NJ BPU Clean Energy Grid Modernization pursuant to Public Docket: **Docket No. QO21010085**

See overview at: [njcleanenergy.com/gridmod](http://njcleanenergy.com/gridmod)
## Agenda

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<td>NJ BPU</td>
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<td>Guidehouse</td>
<td>9:10 – 9:25</td>
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<td>New Jersey Administrative Code (N.J.A.C.) Overview</td>
<td>Guidehouse</td>
<td>9:25 – 9:30</td>
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<td>PJM Interconnection Process and FERC Order 2222</td>
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<td>State Tariff Comparisons</td>
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</tr>
<tr>
<td>Break (15 minutes)</td>
<td></td>
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<td>Stakeholder Requests to Speak</td>
<td>All</td>
<td>10:15 – TBD</td>
</tr>
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<td>Timeline and Next Steps</td>
<td>Guidehouse</td>
<td>End</td>
</tr>
</tbody>
</table>
Project Objectives

• Project Objectives
• Key Takeaways from Meeting #1
Project Objectives
Through an open discussion assure the interconnection process is ready to move New Jersey toward its clean energy goals

Efficient
• Streamlined
• Automated
• Consistent
• Understandable

Transparent
• Visibility into points of interconnection
• Clear, right-sized requirements
• Supports NJ’s goals and objectives

Cost Effective
• Minimizes costs where practical
• Leverages technology
• Fosters investment
Key Takeaways from Meeting #1

1. Grid modernization includes considerations beyond interconnection reforms
   - Grid reliability is key concern for stakeholders
   - Collected input will help identify other aspects (e.g., energy storage, electric vehicles, virtual power plants) to inform future studies as part of the broader NJ grid modernization initiative

2. Selected Poll Results
   - 51% of respondents had previously completed or currently have an interconnection request in process with a NJ EDC and/or PJM
   - 95% of respondents said this stakeholder process could potentially or absolutely be effective in helping NJ implement the strategies in the energy master plan
   - 41% of respondents said they may install a Level 1 residential solar project this year or next year
   - 11% of respondents rated current interconnection process as ‘Simple and Efficient’
New Jersey Administrative Code (N.J.A.C.) Interconnection Overview

- N.J.A.C. Interconnection Overview
- Interconnection Application and Implementation Process
N.J.A.C. Interconnection Overview

<table>
<thead>
<tr>
<th>Request Level</th>
<th>Capacity Limit</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>≤ 10 kW</td>
<td>Inverter based and certified equipment</td>
</tr>
<tr>
<td>Level 2</td>
<td>≤ 2 MW</td>
<td>Certified equipment</td>
</tr>
<tr>
<td>Level 3</td>
<td>No range</td>
<td>Everything else</td>
</tr>
</tbody>
</table>

- **Note**: Certified equipment must confirm to N.J.A.C. 14:8-5.3:
  - Applicable to level 1 and level 2 interconnections
  - Institute of Electrical and Electronic Engineers (IEEE) 1547
  - Underwriters Laboratory (UL) 1741
  - Approved by a nationally recognized testing laboratory
N.J.A.C. Interconnection Overview
Interconnection Application and Implementation Process

1. Customer selects a location for the resource

2. Customer submits Part 1 of the Interconnection Application

3. Electric Distribution Company (EDC) identifies and installs network upgrades

4. Customer receives Approval to Install (ATI); installs the facility

5. EDC conducts inspections and customer submits Part 2 (Certificate of Completion)

6. EDC installs new meter for net metering (if applicable)

7. Customer receives Authorization/Approval to Operate (ATO)

8. Customer begins facility operations
PJM Generator Interconnection Process

- Regional Transmission Planning Process Manuals
- Manual 14A – New Services Request Process
- PJM Queue Reform
PJM Generator Interconnection Process

PJM Manual 14 Series – Regional Transmission Planning Process Manuals

Regional Transmission Planning Process Manuals

PJM’s Regional Transmission Expansion Plan (RTSP) identifies transmission system upgrades and enhancements to preserve the reliability of the electricity grid, the foundation for thriving competitive wholesale energy markets.

M-14A New Services Request Process
Revision 29 Effective Date: 8.24.2021
Guides the generation and/or transmission developers through the planning processes to interconnect to and operate in PJM markets.

M-14B PJM Regional Transmission Planning Process
Revision 50 Effective Date: 7.1.2021
Describes PJM’s open and participatory process for planning baseline expansion facilities.

