

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Small Generator Interconnection Agreements) Docket No. RM13-2-000
and Procedures)

Comments of the Solar Energy Industries Association

The Solar Energy Industries Association (“SEIA”) hereby submits these comments in response to the Federal Energy Regulatory Commission’s (“FERC” or the “Commission”) January 17, 2013 Notice of Proposed Rulemaking (“NOPR”) on Small Generator Interconnection Agreements and Procedures.¹

SEIA supports most of the proposed revisions to the Small Generator Interconnection Procedures and Agreement (“SGIP” and “SGIA”, respectively) described in the NOPR because they address many of the concerns raised by SEIA in its Petition for Rulemaking,² and are an important step to support continued growth of the wholesale distributed generation solar market. SEIA offers the following additional comments and suggestions on the issues of greatest importance to solar wholesale distributed generation developers.

First, SEIA fully supports the Commission’s proposal to revise the SGIP’s supplemental review process, including the requirement that a Transmission Provider utilize the “100 percent minimum load screen” to determine whether a project can interconnect without going through a lengthy and costly interconnection study process.

¹ *Small Generator Interconnection Agreements and Procedures*, 78 Fed. Reg. 7524 (Feb. 1, 2013) (notice of proposed rulemaking).

² *Solar Energy Industries Association*, Docket No. RM12-10-000, “Petition for Rulemaking to Update Small Generator Interconnection Rules and Procedures for Solar Electric Generation” (Feb. 16, 2012) (“SEIA Petition”).

Second, SEIA supports the Commission’s proposal to require a Transmission Provider to provide a pre-application report that includes, among other information, available peak and minimum load data.

Third, SEIA supports changes to the NOPR proposal to require that additional information be included in the pre-application reports. SEIA’s proposed modifications to that portion of the NOPR proposal are set forth in Attachment A.

Fourth, SEIA fully supports changes to the NOPR proposal to specify certain information that an Interconnection Customer must provide to the Transmission Provider at the time it requests a pre-application report. These proposed modifications, which were developed by an informal working group of industry participants including SEIA, the Edison Electric Institute (“EEI”), the National Rural Electric Cooperative Association (“NRECA”), the Interstate Renewable Energy Council (“IREC”), national labs and other interested parties. Proposed modifications agreed to by SEIA, IREC and EEI are set forth in Attachment B.

Fifth, SEIA supports the revised fast track eligibility thresholds developed by the informal working group. Proposed modifications agreed to by SEIA, IREC and EEI are also set forth in Attachment B.

Finally, SEIA supports FERC’s proposal to allow an interconnection customer to review and comment on upgrades required for interconnection.

I. SOLAR ENERGY INDUSTRIES ASSOCIATION

SEIA is the national trade association of the United States solar industry, encompassing all solar technologies, including photovoltaic, concentrating solar power, solar heating and cooling and other technologies. SEIA and its members work to make solar energy a mainstream and significant energy source by expanding markets, removing

market barriers, strengthening the industry and educating the public on the benefits of solar energy. The proposed revisions to the SGIP in the NOPR are critical to the continued growth of the wholesale distributed solar generation electric market.

II. COMMENTS

A. **The Revised Supplemental Review Process Is Practical, Technically Feasible, Safe and Reliable**

Currently, interconnection requests are eligible for the fast track interconnection process if the aggregate distributed generation interconnected on a utility circuit does not exceed 15 percent of the line section annual peak load (referred to herein as the “15% Screen”).³ Although an interconnection applicant that fails the 15% Screen may proceed with supplemental review in an effort to obtain interconnection without going through a study process, the SGIP’s current supplemental review is largely ineffective because it does not define parameters for review, there is no timeline for analysis and there is no guidance on what issues may be resolved in the process.⁴ Consequently, without an effective supplemental review process, as distributed solar generation deployments increase, we will see more circuits where a proposed project would exceed the 15% threshold and many technically viable projects forced to undergo an extended, costly study process because they fail the 15% Screen. While the very conservative 15% Screen may have been appropriate in 2006, when utilities lacked practical experience in integrating solar wholesale distributed generation, today much more is known about these

³ See SGIP § 2.2.1.2 (effective Aug. 26, 2006), approved in *Standardization of Small Generator Interconnection Agreements and Procedures*, Order No. 2006, 70 Fed. Reg. 34190 (June 13, 2005), *reh’g*, Order No. 2006-A, 70 Fed. Reg. 71760 (Nov. 30, 2005), *clarified*, Order No. 2006-B, 71 Fed. Reg. 42587 (July 27, 2006), found at: <http://www.ferc.gov/industries/electric/indus-act/gi/small-gen.asp>.

