



**Docket No. QO21010085, IN THE MATTER OF NEW JERSEY GRID
MODERNIZATION/INTERCONNECTION PROCESS**

**Joint Comments of the Solar Energy Industries Association, New Jersey Solar Energy Coalition,
and Coalition for Community Solar Access**

July 19, 2022

I. Introduction

The Solar Energy Industries Association (SEIA), the New Jersey Solar Energy Coalition (NJSEC), and Coalition for Community Solar Access (CCSA) appreciate the opportunity to offer input in the ongoing Grid Modernization (“GridMod”) stakeholder proceeding being conducted in the above-referenced docket by the New Jersey Board of Public Utilities (“Board” or “BPU”) and its consultant on this matter, Guidehouse. We welcome Guidehouse’s Draft *Grid Modernization Study* and look forward to engaging in productive dialogue with the BPU and other stakeholders regarding implementing the innovative, and necessary, steps New Jersey can take to reform interconnection and allow for increased grid integration of distributed energy resources (DERs) and accompanying technologies — e.g., solar, energy storage, advanced meters, smart inverters, smart devices, demand response and electric vehicle (EV) charging infrastructure.

SEIA is the national trade association for the United States solar industry. As the voice of the industry, SEIA works to support solar as it becomes a mainstream and significant energy source by expanding markets, reducing costs, increasing reliability, removing market barriers, and providing education on the benefits of solar energy. SEIA works with its 1,000 member companies and other strategic partners to fight for policies that create jobs in every community and shape fair market rules that promote competition and the growth of reliable, low-cost solar power. SEIA has more than 45 member companies located in New Jersey with many more national firms also conducting business in the state. Member companies range from manufacturers; residential, community solar, commercial, and utility-scale solar developers; installers; construction firms; investment firms; and service providers.

NJSEC was formed to create public policy support for New Jersey’s solar industry. NJSEC works in legislative outreach, education and the development of realistic public policy alternatives that align with the fiscal and social circumstances that are unique to New Jersey. NJSEC members include local and national development, renewable energy credit market traders and analysts, engineers, legal and accounting professionals supporting all phases of New Jersey’s solar industry.

CCSA is a national coalition of businesses and nonprofits working together to implement best practices for all community solar markets. Its mission is to empower all New Jersey households and businesses that seek home grown energy sources through community solar. CCSA work with customers, utilities, local stakeholders, allies and policymakers to develop and implement best practices that ensure community solar programs provide a win-win-win solution. Member companies are solar industry leaders and are engaged at every step of development, ensuring these best practices are not theoretical but are applied and practiced. CCSA represents nearly 100 member companies, some who are headquartered in New Jersey and others who are investing here.

We offer the following comments on Guidehouse’s draft findings and recommendations and advance a series of reform principles, as well as near-term and longer-term interconnection reform and grid modernization recommendations, that will help New Jersey maintain its solar development workforce and achieve the goals set forth in the 2019 Energy Master Plan.

II. Executive Summary

SEIA, NJSEC, and CCSA appreciate the efforts of BPU and Guidehouse to collect stakeholder input on the current distribution grid interconnection policies and processes and potential improvements to those policies and processes that will enable faster grid modernization and higher levels of DER adoption.

Based on extensive discussion with leading SEIA member companies, outside interconnection experts, and SEIA’s on-the-ground experience across the United States, SEIA released a June whitepaper detailing the extensive interconnection reforms needed to rapidly decarbonize the electricity grid.¹ This new whitepaper, *Lessons from the Front Line: Principles and Recommendations for Large-Scale and*

¹ Solar Energy Industries Association, *Lessons from the Front Line: Principles and Recommendations for Large-scale and Distributed Energy Interconnection Reform* (June 2022), at <https://seia.org/sites/default/files/2022-06/SEIA%20Interconnection%20Paper%206-14-22%20FINAL.pdf>

Distributed Energy Interconnection Reform suggests that three principles should guide all interconnection reform discussions, which are relevant to this proceeding and how the BPU should move forward:

1. Interconnection Processes Must Be Detailed, Transparent, and Clear
2. Interconnection Rules Must Be Rigorously Enforced
3. Infrastructure Upgrade Cost Estimates Must Be Reasonable, Directly Related to the Connecting Project, and Durable

In February 2022, CCSA and Local Solar for All jointly released a whitepaper titled *Integrating Distributed Solar and Storage: The keystones of a Modern Grid*.² This whitepaper provides a comprehensive set of recommendations to policymakers, regulators, utilities, and other stakeholders on the steps that need to be taken to improve the process by which distributed energy resources (particularly solar and storage) are integrated into the distribution system. In addition to providing eight specific recommendations to improve the process of interconnecting and integrating DERs, the paper identified three overarching strategies for achieving these outcomes:

1. Developing and implementing improved interconnection procedures;
2. Compensating utilities to integrate DERs; and
3. Fairly distributing costs to update the grid among all customers who benefit.

For the most part, the targeted findings and recommendations outlined in Guidehouse’s Draft *Grid Modernization Study* align with the three principles in SEIA’s whitepaper and the strategies and recommendations in CCSA’s whitepaper. The BPU and Guidehouse have successfully identified various opportunities New Jersey Electric Distribution Companies (EDCs) and the BPU have to standardize, automate, and clarify interconnection procedures and policies. The recommendations advance ways to create a uniform, digitally based customer-facing system for interconnection with significant improvements to the status quo. The recommendations highlight how data access and transparency of grid conditions—through pre-application reports, consistent and uniform approaches to calculating capacity headroom within hosting capacity maps across EDCs, and uniform unit cost guides for system upgrades—can provide early insight into the feasibility of projects and reduce the number of canceled interconnection applications.