M-14C Generation & Transmission Interconnection Facility Construction
Revision 14 Effective Date: 1.27.2021
Provides PJM process guidelines for the construction and integration of all RTSP projects, including generation and merchant transmission interconnections and Transmission Owner upgrades.

M-14D Generator Operational Requirements
Revision 57 Effective Date: 10.20.2021
Focuses on generator responsibilities as signatories to the Operating Agreement of the PJM interconnection and related market and operational requirements for connecting to the PJM system.

M-14E Upgrade & Transmission Interconnection Requests
Revision 8 Effective Date: 7.1.2020
Provides the specific requirements for interconnecting merchant Transmission Facilities, proposing capability increases to specific Transmission Owner Facilities and making Upgrade Requests to obtain Incremental Auction Revenue Rights (IARRs) under PJM’s Regional Transmission Expansion Planning Process. Additionally, it describes the various rights available and agreements required to complete the Transmission Interconnection or Upgrade planning process.

M-14F Competitive Planning Process
Revision 07 Effective Date: 7.1.2021
The PJM Manual for the Competitive Planning Process is part of the PJM Manual 14 series that encompass the PJM transmission planning protocols. This manual focuses on the process to conduct competitive proposal windows consistent with Order No. 1000.

Guidehouse

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PJM Generator Interconnection Process
PJM Manual 14A: New Services Request Process

Applicability of New Services Request Process

• Interconnect a new generation facility to the transmission system in the PJM region

• Add more capacity from an existing generation facility interconnected with the transmission system in the PJM region

• Modify the fuel type of an existing facility or generation interconnection request or

★ Interconnect a generating unit to distribution facilities to make wholesale sales in the PJM Region
PJM Generator Interconnection Process

PJM Manual 14A: New Services Request Process

New Service Requests
Submit a new interconnection request during the open request window to join a generation queue
• Scoping meeting substantiates project and study details

Feasibility Study
• DC Power Flow Analysis – Identify thermal overloads and required upgrades (Peak load)
• Short Circuit Analysis

Identification of Affected System – PJM will coordinate with entities impacted by the interconnection request (e.g., EDC to review distribution system impacts)
• Preliminary estimates of the type, scope, cost and lead time for construction of facilities

System Impact Study
• AC Power Flow Analysis (Summer peak, light load, and winter peak)
• Short Circuit with Transmission Service Requests incorporated
Facility Studies
- Stability Analysis
- Determine Interconnection Facilities and Network Upgrades
- Document design work necessary to begin construction
- Good-faith estimates

Enabling Agreements
- Service Agreements
- Interconnection Service Agreements
- Construction Service Agreement
- Upgrade Construction Service Agreement

Wholesale Market Participation Agreement
PJM Generator Interconnection Process Reform

PJM queue reform is in progress

- The current Generator Interconnection Process is being reviewed in the PJM Interconnection Process Reform Task Force
- Cost and study construct should be cluster/cycle based
  – First ready/first out
  – Readiness demonstrated by site control and financial milestones
- Increase the amount of financial commitment by the interconnection customer
- Provide off ramp opportunities for projects where there are significant cost increases between phases

★ State jurisdictional projects should first receive their interconnection agreement from the Transmission Owner / Distribution Provider prior to coming to PJM

Source: PJM Solution Proposal Framework Changes – Item 3a – November 4, 2021
FERC Order 2222

- Fact Sheet Review
- PJM Draft Implementation of Order 2222
- Additional Items to Consider
FERC Order 2222 Review
FERC Fact Sheet

FERC Order 2222 enables DER aggregators to compete in all regional organized wholesale electric markets

- DERs are located on the distribution system, a distribution subsystem, or behind-the-meter
- It will help provide a variety of benefits including:
  - lower costs for consumers through enhanced competition
  - more grid flexibility and resilience
  - and more innovation within the electric power industry
- This generation primarily interacts as Demand Response (DR) in wholesale electric markets
- Source: https://www.ferc.gov/media/ferc-order-no-2222-fact-sheet

FERC defers to state jurisdiction for the interconnection of individual distributed energy resources (DERs) for the purpose of participating in wholesale markets through a DER Aggregation (DERA)

FERC Order 2222 enables wholesale market participation for resources and aggregations ≥ 100 kW

Source: PJM Zones in NJ, May 2021, pjm.com/-/media/about-pjm/pjm-zones.ashx
FERC Order 2222 Review
PJM Draft Implementation of Order 2222 in Operation and Markets

PJM DER & Inverter-Based Resources Subcommittee (DIRs) – EDC Coordination Workshop – Item 3B

DERA Real-Time Wholesale Market - Operations Model

- Market Agent and Dispatch Agent could be EDC, DER Aggregator, or a 3rd party as assigned during the DER Aggregation registration process in accordance with RERRA / PUC and Utility requirements.
- Existing PJM to Transmission Operator communications remain in place but are not shown in this model.
- This model represents necessary PJM communications but is not necessarily inclusive of all communications required by the utility.

