NEW JERSEY BOARD OF PUBLIC UTILITIES

Proposed Amendments, New Rules, And Recodification Renewable Energy And Energy Efficiency Net Metering And Interconnection Rules N.J.A.C. 14:8-4

BPU Docket #: EX08080637

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PUBLIC UTILITIES

BOARD OF PUBLIC UTILITIES

Renewable Energy And Energy Efficiency

Proposed Amendments: N.J.A.C. 14:8-4.1 through 4.4

New Rules: N.J.A.C. 14:8-4.5 and 5.1

Recodification With Amendments: N.J.A.C. 14:8-5 as N.J.A.C. 14:8-7

Authorized By: Board of Public Utilities, Jeanne M. Fox, President;

Frederick F. Butler, Joseph L. Fiordaliso, Nicholas Asselta, and Elizabeth Randall, Commissioners.

Authority: N.J.S.A. 48:2-13, 48:3-87

Calendar Reference: See Summary below for an explanation of exception

to calendar requirement.

BPU Docket Number: EX08080637

Proposal Number: PRN 2008-

Comments may be submitted through July 31, 2009 through either of the following methods:

- Electronically, in Microsoft WORD format, or in a format that can be <u>easily</u> <u>converted to WORD</u>, by e-mailing them to the following e-mail address: <u>rule.comments@bpu.state.nj.us</u>; or
- On paper to:

Kristi Izzo, Secretary New Jersey Board of Public Utilities ATTN: BPU Docket Number: EX08080637 Two Gateway Center Newark, New Jersey 07102

The agency proposal follows:

Summary

The New Jersey Board of Public Utilities is herein proposing changes to its rules regarding Net Metering and Interconnection, found at N.J.A.C. 14:8-4. The primary purpose of the proposal is to carry out certain changes required by recent amendments to the rules' authorizing statute, the Electric Discount Energy Competition Act (EDECA), N.J.S.A. 48:3-49 et seq. However, the proposal also incorporates some program improvements that the Board wishes to implement based on its experience administering the net metering and interconnection program. The rules affected by the proposal apply to electric power suppliers, basic generation service (BGS) providers, electric public utilities, and customers that generate class I renewable energy on their own premises.

It should be noted that unrelated amendments were recently proposed to the net metering and interconnection rules in a separate rulemaking, published on October 6, 2008 at 40 N.J.R. 5531. These amendments were adopted and published in the New Jersey Register on March 2, 2009.

As the Board has provided a 60-day comment period on the proposed amendments, it is exempt from the rulemaking calendar requirements set forth at N.J.A.C. 1:30-3.1 and 3.2, pursuant to N.J.A.C. 1:30-3.3(a)5.

SUBCHAPTER 4. NET METERING FOR CLASS I RENEWABLE ENERGY SYSTEMS

Proposed amendments to N.J.A.C. 14:8-4.1 expand the class of customers eligible for net metering, in accordance with recent amendments to N.J.S.A. 48:3-87. Previously, only residential and small commercial customers were eligible to net meter, whereas the statutory amendments now authorize net metering for all customers that generate class I renewable energy. The definition of "customer-generator" at N.J.A.C. 14:8-4.2 is amended and the definition of "small commercial customer" is deleted in order to implement this expansion of eligibility, and limiting phraseology is also deleted from N.J.A.C. 14:8-4.3(a).

Amendments are proposed to the definitions section at N.J.A.C. 14:8-4.2, to remove interconnection-related definitions and relocate them in a separate interconnection subchapter at N.J.A.C. 14:8-5.1. This is part of a larger proposed reorganization that will separate interconnection provisions from net metering provisions, and codify them in two separate subchapters. See this Summary below for a detailed description of the relocation and of changes proposed to the existing interconnection definitions.

It should be noted that amendments to N.J.A.C. 14:8-4.3, relating to the selection of each customer-generator's annualized period, were adopted on March 2, 2009. In today's proposal, the section heading is amended to clarify that these new provisions are included. Also, existing N.J.A.C. 14:8-4.3(k) is proposed for deletion, as its substance is relocated to a new section at N.J.A.C. 14:8-4.5, which sets forth expanded requirements for net metering data reporting by EDCs.

Existing N.J.A.C. 14:8-4.3(I) and (m) are proposed to be consolidated in one subsection (k). In addition, a provision regarding the issuance of RECs is proposed for deletion, as it is outdated, and is redundant with the Board's RPS rules.

Existing N.J.A.C. 14:8-4.3(n), (o), and (p) are recodified with no change in text.

A sentence is added to existing N.J.A.C. 14:8-4.4(c), requiring that, if an EDC must provide a customer-generator with a revenue meter for net metering, the EDC must install the meter within ten business days after approving the interconnection.

Proposed new N.J.A.C. 14:8-4.5 sets forth expanded, more focused reporting requirements for EDCs that serve net metering customer-generators. This new section includes the substance of the reporting requirements found in the existing rules at N.J.A.C. 14:8-4.3(k). In addition, the new section increases reporting from once per year to twice per year and requires electronic report submittal. Where the existing rules require only totals of customer-generators, rated generation capacity, generation output, and energy used by customer-generators; the proposed new section requires that this information be broken down in each case by the types of renewable energy generation used, and the timing of interconnections. This more comprehensive and fine-grained data will greatly improve the Board's ability to track and understand the development of renewable energy resources in the net metering program, and will help to improve the net metering program over time.

Existing N.J.A.C. 14:8-5, Appliance Efficiency, Certification and Testing Standards, is recodified as N.J.A.C. 14:8-7, with no change in text.

SUBCHAPTER 5. INTERCONNECTION OF CLASS I RENEWABLE ENERGY SYSTEMS

Existing N.J.A.C. 14:8-4.5 through 4.11, which contain requirements for interconnection of class I renewable energy systems with EDC distribution systems, are proposed to be recodified in a new subchapter, N.J.A.C. 14:8-5. While the interconnection rules were originally intended primarily to facilitate net metering, changes in the energy landscape have loosened the nexus between interconnection and net metering. The proposed separation of the interconnection and net metering provisions emphasizes and helps clarify this point.

