

**Northwest Power and Conservation Council
Generating Resources Advisory Committee
February 21, 2018**

Gillian Charles, NWPCC, began the webinar at 2:00 pm by calling for introductions. Mike Starrett, NWPCC, presented.

Fred Heutte, NW Energy Coalition, stated that TTC is a static number [Slide 14] and wondered if there are significant reductions of transfer capacity based on changes in the system operating limit or other constraints. Starrett answered that a switch in BPA's methodology now means the TCC is dynamic and captures outages and other changes.

Tomás Morrissey, PNUCC, asked how you plot the TTC sits if its value is dynamic. Starrett said he will show some hourly shapes and mentioned his on-peak, off-peak analysis and agreed that looking at it on a more granular level is important. He stated that the presentation will show typical todays for each of the twelve months for several historical years.

Greg Brownell, EWEB, asked what factors are driving the ATC trend upward. Starrett answered that there is actually still zero ATC available on a long term firm contractual basis from BPA across path 8 and stated that the reasons for the decreased physical utilization by the existing contract holders will be discussed later in the slides.

Dave LeVee, Pwercast, asked how the optimal view of utilization compares to a method that strips out ownership. Starrett said this discussion topic will be picked up later in the presentation.

Paul Dietz, Grant PUD, asked if this effectively allows Pacific NW utilities to access WY, MT and CO wind should we gain the benefit of transmission access via RTO membership. Starrett again asked that this be held until later in the presentation.

Angela Tanghetti, CA Energy Commission, asked what hours are considered off-peak [Slide 21.] Starrett answered that it's the same as what California uses. John Ollis, NWPCC, clarified that it is HE 7 to 22 or 6:00 am to 10:00 pm. Heutte agreed.

Discussion

Heutte called the presentation interesting and pointed to multiple factors: large spring effects of the California's Duck Curve, which is impacted by their large amounts of solar and relatively low load. He the pointes to the difference between January and March in the Northwest, wondering if it's caused by something in the hydro system crowding Montana out.

Starrett followed up about the Montana/January issue, saying that he is not sure why the path is increasingly less utilized in Montana in January. Starrett moved back to [Slide 21] to illustrate

how Colstrip's output has been consistent but off-peak availability continues to rise. He wondered what is causing this trend and if it's going to continue.

LeVee suggested looking at the economic opportunity value and other economic signals like spot market prices. Starrett stated that short term opportunity would make sense if MT resources had an opportunity to sell generation to local load if their export path was congested but noted that MT is a net exporter. He stated that it seemed too risky to build in an area that only has some spot transmission availability since there is no other opportunity to sell energy locally if the path to a contractual off taker is congested.

Brownell commented that perhaps more Northwest hydro energy is shifting to off-peak in response to less, on-peak export opportunity. Starrett noted that this might have the opposite effect. He then reiterated that Colstrip is still operating full out and wondered what it causing the extra room.

Starrett then addressed Dietz's earlier question: Does this effectively allow PNW utilities to access WY, MT, CO wind should we gain the benefit of transmission access via RTO membership? Starrett answered that he did not know but doubted a strong tie to WY.

Heutte clarified, asking if this question about the connection to MT and south or a more general question about system topology between MT, CO and further west. Starrett rephrased the question: does unused transmission open opportunities for utilities to access wind resources in other states. Starrett felt that an RTO would not be needed to tap those resources. He agreed with Heutte that there is not a strong, aluminum conductor tie to those areas.

Brownell wondered if the transmission access works under the same set of rules, noting that you can buy the value of the transmission but not the physical use. Starrett called that a good point.

Heutte agreed that the monolithic approach of an RTO might improve things but theorized that even if the Northwest were to join an RTO there would be transition rules about existing contracts. He added that, given BPA's position, there might be other special arrangements as well. There was robust agreement in the "room."

Jeff Kugel, PNGC, stated that the ATC number is set on the most congested hour of the year and suggested keeping that in mind when looking at the available yearly flow. He acknowledged that that doesn't speak to the unexplained trend but stated that BPA uses that hour and it doesn't change that much.

Tanghetti said that assumption means it's hard to carry this into the future as the peak hour differs by region.

Kugel agreed that it is a conservative assumption but noted that once you cut the top 10 hours availability gets bigger. He called BPA the 800-pound gorilla, noting that they are working on

changing that. Tanghetti noted that as CA builds renewable portfolios they are struggling with the same questions. She recalled that some feel new transmission must be built to bring out-of-state renewables in while others argue that 16,000MW of coal are proposed to retire WECC-wide and renewables can come over those lines. Tanghetti then remarked that she's been told those lines are already subscribed and you can't make those assumptions. She said this really impacts CA's portfolio.

Starrett asked if she's hearing that transmission outside of CA's ISO is fully-subscribed. Tanghetti answered yes, and their portfolio-building tools assume that only 2000MW can come in over existing lines before building new transmission. She added that if the tool is changed to allow 4000MW you get a portfolio that allows out-of-state wind.

Starrett moved to [Slide 24] which illustrated different opportunities to continue engagement. He thanked the members for their input and suggested members send him more thoughts and ideas via email or phone call.

Charles ended the meeting at 3:30 pm.

Attendees via Go-to-Meeting

Alaine Ginocchio	Western Energy Board
Anna Kim	Seattle City Light
Greg Brownell	EWEB
Mark Bergan	BPA
Bill Henry	EQL
Bryan Neff	CA Energy Commission
Melissa Cheesman	WA UTC
Dave LeVee	Pwrcast Consulting
Dave Moldal	Energy Trust of Oregon
Elizabeth Osborne	NWPCC
Frank Brown	BPA
Fred Heutte	NW Energy
Greg Nothstein	WA UTC
Clint Gerkenmeyer	Energy Northwest
Gillian Charles	NWPCC
Eric Graessley	BPA
Mitchell Green	BPA
Greg Mendonca	PNGC Power
Kimberly Haugen	Snohomish PUD
Mike Hill	Cantera Energy??
Holly Taylor	Western Energy Board
Jeff Kugel	PNGC Power
John Ollis	NWPCC
Leanne Bleakney	NWPCC
John Lyons	Avista

Mike Starrett
Elizabeth O'Connell
Will Price
Paul Dietz
Robin Rego
Rick Williams
Angela Tanghetti
Terry Toland
Tom Kaiserski
Tomás Morrissey
David Vidaver
Zac Yanez
Brian Dekiep

NWPCC
WA UTC
EWEB
Grant PUD
Energy Northwest
Portland State University
CA Energy Commission
Clark PUD
Montana Department of Commerce
PNUCC
CA Energy Commission
Snohomish PUD
NWPCC