STATE OF CONNECTICUT

PUBLIC UTILITIES REGULATORY AUTHORITY

CONNECTICUT DISTRIBUTED GENERATION WORKING GROUP –
NONRESIDENTIAL INTERCONNECTION GUIDELINES SUBCOMMITTEE

MEETING AGENDA
Tuesday, February 7, 2023
9:00 AM – 10:00 AM

Location: Microsoft Teams

Discussion on Studies and Project Controls

- The meeting began with Corey Zucker describing a current solar plus storage project and asking about timelines and costs
    - Joe Debs explained the transmission study requirements and how they are determined by ISO-NE and not Eversource
    - Typically a transmission study is required when 20MW or more of DG is online at electrically connected substations
    - Joe mentioned that substation upgrades can be avoided/limited for larger battery projects if the project limits export
    - ISO-NE will evaluate by nameplate capacity
- Sergio Carrillo asked what the typical timeframe is for 5-7 MW storage projects
- Myra S. introduced herself and stated that she worked for six years at FERC in interconnections
    - She stated that a 45-day review period is fairly quick and that the ISO will respond to state innovations
    - She also suggested that the group revise the application to allow developers to choose from certain PCS options and give the developers the option to describe how the projects will function
- Shirin stated that it can be difficult to determine the operation of larger projects because they are often exploring participation in the ISO markets as well as state programs
- Jon D. cautioned that the group may want to continue to rely on reasonable worst case scenarios rather than modeling the project's hourly profile through an 8760 study as this process would take even longer
- Jon also state that specificity is very important when comparing hourly reviews with peak, minimum, and shoulder analyses
- Jon also mentioned that CA is looking at more data points but doesn't look at certain energy measures that are harder to do with intermittent resources
- Zak asked about the use of schedules and inverter controls in lieu of upgrades
    - Mrinmayee stated that inverter-only controls generally apply only to smaller systems and larger projects are using other equipment
- Mrinmayee stated that large projects require an 8760 study and that MA National Grid is providing preliminary thermal assessments; most developers are not happy

with the limited operational schedules because they cannot participate in ISO markets
    - Joe Debs responded that developers need to understand the balance between their desire to operate in the ISO market and the resulting need for upgrades. If a project wants to operate in the frequency or capacity market, they would have to model project operation without restrictions and may need to pay for upgrades
- Myra stated that the programs like the MA Clean peak program will provide some economic benefit to projects but may preclude ISO participation
- Jon D. stated that it's hard for a single project to participate in both peak shaving and frequency regulation unless the project is holding back reserves
- Pete Falcier described a recent industry group position paper submitted in New York and shared it with the group. The paper suggested the following:
    - Building a hosting capacity map for storage resources
    - Allow projects to shift operating windows over time. It may make more sense for a project to operate one way presently but as programs change, it may make more sense to operate in a different manner.
- Pete also said that ConEd in New York is requiring hardware based limitations to limit project export but he uses software controls to control dispatch

Review of Current Fast Track and Study Guidelines

- Joe Debs led the group through a review of proposed changes to the guidelines
- Joe described how metering information will now be posted on company websites rather than in the guidelines
- Zak asked whether the group had comments on proposed changes to volt/var
    - Mrinmayee stated that volt/var settings are usually determined by the utility. CA, NY, and HI have default volt/var settings and jurisdictions may use volt/watt for smaller systems.
- Joe Debs asked the group for feedback regarding what kind of protective functions are most appropriate for storage and suggested that if members didn't have suggestions it could be addressed in a future separate meeting
- Pete F. raised issues for the group to consider regarding behind-the-meter interconnections such as:
    - Options for upgrading transformers vs switch gear at the host site
    - Implications of on-site transformers service upgrades (e.g., 480V to 5kV) when equipment is owned by site owner vs EDC
    - Creation of 1- and 3-line diagrams for storage projects
- Zak asked Pete whether he was aware of any best practices in other jurisdictions
    - Pete responded that NY has some guidelines but the use case examples are mostly FtM and that there are few BtM energy storage projects
    - Mrinmayee stated that MA also is predominately FtM storage
- Pete also mentioned that program design would affect how storage is deployed and talked about the Energy Storage Solutions (ESS) and Connected Solutions programs

    - Chris Arpin described the difference between the two programs stating that Connected Solutions is a BtM only performance based program and ESS has passive and active dispatch incentives
- Jon Demay asked whether, with the move to UL 1741SB, the guidelines should be updated to reflect the additional capabilities of SB certified inverters and described how SB certified inverters do not require a grounding bank in National Grid territory
- Joe Debs expressed openness to discussing revisions and described the factors currently used in evaluating projects such as load and generation ratios, SANDIA and dynamic studies
- Joe Marranca stated that UI takes similar steps, using SANDIA screening, RoCoF vs phase compare/direct transfer trip. Joe suggested keeping the section broad enough to avoid focusing on any specific technology
- Pete brought up metering requirements and described a situation in NY in which projects were required to install a duplicate set of meters and CTs because the utility meters did not meet the requirements to participate in the ISO markets
    - Joe Debs responded that it isn't uncommon for projects to have two meters but that the group could discuss co-participating projects in more detail at a future meeting