One reason for the growing separation of net metering from interconnection in the renewable energy field is that the size and quality of available renewable energy systems has increased to the point where interconnection may be an important tool for some customer-generators for whom net metering would have little or no benefit. For example, a commercial or industrial energy user with a 1.9 MW average consumption may wish to install a 1 MW customer-generator facility to offset its energy bills. Normally, such a customer-generator's consumption will exceed its generation, but the customer-generator still would require a grid connection to meet its remaining energy needs and there may be times when the customer-generator's energy use temporarily drops for operational or business reasons, and the customer-generator facility will then feed the excess energy into the grid. The Board's interconnection rules must provide for such customer-generators, and the existing Level 3 interconnection review procedure would be the appropriate procedure.

Related to the growing size of renewable energy systems, some stakeholders have suggested that the rules be amended to raise the 2MW limit on customer-generator facility capacity. This would allow an energy user with an average load above 2MW to install a customer-generator facility with a capacity over 2MW but still below the customer's average energy load. The Board is considering this issue, and welcomes comments from the public concerning the possible benefits and disadvantages of raising the 2MW cap.

As mentioned in this Summary above, the proposal relocates the existing interconnection provisions into a separate subchapter, which includes an interconnection definitions section at proposed N.J.A.C. 14:8-5.1. This new definitions section includes all definitions found in existing N.J.A.C. 14:8-4.2 that are used only in the provisions relating to interconnection, with the exception of the definition of "small commercial customer" which is no longer used in the rules. The following definitions are relocated without change: "applicant," "fault current," "IEEE standards" and "spot network." Minor clarifying amendments which do not change meaning are proposed in the definitions of "area network" and "good utility practice," concurrently with their relocation in the new subchapter. An amendment to the definition of "interconnection agreement" provides that this agreement will be provided not by the Board but by the EDCs. In addition, a new definition of "line section" is proposed to replace the term "distribution circuit" throughout the rules in order to be consistent with common industry terminology. The term "equipment package" is replaced by the term "interconnection equipment." A new definition of "electrical power system" or "EPS" is added. Finally, minor substantive changes are proposed to the definitions of "good utility practice" and "point of common coupling," to incorporate by reference changes to these definitions that have occurred since the definitions were last adopted.

Under the existing interconnection provisions, EDCs are required to utilize the Level 1, 2 and 3 interconnection review procedures for customer-generator facilities with a capacity of 2 MW or less, and may, at their discretion, utilize the Level 3 procedure for those with a capacity greater than 2MW. In addition, as discussed above, the interconnection rules were originally intended primarily to facilitate net metering. Three provisions, read together with the 2 MW limit on net metering, have given rise to some confusion over whether it is permissible to interconnect a customer-generator facility

with a capacity over 2MW, and if so what review procedure should be used. These three provisions are found at existing N.J.A.C. 14:8-4.5(a)3 (recodified in this proposal as N.J.A.C. 14:8-5.2(a)3), existing N.J.A.C. 14:8-4.5(f), and existing N.J.A.C. 14:8-4.9(a) (recodified in this proposal as N.J.A.C. 14:8-5.6(a)). To clarify this issue, the phrase "with a power rating of 2 MW or less" is proposed for deletion from existing N.J.A.C. 14:8-4.5(a)3 (recodified in this proposal at N.J.A.C. 14:8-5.2(a)3), and existing 4.5(f) is proposed for deletion. Thus, the amendments as proposed would require the EDC to utilize the Level 3 procedure for any interconnection that does not qualify for the Level 1 or Level 2 review procedure.

Throughout the interconnection provisions at proposed N.J.A.C. 14:8-5, cross-references are corrected to reflect the separation of the interconnection provisions into their own subchapter. Cross references are also updated in recodified N.J.A.C. 14:8-7.

Language providing that the Board will post interconnection applications on its website is deleted from proposed N.J.A.C. 14:8-5.2(d), 5.4(h) and 5.5(m).

Amendments to proposed N.J.A.C. 14:8-5.3(a) provide a more precise description of the laboratory certification required for interconnection equipment.

Proposed amendments at N.J.A.C. 14:8-5.4(I) and (m), and at 14:8-5.8(a), provide additional detail and a more step-by-step outline of the level 1 interconnection approval process, and add a requirement that EDCs give applicants written notice of approval to energize their interconnected facilities.

Proposed new N.J.A.C. 14:8-5.9 requires interconnection reporting. The section includes some requirements from existing N.J.A.C. 14:8-4.3(k) (which is proposed for deletion), and also adds some new requirements. In general, the proposed new interconnection reporting requirements focus on the number and type of interconnections in a reporting period rather than on the amount of energy generated by interconnected customers. N.J.A.C. 14:8-5.9(a) clarifies that if an EDC has no interconnected customers it need not submit interconnection reports, increases reporting frequency to semi-annually, and requires electronic submittal of all reports. The information to be reported includes information already required under existing N.J.A.C. 14:8-4.3(k), including the number of interconnected customer-generators and the total capacity of all interconnected customer-generators. The proposed new section also adds a requirement that the EDC report interconnection information by type of renewable energy technology. This will provide the Board with much more "granular" data for use in the net metering program as well as in its overall efforts to promote renewable energy.

Social Impact

The proposed amendments will have a positive social impact by making the existing net metering rules consistent with recent statutory changes, and by codifying program improvements identified by Board staff during the implementation of the net metering program thus far.

Economic Impact

The proposed amendments will have a positive economic impact. By expanding the class of customer-generators that are eligible to net meter, the amendments will enable more people to offset their electric bills through use of renewable energy systems. The addition of more detailed reporting requirements for EDCs with net metering customergenerators will likely increase somewhat the EDCs' costs of compliance with the net metering rules. However, the more detailed information required will enable the Board to better design future net metering program improvements to increase the effectiveness of the net metering program. In addition, any cost increase for the EDCs should be moderate, as most of the information required is already in the possession of the EDCs. Finally, the Board will allow EDCs to recover reasonable, prudent and supportable costs through rates charged to customers.

