

Meeting Summary
NorthWestern Energy Electric Technical Advisory Committee
Butte, Montana
November 29, 2017

Attendance

Those participating in or attending the Electric Technical Advisory Committee (ETAC) meeting in person or via the web and by teleconference included:

Name	Organization
Beki Brandborg	ETAC Facilitator
Chuck Magraw	Natural Resources Defense Council
Brian Fadie	Montana Environmental Information Center (MEIC)
Frank Bennett	NorthWestern Energy (NWE)
John Bushnell	NWE
Jeff Blend	Montana Department of Environmental Quality (DEQ)
Luke Hansen	NWE
Joe Stimatz	NWE
Diego Rivas	NW Energy Coalition
Mike Babineaux	NWE
Jonathan Pytka	NWE
Bill Thompson	NWE
Danie Williams	NWE
Casey Johnston	NWE
Larry Nordell	Montana Consumer Counsel (MCC) (via phone)
Paul Schultz	MCC (via phone)
Tom Power	District XI Human Resource Council (NRC) (via phone)
Bill Damon	HDR
Brad Layton	UM – Energy Technology Program (via phone)
Chris Pope	Consumer at Large
Rick Edwards	NWE

Agenda:

1. Update on Variable Energy Resource (VER) integration study
2. Public Meeting – Follow-up discussion
3. Montana Public Service Commission, Orders on Reconsideration in D2016.5.39 (QF-1 Docket) and D2016.12.103 (MTSUN Petition) - Discussion
4. Future Meeting Dates
 - a. December 21, 2017 – Butte General Office Building
 - b. January 25, 2018 – Helena

Meeting

Members introduced themselves to Brad Layton, the newest member of ETAC, who was attending in person.

2. Public Meeting – Follow-up discussion

Comment: It was good to see the storage representatives in attendance at the meeting.

Comment: There was good turnout from a diversified group of people and a lot of interest.

Comment: Some were in attendance from far up north to see the geothermal presentation.

Comment: There was a lot of value added with this meeting. The fossil fuel representatives put their information out there, discussing changes to baseload power economics.

This has never been done before. It was something different for NWE. It turned out well, and we expect that there will be one more of these in this planning process. We can discuss when and what to cover next time.

Comment: It was a good meeting with good information. Maybe next time it would be helpful to put NWE out there more and make NWE open for questions.

Comment: It was interesting to hear Talen say that they are interested in Colstrip 3&4. Previously, the sense was that they had given up on Montana. The first graph from NWE showing the dispatchable need vs. baseload was useful to educate people. It is important for people to see how jagged (intermittent) the net load shape really is.

Comment: It seems to be important for the storage representatives to show all of the potential benefits that storage can bring.

It was a challenge for presenters to squeeze an hour presentation down to 10 minutes.

There were about 50 people on the RSVP list. But closer to 80 actually showed up. NWE tried to make this event as accessible as possible, with press releases and social media posts, and it seemed to work.

Comment: MEIC did a lot of targeted outreach for this event.

Comment: There was a recognition among the storage proponents that storage does not fit that well with the rules we have in place. Storage is hard to get your hands around in terms of how to handle and value storage.

Question: Does NWE have a difference between on and off peak rates or a time-of-day rate?

Answer: We do not have that. We studied it in our TOU study. Most likely that would have to come after we upgrade our meters. Today's meters cannot currently track this.

Question: What was the nature of that study you mentioned?

Answer: It was 200 residential customers in Helena, and we got a special TOU tariff approved. This was part of a Pacific Northwest study.

Question: This might a good future topic for ETAC, as well as an update on microgrid projects.

Question: If a utility puts smart meters on its grid, does this go into rate-base (as an asset)?

Answer: Yes.

Question: Did NWE make the decision to replace its meters in South Dakota?

Answer: Yes.

Question: Are there any other suggestions for future meetings?

Answer: Maybe we should start comparing the portfolios that NWE will be modeling.

Question: What does NWE project or is considering for the future of its portfolio?

Answer: That is part of this process. We identify our needs every two years, and we study possible portfolio additions to meet our needs, including many different types of technologies, including storage, renewables, and thermals.

The PSC has made it clear that the plan has to be actualized with an RFP so that NWE can see what the marketplace has to offer. There are a host of issues with planning for future supply and capacity needs, including changes in regulatory and market environments. We request feedback from ETAC and the public to influence our decisions.

There was discussion about PowerSimm modeling and the role that it plays in this process.

Comment: Regarding today's public forum, several attendees were actually aware of ETAC. ETAC is a proxy for a public process in getting new ideas out there and encouraging debate, which is good for NWE. The planning process has to have integrity and requires a lot of work. Perhaps the process could be widened to include more public meetings where the general public could attend (but not be allowed to comment) to educate themselves on these issues.

Response – We have discussed in previous meetings the potential for the general public and possibly reporters to impact the nature of the discussion in these meetings. We think that we are making a step in that direction, and we will keep it on the radar.

Comment: It was an obvious success today.

Comment: It was great to hear the natural gas presenter acknowledge that renewables are heavily influencing things.

Comment: It would be good to determine sooner for the next public meeting what the agenda would be and try to get a more diverse group of attendees, including more NWE staff.

Response – This meeting was put together rather quickly due to time constraints.

