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Outwit *Complexity*

Grid Modernization Study Draft Findings and Recommendations

Prepared for: New Jersey Board of Public Utilities

June 27, 2022

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Agenda

The goal of this session is to elicit comments that will inform the Final Report

Agenda

Topic	Presenters	Time (AM except where otherwise noted)
Welcome, Opening Remarks, and Introduction	NJ BPU, Guidehouse	9:00 – 9:15
Findings and Recommendations Presentation	NJ BPU, Guidehouse, All	9:15 – 11:10
Scheduled Stakeholder Speakers	All	11:10 – 11:30
Break (5 minute stretch break)		
Additional Stakeholder Speakers	All	11:35 – TBD
Timeline, Next Steps, Closing Remarks	Guidehouse, NJ BPU	End

Draft report link:

https://www.nj.gov/bpu/pdf/publicnotice/DRAFT%20Grid%20Modernization%20Report%206-20-22.pdf

Public comments may be submitted until 5PM EDT July 19, 2022 at the following link:
https://publicaccess.bpu.state.nj.us/CaseSummary.aspx?case_id=2109704

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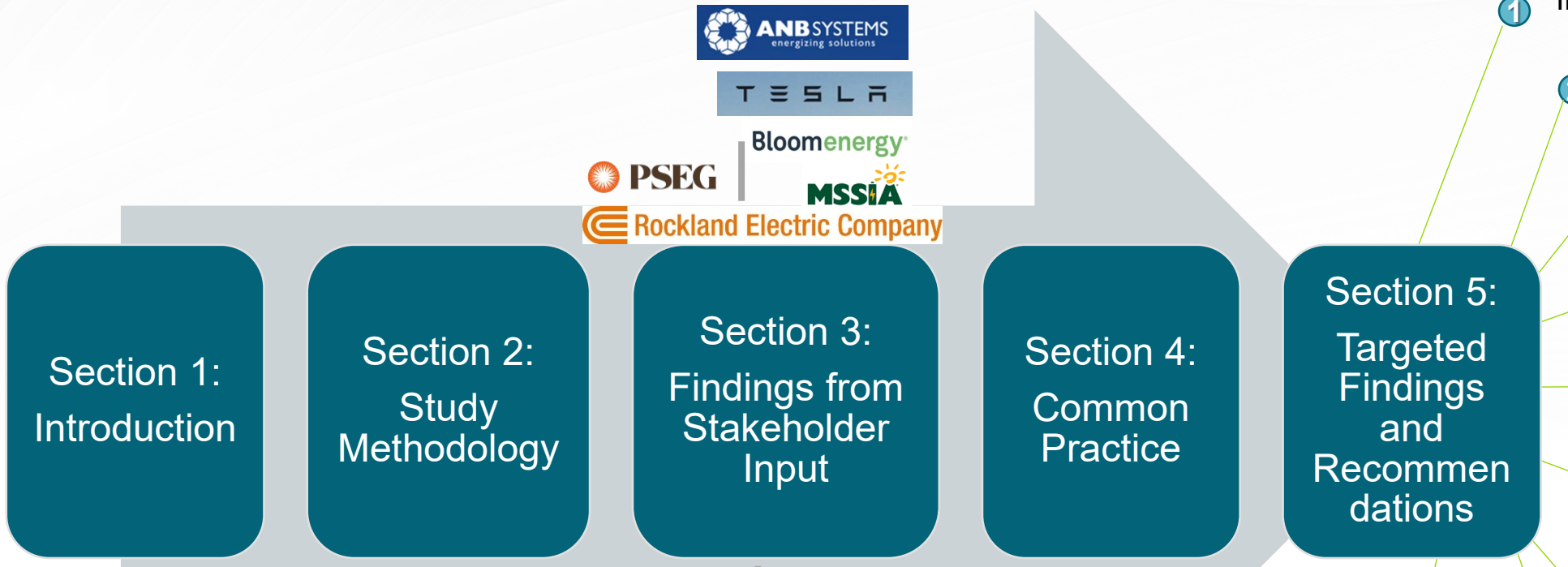
Report Overview and Study Process

Guidehouse Report Overview



ANB SYSTEMS energizing solutions
TESLA
Bloomenergy
PSEG
MSSIA
Rockland Electric Company

Jersey Central Power & Light A FirstEnergy Company
atlantic city electric AN EXELON COMPANY
sunnova
fuelcellenergy
SUNRUN
IREC
conEdison Solutions a Con Edison Clean Energy Business
Ad Energy

IREC
LBNL
NREL
CPUC (and IOUs)
Duke
IEEE
EPRI
FERC/PJM

CA
NY
VA
DC
MD
NC/SC

1. Implement IEEE 1547-2018
2. Streamline/Automate IXC Application Process
3. Align EDC Host Capacity Accuracy
4. Institute Pre-Appl Process (>500kW)
5. Encode Detail On IXC Rules
6. Efficient Sequence of IXC Throughput
7. Grid Upgrade Cost Estimation /Allocation
8. Integrated DER Plans and Defined Roadmap
9. Hybrid Solutions with Non-Renewables

STATE BENCHMARKING:
Tabular comparisons among equivalent DER Interconnection Process elements are made for; Processing Timelines, Hosting Capacity Maps, Metering Requirements, and Fees.