Federal Standards Statement

Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq. require State agencies that adopt, readopt or amend State rules that exceed any Federal standard or requirement to include in the rulemaking document a Federal Standards Analysis. N.J.A.C. 14:8 is not promulgated under the authority of, or in order to implement, comply with or participate in any program established under Federal law or under a State statute that incorporate or refers to Federal law, Federal standards, or Federal requirements. Accordingly, Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq. does not require a Federal Standards Analysis for these proposed amendments.

Jobs Impact

The proposed amendments are likely to have a minimal impact on jobs in New Jersey. The proposed changes to the net metering rules may slightly increase the number of jobs in industries that support net metering, such as renewable energy system installers and engineers. However, the Board does not expect the potential impact to be significant.

Agriculture Industry Impact

The proposed amendments may have a slight beneficial impact on the agriculture industry in New Jersey. The rule changes expand the class of persons eligible for net metering to include additional non-residential customers. Some farmers that were previously ineligible may thus become eligible to net meter. In addition, the clarification to the interconnection rules for large renewable energy systems may enable some farmers with large renewable energy systems that were previously discouraged from interconnecting to do so, and thus enable them to offset their energy bills.

Regulatory Flexibility Analysis

In accordance with the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B-16 et

seq. (the Act), the Board has determined that the proposed amendments will not impose reporting, recordkeeping or other compliance requirements on small businesses. A small business, as defined in the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B-16 et seq., is a business that has fewer than 100 employees. The rules proposed for amendment apply to EDCs, BGS providers, electric power suppliers and customer-generators. However, the only reporting, recordkeeping or other compliance requirements imposed by these proposed amendments are the expanded reporting required of EDCs under N.J.A.C. 14:8-4.7. None of the EDCs affected by these requirements are small businesses. Therefore, the proposed amendments will not impose reporting, recordkeeping or other compliance requirements on small businesses.

Smart Growth Impact

The Board anticipates that the proposed amendments will have no impact on either the achievement of smart growth or the implementation of the State Development and Redevelopment Plan. The State Plan is intended to "provide a coordinated, integrated and comprehensive plan for the growth, development, renewal and conservation of the State and its regions" and to "identify areas for growth, agriculture, open space conservation and other appropriate designations." N.J.S.A. 52:18A-199a. "Smart growth is based on the concepts of focusing new growth into redevelopment of older urban and suburban areas, protecting existing open space, conserving natural resources, increasing transportation options and transit availability, reducing automobile traffic and dependency, stabilizing property taxes, and providing affordable housing." These rules apply uniformly Statewide and the Board does not expect that the proposed amendments will affect the location of future development. Therefore, they will not impact smart growth or the State Plan.

Housing Affordability Impact

The proposed amendments will have an insignificant impact on affordable housing in New Jersey because the scope of the proposal is limited to expanding the class of customers eligible for net metering, and making process improvements to the net metering program. While these changes may slightly increase participation in the net metering program, net metering is voluntary and none of the proposed changes will affect the price of housing in New Jersey. In addition, there is an extreme unlikelihood that the proposed amendments would evoke a change in the average costs associated with housing, because the net metering program is relatively small and does not affect housing prices or the housing market.

Smart Growth Development Impact

The proposed amendments will have an insignificant impact on smart growth in New Jersey because the scope of the proposal is limited to expanding the class of customers eligible for net metering, and making process improvements to the net metering program. While these changes may increase participation in the net metering program, net metering is voluntary and has not shown any signs of affecting the location of

development in New Jersey. In addition, there is an extreme unlikelihood that the proposed amendments would evoke a change in housing production within Planning areas 1 or 2, or within designated centers, under the State Development and Redevelopment Plan, because the net metering program is relatively small and does not affect housing construction or the housing market.

Full text of the rule proposal follows (additions are indicated in boldface <u>thus</u>; deletions are indicated in brackets [thus]):

SUBCHAPTER 4. NET METERING [AND INTERCONNECTION STANDARDS] FOR CLASS I RENEWABLE ENERGY SYSTEMS

14:8-4.1 Scope

[(a)] This subchapter sets forth net metering requirements that apply to electric power suppliers, basic generation service providers and electric distribution companies, as defined at N.J.A.C. 14:4-1.2, which have [residential or small commercial] customers who generate [electricity] class I renewable energy, as defined at N.J.A.C. 14:8-1.2, on the customer's side of the meter [using class I renewable energy].

[(b) This subchapter also sets forth requirements for the interconnection of customergenerator facilities, including those that generate class I renewable energy, with electric distribution systems, as those terms are defined at N.J.A.C. 14:4-1.2 and N.J.A.C. 14:8-1.2.]

14:8-4.2 [Definitions] Net metering definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise. Additional definitions that apply to this subchapter can be found at N.J.A.C. 14:3-1.1 and in 14:8-1.2.

"Annualized period" means a period of 12 consecutive monthly billing periods. A customer-generator's first annualized period begins on the first day of any single monthly billing period, at the customer's choice.

["Applicant" means a person who has filed an application to interconnect a customergenerator facility to an electric distribution system.

"Area network" means a type of electric distribution system served by multiple transformers interconnected in an electrical network circuit, which is generally used in large metropolitan areas that are densely populated, in order to provide high reliability of service. This term has the same meaning as the term "secondary grid network" as defined in IEEE standard 1547 Section 4.1.4 (published July 2003), as amended and supplemented, which is incorporated herein by reference. IEEE standard 1547 can be obtained through the IEEE website at www.ieee.org.]

"Avoided cost of wholesale power" means the average locational marginal price of energy in the applicable utility's transmission zone. This cost can be obtained through the website maintained by PJM Interconnection at www.pjm.com.

"Customer-generator" means [a residential or small commercial] an electricity customer, such as an industrial, large commercial, residential, or small commercial customer, that generates electricity[,] on the customer's side of the meter, using a class I renewable energy source.

