BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF DELAWARE

IN THE MATTER OF THE ADOPTION OF RULES AND REGULATIONS TO IMPLEMENT THE PROVISIONS OF 26 DEL. C. CH. 10 RELATING TO THE CREATION OF A COMPETITIVE MARKET FOR RETAIL ELECTRIC SUPPLY SERVICE (OPENED APRIL 27,1999; RE-OPENED SEPTEMBER 7, 2010)	)))))))	PSC REGULATION DOCKET NO. 49

COMMENTS

OF THE

INTERSTATE RENEAWBLE ENERGY COUNCIL

DATE: November 1, 2010

I. INTRODUCTION

On September 7, 2010, in Order No. 7832, the Public Service Commission (PSC) issued proposed revisions to the Net Energy Metering provisions of its Rules for Certification and Regulation of Electric Suppliers, originally adopted by PSC Order No. 5207 (Aug. 31, 1999) and subsequently revised from time to time since the original adoption. Pursuant to Order No. 7832, the Interstate Renewable Energy Council (IREC) submits these comments regarding the proposed regulations to implement Senate Bill No. 267 (SB 267).

IREC appreciates the opportunity to file these comments. For nearly three decades, IREC has worked as a non-profit organization to accelerate the sustainable utilization of renewable energy resources. With funding from the U.S. Department of Energy, IREC's mission includes assisting policymakers in identifying best practices in the areas of net metering and interconnection of renewable resources. To assist stakeholders in their efforts, IREC has developed model interconnection standards and net metering rules that present best practices in these vital areas.[1]

In addition, in the past two years, IREC has participated in proceedings before over thirty state utility commissions concerning net metering rules, interconnection standards and other policies necessary to assist the sustainable development of renewable energy. IREC has also received funding to assist stakeholders in developing community solar programs that are additive to successful on-site solar energy programs. IREC has assisted in efforts in Massachusetts,

[1] IREC's Model Interconnection Standards and Procedures for Small Generator Facilities are available at http://irecusa.org/fileadmin/user_upload/ConnectDocs/IREC_IC_Model_October_2009.pdf. IREC's Model Net Metering Model Rules are available at http://ww.irecusa.org/fileadmin/user_upload/ConnectDocs/IREC_NM_Model_October_2009-1.pdf.

Colorado, and other states to expand net metering programs to cover community renewables. IREC has worked with utilities, solar developers, community members, and other stakeholders to develop model rules that can be used as a starting point for a successful community renewables program.[2] IREC looks forward to helping the PSC and stakeholders in Delaware to develop a community renewables program that will continue Delaware's solid growth in renewable energy and promote the green energy economy in the state.

II. COMMENTS ON THE CURRENTLY PROPOSED RULES

A. Definitions in Rule 1.0

1. Definition of "Customer" or "Retail Electric Customer"

The proposed rules add a clause to the current definition of "Customer" or "Retail Electric Customer" that is designed to include in that term participants in a Community Energy Facility. However, given the structure of the rules as discussed in more detail below, a separate definition for participants in a Community Energy Facility is preferable. Separating the definition in this way would clarify the meaning of "Community Energy Facility" by preventing any confusion between the term "Customer" and the phrase "multiple owners or customers," which is currently undefined within the rules. Accordingly, IREC requests the following modifications to Rule 1.0:

> "Customer" or "Retail Electric Customer" means a purchaser of electricity for ultimate consumption and not for resale in Delaware, including the owner/operator of any building or facility, but not the occupants thereof, who purchases and supplies electricity to the occupants of such building or facility~~, or the multiple owners or customers who share the energy~~

[2] IREC's model community renewables program rules are included as Attachment A to provide additional context to our comments in this docket.

~~production of a Community Energy Facility~~.[3]

"Subscribers" means the multiple owners or Customers who share the energy production of a Community Energy Facility.

2. Definition of "Community-owned energy generating facility" or "Community Energy Facility"

First, the use of two terms for the same generation facility might lead to unnecessary confusion. It seems prudent to use either "Community-owned energy generating facility" or "Community Energy Facility." "Community Energy Facility" appears most frequently in the rules. Accordingly, IREC recommends its exclusive use.

In addition, consistent with IREC's request above regarding the definition of "Customer" or "Retail Electric Customer," the definition of "Community-owned energy generating facility" should be changed to eliminate the phrase "multiple owners or customers" and replace it with the term "Subscribers" as defined above.

There also appears to be a typographical error in the definition where it states, "Satisfy all applicable requirements of Section 8.2 General Provisions of this Rule." Section 8.2 deals with certain net metering rules regarding metering and does not encompass all of the rules applicable to Community Energy Facilities. Instead, IREC suggests making a more general reference to Section 8.0, which contains all of the net metering rules for generation resources. Doing so would clarify that all of the rules in Section 8.0 apply to Community Energy Facilities, to the extent that they are applicable.

[3] In drafting our comments, we have accepted the proposed rules as provided in Order No. 7832 and provided our suggestions in redline/strikethrough format.

IREC has modified the definition and other relevant rules below, consistent with the requests above:

> ~~"Community-owned energy generating facility" or~~ "Community Energy Facility" means a renewable energy generating facility that has ~~multiple owners or customers~~ Subscribers who share the energy production of the Community Energy Facility, which may be located either as a stand-alone facility or behind the meter of a Subscriber ~~participating owner or customer~~. The ~~Community-owned energy generating facility~~ "Community Energy Facility" shall be interconnected to the distribution system and operated in parallel with an electric distribution company's transmission and distribution facilities. The Community Energy Facility shall:
>
> Satisfy all applicable requirements of Section ~~8.2~~8.0 General Provisions of the Rule;

Similarly, the definition of Customer-Generator Facility would need to be modified to reference Rule 8.0 rather than Rule 8.2.

