Webinar #4: Demand Side Resources Q&A

7/15/2020

Overview

On July 14, 2020 Puget Sound Energy hosted an online meeting with stakeholders to discuss demand side resources. Stakeholders shared their input on conservation potential assessment and sensitivities with demand side resources. Additionally, participants were able to ask questions and make comments using a chat box provided by the Go2Meeting platform.

Below is a report of the questions submitted to the chat box. Answers to the questions were provided verbally by IRP staff during the webinar. 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 57 stakeholders and PSE staff attended the webinar, plus another 12 attendees who called into the meeting and did not identify themselves (69 people total).

Attendees included: Anika Arugunta, Aron Jarr, Anne Newcomb, Brian Grunkemeyer, Cody Duncan, Corey Corbett, Dan Kirschner, David Meyer, David Tomlinson, Don Marsh, Doug Howell, Eddie Webster, Eli Morris, Elyette Weinstein, Fred Heutte, Jeff Tripp, Jennifer Mersing, Jennifer Snyder, James Adcock, Jane Lindley, John Ollis, Joni Bosh, Justin Moffett, Kassie Markos, Kate Maracas, Kathi Scanlan, Katie Ware, Kevin Jones, Kyle Frankiewich, Larry Becker, Lori Hermanson, Lorin Molander, Mark Sellers-Vaughn, Michael Laurie, Michael Noreika, Michelle Wildie, Mike Hopkins, Nathan Gagnon, Philip Puzon, Rachel Brombaugh, R. C. Olson, Rahul Venkatesh, Robert Briggs, Sarah Laycock, Stephanie Chase, Stephanie Price, Ted Drennan, Therese Miranda-Blackney, Thomas Anderson, Virginia Lohr, Warren Halverson, Willard (Bill) Westre, and Zacarias Yanez.

Questions Received

Questions from attendees are posted in the order in which they were received. The webinar began at 1:30 PM PDT and ended at 4:59 PM PDT.

Name	Time Sent	Comment
Alison Peters	**1:22 PM**	Welcome everyone. We will be starting the webinar at 1:30pm.
Alison Peters	**1:26 PM**	Just a friendly reminder as folks are joining to mute yourself.
Alison Peters	**1:37 PM**	You are encouraged to type in your name to the chat box so that folks know who is here. Share with "Everyone." Thank you.
Michael Laurie	**1:37 PM**	Michael Laurie
Brian Grunkemeyer	**1:38 PM**	Question queued up for slide 36: I don't see anything about Demand Flexibility approaches. Specifically, there's no EV load management measure, and it's unclear whether the Heat Pump Water Heater measure is taking advantage of all the great work the BPA has been doing on aggregating water heaters as Demand Flexibility devices.
Doug Howell	**1:39 PM:**	Would please speak a little louder?
Joni Bosh	**1:39 PM:**	Any way to make Gurvinder's voice clearer? He is hard to hear
Kyle Frankiewich	**1:39 PM**	Kyle Frankiewich, UTC staff
Brian Grunkemeyer	**1:40 PM**	Perhaps the answer to my question is slide 43, but Demand Response leaves something on the table vs. Demand Flexibility. We should be modelling resources that can be called every day, not 6 times per year.
Kyle Frankiewich	**1:41 PM**	slide 10: How does the zip code level overlay with PSE's distribution-level planning and with PSE's efforts regarding CETA's equity requirements?
Jane Lindley	**1:42 PM**	What level of International Association for Public Participation (IAP2) engagement will be used in the meeting today? Inform, Consult, Involve or a combination? Thanks!
Irena Netik	**1:44 PM**	This topic is a combination of inform and consult.
Virginia Lohr	**1:44 PM**	Can the slide be shown as a slide, not within PPT, so it is bigger?
Joni Bosh	**1:45 PM**	What other kind of benefits does Plexos provide, specifically?
Kate Maracas	**1:46 PM**	To Gurvinder - does your Plexos flexibility model distinguish between dispatchable DR and those resources that are responsive in real-time? I'm thinking of resources like EV charging vs. real time pricing products.
Doug Howell	**1:47 PM**	How will EE estimates be adjusted once social cost of carbon is accounted for?
Don Marsh	**1:47 PM**	Is local energy storage included in both the Resource Adequacy Model and the Plexos Flexibility Model? It seems that energy storage would provide benefits that would be valuable in both models.
Joni Bosh	**1:50 PM**	Slide 13 What deferral amount did PSE use in the prior IRP? The Power Council value?
Fred Heutte	**1:53 PM**	comment on slide 13: we have provided input to the NW Council that their new value for T&D deferral (lower now than PSE's) needs further review

