

Subject:PSE response to Rob Briggs, Vashon Climate Action Group

Date:Mon, 27 Aug 2018 23:32:45 +0000

From:Kvam, Michele <michele.kvam@pse.com>

To:rsb2@turbonet.com <rsb2@turbonet.com>

CC:Netik, Irena <irena.netik@pse.com>, Popoff, Phillip <phillip.popoff@pse.com>, Brett Houghton (<[email removed](mailto:email_removed)>, IRP -- mail -- <IRP@pse.com>

Rob,

Thank you for your patience as I have collected a thorough answer for you, sending piece-meal answers and offering to calling you for clarification. As you requested, this response has been copied the TAG and the IRPAG sharing list.

Question/comment: My understanding from the May 30 IRP Advisory Group Meeting in Olympia was that Phillip Popoff agreed that PSE would perform low carbon-emission analyses as part of PSE 2019 IRP. How those analyses are structured and what criteria and assumptions are used will be critical to the credibility of the results.

PSE response: Yes, PSE will conduct this analysis. We will provide further details in an upcoming TAG meeting. PSE is looking at early to mid-October dates for this meeting. We will communicate the meetings date when it is confirmed, we expect that to happen soon.

Question/comment: An analysis approach that I believe the majority of TAG members would support would be to solve for supply- and demand-side measures that meet a series of declining CO₂eq emissions caps at the lowest cost while maintaining current standards of system reliability. Given the 20-year IRP study period and the two-year update cycle, it would appear appropriate to model a straight-line transition based on CO₂eq with caps declining 10% in each two-year period leading to a carbon-free system by 2041.

PSE response: We will discuss treatment of carbon in an upcoming TAG meeting as part of the scenarios and sensitives development. We will include these details in that conversation.

Question/comment: I believe this would provide the roadmap for the carbon-free system that Doug Howell and others called for during the July 26 TAG Meeting. I suspect such an analysis will be a challenge for PSE staff, as it will involve changes to the objective function and constraints in the optimizations, as well as the inclusion of a more robust set of measures than those PSE proposed during last week's TAG presentation.

PSE response: PSE will conduct this analysis. We will provide further details will be discussed in an upcoming TAG meeting.

Question/comment: On May 30, Phillip Popoff suggested that the IRPAG would not likely be pleased with the results if PSE simply cranked up the cost of carbon. I agree. But that is not what many in the TAG are requesting. We are asking for PSE to perform an analysis capable of defining a roadmap to a carbon-neutral system, which is a different exercise. Defining the approach to this analysis is something that needs to happen early in the process and should precede the exercise of settling on cost assumptions. I believe there is knowledge and experience within the TAG that PSE can tap to ensure the success of this endeavor.

PSE response: PSE will conduct this analysis. We will provide further details will be discussed in an upcoming TAG meeting.

Question/comment: As I do not see this topic identified for discussion in any upcoming TAG meeting, my question is when does PSE plan to have this important conversation with the TAG?

PSE response: PSE is looking at early to mid-October dates for this meeting. We will communicate the meetings date when it is confirmed, we expect that to happen soon.

Your question/comment: I mentioned during the July 26 Technical Advisory Group (TAG) meeting that I was pleased to have learned recently that PSE had become a founding membership of the [Renewable Hydrogen Alliance](#). In its 2018 IRP, Northwest Natural devoted 10 pages to an evaluation of replacements for fossil methane in their system and 6 pages to Power to Gas. Power to Gas may provide a pathway for decarbonizing the gas grid. In addition, it can provide long-term energy storage, potentially facilitating the integration of large amounts of nondispatchable renewable capacity into the electricity grid, making it a potentially important emerging technology for electric utilities as well.

Does PSE intend to address Power to Gas in its 2019 IRP and, if not, why not?

PSE response: Yes, PSE will include a power to gas examination the 2019 IRP. I have confirmed PSE is a member of the Renewable Hydrogen Alliance.

Thank you.