3. Definition of "Host Customer"

Consistent with the discussion above, the definition of "Host Customer" should be modified so it no longer refers to "multiple owners or customers." In addition, IREC believes the purpose of the last clause in the definition of "Host Customer" is to identify the account to which energy payments may be made for stand-alone Community Energy Facilities. Accordingly, IREC has added language to the definition to focus more specifically on that situation.

> "Host Customer" means the Customer account directly connected to a Customer-Generator Facility or Community Energy Facility, or, in the case of stand-alone Community Energy Facilities, the Customer account as designated by the Subscribers ~~multiple owners or customers who share the energy production~~ of ~~the~~a Community Energy Facility.

B. Net Metering for On-Site Renewable Systems

Overall, IREC agrees with the changes proposed in Sections 8.1, 8.2 and 8.3. However, to provide clarity on what rules apply for on-site generation and what rules apply for Community Energy Facilities, rules related specifically to Community Energy Facilities should be placed in their own section. Accordingly, IREC requests that the proposed Section 8.4 be moved to Section 8.5, which is the new section IREC has proposed for Community Energy Facilities as discussed below. Similarly, IREC requests that proposed Rule 8.5.3, which appears to address issues related to Subscribers in Community Energy Facilities, be deleted from its current position and moved to the new Section 8.5 dealing specifically with Community Energy Facilities. Finally, IREC requests that proposed Section 8.5, concerning meter aggregation for on-site customers, become Section 8.4, and that the rules be subsequently internally renumbered as necessary.

C. Rules for Community Energy Facilities—New Section 8.5

As noted above, IREC believes that providing rules related to Community Energy Facilities in a separate section will greatly aid the overall clarity of the rules. Accordingly, IREC has requested that proposed Rule 8.4 be moved into a new Rule 8.5, and has recommended restructuring the numbering of the rules as necessary to provide additional clarity.

In addition to this general change, IREC believes that a number of topics need to be addressed within new Section 8.5 in order to facilitate the development of Community Energy Facilities.

1. Determination of the Net Metering Credits from Community Energy Facilities

The proposed rules do not appear to clearly state how net-metering credits will be determined for stand-alone Community Energy Facilities. Clarity on this point is absolutely critical in order to facilitate the development of Community Energy Facilities because net metering credits represent a significant source of the value stream stemming from a customer's investment in renewable energy resources.

Sections 1014(e)(1) and (2) provide the statutory basis for net metering in Delaware. Section 1014(e)(1) focuses on the valuation of net metering credits for customers with on-site generating facilities while Section 1014(e)(2) describes the valuation of net metering credits for customers participating in a Community Energy Facility. Proposed rule 8.4 appears to have been drafted consistent with this statutory language. However, IREC suggests clarifying the rule would greatly enhance it's utility. Specifically, proposed rule 8.4 should explain that "excess energy production" is the production of more energy than the Host Customer consumes when a Community Energy Facility is located behind a Subscriber's meter. This characterization of excess energy production is consistent with the treatment of excess energy production in Rule 8.3 which notes, in relevant part, that "[i]f, during any billing period, a Customer-Generator Facility produces more energy than that consumed by the Customer…" when describing excess energy production for an on-site Customer-Generator Facility.

In the case of a stand-alone Community Energy Facility, IREC requests that a separate rule be developed that identifies "excess energy production" as all energy production that is exported to the distribution system as there would be no Host Customer system to instantaneously consume any portion of the energy produced by the facility. IREC has drafted

proposed rules in Section 8.5 consistent with these views. In the case of stand-alone Community Energy Facilities, the new rule has been drafted consistent with the current proposed rule for Community Energy Facilities.

2. Rules for Community Energy Facilities

Section 1014(e)(9) contains statutory rules related to Community Energy Facilities, which apply in the absence of the promulgation of rules for Section 1014(e)(3). Section 1014(e)(3) describes an Electric Supplier's option to pay for the value of excess energy produced by a Community Energy Facility rather than net meter that excess energy to Community Energy Facility Subscribers. IREC reads these statutory rules to apply to all Community Energy Facilities in the absence of rules related to Section 1014(e)(3).

Sections 1014(e)(9)(c) and 1014(e)(9)(d) specify how the size of a Community Energy Facility will be determined. These sections base the overall size limit for a Community Energy Facility on the sum of the capacity allowed to each Subscriber to offset 110% of their aggregate annual consumption, but they also cap each Subscriber at the capacity limits specified in Section 1014(d)(1). IREC suggests small modifications to the proposed Rules 8.6.3 and 8.6.4 to clarify this framework for determining the size of a Community Energy Facility consistent with Sections 1014(e)(9)(c) and 1014(e)(9)(d). Moreover, given Sections 1014(e)(9)(c) and 1014(e)(9)(d), we believe proposed Rule 8.4.1 is redundant and should be deleted.

Lastly, Section 8.5.1 below uses the word "bulling" when the word "billing" was almost certainly intended. IREC has corrected this typographical error in our proposed rules.

Based upon the above discussion, IREC offers the following rules:

8.5 Community Energy Facilities.

8.5.1 Net Metering of Hosted Community Energy Facilities. In each billing period ~~Customers~~ Subscribers participating in a Community Energy Facility shall be credited in kilowatt-hours (kWh) valued at an amount per kWh equal to supply service charges according to each account's rate schedule for any ~~excess~~ energy production of the Community Energy Facility not consumed on-site by the Host Customer. For ~~Customers~~ Subscribers directly connected to a Community Energy Facility, or where all participating ~~Customers~~ Subscribers are located on the same distribution feeder as a Community Energy Facility, credit in kWh shall be valued according to each account's rate schedule and the crediting for excess energy production under Section 8.3 or Section 8.4.2 of this Rule. Excess kWh credits shall be credited to subsequent billing periods to offset ~~Customers'~~ Subscribers' consumption in those billing periods. At the end of the annualized bi~~u~~lling period, a Host Customer may request a payment from the Electric Supplier for any excess kWh credits. The payment shall be calculated by multiplying the excess kWh credits by the supply service rate of the Host Customer of the Community Energy Facility. Such payment shall be made to the Host Customer of the Community Energy Facility, and may be credited to the Host Customer account through monthly billing if less than $25. Any excess kWh credits shall not reduce any fixed monthly customer charges imposed by the Electric Supplier. The ~~Customers~~ Subscribers participating in a Community Energy Facility retain ownership of all RECs associated with electric energy produced unless the ~~Customers~~ Subscribers participating in the Community Energy Facility have relinquished such ownership by contractual agreement with a third party.

