

Meeting Summary
NorthWestern Energy Electric Technical Advisory Committee
Helena, Montana
February 1, 2018

Attendance

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

<u>ETAC Member Organization</u>	<u>Attendees</u>
Consumer at Large	Chris Pope
District XI Human Resource Council	Tom Power
Montana Consumer Counsel	Jamie Stamatson
Montana Department of Environmental Quality	Laura Andersen, Jeff Blend
Montana Environmental Information Center	Brian Fadie
Montana Public Service Commission	Will Rosquist, Mike Dalton
Natural Resources Defense Council	Chuck Magraw
Northwest Power and Conservation Council	Brian Dekiep, Ben Kajula (via phone)
NW Energy Coalition	Diego Rivas
University of Montana, Energy Technology	Bradley Layton (via phone)
<u>Organization</u>	<u>Attendees</u>
ETAC Facilitator	Beki Brandborg
NorthWestern Energy	Frank Bennett John Bushnell Joe Stimatz Mike Babineaux Jonathan Pytka Danie Williams Eric Sayre Todd Johnson Jim Williams Bill Thompson Sarah Norcott

Agenda:

1. Regional Markets Update – Joe Stimatz
 - a. Regional Developments
 - i. EIM
 - ii. Mountain West
 - iii. Peak Reliability / PJM
 - iv. CAISO
 - b. Implications for 2018 Plan
 - i. Capacity requirements
 - ii. Resource types / ancillary services
 - iii. Other
2. Net Metering Study Update – Sarah Norcott / Danie Williams
3. Montana Public Service Commission – Discussion

NorthWestern is seeking advice from ETAC on a number of issues raised in the Commission's Supplemental Comments on the 2015 Plan.

- a. Link to comments
 - b. NWPCC Presentation
 - c. Advice from ETAC members
 - i. Regional Planning
 - ii. RFI for market resources
 - iii. Planning horizon - 15/20 years
 - iv. Consultant
 - v. Other issues
4. Planning Process and Timeline – Discussion
 - a. Public process discussion
 - b. Timeline (attached)
 5. Future Meeting Dates
 - a. February 28, 2018 – Helena (location to be determined)
 - b. March 22, 2018 – Location to be determined
 - c. April

Meeting

Regional Markets Update

NorthWestern presented a discussion on recent developments in regional markets and market formation. Regional market formation has implications for the 2018 MT Electricity Supply Resource Procurement Plan. Real-time markets are found in Energy Imbalance Markets (EIM) as well as in Regional Transmission Organizations (RTO) and Independent System Operators (ISO). Benefits include more efficient use of the transmission system and greater shared load and weather diversity. They also optimize available resources through market signals. Regional Transmission Organizations (RTO) and Independent System Operators (ISO), in addition to the EIM, bring in a day-ahead component that allows for even more efficient commitment of resources and eliminates transmission rate pancaking (accumulating transmission charges between Balancing Areas). They also save costs by operating under a single OATT.

Question – If you are a generator who needs to run all the time as a must-run resource, how does that work?

Answer – The facility will be compensated for operating at a cost that is above market prices in one of two ways. If they are needed for reliability, they will be made whole by the market authority, but if they are not scheduled for reliability the purchaser will make up the price.

The Western EIM, formed by PacifiCorp and CAISO in 2014, is still adding new members. It is an organized market aiming for economically efficient dispatch on a sub-hourly basis. In an organized market such as this, your load is known to the market operator and you pay the market to serve that load. Generation resources are offered into that market, normally at their variable cost of generation and the market selects the economic ones to dispatch. The units don't correct imbalances, but the economic decisions for resource dispatch is used regardless of imbalance conditions.

Unlike RTOs and ISOs, the EIM does not provide ancillary services, contingency reserves, regulation up or down, nor does it administer an OASIS site, or take on reliability responsibility.

Question – On resource sufficiency, when you go into the hour is that enough spin and non-spin for your own needs or what do you need to have?