Source: PJM DERA Operational Coordination Framework
* DERA: DER Aggregation
FERC Order 2222
Additional Items to Consider

• PJM will be presenting their FERC Order 2222 approach in our next session

• This could impact projects and timelines since the interconnection request requires coordination with PJM relative to
  – Telemetry requirements
  – Aggregation Sizes e.g., 0.1 MW minimum to participate per PJM
  – And states, including NJ, may consider additional factors

Source: Acciona, Virtual Power Plant (VPP), a new form of energy management, January 2017, youtube.com/watch?v=7lbZF5ZOpZ4
State Tariff Comparisons

**Sources:** State interconnection tariffs:

- New Jersey
- Virginia
- New York
- Washington DC
- Maryland
- California
Discussion Points on Interconnection Process and Fees

• NJ is aligned with other states

• Fast Track is incorporated in all interconnection processes
  – Some have an additional Level for non-export projects

• Several states charge for Level 1 but some do not (NJ does not)

• IREC\(^1\) provides the following guidance related to application fees:
  – “Most states apply a Level 1 Application fee in the $100 to $200 range, though a number of states have chosen to waive the fee for net-metered facilities. In general, the appropriate fee should ensure that the Utility is compensated, on average, for a conducting reasonably efficient process.”
  – A Utility may elect to charge a standard Application fee of up to $100 plus $10 per kW of Nameplate Rating up to a maximum of $2,000 for Level 2 review.

\(^1\) IREC, Interstate Renewable Energy Council (IREC) Model Interconnection Procedures 2019
## Interconnection Fees Reference Table

*continued on next slide*

<table>
<thead>
<tr>
<th>State</th>
<th>Request Level</th>
<th>Capacity Limit</th>
<th>Fee/Deposit</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td>Level 1*</td>
<td>≤ 10 kW</td>
<td>No application or other fee.</td>
</tr>
<tr>
<td></td>
<td>Level 2*</td>
<td>≤ 2 MW</td>
<td>$50 + $1/kW capacity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Fee min:</strong> $51 <strong>max:</strong> $2,050 (additional review shall not exceed $100 per hour)**</td>
</tr>
<tr>
<td></td>
<td>Level 3</td>
<td>No limit</td>
<td>$100 + $2 / kW capacity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Fee min:</strong> $102 (engineering work shall not exceed $100 per hour)**</td>
</tr>
<tr>
<td>Virginia</td>
<td>Level 1*</td>
<td>≤ 500 kW</td>
<td>$100 Processing fee</td>
</tr>
<tr>
<td></td>
<td>Level 2*</td>
<td>≤ 2 MW</td>
<td>$1,000 processing fee</td>
</tr>
<tr>
<td></td>
<td>Level 3</td>
<td>&gt; 2 MW</td>
<td>$1,000 processing fee and $10,000 plus $1.00 per kWAC interconnection request study deposit</td>
</tr>
<tr>
<td>New York</td>
<td>Standard Interconnection Requirements*</td>
<td>≤ 50kW</td>
<td>No application fee is required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 50 kW and ≤ 5 MW</td>
<td>Non-refundable fee of $750 . $2,500 nonrefundable fee for the supplemental screening</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td>≥ 5 MW and ≤ 20 MW</td>
<td>$750 Application Fee,</td>
</tr>
<tr>
<td>Washington DC</td>
<td>Level 1*</td>
<td>≤ 10 kW</td>
<td>Application fee of $100 payable to the EDC</td>
</tr>
<tr>
<td></td>
<td>Level 2*</td>
<td>≤ 2 MW</td>
<td>Application fee amount is $500</td>
</tr>
<tr>
<td></td>
<td>Level 3*</td>
<td>≤ 50 kW connected to area network OR ≤ 10 MW connected to a radial distribution</td>
<td>Application fee amount is $500</td>
</tr>
<tr>
<td></td>
<td>Level 4</td>
<td>≤ 10 MW</td>
<td>Application fee amount is $1,000</td>
</tr>
</tbody>
</table>