² Coalition for Community Solar Access and Local Solar for All, *Integrating Distributed Solar and Storage: The Keystones of a Modern Grid* (February 2022), at https://www.communitysolaraccess.org/wp-content/uploads/2022/02/CCSA_BRO-White-Paper_20220214.pdf.

Nonetheless, it is important to recognize that if New Jersey is going to reach the Energy Master Plan goals of 5.2 GW of solar by 2025, 12.2 GW by 2030, and 17.2 GW by 2035, then New Jersey must adopt key interconnection reforms as soon as possible. To ensure the ongoing GridMod stakeholder proceeding is effective at implementing the strategies established in its energy master plan, the BPU will need to provide additional clarity and detail concerning several recommendations and set a robust timeline for implementation.

Additionally, New Jersey's legislative and executive policy commitments to achieve 100% clean energy and to reduce state greenhouse gas emissions 80% below 2006 levels by 2050 are designed to benefit all citizens in New Jersey. Thus, everyone who benefits from these infrastructure improvements should participate in funding those upgrades in a fair and equitable manner. However, such costs are currently allocated in New Jersey based on the cost causation principle that the DER facility triggering the need for an infrastructure modification is responsible for all the costs of such modification. SEIA, NJSEC, and CCSA agree with Atlantic City Electric Company's (ACE) May 12th pre-draft report comments that "the inequitable assignment of all upgrade costs to the "triggering" DER creates a financial barrier to distribution system improvements that enable the interconnection of multiple DER customers" and agree with ACE's recommendation that "proactive grid modernization must be aligned with new cost allocation approaches."³ Indeed, there is sufficient evidence that the status quo model of cost causation fails to recognize the range of benefits that distribution system upgrades that facilitate greater integration of DERs can provide to the power system as a whole, the environment, and ratepayers.

As a result, SEIA, NSJEC, and CCSA urge the BPU to quickly embrace and implement a new cost allocation approach that equitably shares the costs of upgrading the electric power system across all customers who benefit from them, including ratepayers. Doing so in a swift manner will enable proactive grid investments necessary for New Jersey's clean energy future, such as re-opening previously closed circuits, and would place New Jersey in the group of states leading on innovative interconnection policies. This thought leadership will be needed in order to achieve the EMP goals of 12.2 GW of solar by 2030, 17.2 GW of solar by 2035, and 100% clean energy by 2050.

III. Detailed Comments on Guidehouse Findings and Recommendations

³ See 5.12.22 Updated Draft ACE Grid Mod Comments, p 5-7 at https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1265729

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

SEIA, NJSEC, and CCSA agree that New Jersey’s regulations for interconnecting generation to an EDC contain out-of-date references to IEEE 1547. An ongoing grid modernization technical working group composed of EDC and the DER industry should be established to update N.J.A.C.14:8-5 to incorporate the relevant and preferably the latest version of IEEE 1547, in alignment with the active National Electrical code version in effect in the state (for which we also highly recommend use of the latest published version), and ensure N.J.A.C.14:8-5 is kept up to date relative to new and emerging technologies and trends. Several other jurisdictions have formed similar technical working groups to address ongoing technical interconnection issues as they emerge.⁴ Replicating this best practice will enable New Jersey to realize the maximum benefits possible from the use of smart inverters.

However, we recommend that the BPU clarify that this technical working group will be convened within the next six months or sooner and promptly begin the work of 1) assessing how other states are adopting the current IEEE 1547 and the current testing protocols, 2) establishing with industry, accredited testing laboratories, and certification entities a practical certification timeline, and 3) recommending technical revisions to N.J.A.C.14:8-5.

Finding #2: There are opportunities to streamline the interconnection process

SEIA, NJSEC, and CCSA agree with the need for standardization across all EDC’s and recommendations to move towards a digitally based customer-facing interconnection portal that the BPU can audit. We recommend that the BPU set specific timelines for EDCs to make progress on implementing a software-based application process as expeditiously as possible, including deadlines for interim measures to ensure that all EDCs accept electronic submission of payment and electronic signatures within the next three months.

⁴ Materials from the Massachusetts Technical Standards Review Group are available here:

<https://www.mass.gov/info-details/massachusetts-technical-standards-review-group>

New York has a policy and technical working group; information about them can be accessed here:

<http://www3.dps.ny.gov/W/PSCWeb.nsf/All/DCF68EFCA391AD6085257687006F396B?Open>

California also recently launched a new interconnection discussion forum along with the standing Smart Inverter Working Group; links to each group’s materials can be found here: <http://www.cpuc.ca.gov/Rule21/>

Information on Illinois’ Interconnection Working Group is available here:

<https://www.icc.illinois.gov/programs/Interconnection-Working-Group>

We recommend that the EDCs be required to jointly procure the services of a third-party that will design and implement a single statewide application portal. There can still be separate pathways for each utility that include requirements unique to that utility where applicable, but there are significant benefits of having a single statewide platform. This has been successfully accomplished in other states, particularly with statewide incentive programs.

We also recommend that in addition to making FAQ webpages to provide guidance useful to interconnection customers engaging in the interconnection process, once a software-based application process is implemented, EDCs, in conjunction with the BPU, should host virtual training sessions or webinars to explain and highlight changes to the interconnection application process and how to use the new interconnection platform. Thorough engagement with the industry will be critical to ensure a smooth transition that actually leads to faster processing times and more transparency.