Don Marsh	**1:54 PM**	What is the effect of the changed T&D number? Does it make transmission more or less costly compares to NWAs? I'm confused because I missed part of Gurvinder's commets because the audio was too distorted.
Kyle Frankiewich (	**1:54 PM**	slide 13 will we see the inputs and calculations for PSE's updated estimates?
Doug Howell	**1:54 PM**	SLide 14. Is there a complete description of the wiggle room that PSE to depart from the NPCC model?
James Adcock	**1:55 PM**	Slide 13 -- I don't understand the large T&D difference between the Power Council 2021 plan vs. 7th plan?
Don Marsh	**1:56 PM**	Can we see the conservation forecast values by zip code?
Don Marsh	**1:57 PM**	Can we also see how the conservation forecast per zip code has changed during recent years?
Brian Grunkemeyer	**1:58 PM**	To extend on Don's questions, have you thought about producing a Locational Marginal Value of Conservation? Kinda like LMP, but annual for directing upgrades to individual substations.
Doug Howell	**2:00 PM**	Louder pleas
Doug Howell	**2:00 PM**	GUrvinder, you are disappearing again
Don Marsh	**2:00 PM**	Can't easily understand Gurvinder, unfortunately.
kevin jones	**2:00 PM**	Could you ask if Gurvinder is using a headset, and if he can try calling on a direct line? The audio is often muffled.
Joni Bosh	**2:02 PM**	Sorry, I cannot hear Gurvinder's answers
R. C. Olson	**2:02 PM**	Gurvinder is sounding very garbeled again.
R. C. Olson	**2:03 PM**	He is still very hard to understand. Elizabeth comes in clear, but Gurvinder fades in and out in clarity.
R. C. Olson	**2:04 PM**	Please share the forumula (equation) used to calculate cost effectiveness.
Joni Bosh	**2:04 PM**	COuld someone please repeat Gurvinder's answers?
Don Marsh	**2:07 PM**	Recommend that Gurvinder try phoning the audio in. The current garbled audio is very taxing on participants.
	2:07 PM	Sorry, I did not get the answer to Kyle's question on slide 13
Doug Howell	**2:07 PM**	I think I got. The methodology is largely the same.
Doug Howell	**2:07 PM**	The measures, values and assumps can be slightly diff
R. C. Olson	**2:13 PM**	I did not gete an answer to my question. Please provide the formula that is in the portfolio model.
Don Marsh	**2:13 PM**	Thanks, Gurvinder. Audio is MUCH better!
Joni Bosh	**2:13 PM**	Thanks
Doug Howell	**2:13 PM**	Gurvinder - you are much clearer now. Thank you.
Elyette Weinstein	**2:15 PM**	Doug you asked a question about values used.