⁴ *Id.* § 2.4; see also National Renewable Energy Laboratory, “Technical Report: Updating Small Generator Interconnection Procedures for New Market Conditions” (Dec. 2012) (“NREL Report”), found at: <http://www.nrel.gov/docs/fy13osti/56790.pdf>.

interactions and the conservative 15% Screen is no longer necessary or appropriate. Developers of small generator projects often lack the financial resources to complete this lengthy study process, and the added delay and uncertain outcome jeopardize the viability of projects relegated to the study process.

Recognizing the need to revise the SGIP to provide a more efficient means of interconnecting small generators, the Commission proposes to revise the supplemental review process to specify that the supplemental review shall be performed using three supplemental review screens and shall be completed within 20 business days of receipt of the supplemental review fee.⁵ If a project passes these three screens, it may be interconnected without further study.⁶

The first screen evaluates whether the aggregate generating facility capacity on the line section is less than 100% of minimum load for all line sections bounded by automatic sectionalizing devices (the “100% Minimum Load Screen”).⁷ The second screen evaluates whether, with existing generation on the line section, the voltage regulation, voltage fluctuation, and harmonic levels can be maintained within acceptable limits (the “Voltage Screen”).⁸ The third screen evaluates whether the location of the proposed interconnection creates impacts to safety or reliability that cannot be adequately addressed without being subject to a further study process (the “Reliability Screen”).⁹

For the reasons discussed below, SEIA supports the Commission’s supplemental review reforms and agrees that the three proposed supplemental review screens together

⁵ NOPR, Appendix C § 2.4.1.

⁶ *Id.* § 2.4.2.

⁷ *Id.* § 2.4.1.1.

⁸ *Id.* § 2.4.1.2.

⁹ *Id.* § 2.4.1.3.

will ensure the safety and reliability of the electric system, while allowing small generating facilities that pass the three screens to interconnect more efficiently without the undue costs associated with a more detailed study process.¹⁰ SEIA therefore recommends that the Commission adopt the NOPR proposal, with the modifications discussed below, in its final rule.

1. The 100% Minimum Load Screen Is Widely Supported, Technically Sound, Safe and Reliable

The 100% Minimum Load Screen is widely supported.¹¹ This screen, together with the Voltage and Reliability Screens, is reasonable, safe and reliable. It will allow more small generators to interconnect without a lengthy and costly study process, while also maintaining the safety and reliability of the grid. SEIA therefore urges the Commission to reject any proposal that would eliminate or weaken the proposed 100% Minimum Load Screen.

Many states have established and are implementing policies to promote the development of renewables, including solar generation.¹² As a result, interconnection requests from small renewable generators have increased dramatically in some regions.¹³ State and federal interconnection policies have a direct and substantial impact on the

¹⁰ NOPR at P 40.

¹¹ *E.g.*, NREL Report at 30–31; Decision Adopting Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations – Electric Tariff 21 and Granting Motions to Adopt the Utilities’ Rule 21 Transition Plans, D-12-09-018, California Public Utilities Commission Rulemaking 11-09-011 (Sept. 22, 2011) (“CPUC Decision”).

¹² As of March 2013, 29 states plus the District of Columbia and two territories have Renewable Portfolio Standards. Database of State Incentives for Renewables & Efficiency, Renewable Portfolio Standard Policies (March 2013), found at: http://www.dsireusa.org/documents/summarymaps/RPS_map.pdf; *see also* NREL Report at 7.

¹³ NREL Report at 7-9.

timing and costs associated with bringing new generating capacity online.¹⁴ To the extent the interconnection process for renewable generation is unnecessarily costly and complex, these elevated costs ultimately will be borne by ratepayers, thus increasing the cost of implementing, and potentially jeopardizing achievement of, the states' clean energy policies.¹⁵ SEIA believes the proposed supplemental review reforms, including the 100% Minimum Load Screen, will support the reliable interconnection of renewable generation needed to meet new demand.

The 100% Minimum Load Screen is similar to the California Public Utilities Commission's ("CPUC") Rule 21, which San Diego Gas & Electric Company, Pacific Gas and Electric Company and Southern California Edison Company (collectively, the "California Utilities") called "a model for use in reforming the fast track process."¹⁶ Although "safety and reliability remained the core purpose of Rule 21," the CPUC observed that the reformed supplemental review process also "permits higher penetration levels of distributed generation without significantly increasing the time or expense of the interconnection process."¹⁷ SEIA believes that Rule 21 provides a national best practice for distributed generation penetration levels, and demonstrates that aggregate interconnected generating capacity can be equal to 100 percent of minimum load on a distribution line section without impairing safety or reliability. Moreover, EEI indicated

¹⁴ *Id.* at 2.