"Customer-generator facility" means the equipment used by a customer-generator to generate, manage, and/or monitor electricity. A customer-generator facility typically includes an electric generator and/or [an] interconnection equipment [package].

["Equipment package" means a group of components connecting an electric generator with an electric distribution system, and includes all interface equipment including switchgear, inverters, or other interface devices. An equipment package may include an integrated generator or electric source.

"Fault current" means electrical current that flows through a circuit and is produced by an electrical fault, such as to ground, double-phase to ground, three-phase to ground, phase-to-phase, and three-phase. A fault current is several times larger in magnitude than the current that normally flows through a circuit.

"Good utility practice" has the same meaning as assigned to this term in the Amended and Restated Operating Agreement of PJM Interconnection (October 2003), as amended and supplemented, which is incorporated herein by reference. The Operating Agreement can be obtained on the PJM Interconnection website at www.pjm.com. As of October 4, 2004, the Operating Agreement defines this term as "a practice, method, policy, or action engaged in and/or accepted by a significant portion of the electric industry in a region, which a reasonable utility official would expect, in light of the facts reasonably discernable at the time, to accomplish the desired result reliably, safely and expeditiously."

"IEEE standards" means the standards published by the Institute of Electrical and Electronic Engineers, available at www.ieee.org.

"Interconnection agreement" means an agreement between a customer-generator and an EDC, which governs the connection of the customer-generator facility to the electric distribution system, as well as the ongoing operation of the customer-generator facility after it is connected to the system. An interconnection agreement shall follow the standard form agreement developed by the Board and posted on the Board's website at www.bpu.state.nj.us.

"Point of common coupling" has the same meaning as assigned to this term in IEEE Standard 1547 Section 3.0 (published July 2003), as amended and supplemented, which is incorporated herein by reference. IEEE standard 1547 can be obtained through

the IEEE website at www.ieee.org. As of October 4, 2004, IEEE Standard 1547 Section 3.0 defined this term as "the point in the interconnection of a customer-generator facility with an electric distribution system at which the harmonic limits are applied."

"Small commercial customer" means a non-residential electrical customer with less than 10 MW of peak demand, as determined by the most recently measured annual peak demand on the customer's demand meter, or by the peak load contribution for the customer as submitted by the EDC to the PJM RTO for load planning purposes.

"Spot network" has the same meaning as assigned to the term under IEEE Standard 1547 Section 4.1.4, (published July 2003), as amended and supplemented, which is incorporated herein by reference. IEEE standard 1547 can be obtained through the IEEE website at www.ieee.org. As of October 4, 2004, IEEE Standard 1547 defined "spot network" as "a type of electric distribution system that uses two or more inter-tied transformers to supply an electrical network circuit." A spot network is generally used to supply power to a single customer or a small group of customers.]

14:8-4.3 Net metering general provisions, annualized period selection

- (a) All Electric Distribution Companies (EDCs) and supplier/providers, as defined at N.J.A.C. 14:4-1.2 and 14:8-1.2 respectively, shall offer net metering to their [residential and small commercial] customers [, as defined at N.J.A.C. 14:8-4.2,] that generate electricity[,] on the customer's side of the meter, using class I renewable energy sources, provided that the generating capacity of the customer-generator's facility does not exceed the lower of the following:
 - 1. [two] Two megawatts[, and does not exceed the] alternating current; or
 - <u>2.</u> The amount of electricity supplied by the electric power supplier or basic generation service provider to the customer over an annualized period.
- (b) (j) (No change.)

[(k) Each supplier/provider or EDC shall submit an annual net metering report to the Board. The report shall be submitted by June 30th of each year, and shall include the following information for the one-year period ending May 31st of that year:

- 1. The total number of customer-generator facilities;
- 2. The total estimated rated generating capacity of its net metering customergenerators;
- 3. The total estimated net kilowatt-hours received from customer-generators; and
- 4. The total estimated amount of energy produced by the customer-generators, which shall be calculated in accordance with customary industry standards.]

[(I)] (k) A customer-generator that is eligible for net metering owns the renewable attributes of the electricity it generates unless there is a contract with an express provision that assigns ownership of the renewable attributes.

[(m) -A] The customer-generator [that owns renewable attributes] may trade or sell the attributes to another person, or may [apply to the Board in accordance with N.J.A.C. 14:8-2.9 for issuance of Solar Renewable Energy Certificates, or SRECS, based on solar electric generation. Once the PJM's Generation Attribute Tracking System (GATS), or another tracking system approved by the Board, is operational, the owner of renewable attributes may apply for issuance of class I renewable energy RECs. If RECs or SRECs are issued, the customer-generator or other recipient of the RECs or SRECs may trade or sell the REC or SREC, or may trade or sell the REC or SREC through an aggregator, or through a trading program authorized by the Board.] use the attributes as the basis for an application for one or more RECs.

Recodify (n) through (p) as (l) through (n), no change in text.

14:8-4.4 Meters and metering

- (a) (b) (No change.)
- (c) If the customer-generator's existing electric revenue meter does not meet the requirements at (b) above, the EDC shall install a new revenue meter for the customer-generator, at the company's expense, within ten business days after the interconnection is approved in accordance with N.J.A.C. 14:8-4.7(m) or (n), N.J.A.C. 14:8-4.8, or N.J.A.C. 14:8-4.9, as applicable. Any subsequent revenue meter change necessitated by the customer-generator, whether because of a decision to stop net metering or for any other reason, shall be paid for by the customer-generator.
- (d) (No change.)