Don Marsh	**2:17 PM**	Documentation of PSE's models and assumptions is so important because some of the conclusions PSE comes to seem to be at variance with what is happening with other utilities across the country. For example, Pacificorp is going much more for battery storage than PSE is. Why is that? Is there something different about PSE's service territory? We need to understand.
Kyle Frankiewich	**2:21 PM**	slide 18 - Not sure CPA would be the logical place for it anyhow, but time-of-use or dynamic rate structures can prompt load-shifting that shares a lot of similarities with DR and other flexible load programs. How will PSE explore those options?
Don Marsh	**2:22 PM**	Slide #18: We haven't seen PSE's load forecast yet. What level of growth was Cadmus provided for its analysis?
Joni Bosh	**2:22 PM**	If load forecasts are complete for this analysis, can you provide those? Slide 18
Michael Laurie	**2:22 PM**	Do the load forecasts take into account the likelihood that commercial building occupancy will be significantly less than it was pre-COVID and that overall demand will likely be less was expected 6 months ago.
Don Marsh	**2:24 PM**	Slide #19: Five sources - why not consider energy storage? This seems like a significant omission.
Alison Peters	**2:25 PM**	Joni, to your question about the forecasts. This will be the topic of the webinar on Sept. 1.
Michael Laurie	**2:25 PM**	Do any of the efficiency and renewables estimates take into account that we may likely have a Democrat president and Democrate controlled Congress which will likely lead to significant federal incentives for more efficiency and renewables?
kevin jones	**2:26 PM**	In the 2019 PSE IRP it was mentioned that the utilty had a gas demand response pilot program. UTC Kathi Scanlan asked for details of this program. Could you explain why your analysis did not contain DR for gas?
Michael Laurie	**2:27 PM**	How is PSE estimating the non-PSE programmatic conservation that will occur due to the new energy codes, C--PACER law, CETA, and the commercial building performance standard law?
Doug Howell	**2:27 PM**	Slide 20. Once the IRP defines "achievable economic" are PSE implementers required to achieve all of this?
Willard (Bill) Westre	**2:29 PM**	Raise hand #13
Don Marsh	**2:29 PM**	Deferring the load forecast until September makes it so hard to judge all these analyses that use the load forecast as an input.
kevin jones	**2:30 PM:**	Why were the load forecasts not reviewed in this forum prior to them being used in the CADMUS analysis?
R. C. Olson	**2:32 PM**	How is the growing trend to switch from gas to heat pump heating being included in this analysis?
kevin jones	**2:32 PM**	Could you tell us the duration of the gas DR pilot?
Rachel Brombaugh	**2:34 PM**	CPACER was signed into law
Doug Howell	**2:36 PM**	Follow up on Slide 20. How do implementers set the EE target from the 'economic achievable?"

kevin jones	**2:39 PM**	WIll the CADMUS analysis be re-done if there are signficant issues with the PSE load forecast? Technical advisors have typically raised concerns about PSE load forecast. How are these results valid?
R. C. Olson	**2:40 PM**	We would like to know when we can plan on hearing a new analysis that includes the heating fuel switching trend that is growing. This is a big flaw in the analysis. What future session will this be presented in?
Michael Laurie	**2:41 PM**	Could you show us the calculations and inputs used to estimate the non-PSE programmatic conservation that will occur due to Washington legislation that has passed recently. This is critical because if this is underestimated it could lead to overbuilding supply side resources. It is not helpful to anyone to know that you will include it in the modeling. Please show us the numbers and details even if that means showing us a simplification of how the model will deal with it. Thanks
Doug Howell	**2:41 PM**	Follow up on slide 20: How can we ensure oversight of this EE target setting? Seems like this is where the rubber meets the road.
R. C. Olson	**2:43 PM**	On slide 21 please provide details on how the distiction is being made between technically feasible and achieveable options?
Joni Bosh	**2:44 PM**	Slide 23 - What is the source for saturation rates? How does the applicability factor differ from ramp rate
R. C. Olson	**2:47 PM**	For deep energy efficiency work on a buliding, a unique set of measures should be used. These vary from building to building in my experience. The results are not typically calculatable by summing the individual measures used. How does the Camus analysis take this realilty into account?
kevin jones	**2:48 PM:**	WIll PSE provide the customer and load forecast used in the CADMUS analysis?
Joni Bosh	**2:49 PM**	Slide 23 - What is the source and the values of these input values? What is included in non-energy benefits? Sorry that should be for slide 14. Slide 24
Warren Halverson	**2:49 PM**	I, too, am disappointed that load forecasts are to be discussed so late in the process. Aren't loads and customers a primary driver. My question about Step 2 is how do you weight the degree of significance of each of these factors?
Alison Peters	**2:50 PM**	Michael, for the question you asked, would you kindly submit a Feedback Form so PSE can provide the level of detail you are asking for? Thank you.
Doug Howell	**2:50 PM**	Slide 24. Does the Total Resource Cost test have the effect of leaving lost energy efficiency opportunity behind?
Michael Laurie	**2:51 PM**	Alison, Thank you. Where or how do I obtain a Feedback Form? Do you have a link to it?
Willard (Bill) Westre	**2:51 PM**	Slide 24 - What discount rate is used for LCOE?
James Adcock	**2:51 PM**	Jim Adcock Raise Hand
Kyle Frankiewich	**2:51 PM**	slide 24: Do CBSA and RBSA data allow for zip code / census tract tailoring based on local building footprints? IE if neighborhood has more MF housing, then MF EEMs will have a greater impact. May link to highly impacted communities and NEIs.