While we are open to charging Level 1 application fees if it will speed up processing timelines from application to PTO, we are concerned with proposals that revenue from Level 1 application fees could be used to invest in software and related computer hardware infrastructure and hire additional staff to manage a digitally based customer-facing interconnection system. It is important to note that several states have chosen to waive application fees for net-metered facilities and small, distributed generation customers should not solely bear the cost of EDCs modernizing and moving towards a digitally based interconnection platform.

We further recommend that any decision to charge Level 1 application fees should be accompanied by concrete improvements for Level 1 systems, such as an increase in the Level 1 system size threshold from 10 kW to 15-25kW. If EDCs do begin to charge Level 1 application fees, these fees should reflect the actual cost of processing Level 1 applications and be no more than \$100, as recommended in the Interstate Renewable Energy Council's (IREC) Model Interconnection Procedures.⁵ However, whether EDCs should charge Level 1 application fees should, in part, depend on how the BPU ultimately addresses Findings & Recommendations (F&R) #7 as it relates to reforms to the current cost allocation model, including whether the BPU defines a mechanism to establish numerical cost and capacity thresholds above which grid modernization costs could be spread over a broader set of

⁵ Interstate Renewable Energy Council, *Model Interconnection Procedures (2019)*, p. 7, available at <https://irecusa.org/resources/irec-model-interconnection-procedures-2019/#:%7E:text=IREC's%202019%20Model%20Interconnection%20Procedures,maintaining%20grid%20safety%20and%20reliability>

beneficiaries. For example, Jersey Central Power & Light in its pre-draft comments alludes to exploring an interim cost-allocation measure where a small fee applied per Level 1 application pays for transformer upgrades in a way that would avoid the unfair cost allocation problem where a final DER project has to bear the full cost of a transformer replacement.⁶

Finding #3: Existing online EDC hosting capacity maps are inconsistent across EDCs

Hosting capacity maps can be a useful tool that can indicate where new DERs can likely be connected without significant distribution system upgrades. However, through SEIA, NJSEC, and CCSA member participation in hosting capacity conversations in multiple other states, not all models are created equal and certain hosting capacity functionality, if not enabled, can render hosting capacity maps nearly useless. Thus, we strongly support updating N.J.A.C.14:8-5 to require uniform data granularity and update frequency for capacity maps.

However, based on SEIA, NJSEC, and CCSA member experience in other states, hosting capacity maps that are only updated once per year are not that useful. Ideally, the objective should be to update hosting capacity maps monthly, or even more frequently and arrive at a state in which hosting capacity analysis may be fully integrated, automated, and continuous. As a result, though we further recommend that the BPU ensure that steps to encode Guidehouse's hosting capacity recommendations into N.J.A.C. 14:8-5 be completed within the next six months and enforced within the next 12 months, we also recommend that the frequency of updated hosting capacity be revisited in the proposed interconnection technical working group. We also recommend that the BPU consider more robust regulatory oversight of data validation processes by requiring EDCs to submit data validation plans subject to stakeholder review.⁷

Additionally, SEIA, NJSEC, and CCSA strongly endorse Guidehouse's proposal to display a uniform unit cost guide for system upgrades on hosting capacity maps or on an EDC's website. We recommend that these guides are updated at least annually, or as costs change. Based on our members' experience, utility cost estimates do not often correspond to market prices for materials or labor and therefore transparency into unit costs would provide needed insight into how EDCs arrive at their cost estimates. Making information about infrastructure costs for all types of projects accessible to developers will also

⁶ See Pre-Draft Comments of Jersey Central Power & Light Company, p. 5, available at https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1268126

⁷ Nagarajan, Adarsh and Yochi Zakai. 2022. Data Validation for Hosting Capacity Analyses. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A40-81811. <https://www.nrel.gov/docs/fy22osti/81811.pdf>.

ensure that cost estimates are reasonable, transparent, and reflect the costs needed to connect safely to the grid. While developing a uniform unit cost guide for system upgrades will be tremendously useful to interconnection customers, it will also help educate the market about system needs, as well as provide more useful information to the BPU about the state of New Jersey’s grid itself.⁸

Together these recommendations will best allow EDCs, the BPU, customers, and DER developers to make more efficient and cost-effective decisions about whether to pursue interconnection of a DER technology at a specific location. For example, if a developer knows upgrade costs will run from \$500,000 - \$1,500,000 they may choose to avoid a full application process, saving the need for more exhaustive studies and analysis. However, the benefits of transparent system information and accurate hosting capacity maps are not exclusively to the DER industry. Indeed, frequently updated hosting capacity maps coupled with transparency about upgrade costs also benefit customers by helping them identify optimal locations to install and interconnect DERs, benefit the BPU and EDCs by developing price signals to direct DERs to locations on the grid where they can provide the greatest benefit, and—especially when paired with cost allocation reform—can enable EDCs to better plan for grid infrastructure improvements that expand hosting capacity at locations with high demand for DERs.⁹

Finding #4: There is no way to accelerate interconnection projects within the NJ interconnection rules

SEIA, NJSEC, and CCSA strongly agree with the recommendation to implement a pre-application process required for projects 500kW and above, and optional for other projects, and recommend that the BPU set a robust timeline for implementation within the next six months, if not sooner, to be aligned with the start of the community solar permanent program.