14:8-4.5 Net metering reporting requirements for EDCs

- (a) Each EDC with one or more customer-generators connected to its distribution system shall submit two net metering reports per year, one covering January 1 through June 30, and one covering July 1 through December 31. The EDC shall submit the reports by August 1 and February 1, respectively.
- (b) The EDC shall submit the reports required by this section electronically, in PDF format, to oce@bpu.state.nj.us. In addition, the EDC may, at its discretion, submit a paper copy of the reports by hand delivery or regular mail to the Secretary, Board of Public Utilities, Two Gateway Center, Newark, New Jersey 07102. The EDC may, at its discretion, submit the net metering report together with the interconnection report required under N.J.A.C. 14:8-5.9.
- (c) Each report shall include the following information regarding customer-generator energy input and output during the reporting period:
 - 1. The estimated total kilowatt hours supplied to the distribution system by customer-generators, and a description of the estimation methodology used:

- 2. The estimated total kilowatt hours that were delivered to customer-generators through the distribution system.
- (d) The report shall include the following information regarding credits and payments to customer-generators during the reporting period:
 - 1. The total number of customer-generators that were paid for excess generation at the end of the customer-generators' annualized periods; and
 - 2. The total dollar amount that the utility paid to customer-generators for excess generation at the end of the customer-generators annualized periods, separated by month.
- (e) For purposes of the reporting required under this section, any estimates shall be made using Board-approved protocols unless no such protocol is available, in which case the estimates shall be accompanied by detailed calculations demonstrating how the estimates were made.

Recodify N.J.A.C. 14:8-5 as N.J.A.C. 14:8-7, no change in text.

<u>SUBCHAPTER 5. INTERCONNECTION OF CLASS I RENEWABLE ENERGY SYSTEMS</u>

14:8-5.1 Interconnection definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise. Additional definitions that apply to this subchapter can be found at N.J.A.C. 14:3-1.1 and 14:8-1.2.

"Applicant" means a person who has filed an application to interconnect a customergenerator facility to an electric distribution system.

"Area network" means a type of electric distribution system served by multiple transformers interconnected in an electrical network circuit, which is generally used in large metropolitan areas that are densely populated, in order to provide high reliability of service. This term has the same meaning as the term "secondary grid network" as defined in IEEE standard 1547 Section 4.1.4, as amended and supplemented, which is incorporated herein by reference. IEEE standard 1547 can be obtained through the IEEE website at www.ieee.org.

"Electrical power system" or "EPS" has the same meaning as is assigned to this term in IEEE standard 1547. As of {effective date of this rule}, IEEE standard 1547 defined EPS as a facility that delivers electric power to a load.

"Fault current" means electrical current that flows through a circuit and is produced by an electrical fault, such as to ground, double-phase to ground, three-phase to ground, phase-to-phase, and three-phase. A fault current is several times larger in magnitude than the current that normally flows through a circuit.

"Good utility practice" has the same meaning as assigned to this term in the Amended and Restated Operating Agreement of PJM Interconnection, as amended and supplemented, which is incorporated herein by reference. The Operating Agreement can be obtained on the PJM Interconnection website at http://www.pjm.com/documents/downloads/agreements/oa.pdf. As of October 23, 2008, the Operating Agreement defines this term as "any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather is intended to include acceptable practices, methods, or acts generally accepted in the region."

"IEEE standards" means the standards published by the Institute of Electrical and Electronic Engineers, available at www.ieee.org.

"Interconnection agreement" means an agreement between a customer-generator and an EDC, which governs the connection of the customer-generator facility to the electric distribution system, as well as the ongoing operation of the customer-generator facility after it is connected to the system. An interconnection agreement shall follow the standard form agreement developed by the Board and available from each EDC.

"Interconnection equipment" means a group of components connecting an electric generator with an electric distribution system, and includes all interface equipment including switchgear, inverters, or other interface devices. Interconnection equipment may include an integrated generator or electric source.

"Line section" means that portion of an EDC's electric distribution system which is connected to an interconnection customer, and is bounded by automatic sectionalizing devices or the end of the distribution line.

"Point of common coupling" has the same meaning as assigned to this term in IEEE Standard 1547 Section 3.0, as amended and supplemented, which is incorporated herein by reference. IEEE standard 1547 can be obtained through the IEEE website at www.ieee.org. As of {effective date of this rule}, IEEE Standard 1547 Section 3.0 defined this term as "the point where a Local EPS is connected to an Area EPS."

"Spot network" has the same meaning as assigned to the term under IEEE Standard 1547 Section 4.1.4, (published July 2003), as amended and supplemented, which is incorporated herein by reference. IEEE standard 1547 can be obtained through the IEEE website at www.ieee.org. As of October 4, 2004, IEEE Standard 1547 defined "spot network" as "a type of electric distribution system that uses two or more inter-tied

transformers to supply an electrical network circuit." A spot network is generally used to supply power to a single customer or a small group of customers.

[14:8-4.5] 14:8-5.2 General interconnection provisions

- (a) Each EDC shall provide the following three review procedures for applications for interconnection of customer-generator facilities:
 - Level 1 an EDC shall use this review procedure for all applications to connect inverter-based customer-generator facilities, which have a power rating of 10 kW or less, and which meet the certification requirements at N.J.A.C. [14:8-4.6] 14:8-5.3. Level 1 interconnection review procedures are set forth at N.J.A.C. [14:8-4.7] 14:8-5.4;
 - Level 2 an EDC shall use this review procedure for applications to connect customer-generator facilities with a power rating of 2 MW or less, which meet the certification requirements at N.J.A.C. [14:8-4.6] 14:8-5.3. Level 2 interconnection review procedures are set forth at N.J.A.C. [14:8-4.8] 14:8-5.5; and
 - 3. Level 3 an EDC shall use this review procedure for applications to connect customer-generator facilities [with a power rating of 2 MW or less, which] that do not qualify for either the level 1 or level 2 interconnection review procedures. Level 3 interconnection review procedures are set forth at N.J.A.C. [14:8-4.9] 14:8-5.6.
- (b) (c) (No change.)
- (d) An application for interconnection review shall be submitted on a standard form, available from the EDC [and posted on the Board's website at www.bpu.state.nj.us]. The application form will require the following types of information:
 - 1. 5. (No change.)
- (e) (No change.)
- (f) (Reserved.) [The provisions of this subchapter that apply to interconnection are primarily intended for customer-generator facilities that are eligible for net metering; that is, renewable generation facilities with a capacity for no greater than two megawatts, which generate electricity for retail transactions. However, these provisions may be used for review of other interconnections at the discretion of the EDC.]
- (g) (h) (No change.)