8.5.2 Net Metering of stand-alone Community Energy Facilities. In each billing period Subscribers participating in a stand-alone Community Energy Facility shall be credited in kilowatt-hours (kWh) valued at an amount per kWh equal to supply service charges according to each account's rate schedule for the total energy production of the Community Energy Facility that is exported to the Energy Supplier's distribution system. Where all Subscribers are located on the same distribution feeder as a Community Energy Facility, credit in kWh shall be valued according to each account's rate schedule. Excess kWh credits shall be credited to subsequent billing periods to offset Subscribers' consumption in those billing periods. At the end of the annualized billing period, a Host Customer may request a payment from the Electric Supplier for any excess kWh credits. The payment shall be calculated by multiplying the

excess kWh credits by the supply service rate of the Host Customer of the Community Energy Facility. Such payment shall be made to the Host Customer of the Community Energy Facility, and may be credited to the Host Customer account through monthly billing if less than $25. Any excess kWh credits shall not reduce any fixed monthly customer charges imposed by the Electric Supplier. The Subscribers participating in a Community Energy Facility retain ownership of all RECs associated with electric energy produced unless the Subscribers participating in the Community Energy Facility have relinquished such ownership by contractual agreement with a third party.

8.5.3 A Community Energy Facility shall not exceed the sum total of the capacity limits as defined under Section 8.1.1.1 through Section 8.1.1.3 among the participants of a Community Energy Facility; and

8.5.4 As an alternative to Section 8.5.1 above, DP&L may elect to make payment to the Host Customer of the Community Energy Facility for the value of the ~~excess~~ energy production as established by the Commission not consumed on-site by the Host Customer.

8.6 Rules Applicable to All Community Energy Facilities.

Unless the value of excess energy production has been established by the Commission pursuant to Section 8.5.4, individual ~~c~~Customers may aggregate their individual meters in conjunction with a Community Energy Facility, provided:

8.6.1 A community includes customers sharing a unique set of interests; and

8.6.2 DP&L shall only allow meter aggregation for ~~customer~~ Subscriber accounts of which it provides electric supply service; and

8.6.3 A Community Energy Facility is designed to produce no more than 110% of the community's aggregate electrical consumption of its individual ~~Customers~~ Subscribers, calculated on the average of the two previous 12-month periods of actual electrical usage for each Subscriber. For new building construction or in instances where less than two previous 12 month periods of actual usage is available for a particular Subscriber, electrical consumption will be estimated at 110% of the consumption of units of similar size and characteristics at the time of installation of energy generating equipment; and

8.6.4 A Community Energy Facility shall not exceed the sum total of the capacity limits authorized ~~among the participants~~ for each Subscriber of a Community Energy Facility as ~~defined~~specified under Section 8.1.1 through Section 8.1.3; and

8.6.5 A Community Energy Facility may include technologies defined under §352(6)(a-h) of Title 26 of the Delaware Code; and

8.6.6 Before Net Metering for a Community Energy Facility may be formed and served by DP&L, the community proposing a Community Energy Facility shall file with the Delaware Energy Office and DP&L the following information:

(i) a list of individual meters the community is entitled to aggregate identified by name, address, rate schedule, and account number; and

(ii) a description of the Community Energy Facility, including the facility's physical location, the Host Customer's physical location, capacity, and fuel type or generating technology; and

(iii) the quantity or proportionate share of kWh credits to be attributed to each meter, which DP&L shall true-up at the end of the annualized billing period.

8.6.7 A community proposing a Community Energy Facility may change its list of aggregated meters as specified in Section 8.6.6(i) no more than quarterly by providing ninety days' written notice to DP&L; and

8.6.8 If the community proposing a Community Energy Facility removes individual ~~Customers~~ Subscribers from the list of aggregated meters as specified in Section 8.6.6(i), then that community shall either replace the removed ~~Customers~~ Subscribers, reduce the generating capacity of the Community Energy Facility to remain compliant with the provisions provided under Sections 8.6.3 and 8.6.4, or negotiate with DP&L to establish a mutually acceptable agreement for any excess kWh credit; and

8.6.9 DP&L may require that ~~Customers~~ Subscribers participating in a Community Energy Facility have their meters read on the same billing cycle; and

8.6.10 Neither ~~Customers~~ Subscribers nor owners of ~~community-owned energy generating facilities~~ Community Energy Facilities shall be subject to regulation as either public utilities or an Electric Supplier.

> 8.7 Nothing in these Rules is intended in any way to limit eligibility for net energy metering services based upon direct ownership, joint ownership, or third-party ownership or financing agreement related to an electric generation facility, where net energy metering would otherwise be available.
>
> 8.8 For public utilities regulated by the Commission, net metering aggregation disputes limited to the correct application of Commission-approved tariffs shall be resolved by the Commission. All other disputes with an Electric Supplier, DEC, or municipal electric companies shall be resolved by the appropriate governing body with jurisdiction over such disputes.