* indicates a Fast Track process is available
## Interconnection Fees Reference Table

*continued from previous slide*

<table>
<thead>
<tr>
<th>State</th>
<th>Request Level</th>
<th>Capacity Limit</th>
<th>Fee/Deposit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maryland</strong></td>
<td>Level 1*</td>
<td>≤ 10 kW</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Level 2*</td>
<td>≤ 2 MW</td>
<td>$50 plus $1 per kW</td>
</tr>
<tr>
<td></td>
<td>Level 3*</td>
<td>≤ 50 kW connected to area network OR ≤ 10 MW connected to a radial distribution</td>
<td>$100 plus $2 per kW</td>
</tr>
<tr>
<td></td>
<td>Level 4</td>
<td>≤ 10 MW</td>
<td>$100 plus $2 per kW, to be applied toward any subsequent studies related to this application</td>
</tr>
<tr>
<td><strong>California</strong></td>
<td>Fast Track*</td>
<td>Non-NEM and &gt; 1 MW NEM-2</td>
<td>Request fee: $800; Supplemental Review: $2,500; Detailed Study: Up to $250,000;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤1 MW NEM-2</td>
<td>Request fee: $145; Supplemental Review: $0; Detailed Study: $0;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NEM-1</td>
<td>Request fee: $0; Supplemental Review: $0; Detailed Study: $0;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-NEM Solar ≤ 1MW</td>
<td>Request Fee + Supplemental Fee + Detailed Study: First $5,000 of study fees waived</td>
</tr>
<tr>
<td></td>
<td>Independent Detailed Study</td>
<td>≤5 MW</td>
<td>Study deposit of $10,000 - where an Interconnection Facilities Study or DGS Phase II Interconnection Study in the case of the Distribution Group Study Process is required, an additional $15,000 deposit must be submitted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 5 MW</td>
<td>Study deposit of $50,000 plus $1,000 per MW up to a maximum of $250,000</td>
</tr>
<tr>
<td></td>
<td>Cluster Study Process</td>
<td>No limit</td>
<td>Study deposit of $50,000 plus $1,000 per MW up to a maximum of $250,000</td>
</tr>
</tbody>
</table>

* a Fast Track process is an administrative screening process without a load study*
Discussion Points on Application Process and Timelines

• Most states have a Pre-Application option
  – IREC recommends having a Pre-Application Report

• Applications usually have a standardized form
  – IREC recommends these forms should be made available in an electronically fillable format and it shall be permissible to submit the form with electronic signatures.

• Most states follow either a Level 1 – 3 or a Level 1 – 4 approach without consolidation
## Application Process Reference Table

<table>
<thead>
<tr>
<th>State</th>
<th>Pre-application</th>
<th>Application Process</th>
<th>Consolidate Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td>Not in the New Jersey Administrative Code</td>
<td>Not specified – currently allow paper, email, and software / online tools. Application is standardized for different Levels and posted to EDC’s website</td>
<td>No</td>
</tr>
<tr>
<td>Virginia</td>
<td>Yes – 20VAC5-314-35 Proposed project for a specific site: generating facility project, including site address, grid coordinates, project size, and proposed point of interconnection</td>
<td>Not standardized in Virginia Administrative Code</td>
<td>No</td>
</tr>
<tr>
<td>New York</td>
<td>Pre-Application Report (see Appendix D herein) be provided by the utility</td>
<td>Standard application is located in the tariff Appendices. Electronic submission of all documents via the Interconnection Online Application Portal (&quot;IOAP&quot;) is required.</td>
<td>No</td>
</tr>
<tr>
<td>Washington DC</td>
<td>Not in D.C. Municipal Regulations</td>
<td>Interconnection customers seeking to interconnect a small generator facility shall submit an interconnection request using a standard form approved by the Commission to the electric distribution company (&quot;EDC&quot;) that owns the electric distribution system to which interconnection is sought. The EDC shall establish processes for accepting interconnection requests electronically.</td>
<td>No</td>
</tr>
<tr>
<td>Maryland</td>
<td>Sec. 20.50.09.06. General Requirements (3) For projects with a nameplate capacity over 20kW, the utility shall: (a) Provide the applicant an opportunity to request a pre-application report</td>
<td>Each utility shall establish a process that allows an applicant and an applicant's authorized designee to: (1) Sign and submit an interconnection request electronically on the utility's website; (2) Track the status of the interconnection request electronically; and (3) Conduct electronically any other process that can reasonably occur in that manner.</td>
<td>No</td>
</tr>
<tr>
<td>California</td>
<td>Yes - Pre-Application Report Request</td>
<td>Rule 21 - Standardize Application. Online applications</td>
<td>Yes – screening criteria exits out of the additional screenings</td>
</tr>
</tbody>
</table>
## Interconnection Timelines Reference Table

