

Webinar #1: Generic Resource Assumptions Q&A

5/29/2020

Overview

On May 28, 2020 Puget Sound Energy hosted a webinar on generic resource assumptions as part of the 2021 Integrated Resource Plan. At this webinar, stakeholders shared their input on generic resource costs. Participants were able to submit feedback on the webinar and materials prior to and after the webinar occurred. Additionally, participants were able to ask questions using a Q&A chat box provided by the GoToWebinar platform.

Below is a verbatim report of the questions submitted to the Q&A chat box. Answers to the questions were provided verbally by IRP staff during the webinar. Timestamps for questions are available for tracking. Please note that questions were answered in order of relevance to the topic currently being discussed. Questions regarding other topics were answered at the end of the webinar session.

To view a recording of the webinar and to hear responses from staff, please visit the project website at pse-irp.participate.online.

Attendees

A total of 61 people attended the meeting.

Attendees included:

Jessica Ackerman, James Adcock, Eleanor Bastian, Larry Becker, Charlie Black, Joni Bosh, Robert Briggs, Rachel Brombaugh, Peter Brown, Stephanie Chase, Vincent Ching, Colin Crowley, Weimin Dang, Cody Duncan, Kara Durbin, Molly Emerson, Ben Farrow, Tom Flynn, Max Greene, Steve Greenleaf, Brian Grunkemeyer, Vladimir Gutman-Britten, Daniel Handal, Fred Heutte, Mike Hopkins, Doug Howell, Laurie Hutchinson, Cameron Janacek, Richard Johnson, Kevin Jones, Eric Kang, Dan Kirschner, Michele Kvam, Sarah Laycock, Virginia Lohr, Jenny Lybeck, Kate Maracas, Kassie Markos, Don Marsh, Sheri Maynard, Jennifer Mersing, David Meyer, Margaret Miller, Valerie O'Halloran, John Ollis, Court Olson, Anthony O'Rourke, Bill Pascoe, David Perk, Nathan Sandvig, Kathi Scanlan, Cindy Song, Steve Johnson, Steve Johnson, Rahul Venkatesh, Katie Ware, Charles Weschler, Willard (Bill) Westre, Kendra White, Bob Williams, Scott Williams and Zacarias Yanez.

Questions Received

Questions are posted in the order in which they were received. The webinar began at 1:30 PM PDT and ended at 4:00 PM PDT.

Responses from staff in the chat box were only provided to assist with webinar troubleshooting. They have not been included for brevity.

Time Asked	Name	Question Asked
01:32:44 PM PDT	Doug Howell	Who is speaking?
01:33:28 PM PDT	Doug Howell	Request that questions can be seen by all participants, not just staff.
01:33:34 PM PDT	Virginia Lohr	Have you started?
01:37:32 PM PDT	Doug Howell	May we see who is participating?
01:38:59 PM PDT	Virginia Lohr	We had no audio, but it's working now.
01:40:04 PM PDT	Doug Howell	It is much better to have questions and participants available in real time. This is key to transparency.
01:42:23 PM PDT	Doug Howell	FYI, King County did this very successfully with 70 participants for their climate plan webinar.
01:44:33 PM PDT	James Adcock	I feel PSE IRP's in the past have been more successful when questions can be asked and answered more-or-less in real time, not delayed "until the end" -- when questions are delayed "until the end" they never get answered in a meaningful way.
01:47:26 PM PDT	David Perk	In the 2019 IRP cycle there were a couple of IRPAG meetings that were opportunities for the general public to make comments. Apparently that format won't be available in the 2021 cycle?
01:49:06 PM PDT	James Adcock	I am concerned that the "chat moderator" is "editing" the questions/chat I am posting in a way which does not necessarily accurately represent that which I am actually saying.
01:49:13 PM PDT	Don Marsh	Q&A's on a particular slide must be near real-time to have a good record for the webinar. Otherwise, the continuity is lost for viewers.
01:50:55 PM PDT	Virginia Lohr	What is the difference between QUESTIONS and CHAT?
01:51:53 PM PDT	James Adcock	I was surprised that PSE "canceled" the 2019 IRP Process without even a "Closure Meeting."
01:53:13 PM PDT	David Perk	+1 on James' comment
01:54:41 PM PDT	James Adcock	Will the 2021 IRP meet the 2030 "80/20" requirements?

