Draft – January 17, 2020

Installed Capacity Subcommittee

Whitepaper Scope for Intermittent Resource Production Correlation

Problem Statement

The NYSRC Executive Committee ("EC") is committed to understanding the impact of high renewable resources penetration on the reliability of the New York bulk power system. As such, the NYSRC Installed Capacity Subcommittee ("ICS") established a project scope, modeling assumptions, performed modeling and analysis, and reported draft results to the NYSRC EC and ICS on a case in which 12,000 MW of intermittent, weather-dependent resources (*i.e.*, solar PV, onshore wind, offshore wind) were added to the 2020 IRM Study Preliminary Base Case assumptions. The NYSRC ICS expressed interest in evaluating the degree to which weather-dependent resource production correlates over a coincident period to determine how these correlations affect New York bulk power system reliability.

Project Scope

The NYSRC ICS will work to test correlation of onshore wind, solar, landfill gas, and run of river hydro to determine whether correlation exists and, if so, whether such correlation is important to model in the IRM Study. The ICS will then evaluate correlation of onshore wind production data (*i.e.*, NYISO billingquality meter data) and offshore wind production, as determined for the High Renewable Whitepaper. The comparison will focus on the 2010 – 2012 period based on data availability.

Project Deliverables

The NYSRC ICS will produce a whitepaper summarizing the problem statement, project scope, data sources, correlation evaluation methods, and justification of both those data source and methods. The whitepaper will also include a test of the 2020 IRM Final Base Case when onshore wind and solar PV data are drawn from the same year (*e.g.*, 2015 wind data is always paired with 2015 solar data; 2016 wind data is always paired with 2016 solar data). The whitepaper will make recommendations on the adoption of intermittent generation production correlation data in the 2021 IRM study, as well as an similar analyses of both; 1) the correlation of onshore wind, solar, landfill gas, and run of river hydro, and 2) the correlation of onshore wind and offshore wind production.

Finally, the ICS will study using more than five years of intermittent resource production data to determine whether modeling correlation data would diminish year-over-year IRM volatility while also capturing a broader sample of renewable resource production data in the MARS model. The ICS would likely issue a final whitepaper in 2021.