The State of Interconnection in NYS:

Understanding the Current Situation, Navigating the New Interconnection Requirements in NY, and What’s Next

Melissa Kemp, NYSEIA Policy Co-Chair
About NYSEIA

NYSEIA is the only statewide membership and trade association dedicated solely to advancing solar energy use in New York state. Led by a growing staff and diverse Board of Directors, NYSEIA strives to achieve responsible and sustainable solar energy adoption throughout the state, while creating jobs that benefit communities and urgently reducing the environmental impacts from fossil fuels.
Importance of Interconnection and SIR

• Interconnection is an essential component of renewable electricity project feasibility from a project development timeline, certainty, and economic viability perspective.

• The Standard Interconnection Requirements (SIR) are New York’s state-wide regulations intended to create uniform interconnection rules and processes for connecting distributed generation (DG) systems that use state jurisdictional rates to New York’s electric distribution grid. The SIR provides application procedures, requirements, review and screening processes, timelines, cost guidelines etc.
Current State of Interconnection in NY

- **Interconnection has become an even more critical topic** in New York over the last two years, as larger scale projects and a greater volume of projects have been proposed, and New York’s clean energy goals have become more defined and now mandated through the new Clean Energy Standard.

- **The status of the interconnection of projects through the SIR in New York is published once per month** by the Joint Utilities in PSC Matter 13-00205. These filings include completed MW and proposed MW in the queue by utility, as well as information on the projects in the queue themselves including date application received, project developer, project size, project technology, circuit #, and information on project process stages and costs.
Current State of Interconnection in NY

- New York has installed 483 MW of non-wind DG (mostly solar) through the JUs and SIR as of 8/31/16, and roughly another 250 MW minimum through LIPA/PSEG to total around 733 MW total.

- The recent construction rate in New York has been about 150 MW in 2015 and just over 80 MW this year so far.
Current State of Interconnection in NY

• The current queue is larger than NY has experienced in the past. As of August 31, 2016, the NY interconnection queue stands at a total of 3,906 MW of proposed non-wind projects - three times the size it was at the beginning of 2016 and 11 times the size it was in early 2015.

• But there is wide consensus from stakeholders and market participants that it does not accurately reflect the number of feasible projects, as there have been many information-seeking, speculative, and/or immature applications.
Current State of Interconnection in NY

MW of Solar Capacity

<table>
<thead>
<tr>
<th>Date</th>
<th>Total Queue Size (MW)</th>
<th>Total Installed to Date (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/31/15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/31/16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/31/16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Recent Challenges and Interconnection Issues

• No way to get information on circuits upfront without submitting an interconnection application and getting in the queue
• Different technical standards being used by utilities across the state to evaluate project feasibility and decide on necessary upgrades
• Effectively no binding timelines for developer decisions and payments
• Lack of project maturity requirements to enter and continue through queue
• Lack of tools help projects better manage delays due to local moratoriums and high cost upgrades
• Significant variation in upgrade costs across utility territories and lack of transparency about those costs
• Delays in the reports and studies in the process – In part driven by waves of application in response to regulatory changes
Recent Challenges and Interconnection Issues

• Lack of some key types of data in the published interconnection queue and need for further standardization of how much and in what format the queue is shared

• Lack of standardization of data provided across all utilities in the SIR process reports, such as the Preliminary Technical Reports and CESIR studies

• Lack of policy for the process of updating these reports, and also what constitutes material modification of applications

• No requirements for construction scheduling or completion
New SIR Update

• After months of work between DPS, the JUs, and the DG industry, a significant update to the SIR was announced by the PSC on March 17, 2016 and went into effect formally on April 29, 2016. It can be accessed on the New York DPS DG website, and the full order is available in the PSC Docket Case #15-E-0557.

• It is a significant step towards addressing several of the above issues (as shown in orange below)

• The update included the addition of a pre-application report option, standardized initial technical screens and supplemental review, binding developer/project milestone timelines, and a lower payment to execute an interconnection contract.
A. Step 2: Pre-application Report Request (Appendix D) – Request by applicant for 13 key pieces of information on the distribution circuit interested in connecting to. No customer name or site control required, and does not place you in the interconnection queue.

