In the Matter of Proposed Amendments to the New York State Standardized Interconnection Requirements (SIR) for Small Distributed Generators.

Case 15-E-0557
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Comments of the Interstate Renewable Energy Council, Inc. on Proposed Modifications to the Standardized Interconnection Requirements.

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I. Introduction

On November 9, 2015, New York Department of Public Service (DPS) Staff issued a notice soliciting comments on proposed modifications to the Standard Interconnection Requirements and Application Process For New Distributed Generators (SIR). Pursuant to the notice’s direction, the Interstate Renewable Energy Council, Inc. (IREC) submits these comments to assist New York in its efforts to streamline the State’s interconnection process and improve the current SIR’s transparency, clarity, efficiency, and fairness.

IREC is a 501(c)(3) non-partisan, non-profit organization working nationally to expand and simplify consumer access to reliable and affordable distributed clean energy by: (1) developing and advancing regulatory policy innovations; (2) generating and promoting national model rules, standards, and best practices; and (3) providing workforce training, education, and credentialing. IREC works independently from
renewable energy industries, trade associations, technologies, and advocacy organizations; and, though we promote the creation of robust, competitive clean energy markets, IREC does not have a financial stake in those markets. Through collaborative partnerships with diverse stakeholders, IREC seeks to build consensus and achieve workable solutions to create a sustainable and economically strong clean energy future. The scope of IREC’s work includes updating interconnection processes to facilitate deployment of distributed energy resources (DERs) under high-deployment scenarios. IREC has recently been or is currently involved in interconnection proceedings in Illinois, Iowa, South Carolina, North Carolina, Ohio, Massachusetts, California, and Hawaii. IREC also participated in the proceeding at the Federal Energy Regulatory Commission (FERC) to revise the Small Generator Interconnection Procedures (SGIP) and is deeply familiar with the SGIP and the rationale for updates adopted in 2013. In addition, IREC has published *Model Interconnection Procedures*, which capture best practices with respect to interconnection, as well as *Integrated Distribution Planning (IDP) Concept Paper, A Proactive Approach for Accommodating High Penetrations of Distributed Generation*, which lays out a forward-looking approach to distribution system upgrades intended to facilitate DER integration.¹

New York initially adopted the SIR in 1999 to provide utilities with a framework for processing applications to interconnect distributed generation (DG) systems, and it

¹ Both of these documents, as well as additional publications touching on interconnection and grid modernization, can be found on IREC’s website at: http://www.irecusa.org/publications/
has periodically revised the SIR in the years since. When DPS Staff last reviewed the SIR, starting in Fall 2012, IREC engaged in the proceeding (Cases 12-E-0393 – 12-E-0398), submitting both opening and reply comments.  

The current SIR proceeding is now taking place in the context of New York’s ambitious regulatory initiative, Reforming the Energy Vision (REV) (Case 14-M-0101), which aims to reorient both the electric industry and the ratemaking paradigm toward a consumer-centered approach that harnesses technology and markets. REV envisions the integration of DER into the planning and operation of electric distribution systems to achieve optimal system efficiencies, secure universal affordable service, and enable the development of a resilient, climate-friendly energy system. The REV Track 1 Order issued on February 26, 2015 explicitly calls for a streamlining and integration of New York’s current interconnection approval processes into system planning and operation.  

Accordingly, each utility should be required to establish certain functionalities, such as online portals for customer applications, automatic management of the application approval process, responses provided in a consistent and timely manner, automatic technical screening and impact studies, and uniform contract terms and procedures. 

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4 Id. at 92-93.
IREC is a party to the REV proceeding and we have submitted several sets of comments, each of which identify the critical role of interconnection procedures in ensuring the achievement of the REV goals. Of particular relevance to the current SIR proceeding, in our September 22, 2014 comments responding to DPS Staff’s Track 1 Straw Proposal, we offered suggestions related to interconnection reform. IREC’s October 27, 2015 Comments in Response to the White Paper on Ratemaking and Utility Business Models (Track 2) supported the adoption of an Earnings Impact Mechanism (EIM) on interconnection. In those comments, however, we emphasized the need for significant reform of the SIR in order to make an EIM meaningful. Our December 7, 2015 comments on the Distributed System Implementation Plan (DSIP) Guidance Staff Proposal also emphasized various aspects of interconnection reform that should be considered in the DSIPs, including consideration of energy storage and explicit steps to streamline interconnection as the distribution system planning process tools are improved.

On February 6, 2015, DPS Staff provided a document outlining its initial thoughts regarding potential changes to the SIR and invited stakeholders to engage in further discussion on a February 13, 2015 conference call. During that call, DPS Staff requested

written comments from interested stakeholders, and IREC accordingly submitted comments on February 27, 2015. IREC also submitted comments in response to a survey that the New York State Energy Research and Development Authority (NYSERDA) distributed to stakeholders in July 2015, which NYSERDA designed both to enhance its understanding of how clean DER developers work within the existing SIR and to gather information on suggested changes to help streamline the interconnection process. In conjunction with DPS, NYSERDA also commissioned a report, published in September 2015, charting New York utilities’ existing interconnection functionalities, practices, and capabilities, and determining the individual and collective readiness of New York’s utilities to meet REV’s Phase 1 goals.

IREC’s earlier informal comments included an eight-page attachment with suggested language for DPS Staff to incorporate in the SIR, including provisions addressing a pre-application report, expedited review technical screens, and a supplemental review process, drawn largely from the current FERC SGIP. As discussed further below, IREC believes that the SIR needs more significant reform than what has been proposed here in order to be positioned to facilitate DER growth in New York in the coming months and years. IREC would like the opportunity to submit a more detailed redline of the SIR that includes the proposed changes as well as additional improvements

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6 We have provided IREC’s earlier informal comments in Attachment A.
8 See IREC’s February 27, 2015 comments, at A-1 to A-8 (Attachment A).
to make the SIR process transparent and easy to follow, but at this time this proceeding does not appear to be designed to facilitate consideration of detailed line-edits. As discussed below, IREC also welcomes the chance to participate in and contribute to workgroup discussions based on our experience with interconnection reform around the United States.

In these comments, IREC provides specific recommendations for the ways in which New York should reform the SIR, as well as the ways in which New York should improve the process of SIR reform. In sum, IREC recommends that DPS Staff take the following actions:

- Schedule a series of full-day workshops, enabling the SIR reform process to proceed with stakeholders working together to draft new language and discuss approaches to address identified challenges.

- Establish a technical review group to focus on more technical issues going forward, but immediately move ahead with the procedural reforms discussed in the comments below which are well tested and do not require a lengthy working group process at this point.

- Rigorously reevaluate and reform the existing SIR, recognizing that robust interconnection standards are the very foundation of healthy renewable energy markets and merely modest revisions will not allow New York to achieve the REV goals.

- Learn from the experiences of other states that have already had to adapt their policies to accommodate review of higher volumes of interconnection applications, and adopt best practices developed by those states and FERC.

- Incorporate a transparent supplemental review process in the SIR to help utilities handle increasing volumes of interconnection applications and reduce the need for full system impact studies.
• Enhance the pre-application report currently proposed in Appendix D to include sufficient data, and reduce the associated fee and timeline to $300 and 10 business days, respectively.

• Require utilities to publish maps of their distribution systems to help developers identify optimal locations to interconnect to the grid.

• Improve the screening analysis currently proposed in Appendix G, adopting additional screens modeled on those in FERC’s SGIP and making those the exclusive basis for determining the need for further study.

• Clarify the application of the SIR to energy storage systems and identify streamlined ways to review such systems.

• Eliminate the size limitation for SIR eligibility entirely, or at minimum, raise the currently proposed upper limit from projects 5 MW in size to projects 20 MW in size.

• Require utilities to share more information about the interconnection study queue and to conduct regular reporting on the status of the interconnection process.

• Reevaluate and consider improvements the CESIR study process itself, with a particular focus on queue management and cost certainty and cost allocation.

• Refine the SIR to identify a clear process for reviewing applications for projects located on networked systems.

• Reorganize and reformat the existing SIR to establish a clearer, more user-friendly process with readily understandable timelines and communication milestones.

II. Functional and Efficient Interconnection Standards Are an Essential Foundation for New York to Achieve its REV Goals.

IREC strongly supports the direction and vision of the REV proceeding and the recent expansion of other renewable energy programs in New York. Updating the existing interconnection process is a critical step in the furtherance of REV’s goals, and
we appreciate the DPS Staff’s efforts to improve the SIR to date. The importance of reevaluating and reforming the SIR is clear, as New York is on the brink of massive growth in its solar market, with the recent commitment of nearly $1 billion to fund the NY-Sun incentive project and the expected resulting 3 gigawatts of installed solar capacity.\(^9\) The Commission also raised the utilities’ net metering caps recently, and it emphasized that the utilities are prohibited from declining to accept and interconnect new net-metered facilities even if their caps are exceeded, which will very likely increase small generator interconnection applications in the near-term.\(^{10}\) Indeed, New York’s utilities are projecting an increasingly high volume of interconnection applications in the next few years. Central Hudson, for example, predicts that between 2015 and 2017 the number of interconnection applications for all system sizes will jump by more than 250 percent.\(^{11}\) National Grid similarly expects to receive a record number of applications in 2017: 4,971 applications for systems less than 50 kW; 213 applications for systems 50 to 300 kW; and 130 applications for systems over 300 kW.\(^{12}\)

With this amount of development on the way, it is critical that the state begin to consider more significant efforts to reform and refine the interconnection process in New


\(^{11}\) Central Hudson specifically predicts that between 2015 and 2017, the number of applications for projects less than 50 kW will jump from 1,640 to 4,198; the number of applications for projects 50 to 3,000 kW will jump from 16 to 41; and the number of applications for projects over 300 kW will jump from 34 to 87. See NYSERDA Report at 13, Table 2.

\(^{12}\) Id.
York. Interconnection is absolutely foundational to healthy renewable energy markets, and without truly robust interconnection standards, it will be impossible to achieve the goals of REV and other DER programs in the coming years. It is essential to recognize that interconnection policies are fundamental to the success of higher-profile programs such as net energy metering and community solar. A well-designed interconnection process for increasing numbers of solar generators will allow utilities to maintain the safety and reliability of the electric power system while providing a transparent, efficient, and cost-effective process that operates on predictable timeframes.

The currently proposed revisions may be a reasonable starting point for discussion, but they are almost certainly inadequate to enable a smooth and efficient interconnection experience for customers this year, let alone in the coming years. Without substantially greater reform, it is likely that interconnection in New York will be a significant obstacle for achievement of the REV goals and a continued source of frustration and contention. IREC offers its comments here to help ensure that New York’s revised SIR successfully achieves all of these goals and either meets or exceeds national best practices.

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13 D. Steward and E. Doris, The Effect of State Policy Suites on the Development of Solar Markets, National Renewable Energy Laboratory, at v, 4, 7 (Nov. 2014) (available at http://www.nrel.gov/docs/fy15osti/62506.pdf) (“States in all contexts experienced more robust markets with the implementation of interconnection and net metering. Although these policies alone are not usually sufficient to spur solar markets, they are foundational for distributed generation market growth.”).

14 See, e.g., id. at 7 (“States that did not maintain high quality [net metering] and [interconnection] policy relative to other states . . . do not have as much installed capacity as states that first added and then maintained leadership in net metering and interconnection policy.”).

A. Safety and Reliability Remain Paramount – But Continuation of Existing Practices Is Not the Way to Achieve a Safe, Reliable and Efficient System.

Interconnection standards serve several functions, but at their core, they are designed to ensure that systems interconnecting to the electric grid do not undermine grid safety or reliability. This concern must remain paramount in the SIR reform process, but New York must also seek to achieve that goal in an efficient and cost effective manner if it also wants to ensure that there is sufficient cost-effective capacity to serve load. The move toward a more decentralized grid through the REV initiative will pose new challenges for New York as it learns to integrate higher penetrations of distributed generation (DG) and other DER.

Grid operators are often resistant to new approaches to interconnection because they fear that change could undermine the safety and reliability of their system. However, in this period of significant transformation in the electricity market, some substantial changes to the existing interconnection process are going to be necessary. IREC is concerned that the proposed modifications to the SIR do not reflect a full appreciation of the significant nature of the changes to the electric grid that we are facing as a result of REV, as they, present mostly minor tweaks to existing procedures instead of taking a deeper look at the process. In these comments, IREC encourages DPS Staff to reevaluate many aspects of the existing procedures and offers recommendations for greater revisions to assist New York achieve comprehensive reform of the SIR.
B. An Automated Process Can Achieve Certain Efficiencies in the Near-Term but Should Not be the Exclusive Focus at this Time.

