

Attendees: TAC 1, July 25, 2018 at Avista Headquarters in Spokane, Washington:

John Lyons, Avista; Kirsten Wilson, Washington State DES; Amy Wheelless, NW Energy Coalition; David Nightingale, Washington UTC; Doug Howell, Sierra Club; Kathlyn Kinney, Biomethane; Grant Forsyth, Avista; Jorgen Rasmussen, Solar Acres Farm; John Barber, Rockwood Retirement Communities; Gerry Snow, PERA; Dean Kinzer, Whitman County Commission; Garret Brown, Avista; Scott Kinney, Avista; Yao Yin, IPUC; Ben Serrurier, Cyprus Creek Renewables; Terrence Browne, Avista; Jason Thackston, Avista; Darrell Soyars, Avista; Kim Vollan, Avista; Kevin Davis, IEP; Matt Nykiel, ICL; Ryan Finesilver, Avista; Paul Kimmel, Avista; and John Osborne, MD.

Phone:

Kelly Hall, Climate Solutions; Mike Starrett, NPCC; Steve Johnson, Washington UTC; Ian Bledsoe; Energy Consultant, NW Energy Coalition

These notes follow the progression of the meeting. They include summaries of the questions and comments from those not presenting, the responses (in italics), as well as significant points raised by the presenters that are not shown on the slides

TAC Expectations and Process Overview, John Lyons

Presentation covering the background behind the electric IRP, TAC member involvement, review agenda for the day and expectations from Avista and from the TAC.

- Jorgen Rasmussen: Can we have someone come in and talk about energy security? *Yes, Avista will look into adding this as a topic.*
- Amy Wheelless: Request to track all questions, requests and responses.
- Matt Nykiel: Asked about getting assumptions earlier in the process to be able to understand them better and make comments. *Yes, Avista will work on this and many of the assumptions will be made available at the next meeting in November 2019.*
- Amy Wheelless: How do we discuss the assumptions? The TAC gets the slides with the assumptions ahead of the meetings.
- Doug Howell: Would like to see the slides three days ahead of the meetings. *Slides will go out on Friday before the Tuesday or Wednesday meetings.*
- Matt Nykiel: Concerns about slide #3 and limitations to the discussions and questions asked. *The points are in the slides to make sure we can get through the agenda for each TAC meeting.*
- Amy Wheelless: We want an open exchange of ideas. Request that participants can provide data and Avista will consider using it. *It is best if the data is publically available.*
- David Nightingale: Discussion on minutes of the TAC and how they will be made available. *Avista is still working on the logistics of this, possibly by email or even posted on the web site.*

- Gerry Snow: Is there a continuing forum between meetings? Can Google Docs be used? *There isn't an ongoing forum or discussion group, but the IRP is available by email and phone for any questions, comments and concerns. Information can then be passed on to the whole TAC. No, IT policy doesn't allow us to use Google Docs, but could explore the use of One Drive if email doesn't work for TAC members.*
- Clint Kalich: Discuss how the Avista web site is used in conjunction with the IRP. Showed the TAC where to find the IRP section of the web site and the documents available there.

2017 IRP Acknowledgements & Policies, James Gall

Presentation covering the expectations and comments in the acknowledgment letters received from the Idaho and Washington Commissions for the 2017 Electric IRP.

- Doug Howell: Passed around letter dated June 26, 2018 to the Idaho, Montana, Oregon and Washington utility commissions concerning Westmoreland Coal Company; handout titled "Fracked Gas The Next Big Climate Fight;" and a July 24, 2018 article from The Billings Gazette concerning the Colstrip outage.
- Doug Howell: Wants more details on the assumptions for air quality controls at Colstrip.
- Steve Johnson: Comment about sheltering or excluding anyone involved in negotiations for a new contract or purchase of the Lancaster facility from non-public analysis to ensure they are arm's length from any new transaction.
- Doug Howell: Colstrip remediation and decommissioning and how it is going to be paid for in a way that provides intergenerational equity.
- Doug Howell: How are existing capital projects used for supporting investment in the IRP, Colstrip capital? *This is a resource decision that uses the IRP developed avoided cost to analyze new projects.*
- Steve Johnson replied that unsure if the IRP is the place to describe how much and when money is to be recovered for Colstrip. The Company would demonstrate prudence in a future rate proceeding, not jumping ahead in an IRP to design a cost recovery mechanism. The IRP recognizes such costs to be included in depreciation recovery. IRP should identify all risks for Colstrip Units 3 and 4 and potential costs in response to the acknowledgment letter from the Washington UTC.
- Matt Nykiel: Wants the group to be kept informed on whether a decision has been made on depreciation at Colstrip.
- Steve Johnson offered to have a more detailed meeting with the public about rate making.
- Dave Nightingale: Anticipation of a resource becoming unavailable if uneconomic. Identify resources that are at risk of going away.