<table>
<thead>
<tr>
<th>State</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td>Screening: 10 Business Days (BDs)</td>
<td>Screening: 15 BDs Additional Review: 30 BDs</td>
<td>Not defined for studies</td>
<td></td>
</tr>
<tr>
<td>Virginia</td>
<td>Systems 50 kW or Less Screenings: 10 BDs</td>
<td>Systems above 50 kW up to 5 MW Preliminary Screening Analysis : 15 BDs Supplemental Screening Analysis: 20 BDs Coordinated Electric System Interconnection Review: 60 BDs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>Screenings: 10 BDs Additional Reviews: 15 BDs (if applicable &amp; at EDCs expense)</td>
<td>Screening: 20 BDs Additional Review: Not defined</td>
<td>Area network impact study: 25 BDs Additional Review: Not defined</td>
<td>Feasibility: Not defined System Impact: Not defined Facilities Studies: Not defined</td>
</tr>
<tr>
<td>Washington DC</td>
<td>Connect Safely &amp; Reliably: 15 BDs</td>
<td>Screening: 20 BDs Additional Review: 30 BDs</td>
<td>Area network impact study: 25 BDs Additional Review: 30 BDs</td>
<td>Feasibility: 30 BDs System Impact: 45 BDs Facilities Studies: 45 BDs</td>
</tr>
<tr>
<td>Maryland</td>
<td>Pre-Application: 10 BDs Fast Track</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Screening: 15 BDs Modifications: 15 BDs</td>
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<td></td>
<td>Supplemental Review: 20 BDs Non-invert: 6 months</td>
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<td></td>
</tr>
<tr>
<td>California</td>
<td>Pre-Application: 10 BDs Fast Track</td>
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<tr>
<td></td>
<td>Detailed Study:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Independent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>System Impact Study: 60 BDs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facilities Studies: 60 BDs (45 BDs if no upgrades are identified)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distribution Group Study Process</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>DGS Phase I: 60 BDs</td>
<td></td>
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<tr>
<td></td>
<td>DGS Phase II : 60 CDs to start, 60 BDs for report</td>
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</tr>
</tbody>
</table>
Discussion Points on Clustering

- The cluster process is an approach to help spread costs for larger projects.
- Industry is trending towards this approach to ease the costs associated with network upgrades.

Request Window
- FERC LGIP
- FERC SGIP
- State Interconnection Procedures

Cluster Formation
- Common Cluster Window, Timeline, and Payment Policies
- Conduct Locational Grouping of Transmission and Distribution Requests
- Exempt Projects

Phase 1 Study
- Conduct Phase 1 Load Flow Study
  - T & D Combined Study

Cluster Processing
- Shared Distribution Impact?
  - NO
  - YES
- Transmission Impact?
  - NO
  - YES

Group 1
- No Transmission Impact & No Shared Distribution Impacts

Group 2
- No Transmission Impact
  - Shared Distribution Impacts & Cost Allocations

Group 3
- Transmission and Distribution
  - Required Network Upgrades & Shared Cost Allocations