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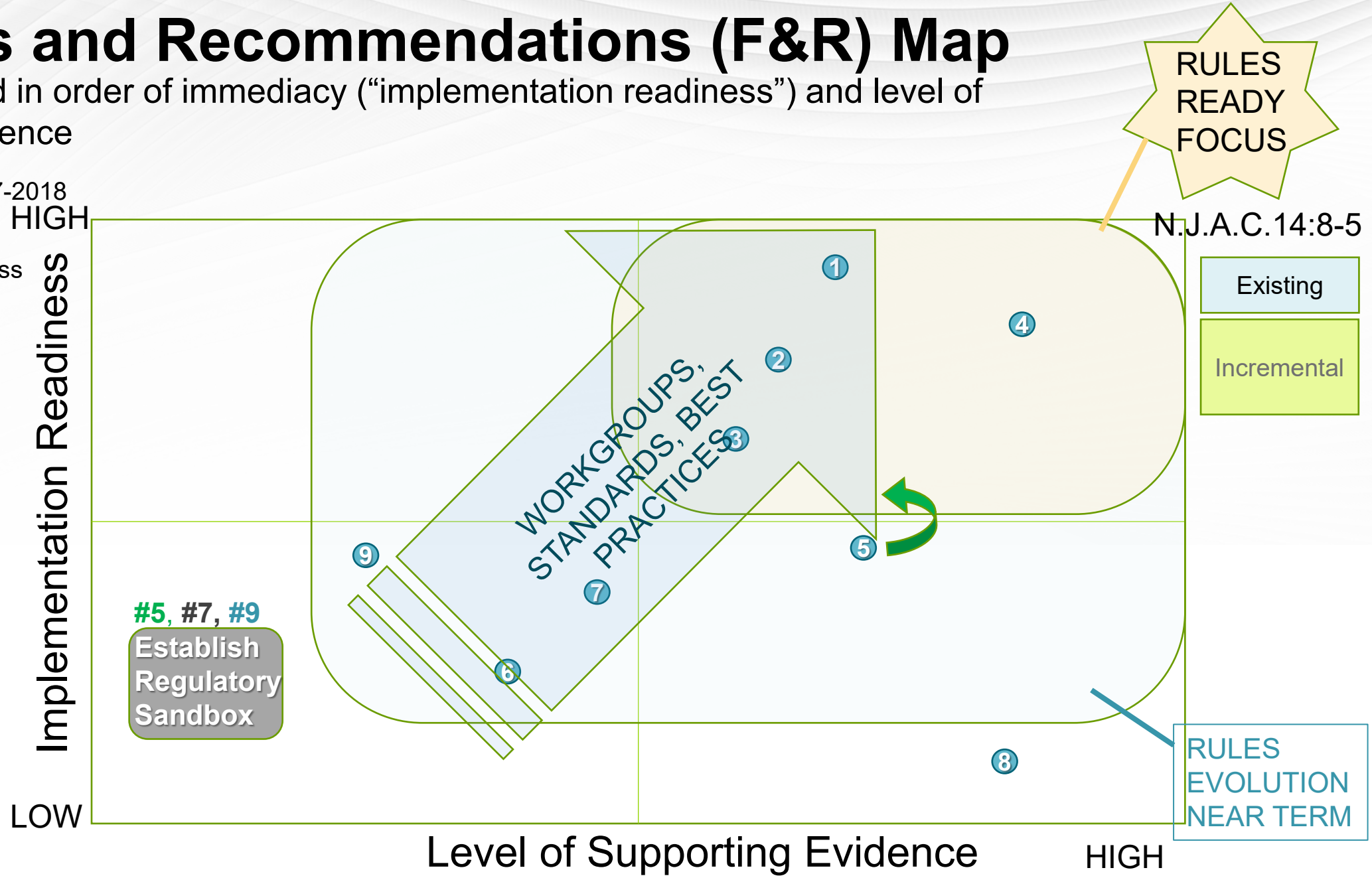
Findings and Recommendations (F&R) Map

F&R are ranked in order of immediacy ("implementation readiness") and level of supporting evidence

1. Implement IEEE 1547-2018
2. Streamline/Automate IXC Application Process
3. Align EDC Hosting Capacity Accuracy
4. Institute Pre-Appl Process (>500kW)
5. Encode Detail On IXC Rules (Tariff?)
6. Efficient Sequence of IXC Throughput
7. Grid Upgrade Cost Estimation /Allocation
8. Integrated DER Plans and Defined Roadmap
9. Hybrid Solutions with Non-Renewables



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Study Process

https://njcleanenergy.com/gridmod

Draft report link:

https://www.nj.gov/bpu/pdf/publicnotice/DRAFT%20Grid%20Modernization%20Report%206-20-22.pdf

Public comments may be submitted until 5PM EDT July 19, 2022 at the following link:

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- **Immediate rulemaking process (in progress)**
  - Additional Guidance
  - Technical Advisory Groups
  - Regulatory Sandbox

Fundamental Research

The project launched with a research task to familiarize with New Jersey's rules, requirements and other provisions for distribution level interconnections

Industry Scan of Best and Common Practices

An industry scan of best and common practices, focused on regions undergoing similar transformation to clean energy and grid modernization led to an understanding of best and common practices to support the connection of increased amounts of distributed energy resources

Electric Distribution Company (EDC) "Soft Start" Engagement

"Soft Start" – early outreach to individual EDCs afforded the ability to align on terminology, organizational structures, overview of interconnection processing, areas of concern and topics for the EDC presentations to stakeholders

Stakeholder Engagement

Findings from industry research, remarks by stakeholder participants, presentations by EDCs, presentations by industry representatives and written public comments all contributed to the body of information referenced for this assessment

Data Collection

A supplemental data request of EDCs provided statistical comparisons across EDCs. Data supports KPIs such as targeted increase in renewable energy interconnections year over year

Draft Report Phase

Receive stakeholder feedback on a publicly available findings and recommendations draft

WE ARE HERE

Final Report

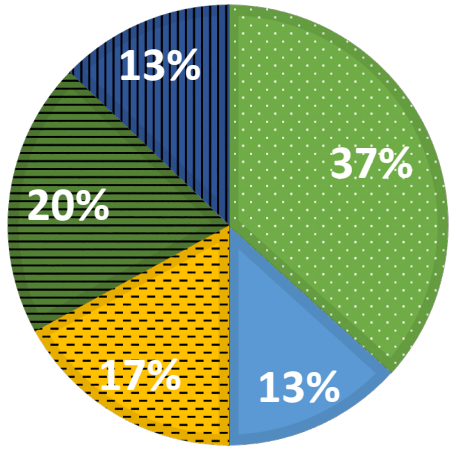
Compiles project activities, analysis, and stakeholder feedback from the draft report, into a final project document