Answer – Contingency reserve requirements are completely separate from EIM. Going into each hour, the Balancing Authority (BA) entity is responsible for having enough resources to meet their need. In the EIM as a whole, everybody's requirement is slightly reduced from what it would be on their own.

Question – How often does the EIM schedule?

Answer – Commitments are made on a 15-minute basis and it dispatches on a 5- minute basis.

Question – In an EIM, you can float. Is there a minimum requirement for this?

Answer – If you don't meet the requirement you don't qualify for that hour, but you can participate in the next hour in which you do meet the requirement.

Question – So, if you have a regulated facility, and there’s cheaper power, you still get paid on your asset?

Answer – Yes, the fixed costs of the rate based resources would get paid the same way they do now.

Current members in the Western EIM include CAISO, PacifiCorp, NV Energy, Puget Sound Energy, Arizona Public Service, and Portland General Electric.

Question – If there is an EIM transaction and a transmission constraint, is this like any other transaction that happens now?

Answer – Yes. Peak Reliability Coordinator, for example, is still responsible and still has the same relationship with all of the balancing authorities. (Peak Reliability Coordinator (Peak RC) monitors and directs the reliable operation of the bulk electric system within the Western Interconnection. Peak works with Balancing Authorities, Transmission Owners and Transmission Operators to ensure an uninterrupted flow of electricity to consumers.)

NorthWestern analyzed the potential for joining the EIM market, and presented a report to the MPSC approximately in March of 2017. NorthWestern did not find a compelling case to proceed with EIM. NorthWestern’s consultant, Utilicast, reported estimated costs to join were \$10.9 million with ongoing annual costs of \$1.1 million, due primarily to additional BA staffing needed. After joining an EIM, the NorthWestern BA would still have to do everything they already do plus more.

Question – Is automated metering required for EIM?

Answer – No, not at the customer level, but EIM would require more metering at the substation level.

A NorthWestern consultant, E3 estimated that the annual dispatch savings ranged from \$1.3 to \$3.0 million, with a base case of \$1.8 million.

Question – Could you talk about the differences between NorthWestern and all the utilities that joined EIM, and why it worked for them?

Answer – Primarily, NorthWestern only has a limited amount of flexible capacity resources so the amount of dispatch savings would be lower than it would be for utilities with more resources. The other thing is that the investment needed to join EIM is relatively fixed and is not proportional to the size of the utility. At roughly \$700 thousand a year in net benefits, it would take NorthWestern some time to recover the estimated costs of joining.

CAISO has been working hard with PacifiCorp to regionalize their market. These efforts to expand the CAISO footprint have stalled, at least temporarily. There is still a big need in the ISO to address the growing amount of solar and the ramping needs they have. CAISO has floated the idea of extending the EIM to add a day-ahead component, but this wouldn’t be an RTO. However, there are significant challenges in regard to day-ahead transmission.

Question – To join MWTG, does NorthWestern need PacifiCorp to be in MWTG?

Answer – Probably. PacifiCorp sits between NorthWestern and MWTG and PacifiCorp is needed to provide transmission connectivity to MWTG.

Regarding the MWTG and SPP, the parties are targeting a go-live date of 10-1-19. The intention is for SPP to operate a single market, optimizing across DC ties. MWTG has requested some changes that would result in different treatment for the West footprint. To date, meetings have been held in private, but the process will move to the public SPP processes soon.

On December 7, 2017, Peak Reliability and PJM Connex announced a partnership to develop a market in the West. Peak Reliability currently provides Reliability Coordinator (RC) services to all BAs in the WECC with the exception of Alberta. There is little definition at this time and an aggressive timeline. The target participant commitment phase is in April-June.

Question – Is the Peak/PJM goal, everybody but CAISO?

Answer – There are two goals. All markets want to be growing. There are benefits to this. For Peak, they see a challenge with the MWTG parties leaving, and CAISO announcing withdrawal as a funder of Peak. They see no ability to maintain their organization in this scenario.

Question – Have you examined your cost for Peak membership?