3. Interconnection

IREC appreciates the inclusion of proposed Rule 8. 9, which mirrors the requirement in Section 1014(e)(5) that "[a]n electric supplier's interconnection rules shall be developed using as a guide the Interstate Renewable Energy Council's Model Interconnection Rules and best practices identified by the U.S. Department of Energy…." This statutory requirement is particularly important because solid interconnection procedures, along with solid net metering rules, are at the heart of successful state-level renewable energy programs. Using model rules and standards as a foundation for developing a particular state's policies allows for consistency between utility interconnection standards and net metering rules at both the state and national level.

Such consistency in interconnection standards is important for the development of the renewables industry. An investor or developer considering a project in a state must investigate the state's interconnection procedures carefully in order to be sure there are no provisions that might delay or block a proposed project. Installers must similarly review interconnection standards for projects to ensure they know the applicable procedures. When interconnection standards vary widely between utilities within a state or between states, installers and developers

face additional—often unnecessary—complexity and uncertainty, which in turn results in additional costs. In contrast, consistent, uniform interconnection standards and net metering rules lower costs, and thereby promote the development of the renewables market and customer investment. Consistency in interconnection standards has the additional benefit of increasing safety because installers have an increased familiarity with procedures seen over and over again across utilities. Finally, basing interconnection standards and net metering rules on model procedures developed over time by utility and stakeholder experts conserves scarce resources. It leverages the expertise embodied in the models and benefits everyone—ratepayers, utilities, industry, and customers seeking to invest in renewable resources.

To assist stakeholders in developing interconnection procedures for their state that meet best practices, IREC has developed *Model Interconnection Standards and Procedures for Small Generator Facilities*.[4] IREC's *Model Interconnection Standards* represents the best practices that have evolved from negotiations between utility and stakeholder experts on interconnection within state proceedings, the Federal Energy Regulatory Commission (FERC), the National Association of Regulatory Utility Commissioners (NARUC), and the Mid-Atlantic Distributed Resources Initiative (MADRI). While technical standards form the core of modern interconnection procedures, they are not enough. IREC's model rules offer a complete package of interconnection standards and procedures to support investment in renewables by addressing fees, timelines, insurance requirements and indemnification, forms and other important issues. They have been proven to safeguard the electrical grid, utility workers, and other electric

[4] IREC's Model Interconnection Procedures are included herein as Attachment B. IREC's Model Interconnection Procedures are also available at http://irecusa.org/wp-content/uploads/2010/01/IREC-Interconnection-Procedures-2010final.pdf.

ratepayers while permitting renewables to flourish. Of course, best practices continuously evolve as more states adopt interconnection standards and net metering rules, and as first-mover states revisit their polices in light of experience. With this in mind, IREC recently updated *Model Interconnection Standards* to incorporate evolving best practices.

Every year, IREC also assists the Network for New Energy Choices, along with The Vote Solar Initiative and The Solar Alliance, to develop and release *Freeing the Grid: Best and Worst Practices In State Net Metering Policies and Interconnection Procedures* (*Freeing the Grid*). *Freeing the Grid* discusses the importance of net metering and interconnection in supporting the growth of renewables. It provides detailed information on the interconnection standards and net metering rules of all 50 States, and ranks each state with a letter grade, using criteria based on best practices in net metering and interconnection policy. Delaware has consistently been a leader in net metering, scoring a B in 2008, and an A in both 2009 and 2010.

Unfortunately, Delaware does not score so highly when its interconnection procedures are compared to best practices having scored an F in 2008, a D in 2009 and an F in 2010 in *Freeing the Grid*. While Section 1014(e)(5) requires the use of IREC's model rules as a guide, there are not statewide interconnection procedures in place for Delaware, because of this fact, in grading Delaware for *Freeing the Grid*, reviewers reviewed Delmarva Power & Light's (Delmarva) interconnection procedures. As part of developing the discussion contained herein, we also reviewed the interconnection procedures for Delaware Electric Cooperative (DEC). DEC's interconnection procedures scored an F also. While a side-by-side comparison of the differences between the best practices contained in IREC's *Model Interconnection Procedures* and the interconnection procedures reviewed to date is not possible in these comments, the low

scores for Delaware's interconnection policies in *Freeing the Grid* show that there is substantial deviation from best practices in nearly all of the critical areas reviewed. These areas include the use of technical screens, standardized agreements, timelines for review, interconnection charges, charges for engineering review, certification requirements, insurance requirements, eligibility to use interconnection procedures, and interconnection to secondary networks. IREC appreciates the opportunity this proceeding provides to work with stakeholders to incorporate best practices into Delaware's interconnection procedures and meet the requirements of Section 1014(e)(5).

III. CONCLUSION

IREC appreciates the opportunity to offer these comments on the rules proposed in Order No. 7832 resulting from SB 267. Community renewables represent an exciting opportunity to expand the ability of all ratepayers in Delaware to participate in greening their energy supply and creating jobs in the State. IREC looks forward to participating in the proceeding to assist the PSC and all stakeholders in developing rules and interconnection procedures to support SB 267.

Because of the complexity many of these issues present, IREC suggests that parties might benefit from a workshop to discuss the issues in the proceeding prior to a hearing. A workshop could help parties better understand the various issues in this proceeding and thereby narrow, or even eliminate, areas of potential disagreement prior to hearings.

Respectfully submitted,

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Attachment A

I. Definitions. As used within these rules, unless the context otherwise requires:

(a) "Biomass" means a power source that is comprised of, but not limited to, combustible residues or gases from forest products manufacturing; waste, byproducts, or products from agricultural and orchard crops; waste or co-products from livestock and poultry operations; waste or byproducts from food processing, urban wood waste, municipal liquid waste treatment operations, and landfill gas.[1]

(b) "Community Energy Generating Facility" means Renewable Energy Generation that is interconnected at the distribution system level and that is located in or near a community served by an Electricity Provider where the electricity generated by the facility is credited to the Subscribers to the facility. A Community Energy Generating Facility may be located either as a stand-alone facility, called herein a stand-alone Community Energy Generating Facility, or behind the meter of a participating Subscriber, called herein a hosted Community Energy Generating Facility. A Community Energy Generating Facility may be no larger than two megawatts (MW). A Community Energy Generating Facility must have at least two Subscribers.