Fee is $750, Utility has 10 business days to complete, and Applicant has 15 business days to use fee credit; Receipt of fees continue to trigger start of timelines. Many utilities are now offering online or digital payment options.

This information can be used to determine likelihood of passing preliminary screens, supplemental screens, and potential for high-cost upgrades. We are going to begin to review how to use this information most effectively later on in the presentation.
# APPENDIX D

**PRE-APPLICATION REPORT FOR THE CONNECTION OF PARALLEL GENERATION EQUIPMENT TO THE UTILITY DISTRIBUTION SYSTEM**

**Utility:**

<table>
<thead>
<tr>
<th>DG Project Information: (Provided to Utility by Applicant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer name</td>
</tr>
<tr>
<td>Location of Project: (Address and/or GPS Coordinates)</td>
</tr>
<tr>
<td>DG technology type</td>
</tr>
<tr>
<td>DG fuel source / configuration</td>
</tr>
<tr>
<td>Proposed project size in kW (AC)</td>
</tr>
<tr>
<td>Date of Pre-Application Request</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pre-Application Report: (Provided to Applicant by Utility – 10 Business Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage of closest distribution line</td>
</tr>
<tr>
<td>Phasing at site</td>
</tr>
<tr>
<td>Approximate distance to 3-Phase (if only 1 or 2 phases nearby)</td>
</tr>
<tr>
<td>Circuit capacity (MW)</td>
</tr>
<tr>
<td>Fault current availability, if readily obtained</td>
</tr>
<tr>
<td>Circuit peak load for the previous calendar year</td>
</tr>
<tr>
<td>Circuit minimum load for the previous calendar year</td>
</tr>
<tr>
<td>Approximate distance (miles) between serving substation and project site</td>
</tr>
<tr>
<td>Number of substation banks</td>
</tr>
<tr>
<td>Total substation bank capacity (MW)</td>
</tr>
<tr>
<td>Total substation peak load (MW)</td>
</tr>
<tr>
<td>Aggregate existing distributed generation on the circuit (kW)</td>
</tr>
<tr>
<td>Aggregate queued distributed generation on the circuit (kW)</td>
</tr>
</tbody>
</table>
B. Step 3: Application Submission – If the pre-application report information indicates that the circuit is viable or you already know a circuit, submitting a formal interconnection application is the next step. Application requirements are similar to the past and still require Customer Name for non-CDG projects, but are now listed in a formal checklist (Appendix F).

Fee is $0 if received completed pre-application report recently (within past 15 business days) or $750 if not; Utility has 15 business days to complete the preliminary review; Incomplete applications will be removed from the interconnection queue after 30 business days.
## APPENDIX F

### APPLICATION PACKAGE CHECKLIST

<table>
<thead>
<tr>
<th>Item</th>
<th>✔</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed standard application form</td>
<td></td>
</tr>
<tr>
<td>Signed copy of the standard contract</td>
<td></td>
</tr>
<tr>
<td>Letter of authorization, signed by the Customer, to provide for the contractor to act as the customer’s agent, if necessary</td>
<td></td>
</tr>
<tr>
<td>If requesting a new service, a site plan with the proposed interconnection point identified by a Google Earth, Bing Maps or similar satellite image. For those projects on existing services, account and meter numbers shall be provided</td>
<td></td>
</tr>
<tr>
<td>Description / Narrative of the project and site proposed. If multiple DG systems are being proposed at the same site/location, this information needs to be identified and explained in detail.</td>
<td></td>
</tr>
<tr>
<td>DG technology type</td>
<td></td>
</tr>
<tr>
<td>DG fuel source / configuration</td>
<td></td>
</tr>
<tr>
<td>Proposed project size in AC kW</td>
<td></td>
</tr>
<tr>
<td>Project is net metered, remote, or community net metered</td>
<td></td>
</tr>
<tr>
<td>Metering configuration</td>
<td></td>
</tr>
<tr>
<td>Copy of the certificate of compliance referencing UL 1741</td>
<td></td>
</tr>
<tr>
<td>Copy of the manufacturer’s data sheet for the interface</td>
<td></td>
</tr>
<tr>
<td>Copy of the manufacturer’s verification test procedures, if</td>
<td></td>
</tr>
<tr>
<td>System Diagram - A three line diagram for designs proposed on three phase systems, including detailed information on the wiring configuration at the PCC and an exact representation of existing utility service. One line diagrams shall be acceptable for single phase installations.</td>
<td></td>
</tr>
</tbody>
</table>
C. Step 4: Utility Performs Screening Analysis – Utility review now includes a set of six preliminary standard state-wide technical screens (Appendix G).