Stakeholder Engagement for Baseline Assessment

Developers, suppliers, NJ electric utilities, and consumer advocates, were well represented

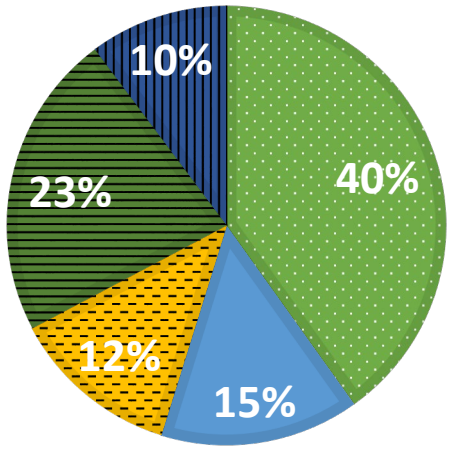
Meeting 1
Grid Modernization Overview

188 attended



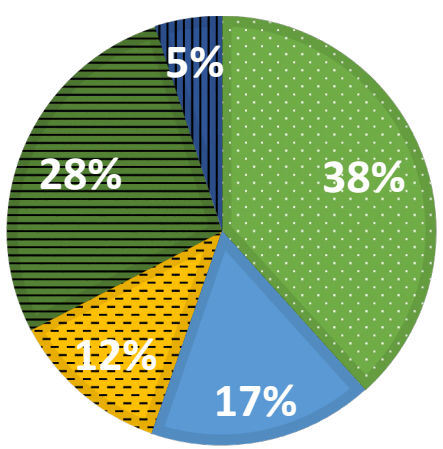
Meeting 2
Stakeholder Data/ Comments

177 attended



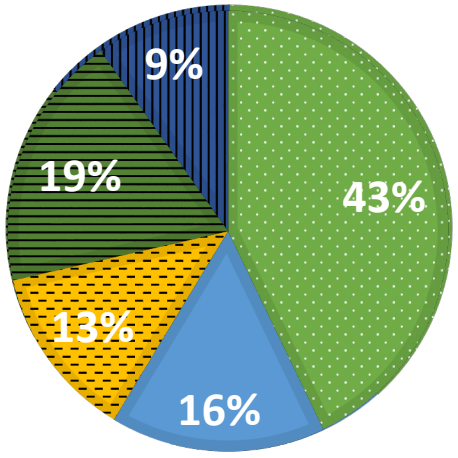
Meeting 3.1
EDC Readout

141 attended



Meeting 3.2
Non-EDC Readout

133 attended



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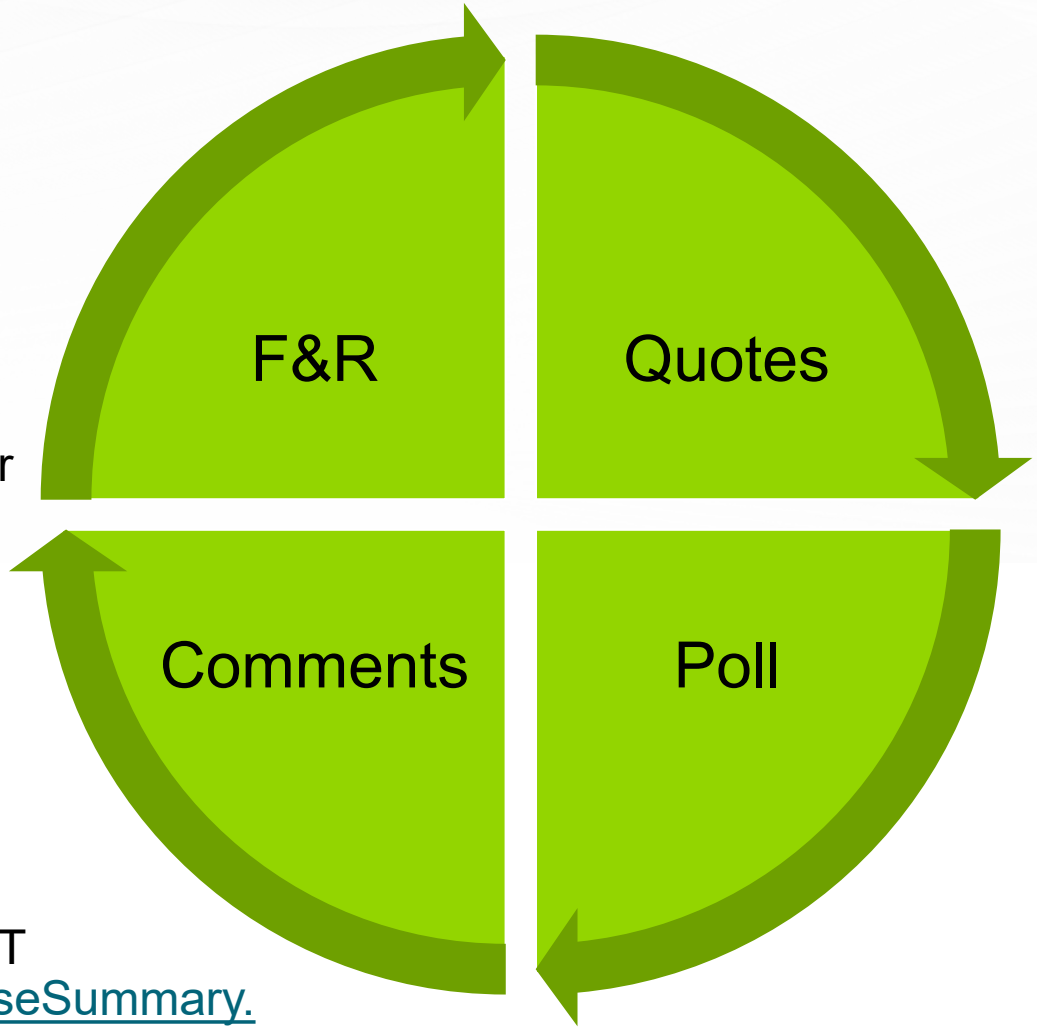
Grid Modernization Study: Summary of Report Section 5