The REV Track 1 Order and the NYSERDA report,\textsuperscript{16} and to a limited extent, the proposed changes to the current SIR, each place an emphasis on automation. IREC strongly supports efforts to automate some aspects of the interconnection process and agrees this is a goal that New York should begin working towards immediately. However, as the NYSERDA report makes clear, full automation is many years off and may ultimately only be possible for certain types of projects in the near term.\textsuperscript{17} Consolidated Edison, for example, noted in its self-assessment that much of the data that would be required for fully automated impact studies does not exist, and removing the human element would be “problematic [as] there are many considerations unique to the system and the local grid that cannot be picked up by a software program.”\textsuperscript{18} Indeed, the NYSERDA report observes that the majority of New York’s utilities do not have a complete set of reliable distribution level data needed to perform automated technical screens and impact studies; most data has to be validated before use, and in all cases, information does not reside in one database. Although filling each of these gaps is a requirement for REV Phase 1, significant time and investment is still needed to achieve

\textsuperscript{16} See, e.g., REV Track 1 Order at 23 (discussing benefits of resilience in automated systems), 92-93 (including automation in list of required improvements in utilities’ ability to process interconnection applications); NYSERDA Report at 26-27 (including various aspects of automation on a list of “leading practices” for interconnection application processing).
\textsuperscript{17} See, e.g., NYSERDA Report at 37, 40, 56.
\textsuperscript{18} Id. at 33.
these ends. Moreover, the grid is a dynamic system, and without comprehensive modeling and monitoring tools in place, full automation of the study process is unlikely.

Given these challenges, New York should focus on setting realistic near-term goals for automation, such as enabling electronic submittal, signatures, and tracking of interconnection applications. In California, both San Diego Gas and Electric and Southern California Edison feature online applications for interconnections of small net-metered systems, which increases efficiency as well as accountability, because an electronic trail is created for customer applications. As IREC wrote in our earlier informal comments, assigning inventory numbers to project applications and sharing those numbers with applicants via the private web-based system and/or the public queue can also help applicants understand where they are in the process and the timelines they should expect. Learning from the work of other utilities that process high volumes of small DG applications, such as HECO in Hawaii and PG&E in California, will help New York develop specific and effective tools to automate review of small, low-impact systems.

While steps towards fuller automation are taken, New York should simultaneously identify other streamlining efforts that can maintain an efficient interconnection process. For example, New York should find ways to make the manual review by engineers simpler. IREC strongly recommends the use of sophisticated multi-layer screens (i.e. the

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19 Id. at 57.
20 See NREL New Market Conditions at 18.
21 See IREC’s February 27, 2015 comments, at 11-12 (Attachment A).
“fast track” and “supplemental review” screens, discussed in greater detail below), which can be applied by utility engineering staff in the near-term, and by software in the long-term. In sum, IREC supports near and long-term steps towards automation, but believes that there are substantial efficiencies that can be obtained without full automation that should be implemented immediately while the data and technologies are put in place to enable full automation.

III. New York Has the Opportunity to Learn from the Experience of States That Have Already Had to Adapt Their Policies to Accommodate Review of Higher Volumes of Interconnection Applications.

A. There Are Consistent Themes Across States with High Penetrations.

While every state has unique issues to address in the development and reform of their interconnection procedures, IREC has seen many of the same issues arise repeatedly in states across the country. As a result, New York is in an excellent position as it reevaluates and reforms the existing SIR, because it can consider and learn from the experiences of other states that have encountered higher penetrations and higher volumes before it. Indeed, the problems that other states have come across in the face of similarly rapid solar growth provide insight into the problems that may arise in New York and the most effective ways to minimize or address them.

Some of the issues that we have seen repeatedly include the following:

- Submittal of many applications for “speculative” projects. This issue often arises because applicants lack access to quality information about the grid at specific interconnection points. IREC has seen this problem in several states, including North Carolina, California, and Massachusetts.
• Inability to track projects’ progression through the application process. This issue is particularly troubling for applicants, because it leaves them with little understanding of how long it will take for the utilities to complete review of their applications. IREC has seen this problem arise in Minnesota, California, Hawaii and Massachusetts.

• Difficulty processing and keeping track of high volumes of interconnection applications within the time limits specified. This issue of efficiency, which often results in both delays and communication failures between utilities and applicants, has come up in North Carolina, Minnesota, California and Massachusetts.

• Backlogged study queues. This issue is frequently the result of several factors, including speculative applications, projects not withdrawing once they are no longer viable, requirements that projects be studied serially, and—most significantly—too many projects being directed to study. IREC has seen this problem arise, most notably, in Hawaii, North Carolina, California, and Massachusetts.

• Frustration and disputes over costs. This issue arises, in particular, when there are disputes over both the certainty of the costs of system upgrades and the methods used to allocate those costs between developers. IREC has seen this problem in California and Massachusetts.

• Delays in post-interconnection agreement steps. Delays are often experienced around the installation of meters and the construction of any required system upgrades.

• Deposits for studies and system upgrades. This issue, which has come up in California, Massachusetts, and North Carolina, often arises because there are questions about the appropriate amount for and timing of deposits.

B. New York Specific Reforms Can be Appropriate, But Policy Makers Should Consider the Lessons Learned and Adopt a Tiered Review Process.

As noted above, unique issues in some states may require unique approaches to interconnection procedures, but many of the lessons learned across the country are applicable here and ought to be heeded by New York as it reforms the existing SIR. All
high-penetration solar states, in particular Hawaii, Massachusetts, North Carolina, and California, have faced backlogged interconnection queues, which drove those states’ utility commissions to streamline their interconnection processes in various ways.\textsuperscript{22} Even states with lower solar penetrations, such as Minnesota, have recently sought to revise their interconnection procedures due to clogged interconnection queues.\textsuperscript{23} Following the lead of these pioneering states should help New York avoid the pitfalls that they have faced. New York should not have to endure the same costly and time-consuming processes, or the resulting public dissatisfaction as installers and their customers wait for months to receive interconnection review and approval. IREC strongly urges DPS Staff to implement the specific procedural reforms that have been adopted by California, Hawaii, Massachusetts, Ohio, and FERC (and are now under active consideration in

\textsuperscript{22} See, e.g., Haw. HB 1943 (Lee C 2014) (noting that the sustainability of the State’s solar industry is “significantly impaired by the current interconnection process. As Hawaii transitions from the early stages of its clean energy transformation, the State needs a more transparent and timely process for electricity customers to exercise their options to manage their energy use.”); MA DPU 11-75, DOER Petition, Attachment: Massachusetts Distributed Generation Interconnection Report, Sec. 8 (Summary of Key Findings) (Aug. 18, 2011) (“The current review process, while lauded for its successes in years past, is no longer up to the demands of the current application volume.”); Joint Initial Comments of Duke Energy Carolinas, LLC, Duke Energy Progress, Inc., and Dominion North Carolina Power, NCUC E-100 Sub 101, at 9 (Nov. 21, 2014) (“The Utilities respectfully assert that the current NC Interconnection Procedures approved by the Commission were never designed to manage this volume of activity and the dramatic changes discussed above, especially over such a short period of time. This level of activity has strained the current NC Interconnection Procedures to the point that they simply cannot effectively address the current North Carolina interconnection landscape.”); CPUC Order Instituting Rulemaking, R.11-09-011 (Sept. 27, 2011) (stating that the success of California’s ambitious procurement programs “may be enhanced by timely and cost-effective interconnection to the distribution system. By this rulemaking, we seek to address the key policy and technical issues essential to timely, non-discriminatory, cost-effective and transparent interconnection.”)

\textsuperscript{23} See, e.g., MN Docket No. E-002/M-13-867, Order Adopting Partial Settlement as Modified, at 15 (Aug. 6, 2015) (“The unanticipated level of interest in the solar-garden program has tested Xcel’s existing interconnection procedures, and the Company has struggled to keep up with the flood of applications… Developers and other stakeholders have urged the Commission to take steps to ensure that solar-garden projects can be built and interconnected … Parties suggest a number of changes to Xcel’s application and interconnection procedures…”); see also MN Docket No E-002/M-13-87, Xcel Monthly Update, Community Solar Gardens, at 2, Table 2 (Dec. 8, 2015) (showing that the interconnection queue is clogged with projects, with only one project “in service,” despite the program being open for over a year).
Illinois and Iowa), which are also reflected in IREC’s *Model Interconnection Procedures*. These best practices provide a thoroughly vetted and proven path for New York to follow. Once the best practices are in place, DPS Staff may consider additional innovations in conjunction with the REV proceeding that could further streamline interconnection and ensure it is responsive to the State’s broader policy objectives regarding DER integration.

One of the most important best practices that is missing from the DPS Staff’s proposed revisions is a “supplemental review” process, which helps utilities determine whether projects that fail one or more of the technical “fast track” screens could interconnect to the system without full study. Until recently, this additional layer of review was a black box in many states’ interconnection procedures, as applicants were given no details on its scope or process. In the most recent revision to the SGIP, however, FERC integrated a more transparent supplemental review process that relies on three screens, including a penetration screen (Screen 1), set at 100 percent of minimum load. In most cases, if the proposed generation facility is below 100 percent of the minimum load measured at the time the generator will be online, then the risk of power backfeeding beyond the substation is minimal, and there is a good possibility, as a result, that power quality, voltage control, and other safety and reliability concerns may be addressed without the need for a full study. The other two screens allow for utilities to
evaluate any potential voltage and power quality (Screen 2) and/or safety and reliability impacts (Screen 3).\textsuperscript{24}

Several states that are already seeing higher penetrations of DG, including California, Hawaii, Massachusetts, and Ohio, have adopted this or a similar transparent supplemental review process, and it is under consideration in other states, including Iowa and Illinois.\textsuperscript{25} IREC strongly recommends that New York follow suit in adopting the SGIP approach. In New York, increasing volumes of interconnection applications will only backlog study queues in the years to come, and the already problematic line of projects between 1 MW and 3 MW in size is likely to become even more extreme with new demands for DG.\textsuperscript{26} New York should learn from states that have already pioneered supplemental review processes to help utilities handle increasing volumes and penetrations of DG efficiently without compromising the safety and reliability of their electrical systems. There is great wisdom in this approach, particularly because evidence indicates that, along with other interconnection improvements, supplemental review is working. IREC recently analyzed interconnection data from the two largest California

\textsuperscript{24} See FERC SGIP § 2.4 (describing the Supplemental Review process); see also IREC’s Model Interconnection Procedures § III.D (incorporating a nearly identical supplemental review process).
\textsuperscript{25} See, e.g., CA Rule 21 Tariff § G.2; MA Interconnection Standards Fig. 1, n.8 (as modified by DPU Order 11-75-F at 12-14); PUCO Docket 12-2051-EL-ORD (adopting amended interconnection rules in Chapter 4901:1-22 of the Ohio Revised Code) (December 4, 2013); Iowa Public Utilities Board Docket NOI-2014-0001 (in this docket the investor owned utilities and other parties have filed comments supporting adoption of a Supplemental Review process identical to the one adopted by FERC); Illinois Commerce Commission Docket 14-0135 (On Nov. 12, 2015 the Commission approved a First Notice Order adopting a Supplemental Review process with screens similar to the one adopted by FERC).
\textsuperscript{26} See, e.g., FERC Order 792 at ¶ 22 (providing citations to the record where utilities across the country have indicated their growing queue backlogs); Joint Initial Comments of Duke Energy Carolinas, LLC, Duke Energy Progress, Inc., and Dominion North Carolina Power, North Carolina Utilities Commission, Docket E-100, Sub 101, Nov. 1, 2014 (summarizing the dramatic backlog in the study queue that arose in North Carolina).
investor-owned utilities, Southern California Edison (SCE) and Pacific Gas and Electric Company (PG&E), to determine the impact that adopting an enhanced supplemental review process has had on reducing the need for full system impact studies. The results show that supplemental review has indeed enabled a significant number of projects to avoid full study, and it has also further reduced the study queue by providing projects critical information earlier on the process that in some cases helps them decide not to proceed to study.\(^ {27} \)

IREC recommends that New York adopt a supplemental review process identical to the FERC SGIP’s three-screen process. With this reform, all projects above 100% of minimum load would still go directly to full study. And projects below this level would not be automatically interconnected, because they would be subject to two other screens that address safety, reliability, voltage, and power quality concerns. As penetrations of solar increase in New York, and more projects fail the technical screens, a transparent supplemental review process will become increasingly important. It will provide additional time to resolve some of the safety and reliability concerns identified by the initial review screens while still allowing for transparent, efficient, and cost-effective interconnection of projects. Applying a well-defined supplemental review process can also help minimize the number of projects that require full study, freeing up utility staff time to focus on the projects truly needing study.

