

Questions from Montana Generation & Transmission Working Group Webinar: May 27th, 2020

Question for John Husar, Upper Badlands Wind Development

Question: That's a ripping wind resource, do you or anyone else know how it compares to North/South Dakota's wind resources?

Answer: The only place I have come across with this kind of wind energy resource is southern tip of Argentina. Land of the living wind. The trees grow sideways. We have done a little work in North Dakota. We studied 2 sites. One up near Minot, and another northwest of Garrison. We had 60 meter met towers installed on both sites for about 2 years. Both sites never got to 7 m/s. Capacity was low 30's. I don't get out of bed for any site under 8m/s at about 40% capacity. Do not have any information on wind speeds in South Dakota but you can review the South Dakota wind maps online. It's a crap shoot. So much has to line up for a successful project. It's tough but I really enjoy it. Here is the Upper Badlands web site: <https://upperbadlandswind.com/>.

Question for Darcy Neigum, Montana Dakota Utilities

Q: Generation retirements often open up transmission capacity for new energy development. With the planned retirement of the Lewis & Clark Station, what is the availability transmission capacity situation on MDU's system & what are MDU's energy identified needs according to current resource planning?

A: Access to MDU's transmission system at Lewis & Clark is governed by MISO's Tariff. Available generation capability would be determined through MISO's generation queue process at: <https://www.misoenergy.org/planning/generator-interconnection>. MDU's most recent resource plan can be found at: <https://www.montana-dakota.com/rates-services/electric-generation/> under "Integrated Resource Plan" towards the bottom of the webpage.

Question for Gayle Nansel, Western Area Power Administration

Q: Is WAPA involved in retrofitting existing hydro assets to provide immediate and variable energy response to compensate for the variable nature of wind and solar generation?

A: WAPA does not own hydropower assets. All of the dams from which WAPA sells hydropower are owned either by the US Army Corps of Engineers or the Bureau of Reclamation (Federal Generating Agencies). WAPA is normally consulted when the Federal Generating Agencies are considering retrofitting the hydro assets, however their design staff considers many factors when looking to replace/upgrade existing units. Further information on their plans would best requested from the Federal Generating Agencies.

Questions for Casey Johnston, NorthWestern Energy

Q: Is NWE involved in retrofitting existing hydro assets to provide immediate and variable energy response to compensate for the variable nature of wind and solar generation?

A: NorthWestern has used the flexibility in the hydro system to contribute to the integration of wind and solar generation for several years. In addition, we have made a number of upgrades in recent years and have plans for future upgrades as well. In some instances, in addition to providing additional capacity and energy, these upgrades increase the flexibility of the facility.

Q: What happens to the interconnection rights associated with Colstrip units upon retirement? Can they be repurposed through assignment or does that interconnection capacity become available to the queue?

A: Regardless of when or if Colstrip retires, the Transmission owners have no plan for removal of the transmission assets. Any future generation in the area will have to go through NorthWestern's Generation and Transmission interconnection processes, including studies, to determine what upgrades may be necessary.

Questions for Larry Nickell of Southwest Power Pool

Q: Is SPP involved in retrofitting existing hydro assets to provide immediate and variable energy response to compensate for the variable nature of wind and solar generation?

A: Only in the sense that we would need to study the transmission system impacts of any such planned retrofits.

Q: Can you give us a flavor for what are the major load centers in the SPP market (either in the Eastern or Western interconnect) that SPP could plausibly help Eastern Montana resources access with existing infrastructure (no new lines)? Does that access change significantly with the launch of the WEIS?

A: I'm sorry but I don't have a specific answer to this question. Answering this question requires performing appropriate generator interconnection and transmission service studies. Existence of the SPP Integrated Marketplace and regional planning processes in the Eastern Interconnect would suggest a higher likelihood of ability to deliver energy from the Eastern Interconnect part of the Montana system into SPP's market and possibly to specific buyers within the market. This higher likelihood is increased by the fact that the already constrained DC tie at Miles City would need to be expanded to facilitate more west-to-east transfers. The WEIS will increase the likelihood that least-cost resources connected to the transmission systems operating in the WEIS are delivered to consumers located within participating balancing areas. The WEIS won't by itself, nor will any other imbalance market for that matter, facilitate more transmission expansion that might be needed to provide increased access for new resources.

Q: Does SPP look at storage as a transmission asset, especially w/r/t potential transmission "upgrades" (i.e., non-wires solution)?

A: While SPP doesn't currently have tariff provisions that treat storage as a transmission asset, we do have the ability to study storage solutions as resources that could be viewed as "non-wires" solutions to congestion on the transmission system.

Q: Do you see an advantage to backbone solutions via competitive solicitation?

A: Generally, backbone solutions have demonstrated optimal means of facilitating large transfers of low-cost energy from resource-centric locations to load center locations. The strength of the existing system and the amounts of energy needing to be transferred determines whether backbone solutions, versus incremental upgrades, are advantageous.