Targeted Findings and Recommendations

Precipitates study findings and best practices into targeted findings and recommendations

Findings and Recommendations (F&R) 1 – 9

- Findings and recommendations are ranked in order of immediacy and potential impact
- Each of the nine findings and recommendations will take around 15-20 minutes to cover
- Each F&R slide includes a condensed version of the information in the draft report, followed by a slide with illustrative quotes from stakeholders for context
- A two-question stakeholder poll will follow each F&R, after the quotes slide
- An opportunity for brief stakeholder comments will follow each F&R poll
- We will open the floor for scheduled and additional stakeholder comments following this section of the presentation
- The formal public comment window is open until 5PM EDT July 19, 2022 https://publicaccess.bpu.state.nj.us/CaseSummary.aspx?case_id=2109704



Findings and Recommendations (F&R) 1 – 9

In the interest of time…

- Please use the question box in the chat panel for brief clarifying questions if possible
- Raise your hand if you have a clarifying question < ~1 min on a specific F&R
- Longer comments will be added to the stakeholder comments queue

F&R #1 N.J.A.C.14:8-5 IEEE 1547 reference is out of date

FINDINGS

N.J.A.C.14:8-5 currently references IEEE 1547 2003 however IEEE has released a 2018 version IEEE 1547 2018 and an amendment IEEE 1547a 2020

IMPLEMENTATION

EDCs to implement a conformity assessment process to ensure smooth implementation of the revised standard

NJ BPU and EDC staff, and the grid modernization technical working group recommended in F&R #5, shall review IEEE 1547 annually for changes

RECOMMENDED ACTIONS

- NJ should adopt the latest version of IEEE 1547 in NJ (IEEE 1547-2018 / IEEE 1547a-2020)
- Update N.J.A.C.14:8-5 to indicate the latest version adopted in NJ is IEEE 1547-2018 / IEEE1547a-2020

RATIONALE

- In comparison to IEEE 1547- 2003, IEEE 1547-2018 provides an expansion on interconnection capability requirements such as by leveraging advanced technologies and existing equipment and grid capabilities, e.g., implementing smart inverters and Volt/VAR optimization.
- The standard elaborates and sets definitive criteria on frequency and voltage support, tripping and reclose coordination, and voltage support.
- IEEE 1547-2018 also provides approaches for information exchange within local DER communications interfaces to enable interoperability between DERs and the distribution grid.

F&R #1 N.J.A.C.14:8-5 IEEE 1547 reference is out of date

Stakeholder Comments

EDC

"RECO recognizes the important role that smart inverters play in a modern grid...Establishing requirements for smart inverter functionality, such as Volt-Watt, Volt-VAR, and Ride-Through, is critical prior to activating these devices. A working group of EDCs, industry, BPU Staff, and other stakeholders should be established to understand the functionality needed and available and the impact on each EDC's distribution and related systems." **RECO Formal Comments**

Non-EDC:

"what we really need is to start using smart inverters, have utilities [be] clear on what their issues are so we can address them." **Stakeholder Comment, Public Stakeholder Meeting #2 Nov 16, 2021**

"Smart inverters can do a lot of things, and I absolutely understand that utilities don't want to depend upon equipment that they don't own and maintain and rely upon that…We can take a lot of cost out of the system if we can work with utilities and make them more confident that [smart inverters] can really do what they need to." **Stakeholder Comment, Public Stakeholder Meeting #2 Nov 16, 2021**

"Need system wide services innovation and innovative interconnection relationships. Options: There are a range of flexible interconnection technologies: smart inverters; storage; power system control for limited/no-export; topology switching; DERMS; etc." **SEIA, Public Stakeholder Meeting #3.2 Jan 28, 2022**

"based on learnings from NREL's VROS study, customers on "saturated" service connections can elect to activate volt/watt within the inverter to avoid paying for utility service upgrade as long as the service transformer is not overloaded." **SunRun, Public Stakeholder Meeting #3.2 Jan 28, 2022**

F&R #1 Stakeholder Feedback (please limit to 1 min)

POLL

Please raise your hand to speak and we will unmute you after the polls close

1

Is there sufficient evidence to support the recommendation?

a) Yes
b) Yes with revisions
c) No

2

Is this recommendation ready to start implementing?

a) Yes
b) Yes with revisions
c) No

F&R #2 There are opportunities to streamline the interconnection process

FINDINGS

- There are opportunities to streamline the interconnection process. Applications are sent back to customers by EDCs due to missing or incorrect information. Interconnection application key information is tracked using a different process and different software for each EDC
- The EDCs do not collect fees for Level 1, yet a large percentage of applications are presently Level 1, with a projected increase of Level 1 applications in the future

IMPLEMENTATION

- EDC shall review the software application forms for usability and clarity based on remaining areas where the most examples of missing or incorrect information occur
- Update the N.J.A.C.14:8-5 to provide the fee or range of fees for Level 1 interconnection applications

RECOMMENDED ACTIONS

- EDCs shall install or upgrade to a software based application platform capable of tracking key information throughout the interconnection application process. The software shall be capable of generating automatic email and online notifications to the customer with the goal of enforcing clearly defined tariff timelines, reducing the turnaround time for missing data
- NJ EDCs should charge Level 1 application fees, with the amount of the fees to be determined by each EDC

RATIONALE

- Digitally based customer facing systems provide high potential for improved recordkeeping, data accessibility, and data management.
- Consistent with best practices in other jurisdictions, and IREC, Level 1 fees are justified to recover costs and provide a financial basis for increasing technical (i.e., new software platforms) and human resources needed to accelerate the interconnection process

F&R #2 There are opportunities to streamline the interconnection process

Stakeholder Comments

EDC

'…it would be beneficial to work on a more consistent system for determining sizing limitations for distributed generation for new construction, where there is no historical data, and for expansions/upgrades, where historical usage may not be indicative of future usage. This is an area where there is not presently discrete guidance and which, in the Company's experience, can lead to project disagreements and delays" **JCP&L Formal Comments**