\(^ {27} \)Data for this analysis was collected from the quarterly interconnection reports filed by the California utilities, which can be found at: http://www.cpuc.ca.gov/PUC/energy/Procurement/LTTP/rule21.htm
If New York decides not to incorporate supplemental review, it is essential that it develop some other method for handling review of projects between 50 kW and 5 MW. It is highly unrealistic to believe the utilities could efficiently review all projects above 15% of peak load through a full serial study process. Research and the experiences of other states, including Minnesota, show that studying every project that fails a 15% of peak load screen, for example, is wasteful and inefficient. As discussed further below, there is no question that not every project requires study using that threshold, and New York needs to justify subjecting distributed generators to unnecessary studies in light of this evidence.

IV. New York Should Undertake a More Significant Reform Effort which Incorporates Broader Stakeholder Input to Ensure REV Goals Can be Achieved.

A. The Process to Date Reflects Bias Toward Utility Input and Lacks Transparency.

IREC appreciated the opportunity to submit informal comments on the existing SIR in February 2015, but we have some concerns about the SIR reform process to date. First, the process has unfolded with an inadequate level of transparency. DPS Staff, for example, sought informal comments from an unspecified list of parties in February 2015. The comments submitted in response to this request were not publicly filed, and parties have therefore been unable to see the input provided by other stakeholders (namely, the utilities). NYSERDA similarly sought comments from stakeholders when it distributed

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its July 2015 questionnaire, but it is not clear how the responses NYSERDA received have been used or incorporated into the proposed modifications to the existing SIR.

Second, there is an apparent utility bias in the SIR reform process to date. As noted above, NYSERDA commissioned an extensive report assessing the interconnection readiness of New York’s utilities, but that report, which was published in September 2015, appears to include only “self-reporting” information from New York’s utilities, without any attempt to verify customers’ actual experiences. It is also IREC’s understanding that DPS Staff invited only the utilities and the New York Solar Energy Industries Association to provide feedback on an intermediate redline version of the SIR in June 2015. No notice of that redline version was provided to the NY-REV list that this proceeding has initiated, despite the fact that the SIR revisions are responding directly to the REV Track 1 Order. Finally, the proposed revisions to the SIR were submitted without any explanatory document, so stakeholders have little to no understanding of the reasons why some of the changes recommended by stakeholder have been incorporated in the current draft and others have not. There needs to be an open dialogue about the appropriate changes where parties have a chance to publicly discuss changes and respond to arguments. This proceeding needs an adequate record of why the changes are being adopted and why others are not.
B. The Existing Structure of the SIR is Not Suited to Handle Review of a High Volume of Applications.

IREC believes the SIR has served the state adequately so far, but it has significant organizational weaknesses and is unlikely to be a good framework to continue to use as the amount of DG increases. A primary concern is the existing SIR’s confusing and user-unfriendly structure, which places multiple layers of exceptions at the start of the document and includes steps that are difficult to follow. As it revises and reforms the SIR, DPS Staff should reconsider the placement of the exceptions and divide paragraphs into subsections with appropriate headers so customers can easily locate the provisions applicable to their projects. The SIR should also make clear the process for review of each type of project, enabling each party to understand their responsibilities, the timelines for review, and relevancy of each step. In addition, applicants should be able to readily understand the technical standards they will have to meet to qualify for expedited review prior to submitting their applications. IREC also suggests that clear timelines and communication milestones for both the utility and applicants are critical. Massachusetts recently established an effective interconnection timeline enforcement mechanism, which requires utilities to annually report their aggregate performance in meeting established interconnection timeframes; incorporates penalties or offsets based on annual reporting; and establishes a method for calculating penalties and offsets.\(^{29}\)

\(^{29}\) See MA D.P.U 11-75-F, Order on a Timeline Enforcement Mechanism (July 31, 2014); see also MA D.P.I 11-75-F Appendix B (Distributed Generation Interconnection Time Frame Enforcement Mechanism).
IREC believes more fundamental reforms such as these are necessary to enhance New York’s interconnection procedures, and the SIR should establish a clearer, more in-depth process that engages stakeholders to work together to achieve reforms that have widespread buy-in. The existing SIR lacks key elements of transparency that enable a fair and efficient interconnection process. Improving the clarity of the SIR is especially critical to keeping the interconnection process moving forward and to avoiding disputes when utilities start to receive high volumes of interconnection requests. Transparent procedures remove any perceived unfairness or discriminatory treatment of applications, as well as any potential for utility abuse of discretion.

C. IREC’s Proposed Framework for Interconnection Reform in New York

In its initial thoughts document on February 6, 2015, DPS Staff indicated that its aim is to encourage an open SIR reform process involving the DER community. IREC fully supports such a process and urges DPS Staff to facilitate as much stakeholder collaboration as possible, as early in the process as possible, especially between the utilities and other stakeholders. In IREC’s experience in engaging interconnection reform around the United States, the most successful processes involve stakeholder workshops or working groups to promote constructive dialogue. In many cases, stakeholders are able to come to consensus on all or most of the issues under discussion, and produce well developed interconnection procedures for Commission review. Because of the technical nature of interconnection standards, it is difficult to achieve
significant reforms purely through a written comment process. IREC believes that such a collaborative process would be appropriate in New York and encourages DPS Staff to institute one as soon as possible, engaging utility, the DER industries, and other stakeholders in a productive conversation about interconnection reform.

IREC believes there are two layers of stakeholder engagement that should begin immediately. The first is a series of workshops to discuss near-term procedural changes, such as the adoption of pre-application reports, technical screens, supplemental review, and study process changes, which can be adopted immediately based upon the experiences of other states. In addition, a technical review group, consisting of engineers and interconnection experts from the utilities and developers, should be convened and meet regularly to tackle deeper technical issues that underlie the interconnection process. The type of issues that the technical review group would address include requirements for direct transfer trip and consideration of smart inverter settings.

IREC specifically recommends that DPS Staff take the following steps to successfully improve and reform the SIR:

- A series of full-day workshops should be scheduled immediately following this comment opportunity.

- The workshops should be facilitated by DPS Staff or an outside facilitator. The major areas raised in stakeholder comments should be discussed initially to get the range of perspectives. The parties should try to develop a schedule for near-term issues that ought to be addressed in this first proceeding, as well as those that need more time, and those that will come out of the Distributed Systems Implementation Plans.
The reform process should proceed with parties working together to draft new language and discussing approaches to address the challenges identified.

Ideally, the parties should come together on a consensus draft, which would then be submitted to the Commission for consideration. Not every issue needs to have consensus, and parties should still be able to raise alternative approaches. Based on its experience in other states, however, IREC has found that substantial agreement can usually be achieved, narrowing the number of issues that need to be briefed.

A technical review group should be established to continue to work on improvements regarding the more technical issues, such as requirements for Direct Transfer Trip and Smart Inverters. The largely procedural reforms discussed below, however, should move ahead immediately, they have a track record from other states and do not require a lengthy working group process at this point.

V. Critical Process Changes for Near-Term Reforms

As noted above, IREC submitted informal comments on the SIR on February 27, 2015, which we have provided here as Attachment A. We hope that DPS Staff will address all of the issues raised in those earlier comments, but there are some issues that the current proposal did respond to for which we have further comments. In addition, there are a few areas that are particularly critical for near-term resolution that were not addressed in the proposed revisions.

A. Improve the Pre-Application Report in Proposed Appendix D

IREC is very pleased that DPS Staff included a pre-application report in the proposed revisions of the SIR (Appendix D). A formal pre-application report will improve New York’s interconnection procedures by making them more transparent and efficient. It will allow potential applicants to obtain more granular information about
potential project locations, and help developers identify and avoid problematic system locations where significant upgrades or lengthy study may be required in advance of submitting an application. This step benefits rate-payers and the state as a whole, because it facilitates better utilization of existing system resources and keeps down the costs of DER integration. A pre-application report can also prevent customers from “fishing” for optimal locations through the application process, which may result in utilities reviewing projects that are unlikely to be built, creating interconnection backlogs that negatively impact the utility and other interconnection customers.

While the inclusion of a pre-application report is a critical first step towards SIR reform, IREC believes that there is still great room for improvement in the proposed Appendix D. IREC recommends that DPS Staff expand the line items in Appendix D to provide developers with more information in advance of their application submissions. It is not clear from the proposed revisions why the Commission is excluding a number of the items adopted by FERC and other states. In Attachment A, IREC offers suggested pre-application report provisions, which are nearly identical to those adopted by FERC, with minor changes to conform with the existing New York procedures and otherwise improve the quality and usefulness of the information.30 New York can also look to California, which has had such a positive experience with Rule 21’s robust pre-

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30 Federal Energy Regulatory Commission, Small Generator Interconnection Agreements and Procedures, 78 Fed. Reg. 73,240 at § 1.2.2 – 1.2.3 (Dec. 5, 2013) [hereinafter FERC SGIP]; 145 FERC ¶ 61,159, Order No. 792 at ¶¶ 28-64; see also NREL New Market Conditions, at 12 (providing additional detail regarding the rationale and utility of the pre-application report).
application report that the California Public Utilities Commission is currently considering pre-application report “enhancements,” to provide developers with even more sophisticated technical information.31

IREC also has concerns about two aspects of the pre-application report that DPS Staff has included in the proposed revisions to the SIR. First, the $750 fee associated with the pre-application report is unreasonably high. IREC suggests that DPS Staff reduce the fee to $300, which is the same fee for the pre-application report in the FERC SGIP. The pre-application report fee is also $300 under California and Ohio’s interconnection procedures, and Massachusetts has no fee at all for some projects.32 IREC would, at a minimum, like to understand why the utilities would require an additional $450 to process pre-application reports. Because all parties should want to encourage customers to use pre-application reports, they need to be priced efficiently.

Second, IREC believes that the proposed timeline of 20 business days is longer than necessary for utilities to provide the readily available information that is required for the pre-application report. FERC allowed for 20 business days to accommodate the situation where a transmission operator would need to seek information from a distribution owner to provide the information. IREC recommends that DPS Staff shorten

32 See CPUC D.12-09-018, Attachment A (California Rule 21 Tariff), § E.1 ($300); OAC § 4901:1-22-04(B)(2) (Ohio: $300); MA DPU Order 11-75-E, Appendix A (MA Interconnection Standards), § 3.2 (no fee).
its proposed timeline to 10 business days, which is the same timeline as several other states’ jurisdictional rules, including Ohio, California, and Massachusetts.\textsuperscript{33} In most cases, providing the listed information will not take more than a few hours of staff time, especially given the limitations requiring only existing readily available data. In addition, as utilities get more efficient at providing this information, they should be able to streamline the process and thus reduce the costs of providing the information. Twenty business days is especially lengthy, considering the fact that the pre-application report is supposed to rely on readily accessible information.

The pre-application report fee and timeline proposed here are also illogical when compared with the existing application fees and time necessary to process expedited applications. In most cases, the costs of submitting an interconnection application would be less than it would cost to just get a pre-application report.\textsuperscript{34} In addition, the actual review results for a completed application could be obtained in less time than it takes to obtain a pre-application report. This undermines the value of the pre-application report as a tool for discouraging speculative applications. Except for very large projects, a developer is unlikely to submit a pre-application report request if they could just submit an actual application and obtain the results in both less time and less money.

\textsuperscript{33} See OAC § 4901:1-22-04(B)(2) (Ohio: 10 days); CPUC D.12-09-018, Attachment A (California Rule 21 Tariff), § E.1 (10 days); MA DPU Order 11-75-E, Appendix A (MA Interconnection Standards), § 3.2 (10 days).