Time Asked	Name	Question Asked
01:55:39 PM PDT	Virginia Lohr	When are the "On-line Meetings"?
01:56:44 PM PDT	Kevin Jones	WAC 480-100-620 states "The utility must inform, consult, and involve stakeholders in the development of its IRP..." What IAP2 level are you applying to this meeting?
01:58:03 PM PDT	James Adcock	If meeting dates change or are canceled how many weeks notice will we have about those changes? It is very disruptive to our schedules and other commitments to have meeting dates changed or moved with little notice.
02:01:24 PM PDT	James Adcock	Was that a "Yes" commitment to meeting the 2030 "80/20" requirements? I did not hear Irena say that in so many words.
02:01:30 PM PDT	Joni Bosh	Did the 2019 progress report include estimated resource need?
02:02:26 PM PDT	Kevin Jones	Since WAC 480-100-620 uses "and", not "or", wouldn't it be more appropriate to apply the "involve" level of public participation to this meeting? If not, why not?
02:02:28 PM PDT	David Perk	Welcome Elizabeth!
02:02:31 PM PDT	Kate Maracas	Will there be phases of the IRP process for which the IAP2 "collaborate" level will be utilized?
02:04:05 PM PDT	Virginia Lohr	You make a distinction between webinars and on-line meetings. When are the on-line meetings and who is invited to them and where can I find information on them? I do not see the distinction on your web site.
02:04:12 PM PDT	Don Marsh	When will the Demand Forecast assumption be discussed? This has been a weak point in previous IRPs, so we want to concentrate on these assumptions.
02:05:14 PM PDT	James Adcock	Can we get access to the input data used for stochastic modeling?
02:06:20 PM PDT	Charlie Black	Elizabeth mentioned PSE's existing resources. How will PSE develop assumptions about costs, availabilities, remaining lives, etc. for PSE's existing generating resources?
02:07:17 PM PDT	Doug Howell	Agree with Jim. We need access to the input files for Plexos, Aurora and the Resource Adequacy models. We will sign NDAs as necessary.
02:09:17 PM PDT	Kate Maracas	Does PSE's capacity expansion model optimize strictly on least cost, or is it configurable to optimize on other parameters associated with particular resources (such as value of flexibility, voltage support, and other ancillary services)?
02:10:55 PM PDT	Nathan Sandvig	How does this upcoming RFP interface with this IRP process?
02:10:56 PM PDT	Charlie Black	Supplement to my question on assumptions about PSE's existing resources: what assumptions are being made about need and costs for refurbishments, other investment costs in the existing resources?
02:14:36 PM PDT	Don Marsh	The location of resources is important. Costs of a resource should include transmission costs, transmission losses, transmission reliability and resiliency, and risks (fires).