Alison Peters	**2:52 PM**	Yes. PSE will answer questions in writing when folks submit a Feedback Form. Here is the link: https://pse-irp.participate.online/feedback-form
R. C. Olson	**2:53 PM**	How does the Cadmus efficiency modeling calculation figure the building envelope air leakage reduction plays in the reduction of energy conservation due to heating load reduction? It will vary from building to building.
Alison Peters	**2:53 PM**	For this webinar, please submit your form by July 21 and the answers will be posted online by July 28.
	2:54 PM	Slide 26. what is included in "discretionary measures" and what portion is this of the total EE budget?
R. C. Olson	**2:54 PM**	In slide 26, How is the potential long-term economic value calculated? What is the formula used?
Doug Howell	**2:54 PM**	Slide 26 - Please explain "lost opportunity measure?"
Michael Laurie	**2:55 PM**	Alison, Got it thanks
Doug Howell	**2:57 PM**	Slide 26 - Why is ramp rate only 10 years?
Warren Halverson	**2:58 PM**	I, too, am disappointed that load forecasts are to be discussed so late in the process. Aren't loads and customer accounts primary drivers? My question about Step 2 is how do you the degree of signficance of each of these factors?
R. C. Olson	**2:59 PM**	For many efficiency enhancements, impact continues well beyond ten years. Can we get this time frame extended through the full IRP period of 20 years?
Joni Bosh	**3:00 PM**	If measures are bundled by levelized costs, how do you plan to reflect/capture peak energy values? By measures? By bundles? Slide 27
Kyle Frankiewich	**3:00 PM**	+1 for Joni's question
Doug Howell	**3:01 PM**	Will we have time to offer sensitivities on Slide 69?
Willard (Bill) Westre	**3:03 PM**	Ramp rates - Have other utiliities used shorter ramp rates?
Michael Laurie	**3:04 PM**	Have you looked at the case study of the major retrofit of the Empire State Building to include the measures they implemented in your analysis of what is technically feasible?
Elyette Weinstein	**3:08 PM**	What percentage of annual contriubtions does PSE contribute to the NW Energy Efficiency Alliance?
	3:12 PM	How is the unique efficiency impact for an aggregation of measures going to be used to adjust the PSE future efficiency forecast? This is important as future CETA deadlines and C-PACER programs ramp up and deep efficiency improvements catch on in the buildings market place. The 2021 IRP must take this into account, so when will we see appropriate revised efficiency forecasting?
Michael Laurie	**3:15 PM**	What is the relaationship between the CPA and IRP effort versus program implementation? Are the program implementers at PSE required to show a good faith effort to carry out what the IRP concludes is cost effective? If so is there a publicly available report where the implementers document that?

kevin jones	**3:18 PM**	Gurvinder - you did not really answer my question - would PSE provide the load data used in the CADMUS analysis? Will this be the same or different than the load forecast provided in September? If different we would like to understand the differences. If the same, why will PSE not provide the data now?
R. C. Olson	**3:20 PM**	We would like our questions addressed in real time as slides are being presented and as we have multiple PSE people available to answer. Please delay the presentation accordingly!
Don Marsh	**3:20 PM**	+1 for Kevin's load forecast question. At least tell use what rate of growth is being assumed. We can delve into the details in September, but there is no reason to hide the ball today, especially on such a crucial assumption.
R. C. Olson	**3:23 PM**	You missed the legislating update for HB2405 which put C-PACER into law. This needs to be included in your analysis. When will your analysis be adjusted accordingly?
Don Marsh	**Slide #30**	How do the 2023 values compare to NWPCC assumptions? How do they compare to assumptions for neighboring utilities, like Seattle City Light? They seem a little low to me.
Joni Bosh	**3:26 PM**	repeating my question from slide 24 here again - If measures are bundled by levelized costs, how do you plan to reflect/capture peak energy values? By measures? By bundles? Slide 27
R. C. Olson	**3:27 PM**	Your commentary thus far indicates that several things were overlooked and not included in estimating the achievable energy efficiency over the next twenty years. When will these projections be revised to include the increasing trend of deep efficiency improvements which we expect over the next twenty years?
James Adcock	**3:27 PM**	Slide 31 -- There is no "2019 IRP" -- because Puget canceled it. Please fix this.
kevin jones	**3:30 PM**	Slide 33: Is the 26% to 8% drop in achieveable Industrial technical potential due to industrial to commercial reclassification?
Don Marsh	**3:33 PM**	Slide 34: I think you're saying that most of the drop in electric potential is because of lower growth in various categories. So the load forecast should be significantly lower than we saw in 2019. But for now, we just have to guess. Like blind men describing an elephant.
Fred Heutte	**3:33 PM**	Actually, the NW Council has shown some interest in enterprise class data center EE and DR, and even if no such facilities locate in PSE territory (which can't be ruled out), facilities in smaller categories can add up to considerable new load
R. C. Olson	**3:34 PM**	Slide 34 seems to only consider new construction. Some of us expect an increasing likelihood of retrofitting existing buildings. It appears that you are missing this likely occurence over the next 20 years which will likely eclipse the savings impacts from more efficient new buildings. When will your forcast be adjusted to accomodate this likely future trend?