¹⁵ *See Review of Small Generator Interconnection Agreements and Procedures*, Docket No. AD12-17-000, "Technical Conference Transcript" (July 17, 2012), at 10:24-11:3 ("Tech. Conf. Tr.").

¹⁶ *Review of Small Generator Interconnection Agreement and Procedures*, Docket Nos. AD12-17-000, *et al.*, "Comments of the California Utilities" (Aug. 16, 2012), at 4 ("California Utilities Comments").

¹⁷ CPUC Decision at 25, 34.

a willingness to support a 100% minimum load screen similar to the screen adopted by CPUC in the context of a supplemental review process.¹⁸

Similarly, in a report released by the National Renewable Energy Laboratory (“NREL”) prior to the issuance of the NOPR, NREL found that if the aggregate load on a line section is below 100 percent of minimum load, the risk of power backfeeding beyond the substation is minimal and there is therefore virtually no need for a full study to address power quality, voltage control and other safety and reliability concerns.¹⁹ Indeed, there is no “hard and fast ceiling” that exceeding 100% of daytime load would necessarily cause a system to fail.²⁰ While there might be cases where exceeding 100% of minimum load would be problematic, there are also systems designed to work well over 100% of the minimum load on a distribution feeder.²¹ NREL thus recommended revisions to the SGIP’s supplemental review process similar to the 100% Minimum Load Screen, Voltage Screen and Reliability Screen ultimately proposed in the NOPR.²² According to NREL, a 100% of minimum load supplemental review process would be a practical and systematic process facilitating efficient and cost-effective interconnection, while providing a mechanism for Transmission Providers to evaluate any safety and reliability concerns created by an interconnection request.²³

¹⁸ *Review of Small Generator Interconnection Agreements and Procedures*, Docket Nos. AD12-17-000, *et al.*, “Comments of the Edison Electric Institute” (Aug. 16, 2012) (“EEI Comments”), at 11, n.10 (stating “[w]hereas the 100 percent minimum load threshold may be appropriate in the context of a supplemental review process such as in the California Rule 21 proceeding.”).

¹⁹ NREL Report at 30.

²⁰ Tech. Conf. Tr. at 92:18-21.

²¹ *Id.* at 92:11-17.

²² NREL Report at 31.

²³ *Id.* at 30–31.

In the industry conferences that have been held regarding the NOPR, some parties, primarily Transmission Providers, have indicated that they do not support the 100% Minimum Load Screen. They claim that it could negatively affect a Transmission Provider's operations since the screen would require the Transmission Provider to operate at the edge of the reliability threshold, without any flexibility.²⁴ However, the 100% Minimum Load Screen will not be considered in isolation. Rather, it will be applied in conjunction with the Voltage Screen and the Reliability Screen.²⁵ Consequently, even if an interconnection request passed the 100% Minimum Load Screen, it would be subject to additional study procedures if it failed either of the other two screens in the proposed supplemental review process, i.e., if it was found to negatively affect power quality or impact safety or reliability.²⁶

The same is true with respect to concerns raised over the possibility that load could change over time or “go away.”²⁷ This concern is misplaced because the Reliability Screen, another component of the proposed supplemental review process, requires transmission providers to consider “[w]hether operational flexibility is reduced by the proposed Small Generating Facility.”²⁸ Therefore, Transmission Providers' concerns regarding operational flexibility and the potential for loss of load have been considered and addressed directly through the Reliability Screen in the NOPR.

The proposed 100% Minimum Load Screen is still very conservative. It is based on an improbable worst case assumption that every generator on a single circuit is

²⁴ See, e.g., EEI Comments at 14–15.

²⁵ NOPR at PP 35–38; *Tech. Conf. Tr.* at 32:11-20.

²⁶ NOPR at P 37.

²⁷ See, e.g., *Tech. Conf. Tr.* at 33:12-17.

²⁸ NOPR, Appendix C § 2.4.1.3.5.

producing power at its nameplate capacity while the circuit's load is simultaneously at its minimum.²⁹ The probability that this would occur is even smaller where the interconnected generation is comprised of smaller, intermittent resources like distributed solar and wind.