Sent on behalf of Resource Planning and Analysis,

Michele

Michele Kvam
Resource Planning & Analysis
Puget Sound Energy, Inc.
10885 NE 4th Street; PSE-11S
Bellevue, Washington 98004-5591
P (425) 462-3137
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Email michele.kvam@pse.com

From: Kvam, Michele

Sent: Friday, August 24, 2018 10:57 AM

To: 'rsb2@turbonet.com'

Subject: RE: Second response: Rob Briggs questions - and initial PSE response: TAG Question: When does PSE plan to discuss low-carbon analyses for the 2019 IRP with the TAG?

I apologize, Rob. I'm being challenged keeping up with the questions and gathering the PSE responses.

Did you get the Q&As from the July 27 meeting via email? They are also posted on-line. Please alert me if you did not receive – you should be on the TAG distribution and the sharing one. I send out on July 16.

I would prefer to talk with you. Are you available today?

Michele

From: rsb2 [<mailto:rsb2@turbonet.com>]

Sent: Friday, August 24, 2018 10:48 AM

To: Kvam, Michele

Subject: RE: Second response: Rob Briggs questions - and initial PSE response: TAG Question: When does PSE plan to discuss low-carbon analyses for the 2019 IRP with the TAG?

Hi Michele,

I've been tremendously busy, hence my slow response to your reply from last week and my inability to find time to talk by phone.

Perhaps I misunderstood, but I thought the protocol that you were putting in place involved a semi-official (i.e., archived) IRP Advisory Group communication process that would enable Advisory Group members to ask questions of PSE and PSE to share responses using an email list of those who had opted in. I have not yet received any emails along these lines.

I would like both my question about hydrogen and my question about the timing for discussion with the TAG of PSE's plans for analyses of the pathways to a carbon-free system along with PSE's responses to be shared with others who have opted in for those emails.

Would you please update me on responses to my two questions and on the status of the communication process with interested AG members.

Thank you.

Kind regards,

Rob Briggs

From: Kvam, Michele

Sent: Thursday, August 09, 2018 10:25 AM

To: rsb2@turbonet.com; IRP -- mail --

Cc: Popoff, Phillip; Samantha DeMars-Hanson (sdemars-hanson@prbiz.com)

Subject: Rob Briggs questions - and initial PSE response: TAG Question: When does PSE plan to discuss low-carbon analyses for the 2019 IRP with the TAG?

Rob,

I understand you might not be able to call me. Yes, the norm is for me to acknowledge the receipt of emails within two business days, and answer questions that I can able within that time. For other questions and inquiries, I need more time for a response.

Here is my initial response:

I have noted your request to revisit the scenarios and sensitivities for the 2019 IRP and you are not alone in that (stakeholder) request.

Yes, PSE will include a “low carbon” or “no carbon” analysis in the 2019 IRP.

I’m not sure if PSE will include a power to gas analysis in the 2019 IRP. I will be getting back to you on this. I will also look into PSE’s membership to the Renewable Hydrogen Alliance.

Again, thank you for your questions and I will be getting back with you next week with a more formal written response. You are also welcome to give me a call at 425.462.3137. I appreciate your patience and kindly sending the emails again.

Sincerely,

Michele

Michele Kvam
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Email michele.kvam@pse.com

From: Kvam, Michele
Sent: Thursday, August 09, 2018 10:07 AM
To: 'rsb2@turbonet.com'
Subject: RE: TAG Question: Will PSE be including Power to Gas in PSE 2019 IRP?

Very sorry not to acknowledge. I was out of the office last Thursday and Friday. I appreciate you sending again!

Michele

From: rsb2 [<mailto:rsb2@turbonet.com>]
Sent: Thursday, August 09, 2018 10:05 AM
To: IRP -- mail --; Kvam, Michele
Subject: FW: TAG Question: When does PSE plan to discuss low-carbon analyses for the 2019 IRP with the TAG?

Hi Michele,

This is the second of two emails from one week ago that I am resending to you. I thought it appropriate to resend this in case my previous email went astray. The slide deck from the kickoff IRPAG meeting set the expectation that acknowledgements of receipt and answers to questions would be provided within 2 business days.

Please acknowledge receipt of this and the other email I just resent to you.

Thank you.