(c) "Electricity Provider" means the jurisdictional entity that is required to offer Net Metering service to Subscribers pursuant to [code section for applicable Net Metering rules].

(d) "Locational Benefits" mean the benefits accruing to the Electricity Provider due to the location of the Community Energy Generating Facility on the distribution grid. Locational Benefits include such benefits as avoided transmission and distribution system upgrades, reduced transmission and distribution level line losses, and ancillary services.

(e) "Net Metering" means a methodology under which electric energy generated by or on behalf of a Subscriber and delivered to the Electricity Provider's local distribution facilities may be used to offset electric energy provided by the Electricity Provider to the Subscriber during the applicable billing period.

(f) "Renewable Energy Credit" means a tradable instrument that includes all renewable and environmental attributes associated with the production of electricity from a Community Energy Generating Facility.

(g) "Renewable Energy Generation" means an electrical energy generation system that uses one or more of the following fuels or energy sources: Biomass, solar energy, geothermal energy, wind energy, ocean energy, hydroelectric power, or hydrogen produced from any of these resources.

[1] The definition of Biomass may need to be adjusted to reflect state renewable portfolio standard definitions.

(h) "Subscriber" means a retail customer of a utility who owns a Subscription and who has identified one or more individual meters or accounts to which the Subscription shall be attributed. Such individual meters or accounts shall be within the same Electricity Provider's distribution service territory as the Community Energy Generating Facility.

(i) "Subscriber Organization" means an organization whose sole purpose is to beneficially own and operate a Community Energy Generating Facility for the Subscribers of the Community Energy Generating Facility. A Subscriber Organization may be any for-profit or non-profit entity permitted by [state] law. The Community Energy Generating Facility may also be built, owned, and operated by a third party under contract with the Subscriber Organization.

(j) "Subscription" means an interest in a Community Energy Generating Facility. Each Subscription shall be sized to represent at least one kilowatt of the Community Energy Generating Facility's generating capacity; provided, however, that the Subscription is sized to produce no more than 120% of the Subscriber's average annual electrical consumption. For Subscribers participating in meter aggregation, 120% of the Subscriber's aggregate electrical consumption may be based on the individual meters or accounts that the Subscriber wishes to aggregate pursuant to these rules. In sizing the Subscription, a deduction for the amount of any existing renewable energy generation at the Subscriber's premises or any Subscriptions owned by the Subscriber in other Community Energy Generating Facilities shall be made.

(k) "Total Aggregate Retail Rate" means the total retail rate that would be charged to a Subscriber if all electric rate components of the Subscriber's electric bill, including any riders or other additional tariffs, except for minimum monthly charges, such as meter reading fees or customer charges, were expressed as per kilowatt-hour (kWh) charges.

II. General Provisions

(a) Subscriptions in a Community Energy Generating Facility may be transferred or assigned to a Subscriber Organization or to any person or entity that qualifies to be a Subscriber under these rules.

(b) New Subscribers may be added at the beginning of each billing cycle. The owner of a Community Energy Generating Facility or its designated agent shall inform the Electricity Provider of the following information concerning the Subscribers to the Community Energy Generating Facility on no more than a monthly basis: (1) a list of individual Subscribers by name, address, account number; (2) the proportional interest of each Subscriber in the Community Energy Generating Facility; and (3) for Subscribers who participate in meter aggregation, the rank

order for the additional meters or accounts to which Net Metering credits are to be applied.

(c) A Subscriber may change the individual meters or accounts to which the Community Energy Generating Facility's electricity generation shall be attributed for that Subscriber no more than once quarterly, so long as the individual meters or accounts are eligible to participate.

(d) An Electricity Provider may require that customers participating in a Community Energy Generating Facility have their meters read on the same billing cycle.

(e) If the full electrical output of a stand-alone Community Energy Generating Facility or the excess generation from a hosted Community Energy Generating Facility is not fully allocated to Subscribers, the Electricity Provider shall purchase the unsubscribed energy at a kWh rate that reflects the full value of the generation. Such rate shall include the avoided cost of the energy, including any Locational Benefits of the Community Energy Generating Facility.

(f) If a Subscriber ceases to be a customer within the distribution service territory within which the Community Energy Generating Facility is located, the Subscriber must transfer or assign their Subscription back to their Subscriber Organization or to any person or entity that qualifies to be a Subscriber under these rules.

(g) If the Subscriber ceases to be a customer of the Electricity Provider or switches Electricity Providers, the Electricity Provider is not required to provide compensation to the Subscriber for any unused Net Metering credits.

(h) A Community Energy Generating Facility shall be deemed to be located on the premises of each Subscriber for the purpose of determining eligibility for state incentives.

(i) Neither the owners of, nor the Subscribers to, a Community Energy Generating Facility shall be considered public utilities subject to regulation by the [responsible agency having regulatory oversight] solely as a result of their interest in the Community Energy Generating Facility.

(j) Prices paid for Subscriptions in a Community Energy Generating Facility shall not be subject to regulation by the [responsible agency having regulatory oversight].

(k) A Subscriber owns the Renewable Energy Credits (RECs) associated with the electricity allocated to the Subscriber's Subscription, unless such RECs were explicitly contracted for through a separate transaction independent of any Net Metering or interconnection tariff or contract. For a Community Energy Generating Facility located behind the meter of a participating Subscriber, the

host Subscriber owns the RECs associated with the electricity consumed on-site, unless the RECs were explicitly contracted for through a separate transaction independent of any Net Metering or interconnection tariff or contract.