\textsuperscript{34} The proposed revisions would provide a credit for projects who sought a pre-application report, but this still does not encourage applicants to seek a pre-application report.
1. Utility Distribution System Maps

IREC recommends that New York require utilities to publish maps of their distribution systems. Publicly available system maps complement pre-application reports because they help developers identify optimal and/or undesirable locations to interconnect to the grid in advance of submitting any informal or formal inquiries to the utility. Providing this advanced information can ultimately save time and resources for the applicant as well as the utility, which does not have to field as many questions, pre-application requests, or “fishing” applications. Developers can more readily evaluate siting options for their projects, because they can see whether an area can accommodate new generation with or without requiring significant system upgrades. Public maps can also result in more strategically located DG throughout the utilities’ systems.

Several utilities already rely on such maps to accomplish these goals, and their maps offer a good starting point for discussion.\(^{35}\) In New York, public distribution system maps can further support the REV goals of better and more efficiently integrating DER, and leveraging the benefits of DER to the extent possible.\(^{36}\) For example, California recently required its utilities to incorporate additional information regarding

\(^{35}\) Utility distribution system map examples:
- PG&E: http://www.pge.com/b2b/energysupply/wholesaleelectricssuppliersolicitation/PVRFO/pvmap/ (download of Google Earth and user account creation required)
- SDG&E: http://sdge.com/builderservices/dgmap/ (download of Google Earth and registration required)

\(^{36}\) See REV Track 1 Order at 92 (discussion of integration of interconnection with grid optimization planning).
the capability of their systems to integrate DER into existing online system maps as part
of its Distribution Resources Planning (DRP) proceeding.\textsuperscript{37}

Although developing system maps can take time and resources upfront,
incorporating their use in the interconnection application process can save utilities time
and money in the long run, because the utilities will not have to respond to individual
information requests or evaluate applications submitted only to get the locational
information, which will already be publicly available. System maps also avoid wasting
resources on evaluating applications for projects located at poor grid locations that
ultimately will never be built.

Although incorporating system maps into the interconnection process may require
a longer timeline, utilities in California were able to adopt this initial reform within about
a year, and the California Public Utilities Commission now requires utilities to publish
maps of the distribution systems that identify actual hosting capacity.\textsuperscript{38} Hawaii has
adopted a similar approach, providing information via online maps on the penetration
levels that have been reached on distribution circuits.\textsuperscript{39} System maps should also be
coordinated with the Distributed System Implementation Plans, but not get lost between
the different proceedings.

\textsuperscript{37} Assigned Commissioner’s Ruling on Guidance for Public Utilities Code Section 769—Distribution Resource
Planning, Attachment: Guidance for Section 769—Distribution Resource Planning, R.14-08-013, at 3 (Feb. 6,
2015).
\textsuperscript{38} Id.
\textsuperscript{39} See NREL New Market Conditions at 13.
B. Improve Screening to Minimize the Volume of Studies for Projects Above 50 kW

IREC is pleased that DPS Staff has proposed to adopt some screens for the review of expedited projects. The addition of more transparent screens is a significant improvement over the existing SIR, which provides no transparency into what criteria the utilities will use to review projects for expedited treatment. However, the screens that comprise Appendix G in the proposed revisions have not gone far enough, and as written, will fail to serve their intended purpose of reducing unnecessary studies and providing a fair and non-discriminatory process. IREC believes there should be a workshop held to discuss the particular screens that should be used, and to discuss how they will be applied. IREC believes that New York’s expedited screening process for projects larger than 50 kW requires significant improvement, and adoption of appropriate screens and a supplemental review process are critical steps to facilitating interconnection of these projects in a timely manner.

1. Application of the Screens

The benefit of including screens in the expedited review process is that it enables applicants to know in advance what standards their projects need to meet, it minimizes the number of disputes between applicants and utilities, and it ensures fair and non-discriminatory treatment. As currently drafted, the screening process in Appendix G will

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40 SIR § I(B). IREC recognizes that additional provisions apply to systems attempting to interconnect to underground networked systems. We believe these issues require further discussion and evaluation by DPS Staff, utilities, and interested stakeholders, for example within a future working group.
not achieve these goals primarily because the screens do not appear to be the exclusive
criteria used to determine whether a project will require a Coordinated Electric System
Interconnection Review (CESIR). The proposed changes still allow the utilities to
identify other factors beyond those identified in the screens. In the vast majority of states
across the country, utilities are able to successfully use a limited set of screens to identify
what projects need further review. There is no reason why the utilities in New York
cannot be expected to rely on similarly clearly defined screens. The additional open-
ended discretion provided undermines the value of the screening process, and it is not
clear why it is necessary in light of the extensive record of success experienced in states
that have adopted the SGIP screens.

2. The Number and Scope of the Screens Appears to be Insufficient

The “Fast Track” screens that are used in the FERC SGIP, IREC’s Model Rules,
and in states across the country have a proven track record of use that has prevented
projects from causing safety, reliability or power quality impacts when they are
interconnected without a full study. While IREC supports updates and further
consideration of whether each of the standard screens is appropriate for use in New York,
it is unclear why the State has proposed to include the screens it has selected. It appears
there may be additional technical considerations left out without any explanation. IREC
believes there needs to be a thorough on-the-record discussion of the screens selected to
both ensure system safety and reliability and the fair and effective review of
interconnecting generators.
3. The 15% Screen is Unduly Conservative

The screens in the proposed Appendix G include a 15% of peak load screen and do not include any sort of supplemental review process to address whether projects that fail that screen, but are below 100% of minimum load, truly require a CESIR.

As DPS Staff is probably aware, many of the technical screens that have been used across the country were initially designed when grid managers had very little experience with the integration of inverter-based DG. As experience has grown, states with higher penetrations of solar, including Massachusetts, California, and Hawaii, have demonstrated that one screen in particular, known as the 15% of peak load screen (or Screen E in Appendix G of the proposed revisions to the SIR) is overly conservative, causing a large number of projects to go through the full study process when they do not pose safety and reliability issues. In fact, utilities in high penetration states have found that they can safely interconnect many systems that fail the 15% of peak load screen without undertaking a full-fledged study process. In some cases, projects may require some more modest review. As a result, state utility commissions and FERC are using the transparent supplemental review process, discussed above, to further evaluate whether projects that fail the 15% or peak load screen or others screens really warrant full study.

As the volume of interconnection applications increases in New York, it will become especially important to avoid unnecessary study of projects, while still

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42 For a good discussion of the need for and benefits of supplemental review, see NREL New Market Conditions.
maintaining system safety and reliability, in order to conserve utility and applicant time and resources. The introduction of the FERC SGIP’s initial nine technical screens, plus three supplemental review screens, can accomplish this goal, while also improving the transparency of the review process. Following the lead of Massachusetts, California, and Hawaii, New York should similarly reconsider whether 15% of peak load is an appropriate screen to include in the currently proposed Appendix G. If New York opts to maintain that conservative screen, IREC strongly recommends that the SIR incorporate the transparent supplemental review process, discussed above, to further filter the interconnection applications that truly need to go to study.

C. **Remove the Size Limitation for SIR Eligibility**

Unlike FERC and many other states, New York has limited projects’ eligibility for its standardized review procedures. While IREC is pleased to see that the proposed revisions to the SIR increased the existing limit from projects 2 MW in size to projects 5 MW in size, IREC strongly recommends that New York eliminate the upper limit for applicability entirely, allowing the SIR’s use for state-jurisdictional interconnections of any size. All projects that want to export power to the grid need to have a clear set of interconnection procedures to follow and a clear process for resolving disputes about that

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43 As IREC discussed in its earlier informal comments, FERC SGIP’s Screen 10, often called the “No-Construction Screen,” should not be included within New York’s interconnection procedures, as it may inefficiently require a project that passes all the other technical screens to pay for and undergo the full study process, even if there are no safety, reliability, or power quality concerns warranting further system impacts review. Instead of disallowing any construction to receive expedited treatment, IREC’s proposed amendments to the FERC SGIP provisions allow a utility additional time to provide a cost estimate along with an interconnection agreement when it determines that upgrades are necessary. See IREC February 27, 2015 Comments, at 15-16 (Attachment A).
process. Limiting the SIR’s application to projects below a certain size could leave projects above that size that fall within state jurisdiction with no clear avenue for interconnection. All DG applicants deserve clear, transparent interconnection procedures, and IREC does not see a rationale for limiting access to them to systems 5 MW or smaller, since larger systems can easily be reviewed using the same study requirements, as evidenced by the FERC procedures and those in many other states.

If New York does not remove the cap entirely, it should at least raise the limit to projects 20 MW in size. FERC allows projects up to 20 MW to be reviewed under its SGIP, and several other states apply the same cap in their review procedures.44 IREC notes that at least one of New York’s utilities, National Grid, already appears to be applying the SIR to projects up to 20 MW.45 Any evaluation necessary to determine whether or not a utility has jurisdiction over the interconnection can occur pursuant to the relevant legal and technical considerations, prior to the project entering the interconnection process. Similarly, if projects may impact the transmission grid or otherwise require review by the New York Independent System Operator (NYISO), the

44 See FERC SGIP § 1.1 (noting that the procedures apply to facilities up to 20 MW, with only certain, smaller facilities eligible for fast track procedures); see also Comments of the Interstate Renewable Energy Council, Inc. in Response to DPS Staff Straw Proposal on Track One Issues, Case 14-M-0101, at 12-13 (Sept. 22, 2014) (also suggesting increasing SIR eligibility to 20 MW).
45 See National Grid, Interconnection of Generators, www.nationalgridus.com/niagaramohawk/business/energyeff/4_interconnection.asp (providing links to the processes for projects 50 kW and smaller, and projects 50 kW to 20 MW); Interconnection Process > 25 kW www.nationalgridus.com/niagaramohawk/business/energyeff/4_interconnection_g25.asp (laying out a process involving the SIR and CESIR).
SIR procedures can be modified to specify the appropriate procedure for obtaining that review.

D. **Incorporate Energy Storage System Review into the SIR**

At this time, the SIR and the proposed changes to the SIR contain no real mention of energy storage. As energy storage is a technology that is likely to be a critical tool in achievement of the REV goals, it is essential that these projects have a clear path to interconnection in New York. IREC recommends, at a minimum, that the definition of Customer-Generator and Generator-Owner be modified to include devices that store power. In addition, the Commission should commence a conversation about what other changes need to be made to streamline the review of energy storage systems in the state.

E. **Establish a Process for Interconnecting Projects Located on Networked Systems**

Because considerable portions of New York State are networked (i.e. New York City), the existing SIR needs to be modified to identify a clear process to review interconnection projects located on a network. The very first screen in Appendix G of the proposed SIR revisions (Screen A) would require a full study of every project on a network, which does not seem realistic considering the size of the networked system in the state. IREC recommends that DPS Staff develop a separate process that looks at how to screen projects on the networked systems.

F. **Improve Queue Transparency and Management**

Learning from the experiences of other states, New York needs to consider additional measures for queue transparency and management. The proposed SIR
revisions require utilities to make data available on a more frequent basis, as IREC previously recommended, but they do not appear to require assignment of inventory numbers or publicly posting the interconnection queue, as IREC suggested in its earlier informal comments. This transparency benefits both developers and the utilities, especially when disputes arise. Sharing more information about the study queue also complements the pre-application reports and distribution system maps discussed above, as each is intended to increase the transparency of the interconnection process, to improve its efficiency for all parties involved, and to encourage more optimal location of projects. Locational information should be included in public queue reports, too, so applicants may know not only the number of projects ahead of them in line, but also where those projects are located and whether that might impact their decisions regarding their own projects.

In addition to posting an adequate public queue, experience in other states has shown that increasing volumes of project applications makes it critical to have a detailed process for managing the study queue. Specifically, there need to be clear timelines and procedures in place that remove stagnant projects from the queue so that later-queued projects may move ahead without delay. Projects that “queue-squat” or otherwise delay final operation can effectively hold system capacity and cause significant delays for other projects. To prevent this from becoming a significant problem in New York, the state should consider the measures adopted by other states which include: deadlines for every exchange in the interconnection process; a fair and transparent, but also binding, method
for removing delayed projects; site control requirements; periodic study and construction deposit; and methods for ordering the review of serially queued projects. These, and other options, should be discussed in a workshop setting to identify which are most appropriate for the state.

G. Other Critical Issues that Warrant Discussion

IREC has identified at least two other major topics that warrant additional discussion. First, IREC is concerned that seemingly little attention has been paid to revising the CESIR study process itself. Comprehensive reform of the SIR must include some discussion and evaluation of CESIR and its effectiveness. IREC has heard informal reports that CESIR’s timelines are not being met, which suggests changes ought to be made. At a minimum, IREC recommends that DPS Staff establish a process for considering improvements to the CESIR through a working group or other method.