2. There Is No Technical Support For Adopting a Minimum Load Screen Below 100%

Some Transmission Providers have suggested that the Commission modify the supplemental review process, and adopt a 67 percent minimum load screen (referred to herein as the "67% Minimum Load Screen"), similar to the interim screen adopted in Massachusetts.³⁰ The Massachusetts Department of Public Utilities ("DPU") did not make factual findings in support of its decision to implement the 67% Minimum Load Screen. Instead, it stated the screen "shall serve as an interim standard" and it directed a working group to continue investigation of the minimum load screen.³¹

While the 67% Minimum Load Screen may be a good first step for Massachusetts, the Commission should not follow suit. The DPU provided no technical or engineering analysis to support its decision to use the interim 67% Minimum Load Screen, nor did it make any finding that the 100% Minimum Load Screen was not safe and reliable. By contrast, the Commission has already studied the minimum load screen and held stakeholder meetings on the subject, and therefore is at a different stage of information development than Massachusetts. Further, any commenters opposing the 100% Minimum Load Screen proposal should be required to support their assertions that

²⁹ NREL Report at 30.

³⁰ Order on the Distributed Generation Working Group's Redlined Tariff and Non-Tariff Recommendations, Massachusetts Department of Public Utilities 11-75-E, at 34 (Mar. 13, 2013) ("*DPU Decision*").

³¹ *Id.* at 35.

the Screen is not safe and reliable. Similarly, to the extent alternative proposals are put forth, the proponent should be required to provide a fulsome technical analysis in support of its alternative proposal. The real-world experience with California’s Rule 21 demonstrates the viability of a 100% Minimum Load Screen on a national level. Thus, there is no need for a lower standard, or to rely on a standard that is being used only as an interim measure in one state. Therefore, given the widespread support, NREL’s analysis, the CPUC’s adoption of a 100% minimum load screen, and the technical feasibility and protections afforded by the Voltage Screen and the Reliability Screen, the Commission should mandate the NOPR’s supplemental review process, including the 100% Minimum Load Screen.

B. Pre-Application Reports Will Provide Developers With Access to Information That Is Essential For Evaluating the Viability of Interconnection

1. SEIA Supports Providing Interconnection Customers With the Option of Requesting a Pre-Application Report

SEIA supports the Commission’s proposal to provide developers with a pre-application report disclosing relevant transmission system information prior to submitting an interconnection request. Such information will allow a developer to more efficiently evaluate the viability of a project before it makes further development investments and files a formal interconnection request. Moreover, a pre-application report process also benefits Transmission Providers by reducing the volume of non-viable or difficult to accommodate interconnection requests that the Transmission Provider must address.³² Importantly, the proposed requirements of the Pre-Application Report would impose no additional studying or modeling requirements on the Transmission Provider—it would be

³² NOPR at PP 26–29.

required to compile pre-application reports based on existing materials. The pre-application report should also be provided in a format that is accessible and complete. As the California Utilities explained, the pre-application report “allows an interested applicant to request specific, pre-existing data relevant to a potential point of interconnection.”³³ Access to such usable information in the pre-application report allows a developer to assess for itself in the first instance whether a project would be feasible at a particular location.

2. The Commission Should Require That Transmission Providers Include Additional Information In Pre-Application Reports

SEIA believes that additional information about conditions at a proposed interconnection point should be provided by Transmission Providers in the pre-application report. SEIA proposes certain changes to SGIP and encourages the Commission in its final rule to require the Transmission Provider to provide in the pre-application report the additional information set forth in Attachment A. Specifically, the Commission should require that the pre-application reports provide developers with identification of the substation/area bus, bank or circuit most likely to serve the point of interconnection and, where available, the actual hosting capacity. In addition, the Commission should require pre-application reports to contain information regarding the distance from a three phase circuit (if the point of interconnection is on a single phase circuit) and whether the point of interconnection is on an area network, spot network, grid network or radial line. SEIA also proposes giving Transmission Providers the option to provide developers with the hosting capacity at a proposed point of interconnection in the pre-application report.

³³ California Utilities Comments at 6.

This information is vital to a developer in evaluating the viability of a project before it makes further investment in pre-development activities and files a formal interconnection request and, SEIA submits, would not impose additional study or modeling burdens on the Transmission Provider. Providing developers with access to this information regarding a potential point of interconnection will further the goal of productive communications between developers and Transmission Providers and will improve the interconnection process.