What could be improved for L1-3 applications: "…

- Formalized process for receipt of customer feedback and incorporation of customer suggestions.
- Development and utilization of a statewide interconnection application.
- Development and implementation of a software tool" **PSEG EDC presentation, Stakeholder Meeting #3.1 Jan 14, 2022**

What could be improved for L1-3 applications: "…

- Expand automated application review…
- Streamline as-built application
- Improve process for invoicing (system improvement) and cost estimates (process improvement)…
- Engage stakeholders in a review of interconnection applications, agreements, and processes/procedures (as written in the regulations)…" **ACE EDC presentation, Stakeholder Meeting #3.1 Jan 14, 2022**

Non-EDC:

"Business process automation can aid the approval process. However, training the developer/installer community on the DER application process and how correctly submitted information leads to faster submittal is just as important. ANB's experience is that often applications are slowed or stalled due to incorrect information being submitted or lag time in getting signatures or other documentation from customer or developers" **ANB Systems Public Stakeholder Meeting #2 Nov 16, 2021**

F&R #2 Stakeholder Feedback (please limit to 1 min)

POLL

Please raise your hand to speak and we will unmute you after the polls close

3

Is there sufficient evidence to support the recommendation?

a) Yes
b) Yes with revisions
c) No

4

Is this recommendation ready to start implementing?

a) Yes
b) Yes with revisions
c) No

F&R #3 Existing online EDC hosting capacity maps are inconsistent across EDCs

FINDINGS

- Existing online EDC hosting capacity maps, including data update frequency and underlying approach to calculating interconnection capacity headroom, appears inconsistent across EDCs
- Hosting capacity information is inconsistently labeled across EDCs resulting in the quantity of closed circuits potentially being overestimated by stakeholders

RECOMMENDED ACTIONS

Update N.J.A.C.14:8-5 to require uniform data granularity and update frequency for capacity map tools using industry standard methods.[†,‡]

- Update capacity maps at least yearly, or when change in generation on a feeder exceeds an EDC-specified amount, or when the aggregate change in load exceeds an EDC-specified amount
- EDCs to develop a shared lexicon and unit cost guide for upgrades on their maps

IMPLEMENTATION

- Take steps to encode the Guidehouse proposed hosting capacity map recommendations into N.J.A.C.14:8-5
- EDCs to develop a uniform unit cost guide for system upgrades to display on hosting capacity maps

RATIONALE

- Stakeholder support for capacity hosting maps is strong in New Jersey and throughout the country, but the maps provide value only when updated with current data and relevant information regarding equipment costs

[†] IREC, NREL, April 2022. Nagarajan, A., Zakai, Y. Data Validation for Hosting Capacity Analyses irecusa.org/wp-content/uploads/2022/04/Data-Validation-for-Hosting-Capacity-Analysis-Final.pdf

[‡] IREC, September 2021. Key Decisions for Hosting Capacity Analyses, p.8: irecusa.org/wp-content/uploads/2021/10/IREC-Key-Decisions-for-HCA.pdf

F&R #3 Existing online EDC hosting capacity maps are inconsistent across EDCs

Stakeholder Comments

EDC

"At the January 28, 2022 stakeholder meeting hosted by the Board of Public Utilities and Guidehouse, a solar developer asserted that the amount of additional distribution feeders shown in red on JCP&L's hosting capacity map when comparing pre-May 2021 to now is an indication that capacity for solar on JCP&L's system has diminished rapidly.

This assertion is not accurate, and it reflects a misunderstanding of a refinement made in color coding on the map during that period, as explained further below" **JCP&L letter to the BPU, Feb 21, 2022**

"Based on years of discussions, the New York working group has agreed that updating the Hosting Capacity Maps twice a year is sufficient to capture the changing landscape for renewables interconnection. RECO believes the same holds true for New Jersey and recommends a biannual update" **RECO Formal Comments**

Non-EDC:

"Hosting capacity is limited" **MSSIA, Stakeholder Meeting #3.2 Jan 28, 2022**

"CCSA recommends consistency, and publication, and content for hosting capacity maps, pre-applications in moving towards an accelerated interconnection study process" **CCSA, Stakeholder Meeting #2 Nov 16, 2021**

F&R #3 Stakeholder Feedback (please limit to 1 min)

POLL

Please raise your hand to speak and we will unmute you after the polls close

5

Is there sufficient evidence to support the recommendation?

a) Yes
b) Yes with revisions
c) No

6

Is this recommendation ready to start implementing?

a) Yes
b) Yes with revisions
c) No

F&R #4 There is no way to accelerate interconnection projects within the NJ interconnection rules

FINDINGS

- There is currently no pre application process in NJ. Industry advocates in NJ suggested that a pre-application process will provide valuable information about available grid capacity and likely upgrade costs without waiting for a full interconnection study or application process.
- Additionally, there is no fast track process in NJ by which projects with no electrical or cost allocation impacts on other projects are eligible to apply for a feasibility study to be completed on a faster timeline than the normal study process.

IMPLEMENTATION

- Model pre-application on the existing application process so the information filed in the pre-application can be seamlessly transferred to reduce resubmission inefficiencies
- EDCs to outsource pre application screening to an external third party to accelerate the pre application process where the EDC does not have sufficient staff

RECOMMENDED ACTIONS

- Implement a pre-application process required for projects 500 kW and above, and optional for other projects.
- Implement a uniform fee structure for pre applications process with the amount determined by the EDCs for each respective interconnection Level
- The Rule 21 outline calls for a fast-track project implementation process. A technical working group made up of the EDCs shall within six months develop a fast-track process appropriate to NJ for small inverter based generators.