Second, cost certainty and cost allocation ought to be addressed more thoroughly in the SIR reform process. Both are major issues in high-penetration states, such as California and Massachusetts, and are almost certain to arise in New York, as well. Although IREC does not believe best practices have been established yet for how to address these issues, New York ought to set forth a process for discussing potential approaches and develop ways to keep cost allocation fair and efficient. Massachusetts and California have developed distribution group study processes that allow projects that
are electrically interrelated to be studied together and to share interconnection costs. California is also considering a number of ways to improve the quality and certainty of the cost estimates. New York could begin considering similar innovations. IREC would welcome the chance to contribute to these discussions based on our experience working on cost allocation issues around the United States. As REV moves forward, DPS Staff could also begin to consider ways in which interconnection and distribution system planning interact, and how costs should be allocated across those two processes. IREC’s Integrated Distribution Planning concept paper offers a framework to begin such consideration. There should also be further discussion about the timing and size of deposits for upgrades and studies.

VI. Conclusion

New York has the potential to become the nation’s leader when it comes to the integration of distributed energy resources. To do so, however, it must develop interconnection standards that not only meet, but exceed, current national best practices. The currently proposed changes to the SIR fail to achieve this goal despite the fact that it is readily achievable using existing, well-tested practices from other states. Along with other stakeholders, IREC is eager to help New York adopt procedures that can be used as

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46 CPUC D.14-04-003, Decision Adopting Revisions to Electric Tariff Rule 21 to Include a Distribution Group Study Process and Additional Tariff Forms, R.11-09-011 (April 16, 2014), available at http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M090/K001/90001430.PDF; Mass. Standard for Interconnection of Distributed Generation § 3.4.1, Docket No. DPU 11-75

models for other states following in the REV footsteps. We hope the state takes our recommendations into account and convenes a more open and transparent stakeholder process immediately to help ensure that interconnection does not become a barrier to DER integration in New York. We appreciate the Commission’s consideration of these comments, and we look forward to next steps in this proceeding.

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Respectfully submitted,

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COMMENTS OF THE INTERSTATE RENEWABLE ENERGY COUNCIL, INC. ON NEW YORK’S STANDARDIZED INTERCONNECTION REQUIREMENTS

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ATTACHMENT A: Suggested Provisions Modeled on FERC SGIP ............................................ 1
I. Introduction

On February 6, 2015, New York Department of Public Service (DPS) Staff provided a document outlining their initial thoughts regarding potential changes to the Standardized Interconnection Requirements (SIR) and invited stakeholders to engage in further discussion on a February 13, 2015 conference call. During the call, DPS Staff requested written comments from interested stakeholders by February 27, 2015. Accordingly, the Interstate Renewable Energy Council, Inc. (IREC) submits these comments. We also note that the Commission addressed interconnection in its order yesterday in the Reforming the Energy Vision (REV) proceeding, which we refer to below.

IREC is a 501(c)(3) non-profit organization, which has worked for over 30 years to enable greater use of clean energy in a sustainable way by: (1) introducing regulatory policy innovations that empower consumers and support a transition to a sustainable energy future; (2) removing technical constraints to distributed energy resource integration; and (3) developing and coordinating national strategies and policy guidance to provide consistency on these policies, centered on best practices and solid research. The scope of IREC’s work includes updating interconnection processes to facilitate deployment of distributed energy resources (DER) under high-deployment scenarios. IREC has recently been or is currently involved in interconnection proceedings in Illinois, Iowa, North Carolina, Ohio, Massachusetts, California and Hawaii. IREC also participated in the proceeding at Federal Energy Regulatory Commission (FERC) to revise the Small Generator Interconnection Procedure (SGIP), and is deeply familiar with the SGIP and the rationale for the recent changes. In addition, IREC has published Model Interconnection Procedures, which capture best practices with respect to interconnection, as well as Integrated Distribution Planning (IDP) Concept Paper, A Proactive Approach for Accommodating High
Penetrations of Distributed Generation, which lays out a forward-looking approach to distribution system upgrades intended to facilitate DER integration.¹

When the DPS last reviewed the SIR, starting in Fall 2012, IREC engaged in the proceeding (Cases 12-E-0393 – 12-E-0398), providing both opening and reply comments. In addition, IREC is a party to the REV proceeding (Case 14-M-0101), in which we have submitted several sets of comments. In particular, in our September 22, 2014 comments in response to DPS Staff’s Track One Straw Proposal, we offered further suggestions related to interconnection reform. IREC cites to our prior comments in these comments as applicable. In addition, we have provided our suggested language for provisions addressing a pre-application report, expedited review technical screens, and supplemental review process in Attachment A, drawn largely from the current FERC SGIP. Although we note below where this language could be incorporated into the current procedures, IREC did not redline the procedures themselves. IREC would be happy to provide a more detailed redline of the SIR that incorporates the proposed changes as well as additional improvements to make the SIR process transparent and easy to follow, but would prefer to offer these suggestions once the scope of the proceeding has been defined.

II. Reform of the New York SIR Is Timely, and Should Lead to Improved Procedural Clarity and Transparency, and Avoid Interconnection-Related Problems Encountered in Other High-Penetration Solar States.

IREC agrees with many of DPS Staff’s initial thoughts regarding potential changes to the SIR, in both the shorter and longer terms, however we believe that New York’s interconnection procedures warrant more comprehensive reform, beyond what the Staff has laid out in their February 6 document. From its recent order, it appears that the Commission likewise envisions

¹ Both documents are available on IREC’s web site at www.irecusa.org/publications.
broader reform.\textsuperscript{2} New York is on the brink of massive growth in its solar market, with the recent commitment of nearly $1 billion to fund the NY-Sun incentive program and the expected resulting 3 gigawatts of installed solar capacity.\textsuperscript{3} The Commission also recently raised the utilities’ net metering caps, and emphasized that the utilities are prohibited from declining to accept and interconnect new net-metered facilities even if their caps are exceeded.\textsuperscript{4} Therefore, New York utilities will likely see growth in small generator interconnection applications, at least in the near term. In addition, the Commission is considering expanding availability of solar via community net metering,\textsuperscript{5} which would further support growth in the distributed solar market. With this amount of development on the way, it is essential that DPS Staff and the Commission reevaluate the SIR to ensure that it can facilitate the efficient and cost-effective interconnection of increasing numbers of solar and other distributed energy generators.

Other states that have faced similarly rapid solar growth can provide insight into the problems that may arise and how to address them. In particular, all high-penetration solar states, including particular Hawaii, California and Massachusetts, have faced backlogged interconnection queues, which have instigated those states’ utility commissions to streamline

\begin{footnotes}
\item[2] Order Adopting Regulatory Policy Framework and Implementation Plan, 14-M-0101, at 91 (Feb. 26, 2015) (“In order for distributed generation to compete on an equal footing, interconnection with the grid must be enabled through technical rules and processes that are not only safe but also efficient and expeditious. New York has been a leader in this area, initially adopting Standardized Interconnection Requirements in 1999. Much progress remains to be made, however.”), 93-94 (stating that after the Order’s specific reforms have been implemented, the Commission will institute a formal review to determine what additional measures are needed to achieve standardized, predictable and efficient interconnection practices.”) [hereinafter REV Order].
\end{footnotes}
their interconnection processes in various ways. Even states with lower solar penetrations, such as North Carolina, have recently sought to revise their interconnection procedures due to clogged interconnection queues.

New York can avoid the pitfalls that these other states have faced, and does not have to endure costly and time-consuming processes, and the resulting public dissatisfaction as installers and their customers wait for months to receive interconnection review and approval. IREC strongly urges DPS Staff and the Commission first to implement the procedural reforms pioneered by other states and now largely incorporated as best practices within the FERC SGIP. Then we suggest considering additional innovations in conjunction with the REV proceeding that could further streamline interconnection and ensure it is responsive the State’s broader policy objectives regarding DER integration.

A. An Open and Collaborative Interconnection Reform Process Can Lead to Considered, Consensus-Based Improvements.

In its initial thoughts document, DPS Staff indicated that their aim is to encourage an open process involving the distributed generation community. IREC supports such a process and

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6 Haw. HB 1943 (Lee C 2014) (noting that the sustainability of the State’s solar industry is “significantly impaired by the current interconnection process. As Hawaii transitions from the early stages of its clean energy transformation, the State needs a more transparent and timely process for electricity customers to exercise their options to manage their energy use.”); MA DPU 11-75, DOER Petition, Attachment: Massachusetts Distributed Generation Interconnection Report, Sec. 8 (Summary of Key Findings) (Aug. 18, 2011) (“The current review process, while lauded for its successes in years past, is no longer up to the demands of the current application volume.”); CPUC Order Instituting Rulemaking, R.11-09-011 (Sept. 27, 2011) (stating that the success of California’s ambitious procurement programs “may be enhanced by timely and cost-effective interconnection to the distribution system. By this rulemaking, we seek to address the key policy and technical issues essential to timely, non-discriminatory, cost-effective and transparent interconnection.”).

7 See, e.g., Joint Initial Comments of Duke Energy Carolinas, LLC, Duke Energy Progress, Inc., and Dominion North Carolina Power, NCUC E-100 Sub 101, at 9 (Nov. 21, 2014) (“The Utilities respectfully assert that the current NC Interconnection Procedures approved by the Commission were never designed to manage this volume of activity and the dramatic changes discussed above, especially over such a short period of time. This level of activity has strained the current NC Interconnection Procedures to the point that they simply cannot effectively address the current North Carolina interconnection landscape.”).
urges DPS Staff to facilitate as much stakeholder collaboration as possible, as early in the
process as possible, especially between the utilities and other stakeholders. In IREC’s experience
engaging in interconnection reform around the United States, the most successful processes
involve stakeholder workshops or working groups to promote constructive dialog. In many cases,
stakeholders are able to come to consensus on all or most of the issues under discussion, and
produce well developed interconnection procedures for Commission review. IREC believes that
such a collaborative process would be appropriate in New York and encourages DPS Staff to
institute one as soon as possible, and engage utility, distributed generation, and other
stakeholders in a productive conversation about interconnection reform.

B. Improvements to the Transparency and Clarity of the New York SIR Are
Critical and Will Serve to Support Anticipated Solar Development.

IREC suggests several modifications in these comments intended to improve the
transparency and clarity of the SIR. Transparent, clear interconnection procedures are especially
critical when utilities receive high volumes of interconnection requests, in order to keep the
process moving forward and avoid disputes to the extent possible. In particular, interconnection
procedures should enable applicants to know and understand technical standards they will have
to meet to qualify for expedited review prior to submitting an application. They should also have
access to current information about system conditions at particular locations on the system that
can enable them to evaluate their interconnection options. Ultimately clear, transparent
interconnection procedures can reduce costs and headaches for both utilities and applicants.

Lack of transparency in interconnection procedures could result in unfair, discriminatory
treatment of applicants, or even just the perception that utilities are abusing their discretion.
Transparent procedures can give applicants as well as regulators visibility into the utilities’
processes, and the ability to hold utilities and applicants accountable to timelines and standards,
if needed. IREC recognizes that utility discretion is necessary and sometimes can result in favorable outcomes for interconnection applicants, and we agree that some degree of discretion should be permitted. In order to balance the benefits of discretion with concerns related to transparency, fairness, and accountability, however, deviation from clear interconnection standards should only be permitted within defined parameters and with specific communication to the applicant required.

Three of our suggestions in the following comments directly address increasing transparency in various ways.

- Incorporation of a pre-application report, and possibly also implementation of distribution system maps, to provide potential interconnection applicants the opportunity to request specific readily, available system information about a particular point of interconnection in advance of submitting an application.
- Improved interconnection queue transparency to provide applicants insight into interconnection process timing and optimal areas of the grid in which to locate, as well as to help utilities and the Commission identify and address any bottlenecks.
- Adoption of the fast track technical screens and supplemental review process from the FERC SGIP to determine system eligibility for expedited review, and improve the transparency, efficiency, accountability and fairness of the interconnection process.

In addition, we offer two suggestions intended to expand the applicability of the SIR to ensure the consistent application of distribution-level interconnection procedures.