3. The Requirements of the Pre-Application Report Should Not Be Diluted Because Information Is Not Available

Some parties have asserted that peak and minimum load data should not be required in a pre-application report because that information is not tracked or readily available to the Transmission Providers.³⁴ However, peak and minimum load data are fundamental considerations to solar developers because this data can greatly impact siting decisions and the viability of a given project. Therefore, the Commission should reject any request that this information not be included in the pre-application report. As proposed in both the NOPR and herein by SEIA, a pre-application report only needs to include existing data, and the requirement to provide the report would not obligate the Transmission Provider to conduct a study or other analysis in the event existing peak or minimum load data is not available.³⁵

Some parties have also raised concerns over the availability of daytime load information.³⁶ NREL advised that if actual historical data is not available, most utilities have access to feeder minimum load and feeder peak load data through Supervisory

³⁴ EEI Comments at 15–16.

³⁵ NOPR, Appendix C § 1.2.4.

³⁶ *See, e.g.*, Tech. Conf. Tr. at 34:7-11.

Control and Data Acquisition (“SCADA”) systems.³⁷ SEIA hopes that such data will become more readily available to Transmission Providers over time. In the meantime, SEIA is asking that existing data be made available, and no more. Therefore, Transmission Providers’ concerns are without merit.

4. The Commission Should Implement Clarifications Regarding Requests for Pre-Application Reports

Following the staff-led workshop that was held during the comment period in this proceeding, SEIA participated in an informal working group consisting of a cross-section of industry stakeholders. Through that process, SEIA, IREC and EEI agreed that requests for a pre-application report should be accompanied by certain basic information to identify the requestor and the specific location of the proposed point of interconnection. The modifications to SGIP Section 1.2.2 that were agreed upon and that SEIA supports are set forth in Attachment B. Including this additional and specific information in the request would assist the Transmission Provider in generating the pre-application report in a timely manner, and would improve communications between the Transmission Provider and the interconnection applicant. Therefore, SEIA asks the Commission to adopt the modifications to SGIP Section 1.2.2 proposed in Attachment B in its final rule.

C. The Commission Should Modify the Fast Track Eligibility Criteria Proposed in the NOPR

SEIA initially requested removal of the 2 MW threshold for fast track interconnection, or in the alternative, amending the 2 MW threshold to 10 MW.³⁸ While a 20 MW threshold, or removal of the threshold, remains SEIA’s preference, SEIA views

³⁷ National Renewable Energy Laboratory, “Technical Report: Updating Interconnection Screens for PV System Integration” at 7 (Jan. 2012).

³⁸ SEIA Petition at 16–17.

the Commission's proposal to revise the thresholds for participating in the fast track process, basing eligibility on interconnecting generator and individual system characteristics (i.e., interconnection voltage level and circuit distance of the interconnection from the substation)³⁹ as a reasonable and appropriate balance between a developer's need for an efficient interconnection process and the safety and reliability concerns raised with respect to broadening the screens for fast track interconnection.⁴⁰

At the same time, SEIA actively participated in the informal stakeholder working group and supports the agreement reached by IREC, SEIA and EEI to propose revisions to the NOPR proposal relative to fast track eligibility, primarily to narrow the scope of projects that would be eligible for fast track interconnection at either end of the voltage spectrum, while appropriately preserving potential fast track eligibility for the vast majority of distributed solar projects that fall between these two extremes. SEIA believes the Commission's proposal, with the modifications suggested in Attachment B, represents a reasonable compromise between developers and Transmission Providers in this regard. SEIA therefore recommends that the Commission implement the proposed modifications to SGIP Section 2.1 on fast track eligibility in its final rule.

D. Interconnection Customers Should Be Permitted To Review and Comment on Upgrades Required for Interconnection

SEIA supports the NOPR proposal that would allow an interconnection applicant to review and comment on the upgrades proposed by the Transmission Provider as necessary for interconnection.⁴¹ Such review and comment on proposed upgrades, including supporting documentation, workpapers, and databases or data will facilitate

³⁹ NOPR at P 30.

⁴⁰ *See, e.g., Tech. Conf. Tr.* at 59:10-16.

⁴¹ NOPR at PP 41-44.

Attachment A
SEIA Proposed SGIP Modifications

Proposed definition of Hosting Capacity to be added to Glossary of Terms (Attachment 1 to SGIP):

“The maximum, aggregate generating facility capacity a distribution circuit can accommodate at a proposed Point of Interconnection without requiring construction of facilities by the Transmission Provider on its own system and while maintaining the safety, reliability and power quality of the distribution circuit. The Hosting Capacity shall be determined by applying the screens set forth in Section 2.4.1.1 to 2.4.1.3 and shall describe the amount of additional generating facility capacity a distribution circuit can accommodate above what has already been approved for interconnection without requiring construction of facilities by the Transmission Provider on its own system. The Hosting Capacity will include queued generating facility capacity for which an interconnection agreement has not been issued; where the queued capacity limits the available capacity it will be identified.”