Time Asked	Name	Question Asked
02:15:07 PM PDT	Kevin Jones	Hi Alison. Will you post my follow-on question regarding WAC 480-100-620 posted 12 minutes ago? Thanks!
02:17:51 PM PDT	Doug Howell	To build off of what Elizabeth just said, and you "must" put in the social cost of carbon in the baseline assumption.
02:18:43 PM PDT	Fred Heutte	Just a thought -- we used GoToWebinar for a test run and the limitation of only "organizers" seeing the actual entries in the chat is a significant limitation, so you may want to consider GoToMeeting next time.
02:19:18 PM PDT	David Perk	But will the Social Cost of Carbon be part of the baseline assumptions?
02:19:52 PM PDT	Fred Heutte	Also to note -- I hosted a webinar on resource adequacy on Tuesday with GoToMeeting and the chat is a lot better with everyone seeing the interaction.
02:21:07 PM PDT	James Adcock	I don't feel it is fair to blame "technology" for the very limited amount of real and meaningful active "public participation" in this meeting. These kinds of "technology" related meeting problems have been going on for more than a decade now.
02:21:28 PM PDT	David Perk	+1 to Fred's comment on using GoToMeeting for better interaction and transparency.
02:22:32 PM PDT	Joni Bosh	How recent is the HDR data? My recollection is this study was completed in 2018?
02:25:55 PM PDT	James Adcock	I will ask my "NREL" question again: Can we get a pointer to the web address of the "NREL [Wind] database" mentioned on page 25 of this meeting?
02:26:02 PM PDT	Fred Heutte	I'm not understanding the 37.5-100 operating range for pumped storage. The Absaroka Gordon Butte project anticipates a full operating range from -400 to +400 with very little interruption and very fast (20MW/sec) ramp rates based on a European design with at least one plant in service using that configuration.
02:26:10 PM PDT	Doug Howell	What is winter peaking for Montana wind?
02:26:56 PM PDT	Kate Maracas	Section 13(3) of CETA requires Commerce and the UTC to adopt rules defining analysis and reporting requirements for "Retail electric load met with market purchases and the western energy imbalance market or other centralized market administered by a market operator" (among other things). How does the IRP evaluate the role of market resources (energy prices)? The generic resource cost data on PSE's website only includes capital and O&M costs.
02:26:59 PM PDT	Fred Heutte	Offshore wind is way above the indicated value for the "sweet spot" area from southern Oregon to northern California -- well above 50%.
02:28:54 PM PDT	Fred Heutte	Could you explain a bit more on using wind/solar P50 values for the resource adequacy assessment? Maybe I'm missing something but where a deterministic value may be ok for some modeling, for RA it really needs to represent daily, seasonal and interannual variability.
02:29:33 PM PDT	Robert Briggs	Please tell us where the offshore wind is located.

Time Asked	Name	Question Asked
02:31:34 PM PDT	Kevin Jones	If I heard Irena correctly, let me say, for the record, that PSE appears to not be implementing WAC 480-100-620 regarding public participation.
02:32:53 PM PDT	Kevin Jones	Regarding offshore wind - how far off the coast?
02:37:10 PM PDT	James Adcock	Thank you for the NREL ref -- can you also repeat the assumed Wind Turbine model number which is being used?
02:39:07 PM PDT	James Adcock	There are many different Wind Turbine models and blade designs matching "3 Megawatt 100 Meters" can you please give me more detailed technical information about what exactly you are assuming?
02:43:40 PM PDT	Doug Howell	Do gas costs include social cost of carbon and upstream emissions?
02:46:08 PM PDT	James Adcock	Why not include interconnect costs?
02:46:38 PM PDT	Don Marsh	I don't understand excluding the cost of interconnection. Does that get included somewhere else?
02:48:50 PM PDT	Kevin Jones	How does PSE evaluate the cost risk of having to move offshore wind more than 3 miles offshore in the IRP? Is this a revision to the model when you complete your research, or does the model include a cost variation parameter?
02:49:04 PM PDT	Mike Hopkins	for thermal generation, was there any consideration of using biofuels or renewable gas as fuel instead of traditional nat gas?
02:52:29 PM PDT	Fred Heutte	here's a number of comments compressed into one submission -- * thanks for an well structured breakout on new resource costs and for providing full detail - big progress already in the 2021 IRP! * we disagree very strongly with using AEO future cost curves, they are using an obsolete approach and the ATB method is much better * we recommend converting to discounted present value instead of nominal value, not only for generation costs but across the board in the IRP * future cost decline most important to get right for fast innovation resources including solar, battery, hybrid and offshore wind * very important to model hybrids (solar+storage, wind+storage) in this IRP!
02:52:57 PM PDT	Fred Heutte	sorry about the formatting on that one! I will also have a couple comments on the specific details when that's appropriate
02:53:15 PM PDT	James Adcock	I am concerned about the possibility of triggering large-scale gas pipeline upgrade needs without fairly including those costs in NG Peaker costs analysis.
02:54:23 PM PDT	Kevin Jones	Does the PSE model include cost risks in general? If not, how to you consider cost risks?