- Increases in the SIR size limitations—both for the procedures as a whole and for expedited review—to comport with the FERC SGIP and national best practices.
- Clarification that the SIR applies to energy storage as well as distributed generation.
IREC provides further detail on each of these recommendations below.

III. **Increased Transparency Through the Provision of Formalized Pre-Application Reports and Potential Distribution System Maps Will Minimize the Number of Unviable Applications, Reducing the Study Burden for Utilities While Maximizing Use of the Existing Infrastructure.**

The current SIR contains an informal process for inquiring about interconnecting a particular project and scoping out its requirements. These provisions provide an informal route for potential applicants to assess the advantages and disadvantages of interconnecting a particular project at a particular site. IREC agrees with DPS Staff, however, that the SIR should also include a more formal pre-application opportunity, “where utilities are required to provide high level analysis to customer/developer based on standardized application/information” for a fee. A pre-application report would improve New York’s interconnection procedures by making them more transparent and efficient. It can help developers to identify and avoid problematic system locations where significant upgrades or lengthy study may be required in advance of submitting an application. This can be beneficial to ratepayers and the State as a whole since it facilitates better utilization of existing system resources and keeps down the costs of DER integration. A pre-application report can also prevent customers from “fishing” for optimal locations through the application process. Fishing can result in utilities reviewing projects that are never likely to be built, which can create interconnection backlogs that negatively impact the utility and other interconnection customers. A pre-application report can also support the Commission’s interest in and efforts to address data access issues within the REV proceeding, in particular access to

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8 SIR §§ I(B)(1)-(2), I(C)(1)-(2).
distribution system data to facilitate location of distributed generation and other DER to minimize costs and maximize benefits.  

In Attachment A, IREC offers suggested pre-application report provisions nearly identical to those adopted by FERC, with minor changes to conform with the existing New York procedures, and otherwise improve the quality and usefulness of the information. These provisions could be included as part of or after the provisions describing the informal process already available under the current rules. The pre-application report provides potential interconnection applicants the opportunity to request specific readily, available system information about a particular point of interconnection in advance of submitting an application. As in the FERC SGIP, IREC suggests a $300 fee. The only modification we suggest is to changes the timeline for the utility to provide the listed information in writing to 10 business days from 20 business days. In most cases, there will be no reason that providing the information will take more than a few hours of staff time, especially given the limitation requiring only existing, readily available data. In addition, as utilities get more efficient at providing this information, they should be able to streamline the process and thus reduce the costs of providing the information. FERC adopted a longer 20-day timeframe for response, largely to allow additional time for Independent System Operators and Regional Transmission Operators to

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10 Federal Energy Regulatory Commission, Small Generator Interconnection Agreements and Procedures, 78 Fed. Reg. 73,240 at § 1.2.2 – 1.2.3 (Dec. 5, 2013) [hereinafter FERC SGIP]; 145 FERC ¶ 61,159, Order No. 792 at ¶¶ 28-64 [hereinafter FERC Order No. 792]; see also Kevin Fox et al., Updating Small Generator Interconnection Procedures, National Renewable Energy Laboratories 12 (Dec. 2012), available at www.nrel.gov/docs/fy13osti/56790.pdf (providing additional detail regarding the rationale and utility of the pre-application report)
obtain information from the local Transmission Owner, a circumstance that does not come up in state level procedures.11 Other state procedures have used a 10-day response time.12 Publicly available distribution system maps can complement pre-application reports by helping developers to identify optimal and/or undesirable locations to interconnect to the grid in advance of submitting any informal or formal inquiries to the utility. Providing this advance information via maps can ultimately save time and resources for the applicant as well as the utility, which does not have to field as many questions, pre-application requests or “fishing” applications. Public maps can also result in more strategically located distributed generation throughout the utilities’ systems. Several utilities already rely on such maps to accomplish these goals and their maps offer a good starting point for discussion.13 In New York, public distribution system maps can further support the REV goals of better and more efficiently integrating DER, and leveraging the benefits of DER to the extent possible.14 For example, California recently required its utilities to incorporate additional information regarding the

11 FERC Order No. 792 at ¶¶ 39, 51-52.
12 See, e.g., OAC § 4901:1-22-04(B)(2) (Ohio: 10 days, $300); CPUC D.12-09-018, Attachment A (CA Rule 21 Tariff), § E.1 (10 days, $300); MA DPU Order 11-75-E, Appendix A (MA Interconnection Standards), § 3.2 (10 days, no fee).
13 Distribution system map examples:
ComEd: https://www.comed.com/customer-service/rates-pricing/interconnection/Pages/distribution-under-10000kva.aspx (download of Google Earth required)
PG&E: http://www.pge.com/b2b/energysupply/wholesaleelectricsuppliersolicitation/PVRFO/pvmap/ (download of Google Earth and user account creation required)
SDG&E: http://sdge.com/builderservices/dgmap/ (download of Google Earth and registration required)
14 See REV Order at 92 (discussion of integration of interconnection with grid optimization planning).
capability of their systems to integrate DER into existing online system maps as part of its Distribution Resources Planning (DRP) proceeding.\footnote{Assigned Commissioner’s Ruling on Guidance for Public Utilities Code Section 769—Distribution Resource Planning, Attachment: Guidance for Section 769—Distribution Resource Planning, R.14-08-013, at 3 (Feb. 6, 2015).}

\section*{IV. By Improving the Transparency of the Utility Interconnection Queues, New York Can Provide Applicants Important Additional Insight into the Interconnection Process, Including with Respect to Timing and Optimal Grid Locations.}

IREC appreciates that the SIR already requires two types of interconnection tracking and reporting: (1) private information-sharing via web-based systems to provide customers and contractors information regarding their interconnection requests;\footnote{SIR § I(D).} and (2) a public interconnection inventory submitted to the Commission every quarter.\footnote{SIR § II(J).} This kind of information-sharing regarding the interconnection process and queue can help to improve the experience for applicants by allowing them to see how many applicants require utility review before them, thereby giving them a more realistic sense of review timing. In addition, similar to a pre-application report and distribution system mapping, a public interconnection queue can show where applicants earlier in the queue are located, and therefore help later applicants determine which areas of the grid have higher penetrations of distributed generation and thus are more likely to require costly interconnection review. A public interconnection queue can also help to identify bottlenecks or other problems for utilities and the Commission to address.

IREC offers a few suggestions intended to improve the usefulness of these existing efforts. First, IREC is unclear whether a project receives any kind of inventory number once a project successfully submits an application.\footnote{See SIR §§ I(B)(3), (C)(3) (requiring applicants to “be placed in each utility’s inventory” upon receipt of a completed application and execution of an interconnection contract). IREC suggests that providing such a number to

\footnote{IREC Interconnection Comments}
applicants and sharing it via the private web-based system and/or the public queue can help applicants to understand where they are in the process and what timing they might expect. In addition, IREC suggests that the public data be made available on a more frequent basis, e.g., monthly, to be more useful to applicants, as well as the Commission and its staff. More frequent reporting might be more cost-effective if it relied on the more standardized SIR tracking and monitoring system that DPS Staff envisions in its initial thoughts document.

Ultimately, interconnection queue information-sharing is complementary to the pre-application reports and system maps discussed above. Each is intended to increase the transparency of the interconnection process, to improve its efficiency for all parties involved, and to encourage more optimal location of projects. The types of locational information discussed with regard to the pre-application reports and maps could also be included in a public queue report, so an applicant could know not just how many projects are ahead of her in line, but also where they are located and whether that might impact her own decisions regarding her project. In addition, like the pre-application reports and maps, improved interconnection queue transparency can support the Commission’s REV goals, as well.

V. Incorporating Technical Screens to Determine Eligibility for Expedited Review Will Improve Interconnection Transparency, Efficiency, Accountability and Fairness.

The current SIR offers expedited treatment to all systems 50 kW and smaller, and to inverter-based systems 300 kW and smaller.19 In these cases, the utility has 10 or 15 business days, depending on the type of system and interconnection, to determine whether an applicant “meets the SIR technical requirements,” and then must provide an executed standardized contract. Otherwise, for larger projects up to 2 MW, the utility has 15 business days to conduct a

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19 SIR § I(B). IREC recognizes that additional provisions apply to systems attempting to interconnect to underground networked systems. We believe these issues require further discussion and evaluation by DPS Staff, utilities and interested stakeholders, for example within a future working group.
preliminary review and another 60 business days to conduct the Coordinated Electric System Interconnection Review (CESIR).\footnote{SIR § I(C).}

The current New York interconnection procedures are not transparent regarding the criteria systems must meet to receive expedited treatment, other than stating the sizes of systems allowed to receive such consideration. They stand in stark contrast to the majority of other states’ procedures and the FERC SGIP, which rely on a set of technical screens to determine which systems can receive expedited or “fast track” treatment. IREC recommends adoption of the FERC SGIP technical screens and supplemental review process within the New York interconnection procedures, with one important modification described below.


The original FERC SGIP, adopted in 2005, serves as the model for many states’ procedures.\footnote{See FERC Order 2006 (“Standardization of Small Generator Interconnection Agreements and Procedures”) (May 12, 2005).} The FERC SGIP, which applies to systems up to 20 MW, provides for two tiers of expedited review—one for small, inverter-based systems (10 kW or smaller, although states have been moving to higher size limits), and another for slightly larger systems (up to 5 MW). Otherwise, systems must proceed through a more intensive study process. The FERC SGIP remains the model for tiered interconnection review in the United States and reflects the “best available analytic process” for utilities to rely on in this respect.\footnote{See REV Order at 92.}

In November 2013, after a lengthy stakeholder process, FERC substantially revised its SGIP and incorporated many new best practices to improve the interconnection process for
higher levels of DG.\textsuperscript{23} The revised SGIP includes important innovations to streamline interconnection, including the incorporation of a pre-application report, adoption of new thresholds for participation in the expedited interconnection review process, and changes to the supplemental review process to allow a greater number of systems to proceed without full study without compromising system safety, reliability, and power quality. Several states, including Ohio, Illinois, North Carolina, Iowa, Massachusetts, Hawaii and California, have recently adopted updates to their interconnection standards or are considering changes that include elements of the updated SGIP.\textsuperscript{24}

As the volume of interconnection applications increases, it will become especially important to avoid unnecessary study, while still maintaining system safety and reliability, in order to conserve utility and applicant time and resources. The introduction of the FERC SGIP’s initial nine technical screens plus additional three supplemental review screens can accomplish this goal, while also improving the transparency of the review process, which is beneficial for the reasons discussed above in section II.B.

IREC recommends that New York adopt nine of the FERC SGIP screens plus its supplemental review process.\textsuperscript{25} As with the pre-application report, in Attachment A, IREC offers

\textsuperscript{23} See FERC Order No. 792, 145 FERC ¶ 61,159 (adopting revised SGIP).


\textsuperscript{25} Federal Energy Regulatory Commission, \textit{Small Generator Interconnection Agreements and Procedures}, 78 Fed. Reg. 73,240 at § 1.2.2 – 1.2.3 (Dec. 5, 2013) [hereinafter FERC SGIP]; 145 FERC ¶ 61,159, Order No. 792 at ¶¶ 28-64 [hereinafter FERC Order No. 792]; \textit{see also} Kevin Fox et al.,
suggested provisions nearly identical to those adopted by FERC, with largely minor changes to conform with the existing New York procedures, and otherwise improve the quality and usefulness of the information.

B. In Order to Comport with National Best Practices, the “No-Construction Screen” Should Not Be Included Within New York’s Procedures.

FERC SGIP screen 10, often called the “no-construction screen,” does not allow projects to receive expedited review if they would require construction of any facilities by the utility to accommodate the project.26 This screen is intended to provide utilities time to determine the extent of the construction needed on their own systems and a mechanism to estimate the cost of upgrades for which the applicant will be responsible. The effect of this screen, however, is that a project that passes all the other technical screens may be required to pay for and undergo the full study process even if there are no safety, reliability or power quality concerns warranting further system impacts review. There are more efficient means to address the legitimate need to determine the cost and schedule for upgrades than sending an interconnection request that passes the other technical screens to the full study process, particularly where the required upgrades are minor. Instead of disallowing any construction to receive expedited treatment, our proposed amendments to the FERC SGIP provisions allow a utility additional time to provide a cost estimate along with an interconnection agreement when it determines that upgrades are necessary. In all cases, after reviewing the estimate provided by the utility, the generator will have to agree to pay the costs associated with the upgrades identified in order to sign the interconnection agreement.