- Matt Nykiel: Will the November meeting discuss regional coal policies from Portland General Electric and PacifiCorp in Oregon? *Yes, regional coal policies will be covered in a later meeting.*
- Doug Howell: Wants to include the risk associated with the growing liabilities of upstream natural gas leakages. *Avista has not historically considered externalities beyond those required by laws or regulations, but will take this request into consideration.*
- Doug Howell: The Sierra Club wants the inputs for Aurora so they can have a consultant review them and run the models. *This will require a discussion at Avista to determine what data could be shared and how it could be shared.*
- Matt Nykiel: Concerns with how we can discuss the inputs without having all of the data.
- Ben Serrurier: Do the consultants provide the data that supports how they derived their natural gas price forecasts and can that be shared with the TAC? *Yes, Avista can provide what we are allowed to. Probably cannot give specific details, but should be able to share the main driving forces behind the gas price forecasts.*
- Yao Yin: What if there are big differences between the two consultants for the gas price forecasts if there are conflicting or different assumptions? *Avista has blended these forecasts in the past and has not seen fundamentally different forecasts. Any major differences would probably be due to conflicting assumptions.*
- Dave Nightingale: Will there be high, low and medium cases? *Avista does an expected case with stochastics with an average of the 500 futures as the expected case. Ask the consultant to do a high and low forecast. Avista will check into this with the consultants, but it may be too costly.*
- James Gall: Should we include some more information here about distributed generation and energy storage? *Yes and storage will be included as a new resource option.*
- Amy Wheelless: More distributed resources and non-traditional. *Yes, Avista will include more options and will need to see how far we can take this.*
- Ben Serrurier: How are you choosing the five projects for distribution upgrades? *The amounts were small enough that we asked that group for five. UTC threshold, but we are looking at needs and what could be met by a distributed energy resource to solve constraints in the IRP timeframe.*
- Kirsten Wilson: Regarding Washington Executive Order 1801, is vehicle-to-grid storage going to be included? Washington State University may have to follow the rules identified in the Executive Order. *Avista will try to incorporate this, but really has no control over this type of resource. Vehicle-to-grid storage may end up being a scenario.*

- Steve Johnson: Offline, examine paragraph 43 of the UTC policy on storage framework or method. Is this practical or is there a better way of doing it? Criticism has been leveled at this method. *Avista will probably do this in PRiSM.*
- Doug Howell: For carbon prices, include the implications of the upstream emissions.
- Dave Nightingale: Regarding how to share meeting minutes, they usually get approved at the next meeting. *Avista still needs to decide on the best way to share the meeting minutes with the TAC.*
- Dave Nightingale: The second and third bullets (WUTC IRP Rulemaking about requests for proposals and avoided costs) are being handled separately as two rulemakings under separate dockets. On a parallel track with conservation (under the Advisory Group) with a subgroup for distribution planning. This is still in discussions and a new draft will be ready in the next month or so. It will be done by the end of the year, but will be surprised if the new regulations get applied to this IRP.
- Yao Yin: Third point, avoided cost, trying to unwind: PURPA, resource differences, and improved rule on how to use it. Idaho has a SAR (surrogate avoided resource) and IRP method. Larger and smaller resource methods, maybe we should talk offline about these.
- Doug Howell: Suggest using the Washington Governor's Deep De-carbonization Study to get assumptions on EV, building codes, solar and others. *Avista will run a scenario with higher assumptions.*

Break (back at 10:55)