As SEIA and NJSEC noted in Docket QO22030153, the community solar permanent program should be designed to incorporate a pre-Application study.¹⁰ Appendix C of the Draft *Grid Modernization Study* illustrates how a pre-application process will be useful to the community solar industry, but we

⁸ Examples from other distribution utilities that provide such information can be found in Section V.7.B. of CCSA’s whitepaper.

⁹ Stanfield, Sky, and Stephanie Safdi. 2017. “Optimizing the Grid – A Regulator’s Guide to Hosting Capacity Analysis for Distributed Energy Resources.” Interstate Renewable Energy Council, December. <https://irecusa.org/publications/optimizing-the-grid-regulators-guide-to-hosting-capacity-analyses-for-distributed-energy-resources/>

¹⁰ See SEIA-NJSEC Comments in Docket QO22030153 here, https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1264965

agree that this process should be required for all projects 500kW and above, and optional for other projects, regardless of whether the project is a proposed community solar project.

We also agree with the recommendation to structure the pre-application based on the existing application process so the information filed in the pre-application can be seamlessly moved into the application form to reduce resubmission inefficiencies. As Guidehouse accurately notes, use of pre-application reports are employed by at least 12 states and can save both developers and EDCs considerable time and effort later in the interconnection process, including a reduction in the inefficiencies resulting from late-stage interconnection application withdrawals.

Ideally, project developers will be able to use the recommended pre-application process as a screen to understand potential interconnection upgrade costs. However, for that to occur it is important that this process, as well subsequent impact studies, yield a durable estimate of the interconnection upgrade cost needed at a given site to safely connect the project. That is, in cases where preliminary assessments of costs are provided, the final costs should be within a reasonable range of the initial estimate (i.e., contingencies associated with cost estimates should not exceed 25%). Developers and customers make investment decisions based on an understanding of what the interconnection cost is going to be from the estimate provided by utilities. While we understand that costs can change throughout the construction process, it is imperative that EDCs are required to be precise in their estimates in order to ensure that projects ultimately aren't forced to pay for interconnection upgrades which make them uneconomic. Too often, developers run into issues where an infrastructure upgrade cost is identified, but final cost estimates or actual installation costs balloon to several times the initial estimate with little oversight; significantly impacting the economics of the project and in many cases causing the project to drop out of the queue. Thus, the implementation of a pre-application process coupled with uniform unit cost guides for system upgrades and a requirement that contingencies associated with cost estimates not exceed 25% will help ensure that infrastructure upgrade cost estimates are reasonable, directly related to the connecting project, and durable.

We also agree that once this process is implemented, an FAQ webpage and detailed example applications will be useful. We also recommend that the EDCs, in conjunction with the BPU, should host virtual training sessions or webinars to explain and highlight use of the pre-application process.

However, there is an additional tool the BPU can use to accelerate interconnection projects within New Jersey. While the Draft *Grid Modernization Study* notes that N.J.A.C.14:8-5 does not contain specified

timelines within the Level 3 study process, it falls short of formally recommending the establishment of Level 3 timelines. However, if EDCs are not required to track or adhere to specific Level 3 timelines from submission to approval to install, it is impossible for the BPU to sufficiently audit the Level 3 process or ensure EDCs are conducting level 3 interconnection reviews in an expedient manner. Moreover, the absence of Level 3 timelines runs counter to the principle that interconnection processes must be detailed, transparent, and clear. As a result, we strongly recommend the establishment of reasonable Level 3 timelines. This can be done by amending N.J.A.C.14:8-5 to clarify that EDCs shall complete and issue a final Interconnection System Impact Study report within at least forty (40) Business Days after the execution of an impact study agreement and by providing clarity around the timing of any necessary facilities studies by specifying that EDCs shall complete and issue a facilities study report within at least sixty (60) Business Days after the execution of a facilities study agreement. These timelines are both based on IREC's Model Interconnection Procedures.¹¹

Finally, we strongly support the establishment of a technical working group to develop a fast-track process appropriate to New Jersey for small inverter-based generators within six months but note that this technical working group should not be limited exclusively to EDCs and should be open to developers and other willing stakeholders. In evaluating the development of a fast-track process appropriate to New Jersey, we recommend that the technical working group specifically explore the feasibility of moving towards a “connect and notify” approach for small, distributed generation less than 25 kilowatts, such as the Hawaiian Electric Company (HECO) Quick Connect program, which allows new DER systems with certain advanced inverter functions to be installed and energized without full prior approval from HECO.¹² Adopting such an approach is way to ensure that controllable generation and storage are treated fairly with small customers connecting new controllable loads like electric vehicle charging or heat pumps.

Additionally, while the core focus of this group should be developing a fast-track process within six months, this working group should also monitor ongoing improvements to fast-track interconnection processes in other states that may be worth replicating. One example worth further consideration is the California Public Utilities Commission's June 23, 2022 ground-breaking decision to reform California's Rule

¹¹ Interstate Renewable Energy Council, *Model Interconnection Procedures (2019)*, Attachment 7a and 7b available at <https://irecusa.org/resources/irec-model-interconnection-procedures-2019/#:%7E:text=IREC's%202019%20Model%20Interconnection%20Procedures,maintaining%20grid%20safety%20and%20reliability>

¹² For more information, see here: <https://www.hawaiianelectric.com/products-and-services/customer-renewable-programs/rooftop-solar/quick-connect>

21 by allowing more projects to pass through the fast-track process by leveraging hosting capacity analysis, referred to in California as the Integration Capacity Analysis, in lieu of frequently imprecise “rules of thumb” that had been used for the expedited screening process.¹³

Finding #5: New Jersey EDCs do not have EDC-specific interconnection rules or tariffs

SEIA, NJSEC, and CCSA agree that N.J.A.C.14:8-5 does not address EDC-specific interconnection issues in detail and that 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 and avoid replicating lengthy stakeholder processes.

