area. Rockwood is up there too, when do batteries come in? *That is in the middle of the most vulnerable area.*

Jennifer Snyder: Do we look at one or more coordinated interventions targeted for efficiency, whole package or by measure? *Intend to look at a package. Feeder-by-feeder, considering the costs of all solutions.*

Dave Van Hersett: But the transmission guy said that batteries won't work. *Scale and cost of problems being solved with batteries are different between distribution and transmission.*

Kathlyn Kinney: Curious if storage folks bear cost like Costco. *We have an obligation to serve where we credit them some of the cost of installation. Can't really charge benefits to the whole system.*

Garrett Brown: Schedule 51 line extension tariffs for cost sharing that identifies all of the components.

Slide #9: modest photovoltaic (rooftop solar) assumes 300 installs of 5 kW on feeder, 1.5 MW of solar per feeder.

Doug Howell (Slide 10): There doesn't look to be any advantage to battery cost, is that the full story? *No, do we install a substation for \$5 million or a \$25 million battery with all of the other benefits it provides? To who and when is the stated value happening? This slide is what it looks like to the distribution system only.*

### **Conservation Potential Assessment, AEG**

James Gall: We have a need based on Grant's load forecast. We want all resources to compete at the same time so they are treated equally. Old way was back and forth where errors could be made and could miss things mathematically.

Jennifer Snyder: Every measure is individual against demand response and generation, peak and energy level.

Clint Kalich: Customized avoided cost. May incentivize them based on cost, but that doesn't account for characteristics rather than lumping them together. Lowering risk instead of iterating.

Barry Kathrens: Do we consider building codes with a solar requirement? *No, we stick to what is on the books. Why not? Would need to talk to the legislature, AEG could supply some estimates. Energy efficiency is not as simple since there are real impacts to the distribution system. Could try a scenario.*

Doug Howell: What are TRC and UCT? *Total Resource Cost is used in Washington and Utility Cost Test is used in Idaho. UCT only looks at the portion of cost the utility bears, so we don't include customer benefits like saving water. More potential passes [for programs] because of lower upfront costs.*

Jennifer Snyder (Slide 8): everyone technical 100% (ramp rates with RTF).

Doug Howell: Look at doing a deep retrofit. *That is the finance mechanism, so if cost effective, we could do it. We are present valuing all of the benefits and costs. Bundling all of the benefits.*

Clint Kalich: Maybe we need to meet on this. Public vs. IOU, average low bundle, but a lot of those programs wouldn't fit.

PSE had a solicitation demonstration project [of a deep retrofit].

Jennifer Snyder: Achievement needs to stay cost effective at the portfolio level.

Doug Howell: Washington State study says we need deep efficiency and we are not achieving that by missing the dynamic of how a building operates. This could be encouraged with Avista financing – Housing Finance Corp.

Amy Wheelless: The whole building is not as well captured. *The information is in there.*

James Gall: We ignore how it [efficiency] is being funded. Incentives now, but loan programs in the past.

Ryan Finesilver: We have a team of account executives that look at whole building systems. This is based on more of a simple payback.

James Gall: We are doing something similar with the Catalyst Building

Doug Howell: Hope this is not outside of the IRP. This area is ripe for innovation.

James Gall: I think AEG is already doing this.

Curtis AEG: Possible to be done, but could do it with other studies.

Dave Van Hersett: Is this a government requirement?

Amy Wheelless: There is a bill that would set large building, non-agriculture or industrial – \$75 million available if it passes.

Jennifer Snyder: TRC for ductless heat pumps. Did we include 2.5? Yes.