(l) The dispute resolution procedures available to parties in the Electricity Provider's interconnection tariff shall be available for the purposes of resolving disputes between an Electricity Provider and Subscribers or their designated representative for disputes involving the Electricity Provider's allocation of Net Metering credits to the Subscriber's electricity bill consistent with the allocations provided pursuant to Rule II.b. The Electricity Provider shall not be responsible for resolving disputes related to the agreements between a Subscriber, the owner of a Community Energy Generating Facility, and/or a Subscription Organization or any other party. This provision shall in no way limit any other rights the Subscriber may have related to an Electricity Provider's provision of electric service or other matters as provided by, but not limited to, tariff, decision of [responsible regulatory body or agency], or statute.

IV. Net-metering Provisions

(a) An Electricity Provider shall not limit the cumulative, aggregate generating capacity of Community Energy Generating Facilities.[2]

(b) For a Community Energy Generating Facility, the total amount of electricity expressed in kWh available for allocation to Subscribers, and the total amount of RECs generated by the Community Energy Generating Facility and allocated to Subscribers, shall be determined by a production meter installed and paid for by the owner(s) of the Community Energy Generating Facility. It shall be the Electricity Provider's responsibility to read the production meter.

(c) For a hosted Community Energy Generating Facility, the determination of the quantity of kWh credits available to Subscribers of that facility for Net Metering,

[2] This program rule is based upon IREC's Net Metering Model Rule (b)(2), which specifies that the cumulative, aggregate generating capacity net metered by on-site renewable generation facilities shall not be arbitrarily limited. Some states cap the total amount of aggregate Renewable Energy Generation that can be Net Metered for a particular Electricity Provider. Most commonly, aggregate enrollment caps are expressed as a percentage of an Electricity Provider's peak demand based on the aggregate of nameplate capacity of the generation systems (though it should be noted that capacity calculations are not standardized in their methodology across or even within states). Such percentages can vary from as low as 0.1% to as high as 20%. IREC believes aggregate caps arbitrarily and unnecessarily limit private investment in Renewable Energy Generation and needlessly curtail the flow of benefits that are associated with customer-side Renewable Energy Generation. For states that place an aggregate enrollment cap on net metered generation, that cap should be removed or expanded to ensure that community renewables programs do not undermine successful on-site programs.

including the host Subscriber, shall be based on any energy production of the Community Energy Generating Facility that exceeds the host Subscriber's instantaneous on-site consumption during the applicable billing period and the Subscribers' Subscriptions in that Community Energy Generating Facility.

(d) For a stand-alone Community Energy Generating Facility, the determination of the quantity of kWh credits available to each Subscriber of that Community Energy Generating Facility for Net Metering shall be based on the total exported generation of the Community Energy Generating Facility and each Subscriber's Subscription in that Community Energy Generating Facility.

(e) For Subscribers that host a Community Energy Generating Facility or where participating Subscribers are located on the same distribution feeder as the Community Energy Generating Facility, the value of the kWh credits for the host Subscriber and those Subscribers on the same distribution feeder shall be calculated by multiplying the Subscriber's share of the kWh electricity production from the Community Energy Generating Facility by the retail rate for the Subscriber. For Subscribers on tariffs that contain demand charges, the retail rate for the Subscriber shall be calculated as the Total Aggregate Retail Rate for the Subscriber.

(f) For all other Subscribers to a Community Energy Generating Facility, value of the kWh credits allocated to each Subscriber shall be calculated by multiplying the Subscriber's share of the electricity production from the Community Energy Generating Facility by the retail rate as charged to the Subscriber, minus a reasonable charge as determined by the [responsible agency having regulatory oversight] to cover the Electricity Provider's costs of delivering the electricity generated by the community electricity generating facility to the Subscriber's premises after taking into account the Locational Benefits and other benefits[3] provided by the Community Energy Generating Facility. The [responsible agency having regulatory oversight] shall ensure that this charge does not reflect costs that are already recovered by the Electricity Provider from the Subscriber through other charges. In no event, shall the charge, if assessed, be greater than the Subscriber's distribution service charge as determined on a per kWh basis.

(g) The Electricity Provider shall carry over any excess kWh credits earned by a Subscriber and not used in the current billing period to offset the Subscriber's consumption in subsequent billing periods until all credits are used. Any excess kWh credits shall not reduce any fixed monthly customer charges imposed by the Electricity Provider.

[3] These benefits can often include capacity payments or energy market payments obtained by the Electricity Provider as provided for under the relevant independent system operator's tariff.

Attachment B

IREC
INTERSTATE RENEWABLE ENERGY COUNCIL

Introduction

IREC first developed model interconnection procedures in 2005 in an effort to capture emerging best practices in this vital area. Since that time, IREC has been an active participant in dozens of state utility commission rulemakings that have focused on the development of interconnection procedures. As states have adopted such procedures, IREC has witnessed the effects, both good and bad, on renewable energy market development within those states. As a result of this experience, and the experience gained by developers and utilities since IREC's model procedures were last updated in late 2006, IREC has identified several important evolutions in best practices that IREC has synthesized into these updated model interconnection procedures.

Among the important advances incorporated into these model procedures are: clarifying that third party ownership of facilities is permissible, raising the Level 1 system size eligibility from 10 kilowatts to 25 kilowatts, allowing online applications, addressing state-jurisdictional facilities over ten megawatts, and updating provisions related to network interconnections. For a discussion of the rationale for adopting these changes, please refer to "Net Metering and Interconnection Procedures Incorporating Best Practices," which was presented at the American Solar Energy Society's Solar 2009 conference and is available at www.irecusa.org. These updated procedures also include footnotes that explain key provisions and provide information on alternatives that are being practiced in some states.