Section 1. Application

1.1 Applicability

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1.2.3 Subject to section 1.2.4, the pre-application report will include the following information:

1.2.3.1 Using the information provided by the Interconnection Customer in section 1.2.2.2 and 1.2.2.3, the Transmission Provider will identify the substation/area bus, bank or circuit most likely to serve the proposed Point of Interconnection. In most cases this will be the circuit closest to the proposed Point of Interconnection, but the Transmission Provider may identify an alternate location if more appropriate. This selection by the Transmission Provider 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 on multiple points of interconnection are desired.

1.2.3.2 Where available, the Hosting Capacity of the distribution circuit at the Point of Interconnection, along with a notation of the power flow or criteria violation(s) that limit the current Hosting Capacity, and any queued projects that

limit the current Hosting Capacity will be supplied. If the Hosting Capacity is provided, items 1.2.3.4, 1.2.3.8 and 1.2.3.10 are the only additional items below that need to be provided. If the Hosting Capacity is not available, the following will be provided:

1.2.3.2.1 Total capacity (in MW) of substation/area bus, bank or circuit based on normal or operating ratings likely to serve the proposed Point of Interconnection.

1.2.3.2.2 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 Interconnection.

1.2.3.2.3 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 Interconnection.

1.2.3.2.4 Available capacity (in MW) of substation/area bus or bank and circuit ~~mostly~~ likely to serve the proposed Point of Interconnection (i.e., total capacity less the sum of existing aggregate generation capacity and aggregate queued generation capacity).

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

1.2.3.46 Nominal distribution circuit voltage at the proposed Point of Interconnection.

1.2.3.57 Approximate circuit distance between the proposed Point of Interconnection and the substation.

1.2.3.68 ~~Actual or estimated r~~Relevant line section(s) peak load ~~estimate,~~ and minimum load data, including daytime minimum load as described in section 2.3.1.1.1 below and absolute minimum load, when available.

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

1.2.3.~~810~~ Number of phases available at the proposed Point of Interconnection. If single phase, distance from three phase circuit.

1.2.3.~~911~~ Limiting conductor ratings from the proposed Point of Interconnection to the distribution substation.

1.2.3.10 Area network, spot network, grid network or radial supply.

1.2.3.1~~12~~ Based on the proposed Point of Interconnection, 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.

1.2.4 The pre-application report need only include existing data. A pre-application report request does not obligate the Transmission Provider to conduct a study or other analysis of the proposed generator in the event that data is not readily available. If the Transmission Provider cannot complete all or some of a pre-application report due to lack of available data, the Transmission Provider shall provide the Interconnection Customer with a pre-application report that includes the data that is available. The provision of information on “available capacity” or Hosting Capacity pursuant to section 1.2.3.24 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 Interconnection Request. Notwithstanding any of the provisions of this section, the Transmission Provider shall, in good faith, include data in the pre-application report that represents that best available information at the time of reporting.

Section 2. Fast Track Process

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2.2 Initial Review

Within 15 Business Days after the Transmission Provider notifies the Interconnection Customer it has received a complete Interconnection Request, the Transmission Provider shall perform an initial review using the screens set forth below, shall notify the Interconnection Customer of the results, and include with the notification copies of the analysis and data underlying the Transmission Provider's determinations under the screens. A Transmission Provider may, at its discretion, elect not to apply one or more of the screens set forth below, provided that the Transmission Provider must apply screen Section 2.2.1.2 and provide the

Hosting Capacity at the Point of Interconnection. Omitted screens shall not provide a basis on which to deny an Interconnection Request.

2.2.1 Screens

2.2.1.1 The proposed Small Generating Facility's Point of Interconnection must be on a portion of the Transmission Provider's Distribution System that is subject to the Tariff.

2.2.1.2 For interconnection of a proposed Small Generating Facility to a radial distribution circuit, the aggregated generation, including the proposed Small Generating Facility, on the circuit shall not exceed the greater of 15 % of the line section annual peak load as most recently measured at the substation, or the Hosting Capacity of the distribution circuit at the Point of Interconnection. A line section is that portion of a Transmission Provider's electric system connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line.

2.2.1.3 For interconnection of a proposed Small Generating Facility to the load side of spot network protectors, the proposed Small Generating Facility 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 kW⁴².

2.2.1.4 The proposed Small Generating Facility, 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.

2.2.1.5 The proposed Small Generating Facility, 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 Interconnection Customer equipment on the system to exceed 87.5 % of the short

⁴² 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)

circuit interrupting capability; nor shall the interconnection be proposed for a circuit that already exceeds 87.5 % of the short circuit interrupting capability.