Answer – Yes, we have. NorthWestern considers the dollar amount at stake to be significant but it's not a deal-breaker. We also are concerned if we are even making the system more reliable. The practical parts are more worrisome.

Question – Is the \$600,000 before or after MWTG?

Answer – Before. With Peak leaving, it would increase some.

Comment – BPA had something on this recently. This would probably have a large impact on customers.

Answer – Yes, and it's hard to know what the impact might be without knowing what other utilities are doing.

Question – What is NorthWestern hearing from others?

Answer – NorthWestern's preference is to look for solutions where we are not forced into making a decision. This is easier said than done. We don't want to change RCs and go through 1 year of costs and issues regarding that and have to turn around and do it again a year later.

Question – Does NorthWestern see that a western market is inevitable?

Answer – Yes, we think it's more likely than not that we will be in an EIM or ISO in the planning horizon. So the question for this group is what does this mean for the 2018 plan.

Resource adequacy and resource selection are key components. These needs are different from market to market. SPP uses a non-coincident peak in the western footprint. SPP does not have a capacity market.

Question – As of now, NorthWestern would not have individual OATTs (open access transmission tariffs)?

Answer – With Peak and PJM, everything is still on the table.

Question – If a member's reserve margin is not adequate, what does this mean?

Answer – Typically it means you would get a penalty. If you're not already a member, there would probably be some rule that you must become compliant and remedy the situation in a specific time-frame.

Question – Is there a percent for long-term purchases?

Answer – It has to be a physical resource, but you can have a tolling agreement. It gets offered into the market and we get the capacity credit. SPP filed for tariff changes (partially regarding this) and FERC rejected the changes. They are close to re-submitting the tariff. FERC also had trouble with publishing where all their customers stand and thought this might put parties at a disadvantage. You could do the whole portfolio in tolling agreements, but there are reliability requirements.

Question – How long has NorthWestern had a relationship with SPP in SD?

Answer – We went live in October 2015. We like the governance process and the committee structure and processes. It's hard to get things changed, but we are OK with that.

As a BA, NorthWestern must maintain enough flexible capacity to meet the NERC standards, including regulation, load following (INC and DEC) and contingency reserves. In an RTO, NorthWestern would no longer be a BA and these would be provided through the market. This could change how and what resources we select. For example, if ancillary prices are relatively high, this could indicate that more flexible resources should be used. If these prices are low, this could indicate that flexible resources are less valuable.

NWPCC Resource Adequacy discussion

Ben Kujala with the Northwest Power and Conservation Council (NWPCC) joined via phone to discuss capacity planning and the reliance on regional analysis. Ben discussed how NWPCC does their resource adequacy assessment. They look at all resources including rate-based resources and stand-by generation, and how much is available to meet load. The target is a 5% Loss of Load Probability (LOLP).

The current assessment had a LOLP of around 7%. This represents about 400 MW. The general method is to look at various hydro situations, weather, and do a large Monte Carlo simulation. What they are seeing is a similar but perhaps higher need.

Regarding the MPSC comments, the region is actually surplus due to the coal plants. The LOLP went above 5% in 2021 due to retirement of coal plants. When they talk about capacity needs, this is for the region as a whole. Individual utility positions vary from surplus to deficient. Also, transmission is not perfectly modeled so those constraints should be looked at carefully for individual utility positions.

Question – If you look at paragraph 10 page 4 of MPSC comments, what is your concern with that statement?

Answer – We think it’s a mischaracterization of how the council plans for the region; this assumes we are one big family (almost already an RTO).

Comment – It’s in between. It’s not an RTO, but resources are not sitting in the NWPCC planning process, they get utilized. It’s not true that everyone is an island. If Seattle is long on capacity, the assumption is that this would be sold into the region, but it could be that they’d sell it outside of the region.

Question – When you run the resource adequacy model LOLP, do we incorporate the cost of resources into this?