Best regards,

Rob Briggs

Email: rsb@turbonet.com

Mobile: 509-330-6793

Home: 206-259-3957

9514 SW Burton Drive

Vashon Island, WA 98070

From: Kvam, Michele

Sent: Thursday, August 09, 2018 10:08 AM

To: 'rsb2@turbonet.com'

Subject: RE: TAG Question: When does PSE plan to discuss low-carbon analyses for the 2019 IRP with the TAG?

Received. Can I give you a call?

Michele

From: rsb2 [<mailto:rsb2@turbonet.com>]

Sent: Thursday, August 02, 2018 2:33 PM

To: 'IRP@pse.com'

Subject: TAG Question: When does PSE plan to discuss low-carbon analyses for the 2019 IRP with the TAG?

Dear Michele Kvam:

I have a question related to PSE's planned timing of what I see as an important topic to discuss with the Technical Advisory Group (TAG). Would you please respond to my question [below](#) and post both my question and PSE's answer to the IRPAG/TAG Opt-in sharing distribution list and post to pse.com: About PSE/Resource Planning. A response by Friday, August 17 would be most appreciated.

My understanding from the May 30 IRP Advisory Group Meeting [in Olympia](#) was that Phillip Popoff agreed that PSE would perform low carbon-emission analyses as part of PSE 2019 IRP. How those analyses are structured and what criteria and assumptions are used will be critical to the credibility of the results.

An analysis approach that I believe the majority of TAG members would support would be to solve for supply- and demand-side measures that meet a series of declining CO₂eq emissions caps at the lowest cost while maintaining current standards of system reliability. Given the 20-year IRP study period and the two-year update cycle, it would appear appropriate to model a

straight-line transition based on CO2eq with caps declining 10% in each two-year period leading to a carbon-free system by 2041.

I believe this would provide the roadmap for the carbon-free system that Doug Howell and others called for during the July 26 TAG Meeting. I suspect such an analysis will be a challenge for PSE staff, as it will involve changes to the objective function and constraints in the optimizations, as well as the inclusion of a more robust set of measures than those PSE proposed during last week's TAG presentation.

On May 30, Phillip Popoff suggested that the IRPAG would not likely be pleased with the results if PSE simply cranked up the cost of carbon. I agree. But that is not what many in the TAG are requesting. We are asking for PSE to perform **an analysis capable of defining a** roadmap to a carbon-neutral system, which is a different exercise. Defining the approach to this analysis is something that needs to happen early in the process and should precede the exercise of settling on cost assumptions. I believe there is knowledge and experience within the TAG that PSE can tap to ensure the success of this endeavor.

As I do not see this topic identified for discussion in any upcoming TAG meeting, my question is when does PSE plan to have **this important** conversation with the TAG?

Thank you for your kind assistance.

Rob Briggs
TAG Member representing Vashon Climate Action Group

Additional question:

From: rsb2 [<mailto:rsb2@turbonet.com>]
Sent: Thursday, August 02, 2018 2:06 PM
To: 'IRP@pse.com'
Subject: TAG Question: Will PSE be including Power to Gas in PSE 2019 IRP?

Dear Michele Kvam:

Would you please address the following question and post both my question and PSE's answer to the IRPAG/TAG Opt-in sharing distribution list and post to pse.com: About PSE/Resource Planning. A response by **Friday, August 17** would be most appreciated.

I mentioned during the July 26 Technical Advisory Group (TAG) meeting that I was pleased to have learned recently that PSE had become a founding membership of the [Renewable Hydrogen Alliance](#). In its 2018 IRP, Northwest Natural devoted 10 pages to an evaluation of replacements for fossil methane in their system and 6 pages to Power to Gas. Power to Gas may provide a pathway for decarbonizing the gas grid. In addition, it can provide long-term energy storage, potentially facilitating the integration of large amounts of nondispatchable renewable capacity into the electricity grid, making it a potentially important emerging technology for electric utilities as well.

Does PSE intend to address Power to Gas in its 2019 IRP and, if not, why not?

Thanks for your response.

Rob Briggs
TAG Member representing Vashon Climate Action Group