Amy Wheelless: Cold weather heat pumps? *Yes, available, but they are five to 10 times more expensive.*

*Slide 20. TRC goes negative. It doesn't start at zero from a non-energy saving. Like not paying to replace LEDs as often UCT never goes negative.*

*EISA – Energy Security Act of 2005. Next backstop in 2020 forces CFLs and LED is the difference between 2019 and 2020. Standard practices will make LEDs the default.*

Dave Van Hersett: Do we have data yet for pay for performance vs. estimated savings? *AEG Seattle City Light had this in the September GRAC meeting. We have some site specific information, but didn't have any numbers in mind. Third party EM&V.*

## **Demand Response Potential Assessment, AEG**

Doug Howell: On water heater, doesn't 1444 require to be DR ready? *Port required [on the water heater] to be DR ready. The study does not capture this yet, since not in law now.*

Jennifer Snyder: What about energy efficiency and demand response overlapping potential? *Following the methodology of the Power Council, energy efficiency goes first.*

John Barber: Does this shut off? *Yes, but override and signup on insulated tank is voluntary. Defer reheat until later.*

Kurtis Kolnowski: 85% doesn't apply to DR side, about 25%.

Amy Wheelless: Midwest utilities have been doing more DR when they don't own generation. Will even give a free water heater to customers when you agree to let them control it.

Grant Forsyth (Slide 31): Behavioral – entirely up to the customer. *Yes, suggestion.*

Amy Wheelless: For the October BC event [natural gas transmission line rupture], did you send out a gas event? *Yes for Oregon. No for the electric side. It was a yes for PSE for both.*

Clint Kalich: What gap is third party contract filling in? *Business program targeting medium to large businesses, getting more energy efficiency since often dealing with a facility measure with an intermediary.*

Phone Participant: Similar impacts both ways, but more popular to have a third party. We just pay for megawatts. Third party gets it [energy efficiency]. They can do more

hand holding, more cost effective than a utility and have economies of scale doing the programs with more than one utility.

James Gall: Large industrial customers are not on here, but we are doing back up generation as non-spinning reserves similar to the PGE program.

Dave Van Hersett: Where does own electric generation fall? *Based on our own study. Would be used as a non-spinning reserve product that we would turn on if all hell breaks loose.*

### **Pullman Smart Grid Demonstration Project Review, Leona Doege**

Dave Van Hersett: What was the population [of this pilot]? *75 installed out of 3,600 single family homes, but 57 to be called out in DR events.*

Rachelle Farnsworth: So it was a yearlong program? *It Ran from 2012 to August 2014.*

Matt Nykiel: Were these only smart thermostat customers in Washington? *No, both Washington and Idaho. Idaho was added back after adding back gas programs.*

Rachelle Farnsworth: Were there surveys of customers? *Yes, we did a survey. Did you notice offsets and would you do again? Very unlikely we would do this again, \$400 payment for early participants. We used a local contractor who took two hours per installation.*

Grant Forsyth: Any analysis of age bias of who took meters? *Early tech adopters, not necessarily correlated with age.*

### **E3 Study – Resource Adequacy in the Pacific Northwest, James Gall**

This assumes the system operates as a single utility.

John Barber: Why not Nevada? *It was a choice because at the time of the study, they were voting on retail choice so they would have operated like California. They have since voted this down.*

Rachelle Farnsworth: Hydro? *Same.*

Barry Kathrens: Climate, should we assume to be more pessimistic? *Assuming same historical data using 80-year record. May change water shape and make it more volatile with warming temperatures.*

Dave Van Hersett (Slide 22): 2050 baseline is the load we have to meet. Yes.

Jennifer Snyder (Slide 25): So 60% in red can be achieved for little or no cost. Yes, *using the current trajectory for technology.*

Barry Kathrens: Using constant costs? *No, using declining costs.*

Dave Van Hersett: Generation and transmission only? *Yes.*

Jim Le Tellier: What does this compare to California?

AEG: High cost is about what we find in comparison to California.

James Gall: \$2,200 to \$4,000 to convert to an all-electric home.

Dave Van Hersett: What would drive me out? Cost. *Converting all heating to natural gas and everything else to electric may be a cheaper way to reduce emissions.*

Clint Kalich (Slide 22): Interesting how economic. Societally, where should the dollars be spent? It may be better spent in other areas.