[14:8-4.6] <u>14:8-5.3</u> Certification of customer-generator [facilities] <u>interconnection</u> equipment

(a) In order to qualify for the level 1 and the level 2 interconnection review procedures described at N.J.A.C. [14:8-4.7 and 4.8, a customer-generator facility must be certified as complying] 14:8-5.4 and 5.5, a customer-generator's interconnection equipment shall

have been tested and listed by a laboratory for continuous interactive operation with an electric distribution system in accordance with the following standards, as applicable:

- 1. (No change.)
- UL 1741 Inverters, Converters, and Controllers for Use in Independent Power Systems ([January 2001] November 2005), as amended or supplemented, which is incorporated by reference herein. UL 1741 can be obtained through the Underwriters Laboratories website at www.ul.com.
- (b) [An equipment package] Interconnection equipment shall be considered certified for interconnected operation if it has been submitted by a manufacturer to a nationally recognized testing and certification laboratory, and has been tested and listed by the laboratory for continuous interactive operation with an electric distribution system in compliance with the applicable codes and standards listed in (a) above.
- (c) If the <u>interconnection</u> equipment [package] has been tested and listed in accordance with this section as an integrated package, which includes a generator or other electric source, the <u>interconnection</u> equipment [package] shall be deemed certified, and the EDC shall not require further design review, testing or additional equipment.
- (d) If the <u>interconnection</u> equipment [package] includes only the interface components (switchgear, inverters, or other interface devices), an interconnection applicant shall show that the generator or other electric source being utilized with the <u>interconnection</u> equipment [package] is compatible with the <u>interconnection</u> equipment [package] and consistent with the testing and listing specified for the [package] equipment. If the generator or electric source being utilized with the <u>interconnection</u> equipment [package] is consistent with the testing and listing performed by the nationally recognized testing and certification laboratory, the <u>interconnection</u> equipment [package] shall be deemed certified, and the EDC shall not require further design review, testing or additional equipment.
- (e) A certified equipment package does not include equipment provided by the EDC.

[14:8-4.7] 14:8-5.4 Level 1 interconnection review

- (a) Each EDC shall adopt a level 1 interconnection review procedure. The EDC shall use the level 1 review procedure only for an application to interconnect a customergenerator facility that meets all of the following criteria:
 - 1. 2. (No change.)
 - 3. The facility has been certified in accordance with N.J.A.C. [14:8-4.6] 14:8-5.3.
- (b) (No change.)
- (c) The aggregate generation capacity on the [distribution circuit] line section to which the customer-generator facility will interconnect, including the capacity of the customer-generator facility, shall not contribute more than 10 percent to the distribution circuit's maximum fault current at the point on the high voltage (primary) level that is nearest the

proposed point of common coupling.

- (d) (No change.)
- (e) If a customer-generator facility is to be connected to a radial [distribution circuit] line section, the aggregate generation capacity connected to the circuit, including that of the customer-generator facility, shall not exceed 10 percent (15 percent for solar electric generation) of the circuit's total annual peak load, as most recently measured at the substation.
- (f) (g) (No change.)
- (h) An applicant shall submit an application for level 1 interconnection review on a standard form, available from the EDC [and posted on the Board's website at www.bpu.state.nj.us. See N.J.A.C. 14:8-4.5(d)]. An applicant may choose to simultaneously submit an EDC's standard form interconnection agreement executed by the applicant.
- (i) (j) (No change.)
- (k) If a customer-generator facility meets all of the applicable criteria at (c) through (g) above, the EDC shall, within three business days after sending the notice of approval under (j)1 above, do both of the following:
 - 1. 2. (No change.)
- (I) An applicant that receives an interconnection agreement under (k) above shall execute the agreement and return it to the EDC [at least five business days prior to starting operation of the customer-generator facility (unless the EDC does not so require). The applicant shall indicate the anticipated start date for operation of the customer-generator facility.] If the EDC requires an inspection of the customer-generator facility, the EDC shall promptly complete the inspection, and the applicant shall not begin operating the facility until completion of the inspection.
- (m) Upon receipt of the executed interconnection agreement from the customergenerator, and satisfactory completion of an inspection if required, the EDC shall [approve] notify the customer-generator in writing that the interconnection is approved, conditioned on approval by the electrical code officials with jurisdiction over the interconnection.
- (n) (p) (No change.)

[14:8-4.8] 14:8-5.5 Level 2 interconnection review

(a) Each EDC shall adopt a level 2 interconnection review procedure. The EDC shall use the level 2 interconnection review procedure for an application to interconnect a customer-generator facility that meets both of the following criteria:

- 1. (No change.)
- The facility has been certified in accordance with N.J.A.C. [14:8-4.6] 14:8-5.3.
- (b) (No change.)
- (c) The aggregate generation capacity on the [distribution circuit] line section to which the customer-generator facility will interconnect, including the capacity of the customer-generator facility, shall not cause any distribution protective equipment (including, but not limited to, substation breakers, fuse cutouts, and line reclosers), or customer equipment on the electric distribution system, to exceed 90 percent of the short circuit interrupting capability of the equipment. In addition, a customer-generator facility shall not be connected to a circuit that already exceeds 90 percent of the short circuit interrupting capability, prior to interconnection of the facility.
- (d) If there are posted transient stability limits to generating units located in the general electrical vicinity of the proposed point of common coupling (for example, within three or four transmission voltage level busses), the aggregate generation capacity (including the customer-generator facility) connected to the distribution low voltage side of the substation transformer feeding the [distribution circuit] line section containing the point of common coupling shall not exceed 10 MW.
- (e) The aggregate generation capacity connected to the [distribution circuit] line section, including the customer-generator facility, shall not contribute more than 10 percent to the [distribution circuit's] line section's maximum fault current at the point on the high voltage (primary) level nearest the proposed point of common coupling.
- (f) If a customer-generator facility is to be connected to a radial [distribution circuit] line section, the aggregate generation capacity connected to the electric distribution system by non-EDC sources, including the customer-generator facility, shall not exceed 10 percent (or 15 percent for solar electric generation) of the total circuit annual peak load. For the purposes of this paragraph, annual peak load shall be based on measurements taken over the 12 months previous to the submittal of the application, measured at the substation nearest to the customer-generator facility.
- (g) (l) (No change.)
- (m) An applicant shall submit an application for level 2 interconnection review on a standard form, available from the EDC [and posted on the Board's website at www.bpu.state.nj.us. See N.J.A.C. 14:4-9.5(d)]. An applicant may choose to simultaneously submit an EDC's standard form interconnection agreement executed by the applicant.
- (n) (s) (No change.)

