

SUBJECT: Managing Imbalances

Date: February 2, 2012

Powerex is very sympathetic to the significant challenges that BPA and its customers face with respect to wind integration. However, Powerex was surprised by the accumulated imbalance data presented by BPA at the January 19th workshop, and believes it is evidence that there may be serious problems with the current scheduling practices in BPA's BAA.

When scheduling a wind project, (or any VER), it is reasonable to expect some generation imbalance due to forecasting errors. As BPA indicated, a predictable, small amount of generator imbalance will accumulate using either a persistency-based forecasting method, or a more sophisticated forecast method, such as those offered by third party providers. However, with these objective forecast methods, the accumulated generation imbalance will remain relatively small, as the hourly generator imbalance should be random, and unbiased. In contrast, the actual accumulations in the examples that BPA presented at the January 19 workshop demonstrate that the scheduling practices of some participants in the BPA wind fleet are not consistent with an unbiased and objective wind forecasting methodology. The data also indicates that some entities may be intentionally submitting inaccurate schedules.

There are many reasons why an entity *may* be incented to intentionally over or under schedule, including: (1) the current difficulties associated with marketing an energy-only product in some hours; (2) the true cost of self-supplying sufficient balancing reserves; (3) the substantial production-based incentives paid to VERs (i.e. Renewable Energy Credits, and Production Tax Credits) that may encourage some generators to continue to generate even if its output has not been sold and scheduled; and (4) the lack of rules preventing the intentional arbitrage of market prices vs. the rate schedules (i.e. generation imbalance and persistent deviation penalties).

Regardless of the reason for these accumulations of generator imbalances, it is clear that changes must be made to the existing scheduling framework for VERs, to improve the reliable operation of the grid and market efficiency. More specifically, Powerex believes the existing scheduling framework for VERs is fundamentally flawed as it enables a variable generator to effectively place a large and changing balancing reserve obligation on the transmission provider each hour, at the variable generator's sole discretion. Powerex believes BPA should establish a scheduling framework which is based on an objective forecasting methodology, to ensure that the quantity of balancing reserves necessary to backstop VER firm schedules each hour is determined outside of the participant's discretion.

In this regard, Powerex recommends that BPA use a T-45 persistency forecasting method to determine each hour, the maximum quantity that a wind customer may schedule as firm each hour. This maximum quantity may be reduced during periods where BPA has insufficient INC balancing reserves to support this level of firm wind schedules. This method can then be used to calculate BPA's balancing reserve requirement for each hour, without curtailment to these objectively determined firm VER schedules.

Using this method:

- BPA would provide customers with the T-45 persistency output (the T-45 Forecast Output), as the forecast for the upcoming scheduling hour.
- Customers would be required to submit energy schedules for the next scheduling hour that are no greater than the T-45 Forecast Output (or some lower amount posted by BPA during certain periods);
- Any energy that a wind generator schedules in excess of the T-45 Forecast Output must be scheduled as Non-Firm (E-tag generation product code G-NF) and those schedules will be subject to curtailment as per DSO 216, in the event that the total amount scheduled exceeds the generation output of the wind project, and BPA has insufficient INC balancing reserves;
- When the total schedules from a wind plant are less than the T-45 forecasted output, the wind project will be subject to generation curtailment, in the event that BPA has insufficient DEC reserves.

It is important to note that under this framework, customers will still be able to schedule based on their own independent forecasts. However, the customer will now bear the risk if its forecast error exceeds what would be achieved using a T-45 persistency forecasting method, by accepting DSO 216 curtailments to NF e-tags and/or curtailments to wind output.

In addition, this framework would allow for further refinements in future rate cases, whereby customers could be given the option to obtain a lower wind integration rate for the year by: (1) agreeing to schedule to T-30 persistency; (2) agreeing to consistently schedule intra-hour (i.e. commit to use intra-hourly schedules for every hour); and (3) agreeing to schedule in accordance with a non-persistency-based forecast that BPA provides each hour, if such a forecast is shown to be superior and more accurate than a persistency-based forecast.

Powerex acknowledges that BPA is making concerted efforts to provide better wind forecasting tools. If, at some point in the future, BPA is able to provide a customized forecast that is more accurate than the persistency based forecast method, customers could opt into a rate that reflects firm scheduling commitments according to BPA's hourly posted forecast amount for each VER facility.

Powerex notes that the framework proposed above would also eliminate the disadvantage the BPA wind fleet now faces in the market as a result of the specter of DSO-216 curtailments, to any and all VER schedules. Using the above framework, only the energy scheduled in excess of the T-45 persistency forecast would be subject to DSO-216 curtailments, and the wind fleet could sell the portion that is scheduled in accordance with T-45 persistency as a truly firm product.

Thank you for the opportunity to comment on this important issue.

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