Source: Guidehouse
## Interconnection Clustering Reference Table

<table>
<thead>
<tr>
<th>State</th>
<th>Clustering</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td>No Options for clustering (Potentially clustering similarly located projects with the same Interconnection Customer)</td>
</tr>
<tr>
<td>Virginia</td>
<td><strong>20VAC5-314-50. Levels 2 and 3 interconnection request general</strong>&lt;br&gt;C. The utility shall prioritize interdependent projects pursuant to 20VAC5-314-38. If applicable, the interconnection request study deposit specified in the Interconnection Request Form will be required pursuant to 20VAC5-314-38. <strong>At the utility's option, interconnection requests may be studied serially or in clusters for the purpose of the system impact study.</strong></td>
</tr>
<tr>
<td>New York</td>
<td>No - A completed application shall be placed in the utility's interconnection queue. The utilities will manage the queue of interconnection applications in their inventories in the order in which they are received and according to the timelines set forth in SIR document.</td>
</tr>
<tr>
<td>Washington DC</td>
<td>No – it is not in the D.C. Regulations.</td>
</tr>
<tr>
<td>Maryland</td>
<td>No - The EDC shall assign a queue position. The queue position of an interconnection request shall be used to determine the cost responsibility necessary for the facilities to accommodate the interconnection. The EDC shall notify the applicant about other higher-queued applicants. Any required interconnection studies shall not begin until the EDC has completed its review of all other interconnection requests that have a higher queue position.</td>
</tr>
<tr>
<td>California</td>
<td><strong>Detailed Study Screens:</strong>&lt;br&gt;<strong>Screen Q: Is the Interconnection Request electrically Independent of the Transmission System?</strong>&lt;br&gt;If Applicant’s Interconnection Request fails Screen Q or elects to be studied under the Wholesale Distribution Tariff (WDT) Transmission Cluster Study Process, Applicant shall have the option of applying for Interconnection under the WDT Transmission Cluster Study Process of the Wholesale Distribution Tariff in accordance with its provisions. If Applicant fails Screen Q, Applicant’s Interconnection Request shall be deemed withdrawn under this Rule regardless of whether Applicant applies for Interconnection under the WDT. Distribution Provider shall inform Applicant of the Detailed Study start date.</td>
</tr>
</tbody>
</table>
Discussion Points on Metering and Measurement

• Industry best practice is separately metering production from consumption
• Net Metering is available in all the regions assessed
  – Metering requirements are typically in utilities’ tariffs
• Telemetry requirements are not specified in regulations
  – Specified by the utilities’ tariffs
<table>
<thead>
<tr>
<th>State</th>
<th>Metering and Measurement requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td><strong>N.J.A.C 14:8-4 NET METERING FOR CLASS I RENEWABLE ENERGY SYSTEMS</strong>&lt;br&gt;All electric distribution companies (EDCs) and supplier/providers, shall offer net metering to their customers that generate electricity on the customer's side of the meter, using class I renewable energy sources, provided that the generating capacity of the customer-generator's facility does not exceed the amount of electricity supplied by the electric power supplier or basic generation service provider to the customer over an historical 12-month period that the customer-generator selects in accordance with this section.</td>
</tr>
<tr>
<td>Virginia</td>
<td><strong>20VAC5-314-80. Interconnection metering.</strong>&lt;br&gt;Any metering, including telemetering, necessitated by the use of the SGF and any additional utility metering requested by the IC and agreed to in writing by the utility shall be provided by the utility at the IC’s expense in accordance with commission requirements or the utility’s specifications. The IC shall be responsible for the utility's reasonable and necessary cost for the purchase, installation, operation, maintenance, testing, repair, and replacement of metering and telemetering equipment.</td>
</tr>
<tr>
<td>New York</td>
<td>Metering requirements shall be determined by the configuration of the DER system. New metering or modifications to existing metering will be reviewed on a case-by-case basis and shall be consistent with metering requirements adopted by the Commission.</td>
</tr>
<tr>
<td>Washington DC</td>
<td><strong>D.C. Regulations 15-40 &amp; Chapter 15-9. NET ENERGY METERING</strong>&lt;br&gt;Any metering necessitated by a small generator interconnection shall be installed, operated and maintained in accordance with applicable tariffs. Any such metering requirements shall be clearly identified as part of the small generator interconnection agreement executed by the interconnection customer and the EDC.</td>
</tr>
<tr>
<td>Maryland</td>
<td><strong>Chapter 20.50.10. Net Metering</strong>&lt;br&gt;Net Energy Metering. An electric company shall provide net metering of electric service to eligible customer-generators using a meter capable of net energy metering until the rated generating capacity of all eligible customer-generators in the State reaches 1,500 megawatts. <strong>Telemetry</strong>&lt;br&gt;PEPCO: Telemetry is required on all DER systems over 2MWs. On radial circuits that have or can incorporate Distribution Automation, telemetry is required on all systems 250kW and greater. Telemetry requirements for the secondary network are delineated under that section. <strong>BGE:</strong> If EDC reasonably determines the need to install additional metering and telemetry and/or the capability of remote disconnect, Interconnection Customer shall allow this to be installed as expeditiously as possible.</td>
</tr>
<tr>
<td>California</td>
<td><strong>Net Metering:</strong> Generating Facility customers may be required to install Net Generation Output Metering for evaluation, monitoring, and verification purposes and to determine applicable standby and non-bypassable charges <strong>Telemetry:</strong>&lt;br&gt;Telemetry equipment at the Net Generation Output Metering location may be required at Producer's expense. If the Generating Facility is interconnected to a portion of Distribution Provider's Distribution System operating at a voltage below 10 kV, then Telemetering equipment may be required on Generating Facilities 250 kW or greater. <strong>Producer will bear all costs of the Metering required by this Rule, including the incremental costs of operating and maintaining the Metering Equipment.</strong></td>
</tr>
</tbody>
</table>
Discussion Points on Hosting Capacity