[14:8-4.9] <u>14:8-5.6</u> Level 3 interconnection review

- (a) Each EDC shall adopt a level 3 interconnection review procedure. The EDC shall use the level 3 review procedure for an application to interconnect a customer-generator facility that [has a capacity less than 2 megawatts and] does not qualify for the level 1 or level 2 interconnection review procedures set forth at N.J.A.C. [14:8-4.7 and 4.8] 14:8-5.4 and 5.5.
- (b) (No change.)
- (c) The EDC shall provide an impact study agreement to the applicant, which shall include a good faith cost estimate for an impact study to be performed by the EDC. An impact study is an engineering analysis of the probable impact of a customer-generator facility on the safety and reliability of the EDC's electric distribution system. An impact study shall be conducted in accordance with good utility practice, as defined at N.J.A.C. [14:8-4.2] 14:8-5.1, and shall:
 - 1. 3. (No change.)
- (d) (l) (No change.)

[14:8-4.10] <u>14:8-5.7</u> Interconnection fees

- (a) An EDC or supplier/provider shall not charge an application or other fee to an applicant that requests level 1 interconnection review. However, if an application for level 1 interconnection review is denied because it does not meet the requirements for level 1 interconnection review, and the applicant resubmits the application under another review procedure in accordance with N.J.A.C. [14:8-4.7(p)] 14:8-5.4(p), the EDC may impose a fee for the resubmitted application, consistent with this section.
- (b) For a level 2 interconnection review, the EDC may charge fees of up to \$50 plus \$1 per kilowatt of the customer-generator facility's capacity, plus the cost of any minor modifications to the electric distribution system or additional review, if required under N.J.A.C. [14:8-4.8(o)3 or 4] 14:8-5.5(o)3 or 4. Costs for such minor modifications or additional review shall be based on EDC estimates and shall be subject to case by case review by the Board or its designee. Costs for engineering work done as part of any additional review shall not exceed \$100 per hour.
- (c) For a level 3 interconnection review, the EDC may charge fees of up to \$100 plus \$2 per kilowatt of the customer-generator facility's capacity, as well as charges for actual time spent on any impact and/or facilities studies required under N.J.A.C. [14:8-4.9] 14:8-5.6. Costs for engineering work done as part of an impact study or facilities study shall not exceed \$100 per hour. If the EDC must install facilities in order to accommodate the interconnection of the customer-generator facility, the cost of such facilities shall be the responsibility of the applicant.

[14:8-4.11] 14:8-5.8 Requirements after approval of an interconnection

- (a) Once the EDC performs an inspection or determines that no inspection is needed under N.J.A.C. 14:8-5.4, 5.5, or 5.6; and has received an executed interconnection agreement from the customer-generator; the EDC shall notify the customer-generator in writing that the customer-generator is authorized to energize the customer-generator facility.
- [(a)] (b) An EDC shall not require an applicant whose facility meets the criteria for interconnection approval under the level 1 or level 2 interconnection review procedure required pursuant to N.J.A.C. [14:8-4.7 and N.J.A.C. 14:8-4.8] 14:8-5.4 and 5.5, to install additional controls or external disconnect switches not included in the interconnection equipment [package], to perform or pay for additional tests, or to purchase additional liability insurance, except if agreed to by the applicant.
- (b) Recodify as (c), no change in text.
- [(c)] (d) Once a net metering interconnection has been approved under this subchapter, the EDC shall not require a customer-generator to test or perform maintenance on its facility except for the following:
 - 1. An annual test in which the customer-generator's facility is disconnected from the electric distribution company's equipment to ensure that the [inverter] facility stops delivering power to the grid;
 - 2. Any manufacturer-recommended testing or maintenance; and
 - 3. Any post-installation testing necessary to ensure compliance with IEEE 1547 or to ensure safety.
- (d) (f) Recodify as (e) (g), no change in text.

14:8-5.9 Interconnection reporting requirements for EDCs

- (a) Each EDC with one or more customer-generators connected to its distribution system shall submit two interconnection reports per year, one covering January 1 through June 30, and one covering July 1 through December 31. The EDC shall submit the reports by August 1 and February 1, respectively.
- (b) The EDC shall submit the reports required by this section electronically, in PDF format, to oce@bpu.state.nj.us. In addition, the EDC may, at its discretion, submit a paper copy of the reports by hand delivery or regular mail to the Secretary, Board of Public Utilities, Two Gateway Center, Newark, New Jersey 07102. The EDC may, at its discretion, submit the interconnection report together with the net metering report required under N.J.A.C. 14:8-4.5.
- (c) <u>Each report shall contain the following information regarding customer-generator facilities that interconnected with the EDC's distribution system for the first time during the reporting period, listed by type of renewable energy technology:</u>
 - 1. The number of customer-generators that interconnected;

- 2. The estimated total rated generating capacity of all customer-generator facilities that interconnected; and
- 3. The total cumulative number of customer-generators that interconnected between June 15, 2001 and the end of the reporting period, including the customer-generators in 1 above.
- (d) The information required under (c) above shall be listed by type of class I renewable energy, as set forth at N.J.A.C. 14:8-2.5(b), as follows:
 - 1. Solar PV technology;
 - 2. Wind technology;
 - 3. Biomass; or
 - 4. A renewable energy technology not listed at (d)1 through 3 above. In such a case, the report shall include a description of the renewable energy technology.