RATIONALE

- An NREL study indicates once pre-application reports were required for projects 500kW+ in MA, the approval rate of applications increased by 24%
- Pre-application results enable interconnection customers to avoid congested portions of EDC systems, reduce interconnection upgrades and avoid sunk study costs incurred by developers for economically unfeasible projects
- Developers can leverage favorable pre-application results to secure funding and capacity offtake agreements, increasing overall success rate of projects

F&R #4 There is no way to accelerate interconnection projects within the NJ interconnection rules

Stakeholder Comments

EDC

"In addition, the Company supports implementation of a pre-application reports process in which developers have the option to request, for a fee, a pre-application study. The Company recognizes the importance of understanding the available capacity of a particular site at an early stage in a project's lifecycle" **RECO Formal Comments**

"A pre-application process, with a smaller fee structure compared to existing application and load study fees may be beneficial. Such a process may identify when distribution system modifications will likely be required, and, thus, project modifications could be considered before reaching the point of a formal load study and the developer's payment of the $15,000 fee associated with same" **JCP&L Formal Comments**

"Particularly for Level 3 systems, timelines established in addition to those found in the Administrative Code, or narrowing of the existing timelines, risk sacrificing system integrity for the sake of speed" **JCP&L Formal Comments**

Non-EDC:

"I think there's a number of different things that can be done ranging from the reasonable time requirements, creating a pre-application, process having uniform set of standard interconnection fees that really can guide New Jersey towards being able to integrate a lot more distributed generation after grid" **AC Power, Stakeholder Meeting #1 Oct 26, 2021**

"I think it's very important that we get to a pre-screening or pre-application process that really is more declaratory than not" **Stakeholder Open Mic Comment, Stakeholder Meeting #2 Nov 16, 2021**

F&R #4 Stakeholder Feedback (please limit to 1 min)

POLL

Please raise your hand to speak and we will unmute you after the polls close

7

Is there sufficient evidence to support the recommendation?

a) Yes
b) Yes with revisions
c) No

8

Is this recommendation ready to start implementing?

a) Yes
b) Yes with revisions
c) No

F&R #5 New Jersey EDCs do not have EDC-specific up to date interconnection rules or tariffs

FINDINGS

- New Jersey EDCs have adopted N.J.A.C.14:8-5. However, N.J.A.C.14:8-5 does not address EDC-specific interconnection issues in detail
- Communication, telemetry, and backflow protection criteria in N.J.A.C.14:8-5 do not conform to modern interconnection technology. Non-controversial new equipment capabilities, such as DERMS monitoring and control and IEEE 1547 smart inverter functionality, have barriers to implementation. Volt/VAR capability is not acknowledged in the generation application process or compensated. Barriers to installation of storage products and meter collars that are approved in other states remain to be overcome in NJ

IMPLEMENTATION

- Consult Rule 21 for use by the working group in expanding the scope of N.J.A.C.14:8-5
- A steering committee of representatives from the EDC and the developer community are to meet quarterly to discuss practices and technologies which affect major operational issues of the system

RECOMMENDED ACTIONS

- NJ BPU should convene a technical working group to adopt and develop into N.J.A.C.14:8-5, as appropriate for NJ, the most current specific guidance
- The NJ BPU should provide a “regulatory sandbox” for stakeholders. The regulatory sandbox will allow stakeholders to align operational practices within the diverse sectors in each EDC service area while maintaining grid safety and reliability

RATIONALE

- New Jersey can leverage ideas from existing interconnection rules such as California Rule 21 to achieve the goals in the EMP within the required timeframe, avoiding a long stakeholder process
- The energy transition initiative relates to numerous and complex changes to the operation of the power system. New technology and the application of technology is being developed rapidly. Stakeholder utility partnerships must quickly and accurately assess, adjust to, and execute numerous activities to ensure a cost-effective, reliable, and safe power system

F&R #5 New Jersey EDCs do not have EDC-specific up to date interconnection rules or tariffs

Stakeholder Comments

EDC

"RECO recommends that BPU Staff leverage the experiences of other states in developing and updating New Jersey's interconnection application, review, and approval standards and processes. In particular, extensive work has been accomplished in New York through working groups composed of utility, industry, and New York Department of Public Service ("DPS") Staff representatives" **RECO Formal Comments**

Non-EDC:

"Even though the magnitude of solar has increased by several orders of magnitude between that time and this, and I think we're getting to the point where revising those interconnection rules in a fundamental way is going to be a necessity to further progress, especially on those threshold limits…" **Stakeholder Open Mic Comment, Stakeholder Meeting #2 Nov 16, 2021**

"Clarify grey areas in electrical service rules – what is an extension of the customer-owned meter socket, what is utility property or process requiring permission?" **Tesla, Stakeholder Meeting #3.2 Jan 28, 2022**

"In New Jersey, in our experiences, electric service rules do not allow this technology; or if there is room to allow it, there's so much gray area, it's impossible to decide on behalf of our customer without working on every project with the utility representative on whether or not the arrangement or the design for the project is permissible" **Tesla, Stakeholder Meeting #3.2 Jan 28, 2022**

F&R #5 Stakeholder Feedback (please limit to 1 min)

POLL

Please raise your hand to speak and we will unmute you after the polls close

9

Is there sufficient evidence to support the recommendation?

a) Yes
b) Yes with revisions
c) No

10

Is this recommendation ready to start implementing?

a) Yes
b) Yes with revisions
c) No

F&R #6 The generator interconnection application queueing and cost allocation process in New Jersey is serial

FINDINGS

- The generator interconnection application queueing and cost allocation process in New Jersey is overwhelmingly a serial process for Level 1, Level 2, and Level 3 generator interconnection applications
- The current process also follows the FERC (transmission) small generator pro forma document

RECOMMENDED ACTIONS

- NJ EDCs should implement a uniform streamlined flexible queue process across EDCs that would prioritize a “first ready, first through” approach to support viable projects and avoid clogging the queue
- NJ BPU to direct the EDCs to form a stakeholder process to address a required list of queue improvements from the NJ BPU. Examples of required items are a cluster process, a fast-track process, milestone processes, penalties for withdrawing or maximum queue ‘parking time,’ identifying new thresholds for existing N.J.A.C.14:8-5 Level definitions, and planning a finite transition timeline to new interconnection processes