As a result, we agree in principle with the recommendation of a standing committee of utility and stakeholder representatives who convene on a regular basis to refine and improve the interconnection process, address evolving technical standards, and discuss treatment of legacy and future technology and equipment. This should also include consideration of the viability of providing “flexible” interconnection options to large-scale and small-scale clean energy resources and other ways that take customer flexibility and new technologies into account.

We also support the recommendation to convene a technical working group to incorporate best practices from the California Rule 21 interconnection tariff to provide more detail and clarity for stakeholders and generate a more streamlined, transparent, and customer-friendly interconnection process. This technical working group should not be limited exclusively to EDCs and should be open to developers and other willing stakeholders. As part of this process, the working group should continuously examine existing hosting capacity thresholds and technical criteria in N.J.A.C.14:8-5 to avoid overly conservative interpretations and ensure that they are not based on outdated interpretations or creating a technically unnecessary, unfriendly customer experience. The experience of states with higher penetration of DERs than New Jersey has continually shown that actual hosting capacity can be significantly increased, particularly when utilizing the smart inverter functionality included in IEEE 1547-2018. New Jersey must improve its hosting capacity thresholds and technical criteria in order to achieve the EMP goals in a cost-effective manner that avoids unnecessary overbuilding of the distribution system.

¹³ See California Public Utilities Commission Resolution E-5172, <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M487/K864/487864531.PDF>

Furthermore, N.J.A.C. 14:8-5 was also not designed with storage in mind. Therefore, in addition to revising the N.J.A.C. 14:8-5 to cover recommended topics from Rule 21, this working group should also incorporate findings from the Building a Technically Reliable Interconnection Evolution for Storage (BATRIES) Toolkit and Guidance for the Interconnection of Energy Storage and Solar-Plus-Storage (Toolkit), which was released on March 28, 2022.¹⁴ The BATRIES project convened utility and energy storage stakeholders from across the country to identify the key barriers to energy storage interconnection and develop consensus based recommendations for how to address those barriers in interconnection procedures. Revising N.J.A.C. 14:8-5 to incorporate best practices from the BATRIES toolkit should include how to address inadvertent export, the use of definitions that more accurately reflect the controls, risks, and technical capabilities of export-limited resources, and other areas where interconnection procedures can be updated to be inclusive of storage, like the reflection of export capacity, not just nameplate rating, in screening thresholds. By tasking the technical working group with incorporating best practices from the BATRIES toolkit, New Jersey can ensure that interconnection customers have access to a fair, efficient and cost-effective interconnection process that gives them maximum freedom to interconnect their storage assets in a manner that meets their needs.

SEIA, NJSEC, and CCSA support exploring the use of regulatory sandboxes and rapid pilots to enable clean energy to be generated at an accelerated pace and utilized as effectively and efficiently as possible. We welcome the opportunity to consider ways to deploy innovative technologies and methods that are not permitted under current N.J.A.C. 14:8-5 rules so long as such initiatives are subject to stakeholder feedback and not used to delay needed changes to N.J.A.C. 14:8-5 or broader adoption of proven technology that can both reduce the cost of connecting DERs and provide data on what's happening with those systems.

For example, we recommend the use of a “regulatory sandbox” to pilot proactive grid modernization cost allocation approaches, such as authorizing distribution upgrades to reopen closed or restricted circuits. As ACE indicated in its May 12th pre-draft report, over 17% of its feeders “are entirely closed or fully restricted to new DER interconnections unless and until additional distribution grid improvements are made.”¹⁵ Moreover, while ACE petitioned the BPU in December 2020 to approve a \$10

¹⁴ Interstate Renewable Energy Council, et. al, *Toolkit and Guidance for the Interconnection of Energy Storage and Solar-Plus-Storage* (March 2022) (Toolkit), downloadable at <https://energystorageinterconnection.org/>.

¹⁵ See 5.12.22 Updated Draft ACE Grid Mod Comments, p 5
https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1265729

million “Solar Hosting Initiative” fund within its base rate case that would be used to help reopen closed circuits and substation transformers in need of upgrade and rectify “constrained solar hosting capacity,” this was not included in the final stipulation of settlement as the issue of socializing grid modernization costs was considered a “generic” utility issue that would best be handled on a statewide basis and not in the “one off” context of a single base rate case.¹⁶ We understand that modifying the existing cost allocation method for DER distribution system improvements may take time and considerable effort. However, we agree with ACE that “changes to the existing interconnection cost allocation method should be established in the near-term to remove barriers to new interconnecting DER.”¹⁷ Thus, this “GridMod” proceeding is an ideal forum to pilot the “generic” concept of cost recovery solutions that encourage utility investments to reduce DER interconnection barriers and allow proactive modernization of EDC distribution systems that better align with New Jersey’s ambitious clean energy goals.