SUBCHAPTER 7. APPLIANCE EFFICIENCY, CERTIFICATION, AND TESTING STANDARDS

14:8-[5.1] 7.1 (No change in text.)

14:8-[5.2] 7.2 Purpose and scope

- (a) (b) (No change.)
- (c) This subchapter governs the following appliances, as defined at N.J.A.C. 14:8-[5.1] 7.1:
 - 1. 9. (No change.)
- (d) (f) (No change.)

14:8-[5.3] 7.3 Standards and testing for commercial clothes washers

- (a) No person shall sell, offer to sell, or install a commercial clothes washer in New Jersey after January 7, 2008, unless the clothes washer has been certified in accordance with N.J.A.C. 14:8-[5.8] 7.8 to meet the energy efficiency standards in Table A below.
- (b) Beginning on January 1, 2010, no person shall sell, offer to sell, or install a commercial clothes washer in New Jersey, unless the clothes washer has been certified in accordance with N.J.A.C. 14:8-[5.8]7.8 to meet both the energy efficiency standards, and the water efficiency standards in Table A below.
- (c) (No change.)

Table A

(No change.)

(d) (No change.)

14:8-[5.4]7.4 Standards and testing for commercial refrigerator, freezer and refrigerator-freezer equipment

- (a) No person shall sell, offer to sell, or install commercial refrigerator, freezer, or refrigerator-freezer equipment in New Jersey on or after January 1, 2010, unless the equipment has been certified in accordance with N.J.A.C. 14:8-[5.8]7.8 to meet the applicable energy efficiency standards in Table B or C below.
- (b) If commercial refrigerator, freezer, or refrigerator-freezer equipment is designed for holding temperature applications, as defined at N.J.A.C. 14:8-[5.1]7.1, the equipment shall use no more energy than the applicable maximum set forth in Table B below.
- (c) (No change.)

Table B (No change.)

(d) If commercial refrigerator, freezer, and refrigerator-freezer equipment is designed for pull-down temperature applications, as defined at N.J.A.C. 14:8-[5.1]7.1, the equipment shall use no more energy than the maximum set forth in Table C below:

Table C

(No change.)

(e) – (g) (No change.)

14:8-[5.5]7.5 Standards and testing for air-cooled central air conditioners and air-cooled central air conditioning heat pumps

- (a) No person shall sell, offer to sell, or install air-cooled central air conditioners or air-cooled central air conditioning heat pumps, as these terms are defined at N.J.A.C. 14:8-[5.1]7.1, on or after January 1, 2010, unless the air conditioner or heat pump has been certified in accordance with N.J.A.C. 14:8-[5.8]7.8.
- (b) For an air-cooled central air conditioner, the energy efficiency ratio, as defined at N.J.A.C. 14:8-[5.1]7.1, shall be as follows:
 - 1. 3. (No change.)
- (c) For an air-cooled central air conditioning heat pump, the coefficient of performance, as defined at N.J.A.C. 14:8-[5.1]7.1, shall be as follows:
 - 1. 3. (No change.)
- (d) (e) (No change.)

14:8-[5.6]<u>7.6</u> Standards and testing for low-voltage dry type distribution transformers

(a) No person shall sell, distribute, or install a low-voltage dry type distribution transformer, as defined at N.J.A.C. 14:8-[5.1]7.1, after January 7, 2008, unless the transformer has been certified in accordance with N.J.A.C. 14:8-[5.8]7.8 to meet or exceed the energy efficiency values shown in Table D below:

Table D

(No change.)

(b) (No change.)

14:8-[5.7]<u>7.7</u> Standards and testing for exit signs, torchieres, traffic signals, and unit heaters

- (a) No person shall sell, offer to sell, or install an illuminated exit sign, as defined at N.J.A.C. 14:8-[5.4]7.1, after January 7, 2008, unless the sign has been certified in accordance with N.J.A.C. 14:8-[5.8]7.8 to meet the requirements of the United States Environmental Protection Agency's (USEPA) "Energy Star Program Requirements for Exit Signs," incorporated by reference herein as amended and supplemented, which are available at http://www.energystar.gov.
- (b) (No change.)
- (c) No person shall sell, offer to sell, or install a traffic signal module, as defined at N.J.A.C. 14:8-[5.1]7.1, after January 7, 2008, unless the module has been certified in accordance with N.J.A.C. 14:8-[5.8]7.8, to meet the USEPA's "Energy Star Program Requirements for Traffic Signals," which are incorporated by reference herein as amended and supplemented, available at http://www.energystar.gov.
- (d) (No change.)
- (e) No person shall sell, offer to sell, or install a torchiere lighting fixture, as defined at N.J.A.C. 14:8-[5.1]7.1, after January 7, 2008, unless the fixture has been certified in accordance with N.J.A.C. 14:8-[5.8]7.8 to consume 190 watts or less, and is not capable of operating using a bulb(s) that draws more than 190 watts.
- (f) (No change.)
- (g) No person shall sell, offer to sell, or install a unit heater, as defined at N.J.A.C. 14:8-[5.1]7.1, after January 7, 2008, unless the heater has been certified in accordance with N.J.A.C. 14:8-[5.8]7.8 to be equipped with an intermittent ignition device and has either power venting or an automatic flue damper.

14:8-[5.8]7.8 Certification

(No change in text.)

14:8-[5.9]<u>7.9</u> Enforcement

- (a) (No change.)
- (b) If the Board's testing of appliances under N.J.A.C. 14:8-[5.2(e)]7.2(e) indicates that an appliance is not in compliance with this subchapter, the Board shall report the test results to the Commissioner of NJDEP, who shall, in accordance with N.J.S.A. 48:3-103c:
 - 1. 2. (No change.)
- (c) (g) (No change.)