Northwest Power and Conservation Council
Generating Resources Advisory Committee
March 1, 2019

Gillian Charles, NWPCC, began the meeting at 1:30 with a review of the agenda and a reminder of webinar phone etiquette. She called for introductions, explained the role of the GRAC and reviewed the 2021 Power Plan Work Schedule.

Electric Transmission in the Northwest
Mike Starrett, NWPCC

Charlie Black, CJB Energy Economics, noted that the NW has non-firm transmission available from entities that have unused long-term firm or firm transmission [Slide 4.] Starrett agreed adding that he will be discussing if that approach is enough to lead to the development of a new resource.

Fred Heutte, NW Energy Coalition, stated that PacifiCorp includes transmission expansion in their power planning and have recently added a feature that allows the model to select from a library of transmission pieces. He asked if Starrett is considering anything like that. Starrett asked if the feature pulls from existing transmission contracts or new builds. Heutte answered new builds, adding that the feature allows the model to dynamically select new, relatively shorter pieces of transmission from a library of corridors and projects. Starrett agreed that a new resource could be paired with expansion or perhaps the region could think about available transmission in a different way.

Heutte spoke about techniques that move power flow around a bit [Slide 10] pointing to BPA approaches around South of Allston. He noted that there are limitations including cost. Starrett agreed that BPA piloted some commercial products that change line resistance but have not been used further.

Someone on Chat asked if [Slide 8] illustrates Loop Flow. Starrett answered no and said that this is normal and typical for any power system.

Angela Tanghetti, California Energy Commission, asked what an average operating limit is [Slide 13]. Starrett explained that the operating limit can move up or down within a day or across multiple days depending on other system conditions. This is a part of daily operations and does not change how much transmission is sold long-term firm.

Jeff Kugel, PNGC Power, pointed to PowerX's storage capability which they use to buy cheap, Q2 energy and sell it back at double or triple the price in the summer. He said it would be interesting to overlay average price on the graph to illustrate that Vancouver follows economics. Kugel then stated that BPA transmission ran a DR pilot that cut TTC in 2017 which could explain the dips. Starrett stated that he did originally add price to the slide and might again.

Ken Dragoon, Flink Energy, asked if this slide represents a fully, contractually subscribed path. Starrett answered that the TTC or SOL describes the maximum thermal limit. He added that all of the long-term firm inventory numbers are current as of three months ago and reflect BPA updates.

Heutte said that BPA updates their paths and capabilities continuously and the last published release states that South of Alston has 313MW of ATC which goes up in the future.

Tanghetti asked why our system operating limit is above the TTC. Starrett answered that it is common because buying long-term firm undersells the transmission system. Black added that there is also conditional firm transmission offered on a limited basis. Starrett agreed, saying the security around the conditions are only good for two years.

Heutte noted that some transmission rights are re-sold close to the operating hours [Slide 16] and likened it to a season ticket holder selling their seat for one game. Starrett agreed but pointed to the risk of buying a plane ticket and booking a hotel when there may or may not be an available ticket.

Dragoon said you can't finance a project in the NW without firm transmission. He noted that he's seen small solar projects not come online because they had no access to firm transmission, calling it a huge hinderance to low-cost projects. Starrett said the Council wants a dialog about this on-the-ground reality.

Kugel mentioned that the TC 20 Bonneville rate case implements a conditional firm to address this issue with the caveat that you could get cut. Starrett agreed.

Black argued that the NW market is Bi-Lateral [Slide 19.] Starrett agreed that people can trade bi-laterally and will re-label the slide. Starrett added that his intent was to compare the NW to an area with a real-time wholesale market like the CALISO. Black said the typical terminology is a centralized or organized market.

Dragoon cautioned that as the region moves to variable resources and 100%+ renewables firm, point-to-point transmission model will not work well. He said moving to an organized market will not take away the risk of financing a project without firm transmission. He suggested an indemnification fund as an alternative solution and voiced frustration with what he calls a broken system that insists on firm, point-to-point for a resource with a 20-30% capacity factor.

Heutte stated the market construct looks like it has a lot of advantages but is also very complicated, pointing to the CALISO as example [Slide 45.] He agreed that the system may become more efficient but is also more exposed to price risk and pointed to the energy imbalance market that had three, five-minute intervals where the EIM price was $1000.

Starrett added that most energy clears day ahead and the five-minute market is meant to be cleanup around the day ahead. He then said that in the CAISO there is transmission expansion plan that matches transmission with where resources are showing up.

Heutte responded that we could overestimate or underestimate what can be added, especially for new renewables. He called this an important issue for the 2021 Power Plan as the sector is moving quickly from taking a long time to build resources, which allows for transmission planning, to resources that are built on a shorter time horizon.

Someone on chat asked for a description of the EIM product. Starrett answered that the EIM is meant to be a cheap way to balance resources on short timescales when the forecast load and generation changes from the day ahead. Nearly all energy needed for a given day clears the day ahead market; the EIM, which is the same thing as the Real Time or Five Minute Market, is specifically meant to deal with imbalance between day-ahead and actuals.

Starrett called for more comments, questions and feedback via email.

Charles stated that the presentation and recording of the meeting will be available on the GRAC webpage and ended the meeting at 3:30.

Attendees via Webinar

Adam Schultz	Oregon DOE
Aimee Higby	WA UTC
Andrea Goodwin	NWPCC
Angela Tanghetti	California Energy Commission
Brandon Charles	MRW & Associates
Bryan Neff	California Energy Commission
Cameron Yourkowski	Renewable NW
Charlie Black	CJB Energy Economics
Dave LeVee	Pwrcast
Dave Moldal	Energy Trust of Oregon
Deanna Carlson	Cowlitz PUD
J. Kent Dittmer	Energy NW
Elizabeth Osborne	NWPCC
Frank Brown	BPA
Fred Heutte	NW Energy Coalition
Greg Nothstein	WA Dept of Commerce
Mike Hill	Tacoma Power
James Vanden Bos	BPA
Jeff Kugel	PNGC Power
Richard Jensen	California Energy Commission
Jeremy Twitchell	PNNL
John Goroski	Flathead Electric Coop
Ken Dragoon	Flink Energy

Matt Muldoon	Oregon PUC
Jennifer Magat	PSE
Christopher McLean	California Energy Commission
Ahlmahz Negash	Tacoma Power
Will Price	EWEB
Paul Rossow	Oregon PUC
Rich Flannigan	Grant County PUD
Rick Williams	Portland State University
Rodney Noteboom	Grant County PUD
Shirley Lindstrom	NWPCC
Terry Toland	Clark PUD
Tomás Morrissey	PNUCC
Villamor Gamponia	SCL
Alaine Ginocchio	Western Energy Board

Daniel Hua	NWPCC
David Howarth	