For additional information on best practices in interconnection procedures and net metering rules, please refer to *Freeing the Grid*, a report prepared annually by the Network for New Energy Choices in collaboration with Vote Solar, the Solar Alliance and IREC. *Freeing the Grid* grades interconnection procedures of all fifty states based on sixteen criteria, including: facility size limitations, timelines, screening procedures to rapidly approve standard facilities, use of standard form agreements and insurance provisions. With its clear explanation of the major interconnection issues and discussion of how states have addressed those issues, *Freeing the Grid* is an invaluable resource for utility commission staff facing the daunting task of creating state procedures. Another useful resource is a detailed report that IREC prepared in 2008 comparing the then-current IREC model with three other sets of model interconnection procedures (the federal, California and "MADRI" procedures), available at www.solarabcs.org/interconnection.

IREC welcomes the opportunity to work with state utility commissions and individual utilities to develop interconnection procedures; please contact IREC at info@irecusa.org with inquiries. This model is available at http://www.irecusa.org/ICmodel09.

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(A) Definitions:

1. "Applicant" means a person or entity that has filed an application to interconnect a Generating Facility to an Electric Delivery System. For a Generating Facility that will offset part or all of the load of a Utility customer, the Applicant is that customer, regardless of whether the customer owns the Generating Facility or a third party owns the Generating Facility.[1] For a Generating Facility selling electric power to a Utility, the owner of the Generating Facility is the Applicant.

2. "Area Network" means a section of an Electric Delivery System served by multiple transformers interconnected in an electrical network circuit generally used in large, densely populated metropolitan areas in order to provide high reliability of service, and having the same definition as the term "secondary grid network" as defined in IEEE Standard 1547.

3. "Certified" has the meaning provided in Section C of these procedures, regarding IEEE and UL standards applicable to Generating Facility components.

4. "Commission" means the *[insert name of the state utility commission]*.[2]

5. "Electric Delivery System" means the equipment operated and maintained by a Utility to deliver electric service to end-users, including without limitation transmission and distribution lines, substations, transformers, Spot Networks and Area Networks.

6. "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.

7. "Force Majeure Event" means any event: (a) that is beyond the reasonable control of the affected party; and (b) that the affected party is unable to prevent or provide against by exercising reasonable diligence, including: acts of war, public disorder, insurrection, or rebellion; floods, hurricanes, earthquakes, lightning, storms, and other natural calamities; explosions or fires; strikes, work stoppages, or labor disputes; embargoes; and sabotage.

8. "Generating Capacity" means the rated capacity of a Generating Facility in alternating current. For an inverter-based Generating Facility, the Generating Capacity is the rated capacity of the inverter.

9. "Generating Facility" means the equipment used by an Interconnection Customer to generate, store, manage, interconnect and monitor electricity. A Generating Facility includes an Interconnection Equipment Package.

10. "IEEE" means the Institute of Electrical and Electronic Engineers.

[1] For a variety of reasons, a Generating Facility may be owned by a third party that contracts to sell energy or furnish the Generating Facility to the Utility's customer. In those cases, the Utility's customer is still the Applicant under this Agreement, though the Applicant may choose to designate the owner as Applicant's representative.
[2] For a utility not regulated by a state utility commission, the regulator of the utility should be listed with the appropriate defined term, such as "Board" instead of "Commission."

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

12. "Interconnection Agreement" means a standard form agreement between an Interconnection Customer and a Utility governing the interconnection of a Generating Facility to a Utility's Electric Delivery System, as well as the ongoing operation of the Generating Facility after it is interconnected. For Level 1, the standard form Interconnection Agreement is incorporated with the Level 1 application, provided in Attachment 1 to these rules. For Levels 2, 3 or 4, the standard form Interconnection Agreement is provided in Attachment 3 to these rules.

13. "Interconnection Customer" means an Applicant that has entered into an Interconnection Agreement with a Utility to interconnect a Generating Facility and has interconnected that Generating Facility.

14. "Interconnection Equipment Package" means a group of components connecting an electric generator with an Electric Delivery System, and includes all interface equipment including switchgear, inverters or other interface devices. An Interconnection Equipment Package may include an integrated generator or electric source.[3]

15. "Interconnection Procedures" means these procedures including attachments.

16. "Minor System Modifications" means modifications to a Utility's Electric Delivery System, including activities such as changing the fuse in a fuse holder cut-out, changing the settings on a circuit recloser and other activities that usually entail less than four hours of work and $1000 in materials.

17. "Parties" means the Applicant and the Utility in a particular Interconnection Agreement. "Either Party" refers to either the Applicant or the Utility.

18. "Point of Common Coupling" means the point in the interconnection of a Generating Facility with an Electric Delivery System at which the harmonic limits are applied and shall have the same meaning as in IEEE Standard 1547.

19. "Spot Network" means a section of an Electric Delivery 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 Utility customer or to a small group of Utility customers, and has the same meaning as the term is used in IEEE Standard 1547.

20. "UL" means Underwriters Laboratories, which has established standards available at http://ulstandardsinfonet.ul.com/ that relate to components of Generating Facilities.

21. "Utility" means an operator of an Electric Delivery System.[4]

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[3] The most common Interconnection Equipment Package is an inverter. However, a solar array and an inverter can be bundled as a complete Interconnection Equipment Package. In that case, the Generating Facility would simply be the Interconnection Equipment Package.

[4] Some interconnection procedures reference the operator of the Electric Distribution System as the "Company" or the "Electric Delivery Company (EDC)." Here, the term "Utility" is meant to include all investor-owned and public

(B) Scope: These Interconnection Procedures are applicable for all state-jurisdictional interconnections of Generating Facilities.[5] There are four review paths:

1. Level 1 - For inverter-based Generating Facilities that pass specified screens and have a Generating Capacity of 25 kilowatts (kW) or less.
2. Level 2 - For Generating Facilities that pass specified screens and have a Generating Capacity of 2 megawatts (MW) or less.
3. Level 3 - For Generating Facilities that: (a) pass specified screens; (b) do not export power to the Utility; and (c) have a Generating Capacity of 10 MW or less.
4. Level 4 - For all Generating Facilities that do not qualify for Level 1, Level 2 or Level 3 interconnection review processes.