Comment: There are two sets of people that we are talking about: informed public and uninformed members of the customer base. If you want more informed attendees then perhaps you should not have the next meeting in the evening.

Comment: More public meetings could help NWE with its customer relations.

3. Montana Public Service Commission, Orders on Reconsideration in D2016.5.39 (QF-1 Docket) and D2016.12.103 (MTSUN Petition) - Discussion

Since the Orders have just recently been issued, we think it might be a good idea to have a full discussion *next* meeting to allow more time to digest.

Comment: It would be nice to get a timeline from the PSC on these dockets. (Nobody from the PSC is attending this meeting today.)

Question: What has happened so far?

Answer: We had the docket, final order, and then motions were made for reconsideration. Now we have received the PSC's order on reconsideration. The next step could potentially be lawsuits filed by parties in these dockets.

Comment: One of the things that the PSC's order hung its hat on was defending its position to require 15-year terms. Even if the utility or some other party challenges this order, there is still an issue of what it means. This may have an impact on developing the plan.

Question: What good is the plan if the 15-year requirement stays in place?

Comment: Since the order does not apply to any resource that the utility currently owns, no lawsuit is necessary at this point. If NWE can show that now their planning is more costly or risky, then there is no reason to sue.

Comment: The PSC's decision has immediate real-world consequences for the utility. If NWE goes through its analysis and determines that it cannot justify this cost compared to the market purchase alternative, it seems that an edict by the PSC is happening and ripe for a lawsuit.

Comment: The company would have to be able to show that it was injured due to this order.

Comment: There was a reference in the order saying something to the effect that the ability to recover costs in a 15-year timeframe is "a pretty tall order".

Comment: One thing that has not come up yet is that in the real world most projects and new builds require 30 years.

Comment: Yes, but if it is an existing resource then you can do shorter contracts.

Question: What do others think of this order?

Comment: Perhaps NWE has already done this, but I think that the PSC is pushing everyone to look at the consequences of what can be done within a 15-year period. This requires some serious thought. This has irrational consequences for risks and costs to customers.

1. Update on Variable Energy Resource (VER) integration study

This is an important topic for ETAC and for NWE. We need to identify how much quick dispatch resources we need to integrate the new wind and solar resources that are now on our system, and then what we will need for future resources.

NorthWestern recounted the history of wind on its system. We were under CPS2 when Judith Gap came into our resource stack. In July 2016, NERC instituted the new "RBC" standard (Reliability Based Control). RBC is a more flexible standard. For example, we can be off a little bit due to wind, and we do not necessarily have to do anything unless we are outside established NERC Standard Balancing Limits.

The VER study will allow us to see how much regulation is required to meet the RBC standard. Navigant is performing the study, in three phases.

- Phase 1. Model validation and a determination of our current need for regulation and load following. There have been a few meetings to validate results, and the results seem to match what we see today. Phase 1 is on target for completion by November 30.
- Phase 2. Determine regulation and load following need for future resources. Phase 2 is due by the end of December for the preliminary report.
- Phase 3. A study of load variability, which will look at different classes of customers and determines the contribution of each to our overall regulation and load following needs. Phase 3 is due with the overall final report by the end of February 2018.

Question: Regarding phase 2, adding additional VERs, how are you doing that?

Answer: For the Genivar study, we asked for 100 or 200 MW increments. For this study, we know what we have coming on line; which is approximately 185 MW of wind.

Question: What timeframe is the actual application of resources to meet these needs?

Answer: When we got Judith Gap, we used empirical data to determine the need. For a new developer, we can give numbers representing how much we need to integrate their resource.

Question: When the Genivar study came out, there was a geographic location component.

Geographic diversity affected the results. Is that an aspect of this study?

Answer: New resources may be geographically diverse from our existing resources. But NWE has argued that that diversity belongs to everyone. And if everyone benefits, it will not affect rate design. When we did the Genivar study, each resource added diversity. However, as the number of resources grows there is less diversity benefit.

Comment: You mentioned load following by Colstrip. How often does this happen?

Answer: We see about an average of 17 events per month, and these are handled by a mix of DGGs, Colstrip, and Basin Creek. We have 30 minutes to get back within the limits.

Comment: It seems that this study could lead to a continuous, ongoing process.

Answer: Yes, but it is costly to keep the model open because this is contract work.

Question: For which facilities do you have dispatch control?

Answer: For Basin Creek we do have that control. Colstrip, because it is owned by multiple parties, is coordinated by the grid control center. Just the first 50 MW of DGGs is on AGC (automatic generation control). The other DGGs units are dispatched manually. We like to keep a spare for maintenance.

Comment: On the solar side, these will be included as well? A pilot project with NREL was whether they could ramp up or down using the solar inverter to regulate. The results were pretty successful.

Question: Regarding matching supply with load, is it just measured at one point to meet RBC?

Answer: Yes, the Area Control Error (ACE) is measured in actual and scheduled interchange MW and interconnection frequency. Amps and volts are handled on a local level. We measure MW for load and MW for generation.

4. Future Meeting Dates

- a. December 21, 2017 – Butte General Office Building
- b. January 25, 2018 – Helena
- c. February 28, 2018 – Location TBD

Suggested topic for a future meeting: EIM presentation.