2.2.1.6 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 Interconnecting Customer, including line configuration and the transformer connection to limit the potential for creating over-voltages on the Transmission Provider's electric power system due to a loss of ground during the operating time of any anti-islanding function.

Primary Distribution Line Type	Type of Interconnection to Primary Distribution Line	Result/Criteria
Three-phase, three wire	3-phase or single phase, phase-to-phase	Pass screen
Three-phase, four wire	Effectively-grounded 3 phase or Single-phase, line-to-neutral	Pass screen

2.2.1.7 If the proposed Small Generating Facility is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Small Generating Facility, shall not exceed 20 kW.

2.2.1.8 If the proposed Small Generating Facility 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.

2.2.1.9 The Small Generating Facility, in aggregate with other generation interconnected to the transmission side of a substation transformer feeding the circuit where the Small Generating Facility 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).

2.2.1.10 No construction of facilities by the Transmission Provider on its own system shall be required to accommodate the Small Generating Facility.

2.2.2 If the proposed interconnection passes the screens, the Interconnection Request shall be approved and the Transmission Provider will provide the Interconnection Customer an executable interconnection agreement within five (5) Business Days after the determination.

2.2.3 If the proposed interconnection fails the screens, but the Transmission Provider determines that the Small Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards, the Transmission Provider shall provide the Interconnection Customer an executable interconnection agreement within five (5) Business Days after the determination.

2.2.4 If the proposed interconnection fails the screens, and the Transmission Provider cannot determine from the initial review that the Small Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards unless the Interconnection Customer is willing to consider minor modifications or further study, the Transmission Provider shall provide the Interconnection Customer with the opportunity to attend a customer options meeting.

2.3 Customer Options Meeting

If the Transmission Provider determines the Interconnection Request cannot be approved without minor modifications at minimal cost; or a supplemental study or other additional studies or actions; or at significant cost to address safety, reliability, or power quality problems, within the five Business Day period after the determination, the Transmission Provider shall notify the Interconnection Customer and provide copies of all data and analyses underlying its conclusion.

If a Hosting Capacity was determined, the Transmission Provider shall provide an explanation of the power flow or criteria violation(s) that limit the current Hosting Capacity, and indicate whether there are any queued projects that limit the Hosting Capacity. Within ten (10) Business Days of the Transmission Provider's determination, the Transmission Provider shall offer to convene a customer options meeting with the Transmission Provider to review possible Interconnection Customer facility modifications or the screen analysis and related results, to determine what further steps are needed to permit the Small Generating Facility to be connected safely and reliably. At the time of notification of the Transmission Provider's determination, or at the customer options meeting, the Transmission Provider shall:

2.3.1 Offer to perform facility modifications or minor modifications to the Transmission Provider's electric system (e.g., changing meters, fuses, relay settings) and provide a non-binding good faith estimate of the limited cost to make such modifications to the Transmission Provider's

electric system. If the Interconnection Customer agrees to pay for the modifications to the Transmission Provider's electric system, the Transmission Provider will provide the Interconnection Customer with an executable interconnection agreement within five (5) Business Days of the Customer Options Meeting; or

- 2.3.2 Offer to perform a supplemental review in accordance with section 2.4; or
- 2.3.3 Obtain the Interconnection Customer's agreement to continue evaluating the Interconnection Request under the section 3 Study Process.

2.4 Supplemental Review

If the Interconnection Customer agrees to a supplemental review, the Interconnection Customer shall agree in writing within fifteen (15) Business Days of the offer, and submit the nonrefundable supplemental review fee of \$2,500 to the Transmission Provider, or the Interconnection Request shall be deemed withdrawn.

- 2.4.1 Within twenty (20) Business Days following receipt of the supplemental review fee, the Transmission Provider will perform a supplemental review using the screens set forth below, shall notify the Interconnection Customer of the results, and include with the notification copies of the analysis and data underlying the Transmission Provider's determinations under the screens.

- 2.4.1.1 Where twelve (12) months of line section minimum load data is 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 Small Generating Facility. If minimum load data is not available, or cannot be calculated, estimated or determined, the Transmission Provider shall include the reason(s) that it is unable to calculate, estimate or determine minimum load in its supplemental review results notification under section 2.4.1.

- 2.4.1.1.1 The type of generation used by the proposed Small Generating Facility will be taken into account when calculating, estimating, or determining circuit or line section minimum load relevant for the application of screen 2.4.1.1. 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.