However, while we support the use of a “regulatory sandbox” to pilot new and untested technologies and regulatory approaches, we again caution that it should not be used to delay deployment of proven technologies such as meter collar adapters that already have been deployed successfully in other jurisdictions and have been certified and listed by nationally recognized testing laboratories. Customer and third party provided and owned meter collar adapters, installed for the purpose of facilitating the deployment of onsite generation or for purposes of isolating a customer’s electrical loads to enable the provision of backup power, have been deployed across numerous jurisdictions, saving individual customers installing combined solar and battery storage systems hundreds – and sometimes thousands – of dollars by dramatically reducing installation time. EDCs already possess the authority to proactively and promptly develop processes for reviewing and approving meter collar adapters that are in compliance with applicable provisions of the National Electric Code. SEIA and NJSEC urge EDCs to use this authority to modify their electric service requirements as necessary to enable use of customer and third party provided and owned meter collar adapters, without the need for further “regulatory sandbox” testing or approval as part of an interconnection rulemaking process. However, if EDCs do not proactively approve use of meter collar adapters or if the BPU does not think existing rules contemplate or allow these devices, the BPU should work to approve meter collar adapters in whichever regulatory pathway it

¹⁶ See BPU DOCKET NO. ER20120746, where ACE sought authority from the Board to create a regulatory asset to record costs related to its solar hosting initiative, at a total cost of up to \$10 million over two (2) years, to be recovered in a future base rate case; and

¹⁷ See 5.12.22 Updated Draft ACE Grid Mod Comments, p 11
https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1265729

determines will be most expeditious. That can include an upcoming interconnection rulemaking proceeding or as part of the development of a “regulatory sandbox” process. Either process should result in EDCs being required to approve customer and third party-provided and owned meter collar adapters in no more than sixty days so long as the established criteria, such as the following, has been met:

1. The device must be equipment qualified to be connected to the supply side of the service disconnecting means under applicable provisions of the National Electric Code
2. The device must be approved or listed by a nationally recognized testing laboratory and must be suitable per the device’s UL listing documentation for use in meter sockets that are rated up to two hundred amperes.
3. The device must be certified to all applicable standards as determined by a nationally recognized testing laboratory.
4. The device must not impede access to the sealed meter socket compartment or pull section of the service entrance section

Finally, we appreciate EDC interest in Distributed Energy Resources Management Systems (DERMs) to improve integration of DERs and Guidehouse’s assessment that complex, less developed areas such as the use of DERMs may benefit from a regulatory sandbox. However, we feel that the topic of control and communications needs further stakeholder discussion and question the assumption that DERs will need to be centrally controlled (via DERMS) to maintain reliability or “necessary” to track FERC Order 2222 wholesale participation and aggregation. Indeed, we posit that the experience of California and Hawaii demonstrate the ability to achieve high DER penetration using the autonomous features of smart inverters intelligently. As a result, we maintain that the use of DER controls platforms through a pilot program should be subject to further stakeholder discussions and accompanied with a clear rationale or cost/benefit analysis demonstrating a) external control of inverters would have advantages over autonomous inverter operation without external control and b) clarity around whether or how DER customers would be compensated for the grid services that an EDC would obtain through the management of the customers’ DER.

Finding #6: The generator interconnection application queueing and cost allocation process in New Jersey is serial

SEIA, NJSEC, and CCSA generally agree with the need to implement a uniform streamlined flexible queueing process that supports viable projects and avoids clogging the queue. We also support the

establishment of a stakeholder process to address potential queue improvements, such as whether there is mutual interest in transitioning to a cluster process, ways to improve queue transparency, and what a potential “first-ready, first through” interconnection queuing approach in New Jersey could look like.

This stakeholder process should also explicitly look at ensuring that final upgrade costs are within a reasonable range of an initial estimate (i.e. contingencies associated with the cost estimates shall not exceed 25%) and at issues of refundability to clarify what money developers get back if they terminate an interconnection agreement. These issues will be particularly important for community solar developers and Level 3 projects who may not be awarded projects under a capacity constrained SuSi program, especially if the yet to be finalized permanent community solar program is not structured as a first come; first served program. Thus, we recommend looking into best practices of states like New York, which allows interconnection applicants 120 business days from when the utility confirms receipt of an advanced 25% payment to pay the remaining 75% to the utility and where any unspent portions of these payments are refunded to the applicant.¹⁸ These types of gated deposits that increase as the project moves through the review period and clear rules regarding refundability will help establish a “first-ready, first-served” queuing process.

In terms of sequencing, we also note that implementing a pre-application process for projects 500kW and above should be viewed as a prerequisite for a productive stakeholder process about ways to implement a uniform streamlined flexible que process that supports viable projects and avoids clogging the queue.

Finding #7: Cost allocation and cost recovery options for accelerated interconnection of renewables have not been defined in NJ

SEIA, NJSEC, and CCSA are encouraged to see Guidehouse’s recommendation that the 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. Indeed, one of the greatest challenges to the rapid and efficient interconnection of DER is increasingly high costs for grid upgrades and the current inequitable system of allocating those costs. Under New Jersey’s current model, individual

¹⁸ See New York State Standardized Interconnection Requirements and Application Process For New Distributed Generators and/or Energy Storage Systems 5 MW or less Connected in Parallel with Utility Distribution Systems, Effective May 1, 2022, at [https://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/dcf68efca391ad6085257687006f396b/\\$FILE/May%202022%20SIR%20-%20Final%20-%20DMM.pdf](https://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/dcf68efca391ad6085257687006f396b/$FILE/May%202022%20SIR%20-%20Final%20-%20DMM.pdf)

interconnection customers who trigger the need for grid upgrades are responsible for paying the full cost of those upgrades, even though such upgrade investments routinely result in benefits to subsequent interconnection customers, as well as ratepayers at large. When upgrades to the electric grid result in outcomes such as improved reliability, voltage control, increased hosting capacity for customer-sited distributed energy resources and electrification measures (e.g., electric vehicles, heat pumps, distributed generation, storage, etc.), and increased clean energy supply to all ratepayers served by the upgrades, it is inappropriate to assess the costs of such upgrades to interconnecting customers alone.