After receipt of preliminary report, Applicant has 30 business days to decide and notify utility on next steps or removed from the interconnection queue. **Next step options are:**
Update to the SIR: Process 50 kW – 5MW (Cont)

• If passed preliminary screens, should go straight to executed contract with no CESIR or further study and no upgrade requirements

• If failed one or more screens, applicant can request:
  • Preliminary Analysis Results Meeting – Optional meeting with utility intended to offer quick possible resolution if failed a preliminary technical screen with obvious straightforward solution (i.e. revision of system size slightly downward, replacement of one piece of equipment due to rating, etc)
• **Supplemental Review** – 2\textsuperscript{nd} set of three technical screens that applicant can request to be applied to project (Appendix G). Intended for projects that minimally fail one or more preliminary technical screens but that may not be an issue if slightly more study done. Most likely to apply to projects under 1 MW. There is a $2,500 fee and 20 business day turnaround.

• **Full CESIR Study** – If neither of the two options seems likely to provide a solution, a full study is required.

• **Withdraw the Application**
D. Step 5 and 6: CESIR Study If Required - Requirements remain similar to previous SIR. Utility has 60 business days to complete and up to 80 business days if over 2 MW. Detailed description of reasoning for any system upgrades required along with utility cost estimates broken down by specific equipment requirements, labor, etc. Contingencies associated with the cost estimates shall not exceed +/- 25%.

E. Step 7: Deposit, and Execution of Contract - After CESIR completion, applicant has 60 business days to pay 25% of upgrade costs to execute interconnection contract, which sets your place in the queue and locks in the project’s property tax status. The remaining 75% of costs are then due in an additional 120 days and then utility upgrades can start.
Update to the SIR: Rationale for Technical Screens

• The overriding goal is to maintain the safe and reliable operation of the distribution grid while enabling larger amounts of distributed generation to be interconnected more efficiently and more cost effectively.

• The concept of a screening analysis is to identify a common set of conservative conditions which, if met, make it very unlikely for the generation to be able to cause any unacceptable impacts on the functioning of the distribution grid.

• The current method of screening has been traced to the early 2000’s with California’s Rule 21.

• A collection of 13 screens (six of which were adopted in the new SIR) are currently in use in California, Hawaii, Massachusetts and a number of other States as well as by the Federal Energy Regulatory Commission’s Small Generator Interconnection Procedures.
Update to the SIR: Preliminary Screening Analysis

• Screen A: Is the PCC on a Networked Secondary System?
• Screen B: Is Certified Equipment Used?
• Screen C: Is the Electric Power System (EPS) Rating Exceeded?
• Screen D: Is the Line Configuration Compatible with the Interconnection Type?
• Screen E: Simplified Penetration Test (15% of the annual peak load)
• Screen F: Simplified Voltage Fluctuation Test (Voltage fluctuation < 5% of the prevailing voltage level and voltage flicker not included here)

• For a full discussion of these screens, and their purpose and rationale please see NYSEIA’s webinar, “Understanding the new Interconnection Rules for Developers” from May 3, 2016 on our website
Update to the SIR: Supplemental Review

• If a system fails the preliminary review and a results meeting cannot identify readily agreeable options to enable interconnection, supplemental review can be chosen for systems that the developer believes are likely to be interconnectable with additional scrutiny but without requiring a full system impact study.