Demand and Economic Forecast, Grant Forsyth

- Grant Forsyth: Employment is one of the big drivers for customer growth, 71% of the local economy is service based.
- Clint Kalich: Does local government include schools? *Yes, it is the biggest share and includes faculty, teachers and administrators.*
- Grant Forsyth: Fairchild Air Force Base is going to be accepting all of the older KC135 tankers as the new tankers are deployed elsewhere, so there will be a buildup at Fairchild.
- Grant Forsyth: Idaho is growing faster than Washington service territory in employment and population. The MSA (Metropolitan Statistical Area) is a well-defined urban area with over 50,000 people.
- Dave Nightingale: Why is non-farming used? *Farming is so low for employment it does not make a huge difference. It is much bigger for income.*
- Grant Forsyth: In-migration is the key driver for customer growth
- Grant Forsyth: Population growth is a strong proxy for customer growth.
- Garrett Brown: What is the impact of the recent announcement by Amazon? [Warehouse in Airway Heights with 1,500 expected employees] *Not a large direct impact because they will be an Inland Power Customer, but Avista will serve their*

natural gas needs and will benefit from in-migration with some amount of household and ancillary business growth.

- Doug Howell: Which are excluded to run the regression [in the peak load forecast]? *Excludes Clearwater and IEP (Inland Empire Paper) and then adds them back in.*
- Kathlyn Kinney: Why is the summer peak growing faster? *It is a combination of weather changes (why we moved from 30 to 20-year weather data); increased air conditioning load because of higher incomes and lower costs for air conditioners; winter conservation; and fuel switching from electric to natural gas.*
- Grant Forsyth: There is a less strong impact from GDP on loads than in the past.
- Dave Nightingale: Graphically look at this, do these make sense based on the past.
- Dave Nightingale: Are these GDP numbers regional? *No, they are national GDP estimates because our region follows the national numbers closely and regional forecasts are scarce.*
- Yao Yin: Questions about GDP differences in slide 11 (Current Peak Load Forecasts for winter and summer, 2018-2043). *Yes, they are different for each year for 5 to 6 years, then extended out for the rest of the forecast.*
- James Gall: Peak demand – we are planning to serve this load over the next 20 years plus a 14% peak planning margin and operating reserves. This made us short in 2027 in the last plan. We may make adjustments as we get more data.
- Amy Wheelless: How does 14% compare to others? 11 – 17%. *Depends on what is included. We add operating reserves putting us at 21-22%, NPPC is about 23%. Water based utilities usually have higher planning margins for running out of water. There is a chart on this in the last two IRPs.*
- Yao Yin: Is PM necessary? *Yes, we were able to cover the 2009 extreme cold event.*
- Matt Nykiel: Actual vs. forecast, do you have a chart? *No, but James Gall looks at the forecast vs. the actual after every event. We are not sure if we could add this.*

Long-term load forecast section

- Doug Howell: Is the 20-year data capturing the warming shift? *It varies within our service territory based on the work done by NASA. There is more of a warming shift in Medford than Washington. The data shows the shift has somewhat stabilized in the 20-year period.*
- Amy Wheelless: UW climate impact and SnoPUD have data on this.
- Matt Nykiel: How do you pick the forward climate model? Can we use an average like GDP? *Potentially, we can verify GDP with historic data, but climate data may be tough to correlate because it is lumpy, not uniform.*
- Steve Johnson: Currently, is Avista's view that the risk of climate change is open ended? *Yes, to the extent we can't quantify it.*