Time Asked	Name	Question Asked
02:54:49 PM PDT	Bill Pascoe	Where can we find information about assumed lives for the various resurces?
02:56:10 PM PDT	Don Marsh	+1 on Fred's recommendation to model hybrids (renewables + storage). We have seen costs of 2 cents / kWh for solar + storage in El Paso, TX. Might not be quite so cheap in the Northwest, but we would like to have accurate accounting of those technologies in our region.
02:56:16 PM PDT	Robert Briggs	<p>There are two recent studies that show that renewable hydrogen can play an important role in enabling transitioning to 100% carbon-free energy at reduced cost.</p> <p>The two studies of great relevance to this IRP are:</p> <p>Path to 100% Renewables for California, WÄRTSILÄ®, <https://www.wartsila.com/docs/default-source/power-plants-documents/downloads/white-papers/americas/path-to-100-renewables-for-california.pdf>.</p> <p>Hydrogen Opportunities in a Low-Carbon Future: An assessment of long-term market potential for hydrogen in the Western United States, Energy+Enviromental Economics, May 2020.</p> <p>It seems that it would be financially imprudent for PSE to add any thermal plants that are not designed to allow them to operate on 100% hydrogen, otherwise they will be at risk of being taken out of service before the end of their service life. Your comment?</p>
02:56:42 PM PDT	Doug Howell	How is PSE dealing with the risk of stranded assets for new gas plants given likelihood they will no longer be "used and useful" but the debt will continue?
02:58:08 PM PDT	Fred Heutte	question on solar+battery hybrid -- will you be using combo cost rather than adding one to the other?
02:59:43 PM PDT	Fred Heutte	We are seeing costs for combo solar+hybrid that are much less than adding them together for several reasons -- colocation costs and some factors that appear to relate to project finance and investor risk appetite
03:01:19 PM PDT	Kevin Jones	Has PSE looked at the available market for "alternate fuels"? Both capacity and cost?
03:01:50 PM PDT	Robert Briggs	Yes, purchase only equipment that can run on 100% hydrogen. Also, add renewable hyrdogen as a storage resource.
03:03:36 PM PDT	Valerie O'Halloran	I may have missed this, but will PSE be looking at HydroPower as well.
03:05:32 PM PDT	James Adcock	<p>Again, under WA law it only "works" to use renewable fuel on NG plants IF you directly use that renewable fuel in the NG plant. If you simply inject renewable gas into the gas pipeline in general you are only qualifying for the "20%" part of the 2030 "80/20" requirements.</p> <p>And again, you have not yet clearly stated for the record whether: "Yes PSE will meet the 2030 '80/20' requirements" -- or alternatively</p>

Time Asked	Name	Question Asked
		maybe PSE is saying: "We don't believe we have a requirement to meet 2030 '80/20' requirements" -- we need to understand what PSE's position is on this issue so that we can understand what PSE is trying to accomplish in this IRP.
03:05:40 PM PDT	Fred Heutte	Info on the Absaroka Gordon Butte project: https://gordonbuttepumpedstorage.com/wp-content/uploads/2020/03/3.04.2020_BriefingDoc_Final.pdf and their NW Council presentation https://nwcouncil.app.box.com/s/xfuiz4fzn0yw6zzmu61djsxc7pt5b3z7
03:06:36 PM PDT	Brian Grunkemeyer	Follow-up: should the value of energy produced in out years be reduced by the discount rate?
03:08:22 PM PDT	Bill Pascoe	When and how will PSE look at flexible capacity needs in this IRP?
03:10:05 PM PDT	Brian Grunkemeyer	If you apply a discount rate to the operating costs, but don't provide a discount rate to the value of energy produced, isn't that inconsistent?
03:10:50 PM PDT	Willard (Bill) Westre	The Variable costs do not seem to include fuel cost. Is this separate?
03:14:21 PM PDT	James Adcock	In previously IRP's there were concerns about required diesel start-ups on the Recips -- not able to meet air quality requirements?
03:16:15 PM PDT	Fred Heutte	On the specific details (referring to the XLS data, for which many thanks) -- * we recommend using only the most recent cost estimates per source for the "clean" averages, and removing previous estimates such as the earlier ATB and PSE IRP values * we also suggest completely excluding the ATB "constant" values which are only intended as a constant baseline for NREL internal modeling
03:18:03 PM PDT	Fred Heutte	One more on the details -- we recommend averaging the ATB low and mid values because they represent the lower and higher bound of their modeling and especially for solar we believe the average between ATB low and mid is the most likely case based on our own modeling
03:19:07 PM PDT	Court Olson	Utility solar doesn't have to be tracking. Have you compared the cost of non-tracking?
03:19:07 PM PDT	Fred Heutte	On offshore wind, there is significant new cost data showing much lower capital cost but it is still basically proprietary -- I will try and connect PSE to some sources
03:21:18 PM PDT	Fred Heutte	If I might respond to Court -- the vast majority of utility scale PV is now single axis tracking, with effectively no incremental capital cost but better overall output, especially with properly sized inverters (as measured for example by the inverter loading ratio or ILR)
03:31:58 PM PDT	Don Marsh	I still have a question about when we will discuss the Load Forecast.
03:33:49 PM PDT	Doug Howell	More than just stochastic modeling, we need input files for Aurora, Plexos, Resource Adequacy and Load Forecast