• The cost is $2,500 and the timeline for completion is 20 business days.

• If a system is unlikely to pass the three supplemental review screens the developer can opt at any time to move to a CESIR.
Update to the SIR: Supplemental Review (cont)

- **Screen G: Supplemental Penetration Test** (is the aggregate Generating Facility capacity on the Line Section less than 100% of the minimum load and definition of minimum load important)

- **Screen H: Power Quality and Voltage Tests** (allows for a more detailed assessment of the potential voltage impacts caused by the proposed generation)

- **Screen I: Safety and Reliability Tests**

  - For a full discussion of these screens, and their purpose and rationale please see NYSEIA’s webinar, “Understanding the new Interconnection Rules for Developers” from May 3, 2016 on our website
Recent Challenges and Interconnection Issues

- No way to get information on circuits upfront without submitting an interconnection application and getting in the queue
- Different technical standards being used by utilities across the state to evaluate project feasibility and decide on necessary upgrades
- Effectively no binding timelines for developer decisions and payments
- Lack of project maturity requirements to enter and continue through queue
- Lack of tools help projects better manage delays due to local moratoriums and high cost upgrades
- Significant variation in upgrade costs across utility territories and lack of transparency about those costs
- Delays in the reports and studies in the process – In part driven by waves of application in response to regulatory changes
Recent Challenges and Interconnection Issues

- Lack of some key types of data in the published interconnection queue and need for further standardization of how much and in what format the queue is shared
- Lack of standardization of data provided across all utilities in the SIR process reports, such as the Preliminary Technical Reports and CESIR studies
- Lack of policy for the process of updating these reports, and also what constitutes material modification of applications
- No requirements for construction scheduling or completion
What’s Next

• Interconnection Queue Management
  • While the SIR update was significant step forward, it did not address the large volume of projects that had entered the queue before it took effect, and it did not completely address all of the important areas of queue management going forward
  • Critical to projects moving to construction and maximizing the utility of the new screening process
  • Proposal out of 3 month collaboration in the Interconnection Policy Working Group to be filed this Friday
  • Includes such items as:
    • Requiring Property Owner Consent and Site Control
    • Applying Binding Timelines for Developer Decisions and Payments to Interconnection Applications Submitted Prior to April 2016
    • Allowing Extensions for Committed Projects with Local Permitting Moratoriums
    • Implementing a Limited Mandatory Cost Sharing Mechanism
What’s Next

- **Interconnection Technical Working Group (ITWG)**
  - Goal of creating best practice technical standards that work towards reduction of barriers, which will simplify the process and costs
  - Issues include:
    - Substation Level Reverse Power Flow
    - Anti-islanding and DTT Requirements
    - Monitoring and Control Requirements
    - Voltage Flicker and Regulation
  - Begun drafting of state-wide common technical standards matrix
Recent Challenges and Interconnection Issues

- No way to get information on circuits upfront without submitting an interconnection application and getting in the queue
- Different technical standards being used by utilities across the state to evaluate project feasibility and decide on necessary upgrades
- Effectively no binding timelines for developer decisions and payments
- Lack of project maturity requirements to enter and continue through queue
- Lack of tools help projects better manage delays due to local moratoriums and high cost upgrades
- Significant variation in upgrade costs across utility territories and lack of transparency about those costs
- Delays in the reports and studies in the process – In part driven by waves of application in response to regulatory changes
Recent Challenges and Interconnection Issues

• Lack of some key types of data in the published interconnection queue and need for further standardization of how much and in what format the queue is shared

• Lack of standardization of data provided across all utilities in the SIR process reports, such as the Preliminary Technical Reports and CESIR studies

• Lack of policy for the process of updating these reports, and also what constitutes material modification of applications

• No requirements for construction scheduling or completion
Questions?

Melissa Kemp, melissa.kemp@3reenergyconsulting.com