- Inconsistency among states whether a hosting capacity map is required within the state codes
- Commonly, most utilities publish hosting capacity maps
- Integrated DER planning could impact how capacity maps are presented in the future

Source: PSE&G Solar Power Suitability Map, nj.pseg.com/saveenergyandmoney/solarandrenewableenergy/solarpowersustainability
## Hosting Capacity Map Reference Table

<table>
<thead>
<tr>
<th>State</th>
<th>Hosting Capacity Map Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td><strong>N.J.A.C. 14:8-9.9 (f)</strong>&lt;br&gt;The EDCs shall make available and update, in a commercially reasonable fashion, capacity hosting maps.</td>
</tr>
<tr>
<td>Virginia</td>
<td>Not in Virginia Administrative Code – Dominion: Plan to refresh the data at least quarterly.</td>
</tr>
<tr>
<td>New York</td>
<td>Not in NYS Standardized Interconnection Requirements&lt;br&gt;National Grid, Con Edison, Central Hudson, Orange and Rockland, New York State Electric &amp; Gas(NYSEG), Rochester Gas and Electric Corporation (RG&amp;E) all have hosting capacity maps</td>
</tr>
<tr>
<td>Washington DC</td>
<td>Not in D.C. Municipal Regulations&lt;br&gt;PEPCO has hosting capacity map</td>
</tr>
<tr>
<td>Maryland</td>
<td><strong>Sec. 20.50.04.01. Information for Customers</strong>&lt;br&gt;A. System Maps or Records. Each utility shall maintain up-to-date maps, plans, or records of its entire transmission and distribution system, with such other information as may be necessary to enable the utility to advise prospective customers, and others entitled to the information, as to the facilities available for serving a locality.</td>
</tr>
<tr>
<td>California</td>
<td><strong>Rulemaking 14-08-013</strong>&lt;br&gt;Integration Capacity Analysis -The ICA map is designed to help contractors and developers find potential project sites for distributed energy resources (DERs).</td>
</tr>
</tbody>
</table>
Break
15 min
Stakeholder Remarks

• Presentations
• Speakers
• Comments
Timeline and Next Steps

- Timeline
- Next Steps and Outcomes
- Submitting Comments
- Closing Remarks
proceedings and recordings from prior meetings are available at: njcleanenergy.com/gridmod
Next Step and Outcomes
Continued engagement

• Meeting #3 January 14, 2022
  – EDC and PJM presentations
  – Follow up includes a frequently asked questions (FAQ) document and updated presentations where issues can be clarified.

• Outcomes include:
  – Gap analysis and proposed roadmap
  – Identified modifications and updates to meet the Clean Energy Plan
  – Potential directives from the NJ BPU
Submitting Comments

njcleanenergy.com/gridmod

• Please submit comments directly to Docket No. QO21010085 as detailed in the public notice. Comments are considered “public documents” for purposes of the State’s Open Public Records Act and any confidential information should be submitted in accordance with the procedures set forth in N.J.A.C. 14:1-12.3. Written comments, including questions regarding the stakeholder process, may also be submitted to:

Aida Camacho-Welch
Secretary of the Board
44 South Clinton Avenue, 1st Floor
Post Office Box 350
Trenton, NJ 08625-0350
Phone: 609-292-1599
Email: board.secretary@bpu.nj.gov

• All comments must be received on or before 5:00 p.m. EDT on March 22, 2022.
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Fernando Palma
Managing Consultant

Nneomma Nwosu
Consultant
NJ BPU Closing Remarks

Paul Heitmann, NJ BPU