2.4.1.1.2 When this screen is being applied to a Small Generating Facility that serves some onsite electrical load, only the net export in kW, if known, that may flow into the Transmission Provider's system will be considered as part of the aggregate generation. Where Hosting Capacity is being analyzed, the load and generation may be simulated in the power flow.

2.4.1.1.3 Transmission Provider 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.

Attachment B

Proposed SGIP Modifications Agreed to By SEIA, IREC and EEI

Section 1. Application

1.1 Applicability

[* * * * *]

- 1.2.2 In addition to the information described in section 1.2.1, which may be provided in response to an informal request, an Interconnection Customer may submit a formal written request along with a non-refundable fee of \$300 for a pre-application report on a proposed project at a specific site. The written pre-application report request shall include the Interconnection Customer's a proposed Point of Interconnection site, which shall be defined sufficiently to clearly identify the specific location of the proposed Point of Interconnection in accordance with section 1.2.2.1 below. The Transmission Provider shall provide the pre-application data described in section 1.2.3 to the Interconnection Customer within ten (10) Business Days of receipt of the written request and payment of the \$300 fee. The Pre-Application Report produced by the Transmission Provider is non-binding, does not confer any rights, and the Interconnection Customer must still successfully apply to interconnect to the Transmission Provider's Distribution System. The Interconnection Customer will provide the following information to the Transmission Provider when requesting a Pre-Application Report:

1.2.2.1 Project Contact Information

_____ Name:

_____ Address:

_____ Phone:

_____ Email:

1.2.2.2 Location (street address with nearby cross streets and town)

1.2.2.3 Meter number, pole number, or other equivalent information identifying proposed point of interconnection, if available.

1.2.2.4 Generator Type (i.e. solar, wind, CHP or other)

1.2.2.5 Size (AC kW)

1.2.2.6 Single or three phase generator configuration

1.2.2.7 Stand-alone generator (no onsite load, not including parasitic load – Yes or No?)

1.2.2.8 Is new service requested? Yes or No? If this an 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.

[* * * * *]

Section 2. Fast Track Process

2.1 Applicability

The Fast Track Process is available to an Interconnection Customer proposing to interconnect its Small Generating Facility with the Transmission Provider's Distribution System if the Small Generating Facility's capacity does not exceed the size limits identified in the table below. Small Generating Facilities below these limits are eligible for Fast Track review, but such eligibility does not guarantee that a Small Generating Facility will pass Fast Track or Supplemental Review screens.

Fast Track eligibility is determined based upon the generator type, the size of the generator, voltage of the line and the location of the Point of Interconnection. All Small Generating Facilities connecting to lines greater than 69 kV are ineligible for Fast Track regardless of size. All synchronous, induction machines must be below 2 MWs to be eligible for Fast Track, regardless of location. For listed or certified inverter-based systems, the size limit which varies according to the voltage of the line at the proposed Point of Interconnection. Listed or certified inverter based Small Generating Facilities located within 2.5 miles of a substation and on a main-distribution-line (as defined) with minimum 600-ampere capacity are eligible for the Fast Track Process under the higher thresholds. In addition to the size threshold, the Interconnection Customer's proposed Small Generating Facility must meet the codes, standards, and certification requirements of Attachments 3 and 4 of these procedures, or the Transmission Provider has to have reviewed the design or tested the proposed Small Generating Facility and be satisfied that it is safe to operate.

Fast Track Eligibility for Listed or Certified Inverter Based Systems

<u>Line Voltage</u>	<u>Fast Track Eligibility Regardless of Location</u>	<u>Fast Track Eligibility on a Main ≥ 600 Ampere Line* and ≤ 2.5 Miles** from Substation</u>
<u>< 5 kilovolt (kV)</u>	<u>≤ 500 kW 1 MW</u>	<u>≤ 500 kW 2 MW</u>
<u>≥ 5 kV and < 15 kV</u>	<u>≤ 2 MW</u>	<u>≤ 3 MW</u>
<u>≥ 15 kV and < 30 kV</u>	<u>≤ 3 MW</u>	<u>≤ 4 MW</u>
<u>≥ 30 kV and < 69 kV</u>	<u>≤ 4 MW</u>	<u>≤ 5 MW</u>

* For purposes of this table, a mainline will typically constitute lines with wire sizes of 4/0 AWG, 336.5 kcmil, 397.5 kcmil, 477 kcmil and 795 kcmil

** Electrical Line Miles

*** An Interconnection Customer can determine this information in advanced by requesting a pre-application report pursuant to section 1.2.