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26 FERC SGIP § 2.2.1.10.

The process we propose in place of the no-construction screen is similar to those seen in many state procedures, which do not require projects needing upgrades to proceed through study if they pass the expedited review screens, and is an emerging best practice nationally.\(^\text{27}\) In addition, it is consistent with the treatment of interconnection requests that pass the FERC SGIP Supplemental Review Process.\(^\text{28}\) FERC has also approved very similar processes for providing cost estimates in lieu of full study for FERC jurisdictional interconnections in Southern California Edison and Pacific Gas & Electric’s territories.\(^\text{29}\) The proposed process ensures that utilities can screen all projects for any safety and reliability issues via the technical screens and study projects that pose any such issues (i.e., that fail the screens), and the proposed modifications ensure that utilities have adequate time to ascertain and allocate costs for any upgrades needed for projects that pass the screens.

VI. The Size Limitations Included Within the SIR Should Be Modified to Comport with the FERC SGIP and National Best Practices, Which Expand Availability of Standardized, Distribution-Level Interconnection Review Procedures.

Unlike FERC and many other states, New York limits eligibility for its standardized review procedures to only 2 MW. FERC, as well as several other states, on the other hand allows

\(^{27}\) See, e.g., CA Rule 21 Tariff § F.2.a; Hawaiian Electric Company (HECO) Rule 14H, Appendix III (Interconnection Process Overview), § 1.c; IREC Model Interconnection Procedures §§ III.A.5, B.5, D.2; Updating Interconnection Procedures at 28-30.

\(^{28}\) FERC SGIP § 2.4.5.

\(^{29}\) 135 FERC ¶ 61,093, at ¶¶ 76-80, 91 (April 29, 2011) (“SoCal Edison further states that the ability of a generating project to pass the first nine fast track screens . . . signifies that the proposed project will have an insignificant effect on the SoCal Edison distribution system, and that SoCal Edison can determine the interconnection requirements necessary to interconnect the project safely and reliably without additional studies. Therefore, according to SoCal Edison, denying fast track approval and, thereby forcing projects to undergo the study process simply because they require the construction of some interconnection facilities is an unnecessary burden, in terms of time and money, on interconnection applicants, and on the SoCal Edison study process. SoCal Edison states that unless fast track screen ten is revised, certain generating projects would be excluded from the fast track process simply because they require construction of some facilities to interconnect to the distribution system.”); 135 FERC ¶ 61,094, at ¶¶ 10, 27-28 (April 29, 2011).
projects up to 20 MW to be reviewed under its SGIP. IREC suggests that so long as New York’s distribution utilities’ have jurisdiction over a project’s interconnection, as they will in many cases if a project interconnects at the distribution level, then there is no reason to bar them from the SIR, which permits full study (CESIR) of any projects determined to impact the utilities’ distribution systems. All applicants should benefit from a clear view into the technical requirements and timelines their project will have to meet to interconnection with a utility’s system. Limiting the SIR’s application to projects below a certain size could leave projects above that size that fall within state jurisdiction no clear avenue for interconnection.

IREC recommends either eliminating the upper limit for applicability or matching the FERC limitation of 20 MW, which should encompass most if not all distribution-level interconnections. IREC notes that at least National Grid appears to be applying the SIR to project up to 20 MW already. Any evaluation necessary to determine whether or not a utility has jurisdiction over the interconnection can occur pursuant to the relevant legal and technical considerations, prior to the project entering the interconnection process. Similarly, if projects may impact the transmission grid or otherwise require review by the New York Independent System Operator (NYISO), the SIR procedures can be modified to specify the appropriate procedure for obtaining that review.

30 See FERC SGIP § 1.1 (noting that the procedures apply to facilities up to 20 MW, with only certain, smaller facilities eligible for fast track procedures); see also Comments of the Interstate Renewable Energy Council, Inc. in Response to DPS Staff Straw Proposal on Track One Issues, Case 14-M-0101, at 12-13 (Sept. 22, 2014) (also suggesting increasing SIR eligibility to 20 MW).

31 National Grid, Interconnection of Generators, www.nationalgridus.com/niagaramohawk/business/energyeff/4_interconnection.asp (providing links to the processes for projects 50 kW and smaller, and projects 50 kW to 20 MW); Interconnection Process > 25 kW www.nationalgridus.com/niagaramohawk/business/energyeff/4_interconnection_g25.asp (laying out a process involving the SIR and CESIR).
As far as eligibility for expedited review, the current procedures generally allow such treatment for systems 50 kW or smaller, or for inverter-based systems 300 kW or smaller. IREC suggests maintaining these limitations for applicability of an expedited process for small systems, wherein such systems could continue to receive the benefit of a faster application and contract execution process after passing the suggested technical screens, similar to the process for small inverter-based systems within the FERC SGIP. In addition, we suggest that systems meeting the size eligibility requirements in the FERC SGIP, as laid out in Table 1 below, also receive expedited screening and the opportunity to avoid a CESIR if they pass all of the technical screens.

Table 1. Fast Track Eligibility Table (FERC SGIP)

<table>
<thead>
<tr>
<th>Line Voltage</th>
<th>Fast Track Eligibility Regardless of Location</th>
<th>Fast Track Eligibility on a Mainline(^a) and (≤ 2.5) Electrical Circuit Miles from Substation(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(&lt; 5 \text{ kV})</td>
<td>(≤ 500 \text{ kW})</td>
<td>(≤ 500 \text{ kW})</td>
</tr>
<tr>
<td>(≥ 5 \text{ kV} \text{ and } &lt; 15 \text{ kV})</td>
<td>(≤ 2 \text{ MW})</td>
<td>(≤ 3 \text{ MW})</td>
</tr>
<tr>
<td>(≥ 15 \text{ kV} \text{ and } &lt; 30 \text{ kV})</td>
<td>(≤ 3 \text{ MW})</td>
<td>(≤ 4 \text{ MW})</td>
</tr>
<tr>
<td>(≥ 30 \text{ kV} \text{ and } \leq 69 \text{ kV})</td>
<td>(≤ 4 \text{ MW})</td>
<td>(≤ 5 \text{ MW})</td>
</tr>
</tbody>
</table>

\(^a\) For purposes of this table, a mainline is the three-phase backbone of a circuit. It will typically constitute lines with wire sizes of 4/0 American wire gauge, 336.4 kcmil, 397.5 kcmil, 477 kcmil and 795 kcmil.

\(^b\) An interconnection customer can determine this information about its proposed interconnection location in advance by requesting a pre-application report.

VII. Evaluating Ways to Clarify and Improve Cost Allocation Within the CESIR Process Can Serve to Streamline Interconnection for Larger Projects, Especially as Penetrations of Distributed Generation Increase.

The general rule for allocating interconnection costs is that the cost-causer pays for the costs she causes. For example, if a particular project requires a large system upgrade, that project

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32 FERC SGIP § 1.1.1 and Att. 5.

33 FERC SGIP § 2.1.
must pay for that upgrade or else exit the interconnection process. Where a project is within the interconnection queue can affect whether it triggers expensive upgrades, or whether that burden falls on a project earlier or later in the queue, which supports the need for queue transparency as discussed above. However, as penetrations of renewable energy increase, as envisioned by the Commission in its NY-Sun and REV initiatives, it will be important to reconsider cost allocation, and develop ways to keep it fair and efficient. For example, high-penetration states like Massachusetts and California have developed distribution group study processes that allow projects that are electrically interrelated to be studied together and to share interconnection costs.\textsuperscript{34} New York could begin considering similar innovations. IREC would welcome the chance to contribute to these discussions based on our experience working on interconnection and cost allocation issues around the United States. As REV moves forward, DPS Staff and the Commission could also begin to consider ways in which interconnection and distribution system planning interact, and how costs should be allocated across those two processes. IREC’s Integrated Distribution Planning (IDP) concept paper offers a framework to begin such consideration.\textsuperscript{35}

VIII. The Same Interconnection Procedures Should Be Available to Interconnect Energy Storage and Distributed Generation.

While still relatively rare today, energy storage is poised to experience significant growth in the coming years, especially given the various benefits it can offer to customer-generators, utilities, and all ratepayers. Recognizing this potential, energy storage is repeatedly referenced in

\textsuperscript{34} CPUC D.14-04-003, Decision Adopting Revisions to Electric Tariff Rule 21 to Include a Distribution Group Study Process and Additional Tariff Forms, R.11-09-011 (April 16, 2014), available at http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M090/K001/90001430.PDF; Mass. Standard for Interconnection of Distributed Generation § 3.4.1, Docket No. DPU 11-75.

the REV proceeding as a key component of the future grid. Therefore, IREC suggests clarifying that the SIR apply to energy storage, as well as distributed generation, potentially through clarifying the definitional language in the Glossary of Terms. We note that FERC recently updated the SGIP definition of a “small generating facility” to include a “device for the production and/or storage for later injection of electricity.” FERC’s definition could form the basis of language incorporated into the New York SIR. Explicitly clarifying that the SIR applies to energy storage can improve transparency, and ensure that storage devices are interconnected in a just and reasonable and not unduly discriminatory manner.

IREC notes that further refinement of the SIR to accommodate energy storage may be necessary and could be part of DPS Staff’s longer-term, interconnection-related goals.

IX. DPS Staff Has Raised Several Additional Issues That Warrant Attention Going Forward, In Particular Within the Context of REV, Including Smart Inverters, Electric Vehicles, Net Metering, the DSP Framework and Microgrids.

In its initial thoughts document, DPS Staff outlined a number of other issues for longer-term consideration with respect to interconnection, including: smart inverters and UL 1741; battery storage and electric vehicles; net metering; the distributed system platform (DSP) framework; and microgrids. IREC agrees that all of these issues warrant further attention and looks forward to discussing them, whether within a dedicated interconnection proceeding or within the broader REV context.

X. Conclusion

IREC appreciates the opportunity to provide these comments. As discussed above, we offer specific provisions drawn from the FERC SGIP for DPS Staff’s consideration in the following Attachment A. IREC notes that, as part of the SIR revision, DPS Staff might also

36 FERC SGIP Att. 1.
37 See FERC Order No. 792 at ¶¶ 227-28.
reconsider the formatting of the procedures in order to improve their clarity and the ability of applicants to understand their requirements. For example, breaking the process steps into discrete sections instead of bulky paragraphs may improve the readability. If there is interest in incorporating the FERC SGIP provisions, modifying the formatting of the SIR could make this incorporation easier and could help facilitate the incorporation of new best practices as they emerge in the future. Finally, IREC notes that a process diagram, similar to the one that National Grid provides on its web site, or diagrams used in the FERC SGIP and other state procedures, could also help to make the SIR more understandable and clear for applicants.38

We look forward to engaging with DPS Staff and other stakeholders regarding interconnection going forward, whether in a formal docketed process or an informal working group.

Respectfully submitted this 27th of February, 2015,

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38 See National Grid, Interconnection of Generators, www.nationalgridus.com/niagaramohawk/business/energyeff/4_interconnection.asp (see especially links to “Generators up to 50 kW” and “Generators between 50 kW and 20 MW); FERC Order 792 App. B; MA DPU Order 11-75-E, Appendix A (MA Interconnection Standards), Figs. 1 & 2, pp. 30-31; CA Rule 21 § I.3 (Initial and Supplemental Review Process Flowchart)
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ATTACHMENT A: Suggested Provisions Modeled on FERC SGIP

Pre-Application Report

1. The utility shall designate an employee or office from which information on the application process and on an affected system can be obtained through informal requests from the interconnection customer presenting a proposed project for a specific site. The name, telephone number, and e-mail address of such contact employee or office shall be made available on the utility's Internet web site. Electric system information provided to the interconnection customer should include relevant system studies, interconnection studies, and other materials useful to an understanding of an interconnection at a particular point on the utility's system, to the extent such provision does not violate confidentiality provisions of prior agreements or critical infrastructure requirements. The utility shall comply with reasonable requests for such information.