Nonetheless, at BPU's June 27th stakeholder meeting, the BPU and Guidehouse presented a Findings and Recommendation's map that suggests that the BPU and Guidehouse do not view addressing the current unfair cost allocation problem with a high degree of implementation readiness and implied that although fair cost recovery options will enable NJ to meet the goals in the EMP, there is less evidence to support Guidehouse's recommendations relative to other findings and recommendations contained in *Draft Grid Modernization Study*.

While there may be relatively few examples of states directly implementing multi-beneficiary cost sharing to date, we maintain that there is sufficient evidence to support the need for proactive grid modernization. Additionally, our organizations agree with ACE's assessment that "the inequitable assignment of all upgrade costs to the "triggering" DER creates a financial barrier to distribution system improvements that enable the interconnection of multiple DER customers."¹⁹ We point to the fact that by ACE's own admission, by March 31, 2022, more than 17% of ACE feeders were "entirely closed or fully restricted to new DER interconnections unless and until additional distribution grid improvements are made," a sum that includes at least nine additional closed circuits since Guidehouse collected data on this matter on January 28, 2022.²⁰ Clearly, immediate BPU action is necessary to remedy an escalating situation where customers in South Jersey are increasingly unable to take part in the State's renewable energy program and many otherwise net-beneficial DER projects are precluded from being built. Reopening closed circuits is in some ways a distinct issue from becoming closed through cost allocation since you cannot cost share your way to a solution when no projects are able to be developed. Thus, the

¹⁹ See 5.12.22 Updated Draft ACE Grid Mod Comments, p 5-7 at

https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1265729

²⁰ Table 3-11 demonstrates that ACE had 49 of 327 circuits closed. However, ACE's 5.12.22 Updated Draft ACE Grid Mod Comments suggest that as of March 31, 2022, 58 distribution feeders or more than 17% of ACE feeders are entirely closed or fully restricted to new DER interconnections unless and until additional distribution grid improvements are made.

BPU should identify a viable pathway to reopen those circuits while a new cost allocation framework is developed.

SEIA, NJSEC, and CCSA urge the BPU to use the tools it has at its disposal and its discretionary authority to take immediate action to advance a forward-thinking interconnection cost allocation framework that appropriately recognizes that certain types of interconnection upgrades will result in benefits to parties other than solely the interconnecting customer(s). Prioritizing a grid-forward grid modernization upgrade approach, and proactively setting a policy for establishing thresholds for pro-rata cost allocation, is an opportunity for the BPU to demonstrate ground-breaking regulatory leadership around the types of robust cost-sharing and cost-socialization mechanisms necessary to mobilize the financial resources needed to rapidly decarbonize the electricity grid. The objectives of establishing an accurate and fair cost allocation methodology must be balanced with what is practical and able to be implemented in the near term to ensure the state can be on track to meet New Jersey's EMP targets.

We also urge the BPU to provide additional clarity around when and how it plans to initiate a proceeding that will enable proactive grid modernization and recommend that the BPU actively participate in the shaping of a legislative mandate to move towards multi-beneficiary cost sharing through the legislative proposal S-431, which now passed the New Jersey State Senate and is moving onto Assembly hearings in the fall. Broad political support for this proposal will provide additional clarity around the Board's authority to proceed with a rulemaking that will enable proactive grid modernization.

SEIA, NJSEC, and CCSA also recommend using the Massachusetts provisional interconnection cost-sharing mechanism as an example of how the BPU might frame a subsequent rulemaking to take interim action expediently. For example, Guidehouse's Draft *Grid Modernization Study* suggests initiating a proceeding for grid modernization similar to the Massachusetts approach of demonstrating prudently incurred costs will allow integration of DER as a condition of rate-based cost recovery. In Massachusetts, the Department of Public Utilities (DPU) proposed allowing EDCs to make proactive investments in system modifications (Capital Investment Projects or CIPs) that are designed to facilitate timely and more cost-effective interconnection of DERs, particularly in areas that are at or near hosting capacity limits.²¹ Under

²¹ See MA Dept. of Pub. Util., D.P.U. 20-75, Investigation by the Department of Public Utilities On Its Own motion Into Electric Distribution Companies' (1) Distributed Energy Resource Planning and (2) Assignment and Recovery of Costs for the Interconnection of Distributed Generation, Vote and Order Opening Investigation (Oct 20, 2020), <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/12796087> and Attachment A, Distributed Energy Resource Planning Proposal (Straw Proposal), <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/12796088>

the DPU's proposed model, EDCs pay upgrade costs and charge DER firms on a pro-rata basis their share of the cost upgrade after interconnection, with ratepayers paying for the costs in the interim and being reimbursed over time as new projects pay their pro rata fee. As part of the pre-approval process for authorizing these CIPs, EDCs would identify the cost of and kW capacity enabled by their proposed CIP and the DPU would subsequently establish a \$/kW CIP fee for the EDC to allocate to each interconnecting facility that benefits from the upgrades associated with the CIP.