- Clint Kalich: Magnitude of temperature and could also run scenarios on other changes with similar results. Put a statement about risk and what we are thinking.
- Yao Yin: Why not an econometric model for the long term? *We could, but would also need a population growth forecast.*
- Garrett Brown: Is it positive or negative growth? *Still positive, but about half percent long term. 5% or more solar penetration starts making a difference. More aggressive solar growth with larger projects over 10,000 watts.*
- Yao Yin: Relationship between load and solar. How much is solar taking off of load, the net impact?
- Doug Howell: What about the Commerce predictions for electric vehicles (Executive Order 18-01)? *Have not been able to determine where they got their goals from, maybe the Governor's deep de-carbonization pathway. We are going to run some scenarios on different levels of electric vehicles, solar and electrification.*
- Amy Wheelless: Are electric vehicle fleets growing faster? *In the model, there is a connection to residential and commercial loads.*
- David Nightingale: Distribution of model by Washington EVs (electric vehicles) may be shifting with new models. *Income and household density are the drivers for EVs. Density is 4 times less in Spokane, so people live far enough away to have some range anxiety.*
- Jorgen Rasmussen: Also need to consider the used EV market and the number and location of chargers. There are fewer chargers in our service territory.
- Jorgen Rasmussen: Could also consider the consumption of refineries. How far do we take this?
- Yao Yin: Why not include solar in the resource side? *This is for customer-owned solar.*
- Gerry Snow: When will we see the "duck curve"? *Partly by feeder. 5% and higher penetration will affect us for solar. This is more on an issue with Power Supply. The location of the solar is important.*
- Doug Howell: It would be useful if we could see growth rates and efficiency in a deep de-carbonization scenario and how this overlays with the economic forecast. *Would need to see what kind of specific data we could get for this.*
- David Nightingale: Electric vehicles are not utility scale, but impact Avista's system. Reliable, planning level at what point for electric vehicles and solar? *Summer peaks maybe.*
- Doug Howell: When are the peaks? *6 pm in the summer and 7 – 8 am / 5 – 6 pm in the winter.*
- Kathlyn Kinney: Energy storage with hydrogen could change this.
- Yao Yin: (Slide 29 Median Monthly Conservation as a Share of Total Actual Retail Load: Navigant Estimates): Have the ratios for the Navigant coefficients stayed the same? *They have increased a bit, but not very much since using the*

median rather than the average. The conservation estimate is from the DSM area.

- Jorgen Rasmussen: Have there been more energy savings in the LEDs vs. the conversions to natural gas? *Yes, the LED lighting conversions are about double the energy savings for lighting. Conversions to LED provide more savings than fuel conversions on a per kWh basis.*
- Amy Wheelless: The WUTC is wanting less fuel conversions.
- On the last slide, the blue line is the starting point for conservation selection

Lunch 12:00

2017 Action Plan Updates, James Gall

- Amy Wheelless: Are we presenting data on bullet 1, page 4. *Yes, we will present. Yes, publically.*
- Doug Howell: List of BPA commitments with Governor Bullock's (Montana) process. *Scott Kinney replied that we have done most of them and the rest are up to BPA.*

2019 IRP Draft Work Plan, John Lyons

- Dave Nightingale: Consider placing a draft IRP review placeholder meeting at the end.
- Gerry Snow: Are you considering additional storage instead of new resources? *Yes.*
- Doug Howell: There is an expectation of signing a non-disclosure agreement to be able to get the inputs used for the March and April meetings. *We want to set up a process to the data? Avista will need to meet internally and discuss this.*
- Matt Nykiel: Timing of the November meeting, add time to the agenda to follow up on assumptions.
- Amy Wheelless: Can Avista be more nimble for inputs to be shared regarding CO2? *We are going to try, but there are several moving parts with the election and potential upcoming state legislative efforts in Washington.*
- Doug Howell: How are you going to decide how to implement the social cost of carbon and the citizen's initiative (I-1631 carbon fee)? *Avista is still determining how to do this and waiting for the results of the November election.*
- Jorgen Rasmussen: Remember the initiative (I-1631) is considered a fee instead of a tax. *Yes, it is modeled the same as a tax even though it's a fee and the recent state court ruling upheld I-1631 as a fee instead of a tax.*
- Scott Kinney: Would like to add that there may be limits to the amount of studies that can be run based on how many requests we receive.

Break

Hydro One Merger Agreements, James Gall

- Jason Thackston: Avista is accelerating the depreciation for Colstrip as part of the Hydro One agreement in Washington and only if the transaction is approved in all five states and is consummated. Idaho has a separate depreciation study case.
- Mike Starrett (phone): For the RFP short-list (for new, renewable generation), are they below cost? *Avista cannot share the specific cost information, but we are getting current pricing data on renewable generation.*
- Doug Howell: Would like to acknowledge the \$4.5 million commitment to the City of Colstrip by Hydro One.

Adjourn