IMPLEMENTATION

- The EDCs will submit their revised tariffs to the NJ BPU for review after they have completed the stakeholder process. Once approved, the tariffs would take precedence for each EDC service area over N.J.A.C.14:8-5. NJ BPU to post the most up to date tariffs in their website

RATIONALE

- First ready, first through approaches with cluster studies, fast-track options, milestones phase gates and well-defined screening processes are in use by utilities with high rates of renewables adoption including CA, NY, and are effective in lowering interconnections costs and introducing process efficiency
- By forming a stakeholder process which the EDCs will lead, it puts the experts of each service area in control while following guidance from the NJ BPU and input from their customers

F&R #6 The generator interconnection application queueing and cost allocation process in New Jersey is serial

Stakeholder Comments

EDC

"Consistent approach, treating applicants fairly; Good experience over the past 10+ years" **EDC presentation, Stakeholder Meeting #3.1 Jan 14, 2022**

"Areas for improvement:

Queue integration:

- Overlapping interconnection queues
- More defined process for 'stale' applications"

EDC presentation, Stakeholder Meeting #3.1 Jan 14, 2022

Non-EDC:

"We are working on developing those pathways to improve DG interconnection for solar storage for residential customers; and we are developing their own MOUs and pilots to help EDCs work through problems through a field of technical reviews, while also not delaying those interconnection customers in our project queues**" Tesla, Stakeholder Meeting #3.2 Jan 28, 2022**

"The only addition I guess I would make is that I do think it would be worthwhile for this group to look towards the benefits of developing a reallocation process for EDCs to pre-screen potential larger projects. This would likely be in that Tier 3 or above, which would help quickly evaluate at a high level the likely interconnection costs determine if rough estimates would far exceed public economic value of a project. I think we've seen this play out in other states where this helps reduce the number of speculative applications, and it also helps prioritize projects" **MSSIA Stakeholder Meeting #1 Oct 26, 2021**

F&R #6 Stakeholder Feedback (please limit to 1 min)

POLL

Please raise your hand to speak and we will unmute you after the polls close

11

Is there sufficient evidence to support the recommendation?

a) Yes
b) Yes with revisions
c) No

12

Is this recommendation ready to start implementing?

a) Yes
b) Yes with revisions
c) No

F&R #7 Cost allocation and cost recovery options for accelerated interconnection of renewables have not been defined in NJ

FINDINGS

- The BPU has not set a policy for demonstrating the criteria by which the need for grid modernization would be assessed to justify a grid-forward grid modernization upgrade approach, nor a policy for establishing thresholds for pro rata cost allocation

RECOMMENDED ACTIONS

- NJ BPU should define a mechanism to be put in place to establish numerical cost and capacity thresholds above which grid modernization costs could be spread over a broader set of beneficiaries.

IMPLEMENTATION

- NJ BPU to initiate a proceeding for grid modernization similar to the MA approach of demonstrating prudently incurred costs will allow integration of DER as a condition of rate-based cost recovery.
- NJ BPU should consider fairness in establishing cost recovery policies. For instance, if grid modernization investment provides a benefit to all customers, not just DER beneficiaries, then the investment should be covered by all rate payers (e.g., replacement or upgrade of obsolete equipment, substation relays, installation of voltage control/monitoring, removal of thin primary wire, installation of communications would benefit all customers).

RATIONALE

- Fair cost recovery options will enable NJ to meet the goals in the EMP

F&R #7 Cost allocation and cost recovery options for accelerated interconnection of renewables have not been defined in NJ

Stakeholder Comments

EDC

"ACE is not able to proactively upgrade its distribution system to accommodate additional DERs and recover its costs from doing so under existing New Jersey regulations unless the triggering DER agrees to pay the cost of the required upgrade" **ACE Formal Comments**

"The Company recommends forward-looking approval and cost recovery of utility investments that support a reliable, resilient and modern grid through an Infrastructure Investment Program ("IIP") surcharge or similar mechanism that supports forward-looking investments and strategies and recovers costs from all customers as these investments benefit all customers" **RECO Formal Comments**

Non-EDC:

"I think, the current cost-causer model is insufficient and that there are other models that are out there that other states have begun to adopt and that New Jersey can take the lead on it as well" **MSSIA, Stakeholder Meeting #1 Oct 26, 2021**

" [The current paradigm] served us well for decades under that old industry structure, but over the past decade has been demonstrated to be incompatible with a sustained DG industry/high-DER future" **ConEdison, Stakeholder Meeting #3.2 Jan 28, 2022**

F&R #7 Stakeholder Feedback (please limit to 1 min)

POLL

Please raise your hand to speak and we will unmute you after the polls close

13

Is there sufficient evidence to support the recommendation?

a) Yes
b) Yes with revisions
c) No

14

Is this recommendation ready to start implementing?

a) Yes
b) Yes with revisions
c) No

F&R #8 EDCs do not currently submit integrated DER plans as recommended in the EMP

FINDINGS

- Integrated DER plans are an effective basis for planning distribution grid expansion and identifying cost recovery for grid modernization, and are recommended in the EMP. EDCs do not currently submit integrated DER plans as recommended in the EMP

RECOMMENDED ACTIONS

- EDCs should submit integrated DER and integrated distribution plans that will allow NJ to meet the EMP goals, and that outline the investments the EDCs will need to make, including cost benefit analysis for each grid component upgrade they say will be needed to meet the goals

IMPLEMENTATION

- NJ BPU to set a date by which EDCs shall submit integrated DER and integrated distribution plans

RATIONALE

- Submitting integrated DER and integrated distribution plans as recommended in the EMP will help ensure New Jersey's electric grid is positioned to participate fully in the energy industry's complex transition toward a clean, modern, safe, reliable, resilient, and independent power infrastructure by providing a basis for grid modernization budgets in NJ

F&R #8 EDCs do not currently submit integrated DER plans as recommended in the EMP