Answer – No, we don’t look at the cost of resources in the NWPCC resource adequacy. Some of these are costly. One example, is backup generators at Portland area hospitals that are expensive to run, are included in the resource stack. They don’t consider what is or is not available to the region.

Comment – I worry that NorthWestern is worrying about the numbers and missing the bigger point that the commission was trying to make. That utilities ignore the resources of the region in dealing with capacity deficiency. In what sense, is NorthWestern deficient? NorthWestern will meet its loads today and tomorrow. NorthWestern is able to find these resources. In the next 5-10 years, don’t sweep away these types of resources because they’re not 20-year resources.

Comments: There are large imports/exports to California included in this?

Answer – The region is winter peaking and NorthWestern is winter peaking; the overlaps are substantial. NorthWestern will still do RFPs that are wide in geographic reach, considering for example, Mid-C resources.

Question – How does NorthWestern see the range of ways for meeting the capacity requirements associated from joining an RTO? How do you move away from this collision with the commission and other parties about the character of the capacity deficiency and how it might be met? The previous graphing of what capacity NorthWestern has and the load on the system and calculating this huge deficit elicited a reaction. This was possibly crude or misleading. What we have lingering here now is that the way NorthWestern presented the capacity deficit and the way others responded by saying you’re exaggerating or not presenting this problem in a productive way. NorthWestern could have presented the solution differently. We need to pry this issue open so that we can get back on the same page.

Comment – The WECC requirement is not enforced. NorthWestern will see what the short term requirement is because it’s taking on 185 MW of wind in the near term. The Variable Energy Resource (VER) study will tell us what’s required to integrate this wind into our system. We may need to acquire short-term contracts immediately. The other part of this is that the RTO requirements are going to make a large impact. There is no way NorthWestern could build resources that fast. NorthWestern will have to go with a portfolio approach, with some mix of long-term and short-term resources to meet these requirements. Purchases are allowed but they do have to be unit-contingent. It would help us separate the discussion into how we define what the need is and how we address it. I think the chart mentioned does identify the need, but it doesn’t identify the approach or the mix required for meeting this need. That’s what we really need to address in this planning cycle.

Comment/Question – With all the changes and unknowns, the commission wants to be nimble and not tied down. Regarding the market as being the base case in the plan, I don't see how it couldn't be. The higher LOLP and the movement of others into the markets, islanding NorthWestern. How could you address these without making joining a market the base case? You don't. There is a big "if" on whether NorthWestern in Montana joins SPP. The new PJM Peak market coming on, could be driven by the fact that they don't want to join SPP. Maybe you use a blend of EIM and PJM as a proxy for an RTO scenario?

Answer – Yes, we need to do this for capacity issues. We need a short and long-term bridge. From a planning point of view, the EIM doesn't change much in terms of planning, because you still have to plan to be sufficient.

Comment – How have other utilities done this? They've maybe joined EIM instead of a full-market first and maybe this could be a transition. Maybe when the PJM stuff comes out in April, this will give you more information and we could use that. We could continue as it is and maybe an RTO develops around us later, but there are implications of having everybody go around you and you are not able or ready to join.

Comment/Question – The decision seems to be coming fast and could well be within 5 years. From a public point of view, to be in the 21st century, would NorthWestern leadership be interested in signaling that decision sooner than 5 years because it will take that long to get ready?

Answer – NorthWestern thinks the decision will need to be sooner than that because a go-live date of 5 years is more likely. Some things could occur that drive this and help inform this decision sooner rather than later.

Comment – The sooner the decision is made, then maybe this becomes the base case rather than a distant possibility.

Question – This round of modeling regarding resource acquisition would be different?

Answer – It is different; for example, the lowest marginal price (LMP) would be regional.

Question – Regarding the VER study, does this consider RTO entry?

Answer – No, you don't need RTO to know what you need for resource integration.

Comment - This is also still needed because we are about 5 years out.

Question – Does the market pricing change?

Answer – Yes, it would depend on who you're in the market with. If we have options to go in two different directions, that would come into play. We could assume both a Rockies price and an SPP price.

