Interconnections Technical Working Group Meeting

3/8/16

Introductions

Framework

- Identify and tackle technical barriers through consensus solutions.
    - Has to be sound engineering decisions
        - What is a sound engineering decision?
    - Accelerate some of these solutions without any sort of force
- Focus on results.
    - Specific goals and resolution in a timely manner
        - SMART Goals
        - Communication on constraints and challenges – "opportunity for both sides to air their thoughts"-Jason
        - Implement results in a timely manner
- Work with parties outside the TWG is encouraged.
    - Technical experts and third party expertise
    - Plans for technical consultant to join group
        - provide topic specific assistance and experience towards decision making process
        - Develop white papers and other work products for our review
- This group is not:
    - Arbitrator for individual project disputes
    - Will not handle per project DER challenges
    - A lot of crossover, but
        - We want to stay focused on technical issues and the subsequent, necessary results
- Set up a page on the website for the TWG
    - Meeting schedules
    - Presentations, material (not confidential or sensitive)
- Participant input….
    - Voting framework?
    - Informal group consensus?
        - What happens when we can't reach consensus?
            - Reach out to other industry reps or research groups for advice
            - Benchmark against other jurisdictions
            - Co-Chairs would be final decision makers in case of non-consensus.
- Primary focus out the door is solar since it is the largest industry….then down the road more system types (such as CHP or wind) will be looped in.
- Leveraging of outside resources
    - TWG can be a vehicle to leverage available outside resources when analysis call for processes not readily available i.e.: Lab work
- Trying to accommodate everyone's schedules
    - Potentially 6-8 hour meetings if quarterly
    - Suggestion for 5-6 hour meeting if bi-monthly
    - Location may change to NYSERDA for more convenience / parking

Solar Industry Perspective: Interconnection Technical Review Group (refer to presentation)

- Vision
    - To research and aggregate information to identify improvements and facilitate the adoption of best practices that drive a continued simplification and streamlining of the interconnection process, lower interconnection costs, and meet REV and other state goals while maintaining the safety and reliability of the Electric Distribution System
- Goals
    - Research and synthesizing bet practices for regulatory standards as well as utility and developer processes
    - Harmonize tech standards where possible
    - Transparency on tech standards used by utilities and rationale supporting them
    - Greater communication and collaboration between utilities and developers to:
        - Identify what is working well and where there are areas for improvement
        - Offer suggested improvements to the SIR allowing it to more rapidly reflect the identified best practices and improved processes.
    - Ask the right questions to get the right answers
- Transparency
    - Standards and underlying technical justification
    - Manual or guideline matrix (Massachusetts currently has)
- Collaboration
    - Feedback channel for issues identified internally by utilities or developers
    - Sharing unique or innovative strategies
- Make the SIR a living document
    - In order to meet the governors 50% by 2030
    - ITWG can help ensure that interconnection standards remain optimized by:
        - Offering recommendations and best practices for inclusion into the SIR
        - Assessing the value of changes to be applied to the SIR
        - Focus on potentially providing a technical reference guidebook that the SIR can reference
- Other outstanding issues
    - Interconnection Queue management
    - Customer name designation on application
    - Process for updating CESIRs
    - Project bundling and other cost sharing mechanisms
    - Timeline enforcement mechanisms
        - EIMs
            - Separate initiative

Joint Utilities Perspective

- Collaboration and common goal
    - Shared customers and clients – in best interests of both parties to collaborate
    - Shared interest in enhancing the efficiency of the interconnection process
    - Common goal of streamlining interconnection process while ensuring safety and reliability
        - We have final responsibility for the safety and reliability of the grid.
- Alignment with the DSIP