R. C. Olson	**3:38 PM**	To follow up on my question on air leakage consideration, please provide the data source for the detailed envelope factors that Camus says that they use. Thanks.
Doug Howell	**3:41 PM**	Slide 26. That does not answer the question about why can't PSE further accelerate the ramp rate from 10 years to six or eight years.
R. C. Olson	**3:44 PM**	The answer to my question on the 10 year life for measures rather than 20 years, the assumption that measures will only have a weighted average of 10 years is incorrect in my experience. This needs to be revised. When can we expect to see this impact period extended from 10 years to 20 years?
Michael Laurie	**3:45 PM**	Slide 36 includes one measure called "Whole Home". Whole home what? What is that?
Kyle Frankiewich	**3:46 PM**	hand raised - slide 36
James Adcock	**3:48 PM**	Raise Hand -- general question.
Michael Laurie	**3:50 PM**	Slide 39 Back to my point about a likely Democratic federal administration, I think it is critical to consider that there will be a lot more new federal standards when and if that happens.
Kyle Frankiewich	**3:58 PM**	slide 42: what's the difference betwen CPP and behavior DR? If behavioral DR is similar to home energy reports, is it effectively just asking / informing customers of the benefit of shifting load?
R. C. Olson	**3:58 PM**	Where are slides 41 & 42? One was missed and one that appeared wasn't numbered.
Kate Maracas	**3:58 PM**	Slides 24-43: To what extent does PSE rely on demand response aggregators to deploy the the DR products? Could broader use of aggregators increase customer adoption?
Don Marsh	**3:59 PM**	Disappointed the Cadmus didn't include time-of-use rates as a Demand Response product. Although Critical Peak Pricing can help alleviate maximum peaks, a daily TOU rate would make customer batteries more economical, with potentially attractive environmental benefits.
Kate Maracas	**3:59 PM**	Sorry - the above reference was meant to be slides 42-43.
Don Marsh	**4:00 PM**	Slide 44, Cadmus again mentions PSE's 2045 load forecast, which we are not allowed to know for months. This is not acceptable.
Fred Heutte	**4:01 PM**	slide 47: I have a comment on the residential water heat DR potential.
Don Marsh	**4:01 PM:**	Slide 45, does "behavioral load response" = time of use rates? Or is this just critical peak pricing?
Kate Maracas	**4:02 PM**	Slides 42-44: do many of these programs rely on AMI (automated metering infrastructure)? If so, is investment in AMI an impediment to broader customer adoption?
kevin jones	**4:02 PM**	Slide 45: Is uncertain customer acceptance a CADMUS or PSE assumption and what is the basis for the assumption?
Doug Howell	**4:03 PM**	Demand Response: Do the DR benefits include: avoided generation and TX upgrades; avoided distribution upgrades; storage function; line loss reduction from energy savings; ancillary services at generation level such as frequency regulation and spinning reserve; and ancillary services for distribution of voltage control?