Question – When will you know the timeline?

Answer – We are a little behind, due to resource definitions coming from a contractor being behind. We will be looking in a forward manner to determine the entry. Some of this is determined by the needs to become adequate for entry.

Comment – If NorthWestern’s participation in the RTO seems imminent, then it needs to be analyzed in the plan. Right now, NorthWestern is not, so it seems like this should not be the base case, but modeled as a case in the plan.

Montana Public Service Commission Additional Comments

There are conflicting statements that govern the rules for considering the longest life of resources and planning vs the Commission’s comments. There was a discussion of which approach to take in terms of the planning horizon for the resource plan.

ETAC – Discussion on whether resources should be evaluated over 15 years, or the life of the resource.

ETAC – Discussion regarding the consultant mentioned in the Commission’s comments. For clarity, there is a statutory allowance for the commission to hire a consultant to review resource acquisitions and for resource plan review. It is less than clear that the commission can hire a consultant to review NorthWestern’s plan and to have those costs be recoverable through NorthWestern’s rates.

Comment – NorthWestern was asking for advice on the RFI. What are its plans at this point?
Answer – NorthWestern hasn’t made a decision and doesn’t know where it’s going with this yet.

Question – What’s the status of being able to use the bid responses of the current RFP in the modeling for this plan?

Answer – It would be tough. It’s hard enough to use bids that are active, and this requires vetting the bids.

Question – How would you use it?

Answer – To compare bids with the HDR resource definitions.

Our contractor, HDR, doesn’t have a construction component so they get really good information from the original equipment manufacturers (OEMs).

Net Metering Study Update

NorthWestern gave an update on the status of the net metering study. By statute, NorthWestern has to file the final report by April 1, 2018. Then it will sit and be adjudicated in the rate case later in the year. It will be available once it’s filed with the commission.

The other topic discussed with ETAC was carbon costs. Navigant has a Portfolio Optimization Model (POM) to develop the carbon costs. We are doing a zero-carbon cost case and a case with these carbon costs.

Comment - ETAC should have a presentation from Navigant on this.

ETAC – Discussion about presenting the information about the other components of the study before a draft is finalized.

Comment – If Navigant is going to give a presentation, it would be good for ETAC to get a copy of the report in time to digest it before this presentation.

2018 CREP RFP Update

NorthWestern discussed the 2018 CREP RFP. We have a draft of the RFP that will be sent to ETAC today, and hope to get feedback by February 7.

Question – Can we add a few days to this, perhaps by Feb 9?

Answer – NorthWestern will check internally on this.

Comment – two or three days should not make an impact on deadlines if due by end of February.

Question – Why was the timeline this year so tight?

Answer – When you need to give a contract to parties so that they are online by the COD deadline and work backwards, this is the kind of timeline that shakes out for this.

Planning Timeline

NorthWestern mentioned we're probably behind on some tasks like resource definitions.

Question – How is the VER study status and will it be done at the end of the month?

Answer – It's coming along. Phase II got moved a bit, but the overall result hasn't been changed. The end of January is the time mentioned but they appear to be on-track.

Comment – ETAC would like the VER study to be reviewed next meeting.

Question – What about large customer DR?

Answer – We've met with some of our VPs to discuss large customer's contracts. The VER study will give us pricing information that can inform these customers about what we could pay for their DR. Until, you've got smart meters installed, it's pretty hard to do this at the general customer level.

Question – Do we ever talk about electric vehicles?

Answer – NorthWestern could put in optimistic numbers for load growth.

Comment - The DOE hasn't undertaken a study on adoption of EVs but I'd ask if there is interest in DOE providing info to ETAC.

Comment – The idea of tourism and related infrastructure build-out, and NorthWestern should have interest and have a role in that.

Those conversations occur but we have not been involved in that yet.