    - DSIP calls for automated interconnection process consistently across the state
        - Consensus among parties commenting on the SIR that there are interim steps that can be completely more quickly with higher impact while pursuing a longer term vision. This was supported through the EPRI Gap Analysis.
        - Opportunities to make progress on key issues through this TWG.
        - Data availability/accuracy – did not require the same level of precision when power flow was one way
    - DSIP guidance requires initial utility activities related to hosting capacity to be defined and a standard approach applicable to all the utilities to be included in the Supplemental DSIP
        - Alignment of methodology and goals to extent possible among JUs
            - Opportunity to learn from California
        - Stakeholder input will be critical, but through a separate process within the DSIP
        - Will assist with customer acquisition costs and queue management
- Queue management
    - Enhancing queue management
        - Cost estimates & allocation
        - Queue position assignment
        - Pre app report
    - High priority for utilities
        - Ensure as many systems as feasible are constructed. With a queue clogged with projects not moving forward, fewer projects will be constructed.
        - Central Hudson received over 600 MW of CDG applications since 10/1/15, with a minimum load of 350 MW and peak load of 1200 MW. An additional 300 MW is anticipated.
    - Best practices from California (Rule 21)
        - Queue position accuracy and transparency
        - Site exclusivity to mitigate queue hogging
- Benefits to the Pre application report
    - . Planning and operating criteria and characteristics is required to provide insightful information on what upgrades are needed, which cannot be demonstrated by a single black and white number provided in raw data.
    - Utilities proposed to waive the interconnection application fee if submitted within a certain number of days of the pre application report.
- Screening processes
    - A more robust screening process could be valuable after simplified screens are tested in New York State
        - Utilities concerned robust screens may slow the process down as indicated by current screening process at PG&E and SCE (see specific percentages on the slides).
        - Once tested in New York State, additional screens could be added through collaboration with the utilities, the industry, and potentially EPRI or NREL
        - Borrego Solar suggested potential size limits for an expedited screening process (1 MW)
- Technical Issues
    - Monitoring
        - >200kW level suggested

        - All parties agreed the details should be discussed further
    - Smart Inverters Capabilities/Control
        - Some implementation within Rule 21 in California
        - Opportunity with REV to participate in markets and mitigate the substation and distribution upgrades required to integrate solar
            - Dynamic PF adjustment could create opportunities
        - Opportunity to learn from Germany and ensure inverters are firmware upgradeable at a minimum
        - Implement standards that have already been approved
            - Then begin to work on capabilities that don't have approved standards yet
    - Protection
        - Substation backfeeding
            - The JUs look forward to opportunities to benchmark and standardize, where feasible.
            - Each utility has unique configurations
                - Even within service territories
            - Results in unique protection requirements and limitations
    - DTT/Anti Islanding
        - Unintentional Islanding risk
        - Incomplete device libraries present challenges for implementing
            - No way of modeling algorithms within inverters
        - Opportunity to leverage this group and the third party resources to influence sharing of inverter models
    - Voltage Flicker
        - Will need to discuss application of IEEE Standards

Discussion

- How to make data available to the utilities
- Mass research with solar, currently
- Academic studies in central NY with monitoring data that is digging into some of these issues
- Accuracy issues and lag time allowable with monitoring?
- Stakeholder engagement pending the finalization of the DSIP guidance
- Hosting capacity based on circuit minimum load is a useful tool to identify "low hanging fruit"
- Utilities are in the driver's seat for hosting capacity pending a final DSIP Order
    - How do we get more penetration on the system comfortably with good engineering results?
    - The more you open the where question
        - The more you can assess the value of DG on the system
        - Important to compare "Apples to apples"
    - Hosting capacity is one of the two priority items for the utilities with reference to the DSIP
- Immediate Need Subjects;
    - Substation Backfeeding
        - Unintentional islanding concerns and solutions: DTT Requirements
        - $3V_0$ Requirements

    - Tech Screening process
    - Monitoring requirements and solutions: RTUs, other
    - Smart inverter tech/adoption
- SIR targeting March session (3/17/16), but not definite
    - If SIR is completed, go through it and answer questions
    - Technical screens
- DTT is used to resolve a safety issue
    - Anti-islanding won't be completely figured out immediately
        - NREL is working on inverter "inner-working" standards
- Identify who we want to work with in the way of outside consultants
- Prioritize near term issues and push tech screenings a couple meetings down the road once outside consultant is on board.

Next meeting agenda:

- State DG Ombudsperson Update
- SIR
    - Go through and answer questions
    - Tee up Technical Screens
- Utilities to provide position and explain concerns and analysis associated with the following subjects
    - Substation backfeeding
    - Anti-Islanding
    - Monitoring
- Next meeting will be scheduled in April @ NYSERDA 10am-4pm

More Discussion

- Most community DG isn't in the queue yet
- Next wave is likely to be next phase of CDG
- NYSERDA now requires application to the utility before incentive application
- How much is site shopping? How much is legit?
- Less pushback if developers have a forum in which they can share costs
- De-risk the interconnection process, but the trick is to do it without putting shareholders and rate payers on the hook for upgrades