Don Marsh	**4:03 PM**	Slide 45 - "uncertainties regarding customer acceptance" is PSE's standard explanation. However, many utilities find customers love demand response programs that provide lower monthly bills. PSE is using assumptions that are decades out of date.
R. C. Olson	**4:04 PM**	Not including the potential for demand control on smart appliances misses a DR potential. Can this potental be included in a revision to the DR calculations?
Michael Laurie	**4:05 PM**	Slide 45 - Agree with Don Marsh's point. PSE please explain what thinking and evidence led to reach a different conclusion than other utilities reached.
Don Marsh	**4:07 PM**	Slide #46, Critical Peak Pricing seems pretty wimpy if only 15% of customers are eligible. Time of use rates could apply to nearly 100% of customers. PSE's reluctance to study time of use is based on one bad experience more than two decades ago. Technology has changed, the industry has learned.
kevin jones	**4:07 PM**	What is the basis of the assumption that energy efficiency occurs before Demand Response? What is your estimate of delayed DR employment while waiting for EE upgrades?
R. C. Olson	**4:08 PM**	Where to you get your PV market penetration function for each year?
Don Marsh	**4:12 PM**	Slide 51. Solar prices are decreasing pretty fast. Does your forecast anticipate cheaper and more efficient solar panels? Most customers will find it's financially attractive to install panels. The adoption rate in that scenario could be higher than your forecast shows.
Fred Heutte	**4:15 PM**	Comment: because the Bass diffusion model relies so much on first-cost for solar market penetration, the future cost estimates for rooftop PV are absolutely pivotal to the outcome, and as we previously said, even the NREL 2019 ATB medium estimates are probably too high and a midpoint between medium and low is more credible.
Fred Heutte	**4:16 PM**	Also, the new 2020 ATB data has just been put online and we are looking through it now. The website is: atb.nrel.gov
R. C. Olson	**4:17 PM**	Could you please define what you mean by combined heat and power?
R. C. Olson	**4:18 PM**	Are you projecting a decline in natural gas use due to switching to heat pumps? If not, when will you adjust your calculations to include this trend?
Michael Laurie	**4:20 PM**	Have you considered the possibility of some uses of natural gas will be banned in new construction as has happened in a number of jurisdictions in California?
Kyle Frankiewich	**4:23 PM**	raised hand for slide 66
Doug Howell	**4:24 PM**	Raised hand for slide 69
Fred Heutte	**4:25 PM**	for slide 63: is there an effective difference between volt/var optimization (VVO) and conservation voltage reduction (CVR), if so has PSE looked specifically at CVR
Fred Heutte	**4:27 PM**	a general comment: NWEC requests that the workbooks for the EE and DR assessments be made available and sufficient time (5 business days at a bare minimum) provided for stakeholder feedback on the CPA after they are made available

Doug Howell	**4:30 PM**	Slide 69 - Raised hand for a recommended sensitivity
James Adcock	**4:32 PM**	Slide 69 -- Distributed Solar pV -- with 3rd party ownership and PSE financial support -- especially in low income communities.
Don Marsh	**4:33 PM**	Slide 69: Like the PSE incentive, but why $0.048 / kWh? I'd like to see a sensitivity with a higher incentive. I think that could make a big difference. Also, I'd love to see what paired batteries could do. How about some incentive on that?
Don Marsh	**4:34 PM**	+1 on a sensitivity on shorter ramp rates, like Doug suggested! A 6 or 8-year ramp rate would be very interesting.
Don Marsh	**4:35 PM**	It is extremely likely that solar panel efficiency will increase during the next 20 years, making panels cheaper. I don't think PSE is taking that likelihood into account.
Michael Laurie	**4:39 PM**	Could you do a sensitivity analysis of conservation achievable if conservation can be done without a loss of revenue to PSE. And a sensitivity analysis of conservation potential if conservation spending was recognized as capital spending, thus allowing PSE to make a profit on conservation spending.
Kate Maracas	**4:41 PM**	+1 to Don Marsh. Also, the increased capabilities of grid-forming inverters that will inevitably be deployed after implementation of IEEE 1547 standards will have a significant impact on solar PV's (distributed and utility scale) ability to provide flexibility and ancillary services. How is PSE considering both the cost reductions and advanced technical capabilities?
Warren Halverson	**4:56 PM**	It seems like resource alterntives -DR, Solar, Batteries. Water heaters etc etc - are only considered on a total market or company basis.
Warren Halverson	**4:59 PM**	I would like to see a more niche approach to using a combination of these solutions, particularly in transmission planning. It seems to me that there are many applications of these solutions in combination to meet residential and/or commercial needs .... let's add some creativity and options to our customers. Thank you.