Time Asked	Name	Question Asked
03:34:18 PM PDT	Don Marsh	I'm disappointed that the Demand Forecast is designated as an "inform" item. This group has good questions and good information that could "inform" PSE's modeling. We are hoping the Demand Forecast will be much more accurate than it has in previous IRPs.
03:35:57 PM PDT	David Perk	+1 Don's comment re Demand Forecast's "inform" designation
03:36:33 PM PDT	Joni Bosh	I think the reference is to the current DR RFP and the all source RFP that is underway?
03:36:50 PM PDT	David Perk	+1 Doug's request for additional input files to be made available
03:38:38 PM PDT	Don Marsh	+1 Doug's request for input files
03:38:39 PM PDT	Joni Bosh	Yes.
03:40:18 PM PDT	Fred Heutte	if I understand correctly, you automatically get GoToMeeting with the GoToWebinar subscription
03:40:24 PM PDT	Kate Maracas	Can PSE provide anonymized bid data in the form of median values by project type?
03:40:45 PM PDT	Doug Howell	Why aren't questions made available to everyone?
03:41:03 PM PDT	Fred Heutte	we are all learning about this new all-webinar-all-the-time world!
03:41:14 PM PDT	Willard (Bill)Westre	How have the responses (PPA's) to the 2017 RFP's, indicating market costs effected the cost data.
03:41:31 PM PDT	Doug Howell	It is must different to see questions in real time.
03:41:39 PM PDT	Doug Howell	It is *much different
03:44:07 PM PDT	Don Marsh	We learn a lot from anonymized RFP data from utilities in other states. It would be wonderful if PSE took this step for increased transparency and accountability. It's appropriate for such a technologically and ecologically advanced region as the Puget Sound.
03:45:56 PM PDT	David Perk	Will there be a general public comment opportunity during the 2021 IRP cycle?
03:46:01 PM PDT	Brian Grunkemeyer	FYI - we saw a drop in EV driving (and charging) by about 75% as a result of COVID shelter-in-place and stay-at-home orders. I'll send some pictures for your information.
03:46:14 PM PDT	Kate Maracas	Will PSE consider using bid data to inform future IRPs once they have been fully negotiated? Note that I'm not suggesting making the data public.

Time Asked	Name	Question Asked
03:46:22 PM PDT	Bill Pascoe	Have the meeting times been established?
03:46:24 PM PDT	Kevin Jones	Do all these meetings start at 1:30PM?
03:46:30 PM PDT	Joni Bosh	Could you post the link to the website again:
03:47:48 PM PDT	Virginia Lohr	Didn't UTC (David Nightingale) ask for anonymous RFP data in one of the early 2029 IRP meetings?
03:48:20 PM PDT	Virginia Lohr	2019 IRP, I meant
03:48:30 PM PDT	Don Marsh	We have seen COVID impacts on electric demand from around the country, but very little information from the Northwest. When will PSE tell us what is happening in its service area?
03:51:09 PM PDT	Court Olson	In future meetings, would you please schedule a five minute "bio" break after 90 minutes?
03:51:15 PM PDT	Kevin Jones	Could you post your website link in the chat?
03:51:30 PM PDT	Kevin Jones	Sorry - I see you did. Thanks.
03:52:43 PM PDT	Kate Maracas	It's https://pse-irp.participate.online
03:56:15 PM PDT	David Perk	thank you -- wishing you good health