Public Process Discussion

NorthWestern expects that the planning process would be different if meetings were public. Avista and Idaho Power have a public process with fewer meetings. It is likely that NorthWestern would also hold fewer meetings. Additionally, in a public process, NorthWestern would need to clear what information it shares for public release [ETAC currently reviews sensitive and confidential information]. Portland's process resembles a larger planning process like the NWPCC, which would not be possible for NorthWestern due to limitations in staffing. We are not familiar with Puget's process.

The meeting facilitator separated ETAC members into groups of two; NorthWestern employees did not participate in this exercise. Each group discussed the pros and cons of opening up meetings to the public.

Group 1 – Public meetings could result in less potential engagement by some individuals. In particular, government employees would be hesitant to make certain comments out of a concern that their comments would be attributed to their agencies. The level of technicality in meetings would be reduced. The meetings might be slower paced due to having to explain everything, and they would cover less material. Open public meetings could become a forum for advocacy. On the other hand, open meetings would allow the public to become more educated, and for NorthWestern to receive feedback from their customer base. Group 1 recommended keeping ETAC meetings the same but to also create a separate public process.

Group 2 – Group 2 referred to the rules that require both ETAC and also a public process. If ETAC went completely public, that would be inconsistent with the rules, which require a technical committee and a public process. The point of ETAC is to warn NorthWestern when ETAC thinks that the company is making a mistake or when NorthWestern could do better. Group 2 recommended keeping ETAC the same but to also hold public processes.

Group 3 – It would be really embarrassing to get quoted from a public process on statements that are contrary to our employers' goals. ETAC voices would be watered down in a public process, and particular parties could take over the discussion. It would be harder to get things done in a public process; it is hard enough with a group at the current ETAC size. Group 3 recommended keeping ETAC as is, and that adding a public process in addition to regular ETAC meetings would be helpful.

Group 4 – Puget and Portland have planning processes that are less technical and generally open to public. These utilities also have specific working group meetings. Puget's technical meetings are open to public. With a public process, it could take longer to get things done. An open process would eliminate uncertainty about ETAC's membership and it would garner trust with non-ETAC members. Group 4 had varying opinions. One member advocated changing ETAC into a public process. The other indicated that the value that ETAC provides shapes who needs to be involved, but that a public process should be added.

Group 5 –The nature of the ETAC relationship that we have in the room now would change. There would be less candor and less information shared. There would be inconsistency of attendance, but at the same time more people would be in-the-know. ETAC as a whole could discuss outside issues brought in by the general public. Perhaps the best way to go about this would be to supplement ETAC with additional public meetings. Public meetings could be scheduled quarterly. ETAC would meet monthly. Perhaps a half of every third ETAC meeting could be open to the public, and then ETAC would have closed-door follow up discussion on public comments. The public should be present to interact with ETAC. This would cause some changes, but it would also shed some needed light. Group 5 also had varying opinions. One member indicated that they could go either way; ETAC as is, or as a public process. The other indicated that they like the group as is, but that a public process should be added.

Comment – There seems to be unanimity that a public process ought to be pursued.

Comment – It is a two-way street. The point of the process is to inform the utility to make sure that it does not make mistakes and to avoid litigation. It is not a place for ETAC members to advance their own agendas. We are not trying to win on policy points here. ETAC is not for blessing decisions that NorthWestern has already made. None of us should come to these meetings with unilateral dogmatic ideas; leave them at the door. Is ETAC worth it? By eliminating ETAC, you would be “throwing the baby out with the bathwater.”

Comment – I like coming to these meetings and learning from other people in one place at one time. That is the benefit of the current format.

Reply – NorthWestern has held one public meeting and we are allowed to keep this format the way it is, we will not decide this issue today. Instead, we will take this discussion back and evaluate our options.

Future Meeting Dates

- a. February 28, 2018 – Helena (location to be determined)
- b. March 22, 2018 – [Note: The March meeting was cancelled]
- c. April 18, 2018 – Helena (location to be determined).

Note: Committee members provide advice to NorthWestern as individual professionals; the advice they provide does not bind the agencies or organizations that the members represent.