Stakeholder Comments

EDC

"The Grid Mod proceeding is not the appropriate forum to determine the contents or even the overall tone of an IDP. The IDP can be a roadmap of each EDC's plans to meet the State's and the EDC's clean energy goals and should not contain processes and procedures at a granular level" **RECO Formal Comments**

What resource gaps and policy changes need to be addressed to interconnect the required clean energy capacity? PSEG Response:

"… Move forward with the development and implementation of the Integrated Distribution Plan (IDP) as a roadmap to unrestricted distribution system and large-scale implementation of renewable interconnections" **PSEG EDC presentation, Stakeholder Meeting #3.1 Jan 14, 2022**

Non-EDC:

"…without IDP's there would be minimal visibility for state regulators, and utilities, private investors, ratepayers; and therefore, limited opportunity for strategic input and private sector investment to optimally plan for system upgrades while reducing redundancy and suboptimal investments" **Environmental Defense Fund, Stakeholder Meeting #2 Nov 16, 2021**

"It's hard to accomplish this [process] without the utilities first demonstrating whether costs can be minimized by combining grid modernization plans with capacity upgrade through integrated distribution plans" **Deputy Rate Council, Stakeholder Meeting #2 Nov 16, 2021**

F&R #8 Stakeholder Feedback (please limit to 1 min)

POLL

Please raise your hand to speak and we will unmute you after the polls close

15

Is there sufficient evidence to support the recommendation?

a) Yes
b) Yes with revisions
c) No

16

Is this recommendation ready to start implementing?

a) Yes
b) Yes with revisions
c) No

F&R #9 Non-renewable fuel sources are not able to aggregate their generation with that of renewable generators and count the generation toward the NEM program

FINDINGS

- N.J.A.C.14:8-5 only allows Class I renewable resources (e.g., solar technologies, photovoltaic technologies, wind energy, fuel cells powered by renewable fuels, geothermal technologies, wave, or tidal action, and/or methane gas from landfills or a biomass facility, provided that the biomass is cultivated and harvested in a sustainable manner) to participate in the NEM program. Non-renewable fuel sources are not able to aggregate their generation with that of renewable generators and count the generation toward the NEM program

RECOMMENDED ACTIONS

- NJ BPU should provide a rulemaking that in light of EMP goals, non-renewable fuel sources should be separate from renewable sources (separately metered) and cannot be combined for net metering purposes, allowing full credit for renewable generation sources such as solar without penalty for co-located non-renewable source
- NJ BPU should consider allowing non-renewable fuel sources play in the net metering market, however at a reduced rate, or based on Avoided Energy Cost e.g., per Georgia Power

IMPLEMENTATION

- NJ BPU to create a definition for non-renewable clean energy fuel sources that would be allowed to take part of the NEM program
- NJ BPU to allow EDCs to set up a non-renewable rate based on the utility's avoided cost. EDCs would submit a docket for the NJ BPU and to be posted in the NJ BPU webpage
- NJ BPU to update N.J.A.C. 14:8-4.3 to include language for separate metering for the renewable and non-renewable fuel sources

RATIONALE

- States are looking at non-renewable fuel sources to meet their carbon reduction goals while maintaining the reliability of the grid. There are some non-renewable fuel sources that are considered cleaner than the current fuel (carbon, oil etc.) sources used. Non-renewable fuel sources include hydrogen and natural gas. Combined Heat and Power (CHP) is considered an energy efficient form of generation under certain specified heat recovery conditions

F&R #9 Non-renewable fuel sources are not able to aggregate their generation with that of renewable generators and count the generation toward the NEM program

Stakeholder Comments

Non-EDC:

- … “NJ customers who have already installed solar are unable to install resilient DERs without losing the ability to Net Meter solar electrons
- NJ customers who have installed resilient DERs are unable to practically install solar because they cannot Net Meter solar electrons.
- Other jurisdictions have accepted multiple meters to avoid this situation
- This issue should be resolved so solar and resilient DERs can co-exist in New Jersey”

BloomEnergy, Stakeholder Meeting #3.2 Jan 28, 2022

F&R #9 Stakeholder Feedback (please limit to 1 min)

POLL

Please raise your hand to speak and we will unmute you after the polls close

17

Is there sufficient evidence to support the recommendation?

a) Yes
b) Yes with revisions
c) No

18

Is this recommendation ready to start implementing?

a) Yes
b) Yes with revisions
c) No

Final Poll Questions

POLL

19

The depth of this interconnection stakeholder engagement was:

a) About right
b) Not deep enough (too shallow)
c) Too deep (in the weeds)

20

I expect this stakeholder process to be effective in helping NJ implement the strategies established in its energy master plan:

a) Absolutely
b) Potentially
c) Doubtful
d) Unlikely

Scheduled Stakeholder Speakers

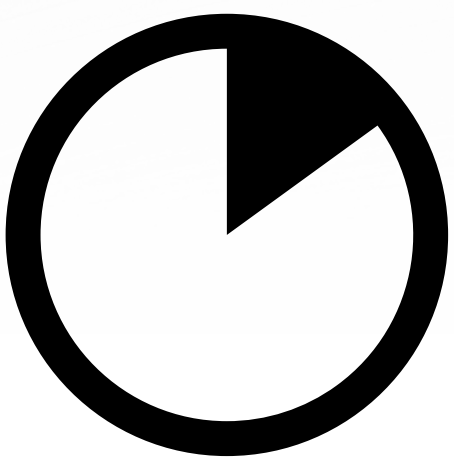
- For those who requested to speak when you registered for this webinar, please raise your hand so we know you are here and we will unmute you when it is your turn

Draft report link:
https://www.nj.gov/bpu/pdf/publicnotice/DRAFT%20Grid%20Modernization%20Report%206-20-22.pdf

Public comments may be submitted until 5PM EDT July 19, 2022 at the following link:
https://publicaccess.bpu.state.nj.us/CaseSummary.aspx?case_id=2109704

https://njcleanenergy.com/gridmod

5-minute stretch break



Additional Stakeholder Speakers

Time permitting

- Please raise your hand and we will unmute you when it is your turn

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Thank you!

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