2. In addition to the information described in section 1, which may be provided in response to an informal request, an interconnection customer may submit a formal written request form along with a non-refundable fee of $300 for a pre-application report on a proposed project at a specific site. The utility shall provide the pre-application data described in section 3 to the interconnection customer within 10 business days of receipt of the completed request form and payment of the $300 fee. The pre-application report produced by the utility is non-binding, does not confer any rights, and the interconnection customer must still successfully apply to interconnect to the utility’s system. The written pre-application report request form shall include the information in sections 2.a through 2.h below to clearly and sufficiently identify the location of the proposed point of common coupling.

   a. Project contact information, including name, address, phone number, and email address.
   b. Project location (street address with nearby cross streets and town)
   c. Meter number, pole number, or other equivalent information identifying proposed point of common coupling, if available.
   d. Generator Type (e.g., solar, wind, combined heat and power, etc.)
   e. Size (alternating current kW)
   f. Single or three phase generator configuration
   g. Stand-alone generator (no onsite load, not including station service – Yes or No?)
h. Is new service requested? Yes or No? If there is existing service, include the customer account number, site minimum and maximum current or proposed electric loads in kW (if available) and specify if the load is expected to change.

3. Using the information provided in the pre-application report request form in section 2, the utility will identify the substation/area bus, bank or circuit likely to serve the proposed point of common coupling. This selection by the utility does not necessarily indicate, after application of the screens and/or study, that this would be the circuit the project ultimately connects to. The interconnection customer must request additional pre-application reports if information about multiple points of common coupling is requested. Subject to section 4, the pre-application report will include the following information:

a. Total capacity (in MW) of substation/area bus, bank or circuit based on normal or operating ratings likely to serve the proposed point of common coupling.

b. Existing aggregate generation capacity (in MW) interconnected to a substation/area bus, bank or circuit (i.e., amount of generation online) likely to serve the proposed point of common coupling.

c. Aggregate queued generation capacity (in MW) for a substation/area bus, bank or circuit (i.e., amount of generation in the queue) likely to serve the proposed point of common coupling.

d. Available capacity (in MW) of substation/area bus or bank and circuit likely to serve the proposed point of common coupling (i.e., total capacity less the sum of existing aggregate generation capacity and aggregate queued generation capacity).

e. Substation nominal distribution voltage and/or transmission nominal voltage if applicable.

f. Nominal distribution circuit voltage at the proposed point of common coupling.

g. Approximate circuit distance between the proposed point of common coupling and the substation.

h. Relevant line section(s) actual or estimated peak load and minimum load data, including daytime minimum load as described in Supplemental Review section 4.a.i below and absolute minimum load, when available.

i. Number and rating of protective devices and number and type (standard, bi-directional) of voltage regulating devices between the proposed point of common coupling and the substation/area. Identify whether the substation has a load tap changer.

j. Number of phases available at the proposed point of common coupling. If a single phase, distance from the three-phase circuit.
k. Limiting conductor ratings from the proposed point of common coupling to the distribution substation.

l. Whether the point of common coupling is located on a spot network, grid network, or radial supply.

m. Based on the proposed point of common coupling, existing or known constraints such as, but not limited to, electrical dependencies at that location, short circuit interrupting capacity issues, power quality or stability issues on the circuit, capacity constraints, or secondary networks.

4. The pre-application report need only include existing data. A pre-application report request does not obligate the utility to conduct a study or other analysis of the proposed generator in the event that data is not readily available. If the utility cannot complete all or some of a pre-application report due to lack of available data, the utility shall provide the interconnection customer with a pre-application report that includes the data that is available. The provision of information on “available capacity” pursuant to section 4 does not imply that an interconnection up to this level may be completed without impacts since there are many variables studied as part of the interconnection review process, and data provided in the pre-application report may become outdated at the time of the submission of the complete application. Notwithstanding any of the provisions of this section, the utility shall, in good faith, include data in the pre-application report that represents the best available information at the time of reporting.
**Expedited Review Process**

**Technical Screens**

1. The proposed system’s point of common coupling must be on a portion of the utility’s distribution system that is subject to the SIR.

2. For interconnection of a proposed system to a radial distribution circuit, the aggregated generation, including the proposed system, on the circuit shall not exceed 15% of the line section annual peak load as most recently measured at the substation. A line section is that portion of a utility’s electric system connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line.

3. For interconnection of a proposed system to the load side of spot network protectors, the proposed system must utilize an inverter-based equipment package and, together with the aggregated other inverter-based generation, shall not exceed the smaller of 5% of a spot network's maximum load or 50 kW.\(^{39}\)

4. The proposed system, in aggregation with other generation on the distribution circuit, shall not contribute more than 10% to the distribution circuit's maximum fault current at the point on the high voltage (primary) level nearest the proposed point of change of ownership.

5. The proposed system, in aggregate with other generation on the distribution circuit, shall not cause any distribution protective devices and equipment (including, but not limited to, substation breakers, fuse cutouts, and line reclosers), or applicant equipment on the system to exceed 87.5% of the short circuit interrupting capability; nor shall the interconnection be proposed for a circuit that already exceeds 87.5% of the short circuit interrupting capability.

6. Using the table below, determine the type of interconnection to a primary distribution line. This screen includes a review of the type of electrical service provided to the applicant, including line configuration and the transformer connection to limit the potential for creating over-voltages on the utility's electric power system due to a loss of ground during the operating time of any anti-islanding function.

<table>
<thead>
<tr>
<th>Primary Distribution Line Type</th>
<th>Type of Interconnection to Primary Distribution Line</th>
<th>Result/Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three-phase, three wire</td>
<td>3-phase or single phase, phase-to-</td>
<td>Pass Screen</td>
</tr>
</tbody>
</table>

\(^{39}\) A spot network is a type of distribution system found within modern commercial buildings to provide high reliability of service to a single customer. (Standard Handbook for Electrical Engineers, 11th edition, Donald Fink, McGraw Hill Book Company)
7 If the proposed system is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed system, shall not exceed 20 kW.

8 If the proposed system is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition shall not create an imbalance between the two sides of the 240 volt service of more than 20% of the nameplate rating of the service transformer.

9 The system, in aggregate with other generation interconnected to the transmission side of a substation transformer feeding the circuit where the system proposes to interconnect shall not exceed 10 MW in an area where there are known, or posted, transient stability limitations to generating units located in the general electrical vicinity (e.g., three or four transmission busses from the point of interconnection).

10 When a utility determines that the system passes the technical screening criteria, or the utility determines that the system can be interconnected safely and will not cause adverse system impacts, even if it fails one or more of the technical screening criteria, it shall provide the applicant with an interconnection agreement within the following timeframes:

   a. If the proposed interconnection requires no construction of facilities by the utility on its own system, the interconnection agreement shall be provided within 5 business days after the notification of review results.

   b. If the proposed interconnection requires only minor system modifications, the interconnection agreement, along with a non-binding good faith cost estimate and construction schedule for such upgrades, shall be provided within 15 business days after notification of the review results.

   c. If the proposed interconnection requires more than minor system modifications, the utility shall either: (i) provide an executed “Conditional Agreement to Interconnect Distributed Generation Facility,” along with a non-binding good faith cost estimate and construction schedule for such upgrades, within 20 business days after notification of the review results; or (ii) notify the customer when it provides the review results that it must first fund a CESIR under to determine the necessary upgrades. If the customer elects to fund a CESIR, the utility shall proceed with the CESIR according to the applicable procedures.
Supplemental Review (if a project fails the Technical Screens above)

1. To accept the offer of a supplemental review, the applicant shall agree in writing and submit a deposit for the estimated costs of the supplemental review in the amount of the utility’s good faith estimate of the costs of such review, both within 15 business days of the offer. If the written agreement and deposit have not been received by the utility within that timeframe, the application shall continue to be evaluated under the CESIR process unless it is withdrawn by the applicant.

2. The applicant may specify the order in which the utility will complete the screens in section 4.

3. The applicant shall be responsible for the utility's actual costs for conducting the supplemental review. The applicant must pay any review costs that exceed the deposit within 20 business days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced costs, the utility will return such excess within 20 business days of the invoice without interest.

4. Within 30 business days following receipt of the deposit for a supplemental review, the utility shall (1) perform a supplemental review using the screens set forth below; (2) notify in writing the applicant of the results; and (3) include with the notification copies of the analysis and data underlying the utility’s determinations under the screens. Unless the applicant provided instructions for how to respond to the failure of any of the supplemental review screens below at the time the applicant accepted the offer of supplemental review, the utility shall notify the applicant following the failure of any of the screens, or if it is unable to perform the screen in section 4.a, within two business days of making such determination to obtain the applicant’s permission to: (1) continue evaluating the proposed interconnection under this section 4; (2) terminate the supplemental review and continue evaluating the system under the CESIR process; or (3) terminate the supplemental review upon withdrawal of the application by the applicant.

a. Minimum Load Screen: Where 12 months of line section minimum load data (including onsite load but not station service load served by the proposed system) are available, can be calculated, can be estimated from existing data, or determined from a power flow model, the aggregate Generating Facility capacity on the line section is less than 100% of the minimum load for all line sections bounded by automatic sectionalizing devices upstream of the proposed system. If minimum load data is not available, or cannot be calculated, estimated or determined, the utility shall include the reason(s) that it is unable to calculate, estimate or determine minimum load in its supplemental review results notification under section 4.
i. The type of generation used by the proposed system will be taken into account when calculating, estimating, or determining circuit or line section minimum load relevant for the application of screen 4.a. Solar photovoltaic (PV) generation systems with no battery storage use daytime minimum load (i.e. 10 a.m. to 4 p.m. for fixed panel systems and 8 a.m. to 6 p.m. for PV systems utilizing tracking systems), while all other generation uses absolute minimum load.

ii. When this screen is being applied to a system that serves some station service load, only the net injection into the utility’s electric system will be considered as part of the aggregate generation.

iii. The utility will not consider as part of the aggregate generation for purposes of this screen generating facility capacity known to be already reflected in the minimum load data.

b. Voltage and Power Quality Screen: In aggregate with existing generation on the line section: (1) the voltage regulation on the line section can be maintained in compliance with relevant requirements under all system conditions; (2) the voltage fluctuation is within acceptable limits as defined by Institute of Electrical and Electronics Engineers (IEEE) Standard 1453, or utility practice similar to IEEE Standard 1453; and (3) the harmonic levels meet IEEE Standard 519 limits.

c. Safety and Reliability Screen: The location of the proposed system and the aggregate generation capacity on the line section do not create impacts to safety or reliability that cannot be adequately addressed without application of the CESIR process. The utility shall give due consideration to the following and other factors in determining potential impacts to safety and reliability in applying this screen.

i. Whether the line section has significant minimum loading levels dominated by a small number of customers (e.g., several large commercial customers).

ii. Whether the loading along the line section uniform or even.

iii. Whether the proposed system is located in close proximity to the substation (i.e., less than 2.5 electrical circuit miles), and whether the line section from the substation to the point of common coupling is a Mainline rated for normal and emergency ampacity.
iv. Whether the proposed system incorporates a time delay function to prevent reconnection of the generator to the system until system voltage and frequency are within normal limits for a prescribed time.

v. Whether operational flexibility is reduced by the proposed system, such that transfer of the line section(s) of the system to a neighboring distribution circuit/substation may trigger overloads or voltage issues.

vi. Whether the proposed system employs equipment or systems certified by a recognized standards organization to address technical issues such as, but not limited to, islanding, reverse power flow, or voltage quality.

5. If the proposed interconnection passes the supplemental screens in sections 4.a, 4.b, and 4.c above, the application shall be approved and the utility will provide the applicant with an executable interconnection agreement within the timeframes established in sections 5.a and 5.b below. If the proposed interconnection fails any of the supplemental review screens and the applicant does not withdraw its application, it shall continue to be evaluated under the section 3 Study Process consistent with section 5.c below.

a. If the proposed interconnection passes the supplemental screens in sections 4.a, 4.b, and 4.c above and does not require construction of facilities by the utility on its own system, the interconnection agreement shall be provided within ten business days after the notification of the supplemental review results.

b. If interconnection facilities or minor modifications to the utility's system are required for the proposed interconnection to pass the supplemental screens in sections 4.a, 4.b, and 4.c above, and the applicant agrees to pay for the modifications to the utility’s electric system, the interconnection agreement, along with a non-binding good faith estimate for the interconnection facilities and/or minor modifications, shall be provided to the applicant within 15 business days after receiving written notification of the supplemental review results.

c. If the proposed interconnection would require more than interconnection facilities or minor modifications to the utility’s system to pass the supplemental screens in sections 4.a, 4.b, and 4.c above, the utility shall notify the applicant, at the same time it notifies the applicant with the supplemental review results, that the application shall be evaluated under the CESIR unless the applicant withdraws its system.