This Massachusetts example may offer the BPU insight into how to put forward a rulemaking framework for multi-beneficiary cost sharing that apportions upgrade costs to both interconnecting DERs and customers at large when such upgrades contribute to decarbonization goals and utility system planning objectives. However, it is important to note that the DPU's November 24, 2021 Order also offers the BPU insight into how to act on an interim basis, even if BPU feels that it needs further evidence and stakeholder engagement to arrive at a permanent solution to addressing the current unfair cost allocation problem.²² Clearly, time is of the essence and we believe that the pending interconnection reform legislation with BPU input and support and the insights offered by the Massachusetts example pave a near-term path forward to resolving an approach to interconnection cost allocation that threatens New Jersey's ambitious clean energy goals.

Finding #8: EDCs do not currently submit integrated DER plans as recommended in the EMP

SEIA, NJSEC, and CCSA generally agree with the need to rethinking traditional distribution planning processes and the concept of "integrated distribution planning" (IDP) to encourage proactively moving away from responding to individual interconnection requests and associated grid upgrade fees on a project-by-project basis and toward a methodology of forecasting DER growth and planning for grid upgrades. Ideally, this would allow EDCs to consider proactive grid modernization upgrades that can simultaneously accommodate load growth (and buildings and transportation electrification) and allow higher penetration of DER.

We agree that BPU should set a date by which EDCs shall submit integrated DER and integrated distribution plans and point BPU towards the GridLab publication *Integrated Distribution Planning: A Path*

²² See MA Dept. of Pub. Util., D.P.U. 20-75, Investigation by the Department of Public Utilities On Its Own motion Into Electric Distribution Companies' (1) Distributed Energy Resource Planning and (2) Assignment and Recovery of Costs for the Interconnection of Distributed Generation, Order On Provisional System Planning Program (Nov 24, 2021), <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/14232299>

Forward, which offers recommendations for regulators on potential next steps for beginning the transition to IDP.²³ We also recommend that the BPU consider how cost-sharing might be factored into a more comprehensive distribution system planning process that considers future DER growth and electrification. Indeed, as ACE notes, forecasting DER growth could allow EDCs to proactively propose system upgrades (ideally with significant stakeholder input) to their respective distribution systems, an approach that “would complement New Jersey policy by anticipating and addressing system upgrades in advance of customer-generator interconnection requests.”²⁴

However, we also caution BPU to scrutinize IDPs to prevent against “gold plating” and redundant investments made under the guise of system improvements and point BPU towards IREC and GridLab’s *A Playbook for Modernizing the Distribution Grid*, the first in a series of reports that helps frame what investments in the distribution grid are needed now, and what can be provided by other services - such as DERs providing Non Wires Solutions.²⁵

Finding #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

SEIA, NJSEC, and CCSA disagree with Guidehouse’s recommendation that the BPU should create a definition for non-renewable clean energy fuel sources that would be allowed to participate in the NEM program. Rather, we recommend that BPU create appropriate definitions, eligibility, and terms for non-renewable clean energy fuel sources that are not participating in NEM to be located with resources participating in the NEM program. Doing so would be more consistent with the views and requests made on this subject at the BPU’s January 28, 2022, stakeholder meeting. However, we appreciate the scope of recommendations offered in Guidehouse’s Draft Grid Modernization Study and the considerable time and effort that will be needed for effective implementation. Thus, we recommend deferring prioritization on this matter until material progress has been made on the preceding findings and recommendations, which we consider greater near-term priorities for accelerated interconnection of renewables.

²³ Curt Volkmann. *Integrated Distribution Planning: A Path Forward*. GridLab. April 2019, https://gridlab.org/wp-content/uploads/2019/04/IDPWhitepaper_GridLab-1.pdf

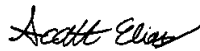
²⁴ See 5.12.22 Updated Draft ACE Grid Mod Comments, p 6-7 at https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1265729

²⁵ Sara Baldwin, Ric O’Connell, Curt Volkmann. *A Playbook for Modernizing the Distribution Grid; Volume I: Grid Modernization Goals, Principles and Plan Evaluation Checklist*. IREC and GridLab. May 2020. <https://gridlab.org/wp-content/uploads/2020/05/Grid-Modernization-Playbook-report-1.pdf>

IV. Conclusion

To enable clean energy to be generated at an accelerated pace and as effectively and efficiently as possible, improving project interconnection must become an urgent priority. Indeed, the scope and depth of the Guidehouse Draft *Grid Modernization Study* demonstrates that many changes are needed to bring New Jersey's interconnection protocol in line with the rapidly changing landscape of distributed energy resource interconnection. We commend BPU and Guidehouse for its efforts to collect stakeholder input on the current distribution grid interconnection policies and processes and potential improvements to those policies and processes that will enable faster grid modernization and higher levels of DER adoption. We look forward to engaging in productive dialogue with the BPU and other stakeholders in this GridMod proceeding and believe that if the BPU sets a robust timeline for implementation of Guidehouse's recommendations and incorporates our suggestions, this proceeding can be effective in helping New Jersey implement the strategies established in its 2019 Energy Master Plan. SEIA, NJSEC, and CCSA appreciate the opportunity to comment and look forward to continued collaboration with the BPU, Guidehouse, and additional stakeholders to help advance interconnection reforms necessary to rapidly decarbonize the electricity grid.

Sincerely,



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