(C) Applicable Standards: Unless waived by the Utility, a Generating Facility must comply with the following standards, as applicable:

1. IEEE Standard 1547 for Interconnecting Distributed Resources with Electric Power Systems for Generating Facilities up to 10 MW in size,
2. IEEE Standard 1547.1 for Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems, and
3. UL 1741 Standard for Inverters, Converters and Controllers for Use in Independent Power Systems. UL 1741 compliance must be recognized or Certified by a Nationally Recognized Testing Laboratory as designated by the U.S. Occupational Safety and Health Administration.[6] Certification of a particular model or a specific piece of equipment is sufficient. It is also sufficient for an inverter built into a Generating Facility to be recognized as being UL 1741 compliant by a Nationally Recognized Testing Laboratory.[7]

(D) Order of Review: If approval of a Generating Facility interconnection will determine whether any other proposed Generating Facility will fail a technical screen or one of the standards listed in Section (C), the Utility shall process the relevant Generating Facilities' applications in the order they were received.[8] If an Applicant is denied approval for interconnection under one level and reapplies within ten business days under another level, the date of Utility receipt of the initial application shall be used for purposes of the order of review. No automatic extension of Utility review periods are allowed due to one

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utilities, including cooperatives, municipal utilities and public utility districts. In deregulated states, the "wires" company is the Utility while the energy provider is not.

[5] Depending on state law, individual utility procedures may govern interconnections, particularly for municipal and cooperative utilities and public utility districts. These model procedures may be modified to apply to a particular utility. State or utility procedures do not apply when the U.S. Federal Energy Regulatory Commission (FERC) has jurisdiction over the interconnection, as is the case for many transmission line interconnections and on rare occasions, for distribution line interconnections.

[6] Inverter certification to UL 1741 is routinely required. Some states have established lists of certified inverters with UL 1741 certification as the primary criterion.

[7] As of late 2009, a popular small wind generator was recognized by UL as having a built-in inverter compliant with UL 1741, though it is not UL 1741 Certified because UL has not completed its UL 6040 small wind standard.

[8] In most cases, a proposed Generating Facility will not determine whether other proposed Generating Facilities will pass the technical screens. It would be very unusual for an effect to be felt beyond an individual circuit or network.

proposed Generating Facility's impact on another proposed Generating Facility. However, a Utility and an Applicant may mutually agree to a delay and a Utility may request that the Commission provide an extension for review of one or more applications.

(E) Level 1 Screening Criteria and Process for Inverter-Based Generating Facilities Not Greater than 25 kW:

1. Application: An Applicant must submits a Level 1 application using the standard form provided in Attachment 1 to these Interconnection Procedures, which may be sent electronically to a recipient designated by the Utility. Within three business days of receipt, the Utility shall acknowledge receipt of the application and notify Applicant whether or not the application is complete. If the application is incomplete, the Utility shall provide a written list detailing all information that must be provided to complete the application. The Applicant shall have ten business days after receipt of the list of incomplete material to submit the listed information, or to request an extension of time to provide such information. Otherwise, the application will be deemed withdrawn. The Utility shall notify the Applicant within three business days of receipt of a revised application whether the application is complete or incomplete. The Utility may deem the application withdrawn if it remains incomplete. An Applicant executes the standard Interconnection Agreement for Level 1 by submitting a Level 1 application.
2. Applicable Screens:
   i. For interconnection of a Generating Facility to a radial distribution circuit, the Generating Facility aggregated with all other generation capable of exporting energy on a line section will not exceed 15 percent of the line section's annual peak load as most recently measured at the substation or calculated for the line section. [9] A line section is that portion of the radial distribution circuit to which the Applicant seeks to interconnect and is bounded by automatic sectionalizing devices or the end of a distribution line.[10]
   ii. If the Generating Facility is to be interconnected on single-phase shared secondary, then the aggregate generation capacity on the shared secondary, including the Generating Facility, will not exceed 20 kilovolt-amps (kVA).
   iii. If the Generating Facility is single-phase and is to be interconnected on a transformer center tap neutral of a 240-volt service, its addition will not create an imbalance between the two sides of the 240-volt service of more than 20 percent of nameplate rating of the service transformer.
   iv. The Generating Facility's Generating Capacity cannot exceed the Applicant's existing electrical service entrance capacity.

[9] The intent of this screen is to assure that generation on a line section will not exceed load at any time, but utilities typically track peak loads and not minimum loads. Fifteen percent of peak load was established in the FERC procedures as a conservative estimate of minimum load. Inexplicably, the FERC procedures call for aggregate generation on the *circuit* to not exceed 15% of *line section* peak load, when the relevant comparison is line section generation vs. line section load (the correction has been made here).

[10] Typically, a radial distribution circuit does not have automatic sectionalizing devices, so the whole circuit is one line section. A fuse must be manually replaced and is therefore not considered an automatic sectionalizing device.

v. No construction of facilities by the Utility on its own system shall be required to accommodate the Generating Facility.[11]

vi. For interconnection of a Generating Facility within a Spot Network or Area Network, the aggregate generating capacity including the Generating Facility may not exceed 50% of the Network's anticipated minimum load.[12] If solar energy Generating Facilities are used exclusively, only the anticipated daytime minimum load shall be considered. The Utility may select any of the following methods to determine anticipated minimum load:

a) the Network's measured minimum load in the previous year, if available;
b) five percent of the Network's maximum load in the previous year;
c) the Applicant's good faith estimate, if provided; or
d) the Utility's good faith estimate if provided in writing to the Applicant along with the reasons why the Utility considered the other methods to estimate minimum load inadequate.

3. Time to process screens: Within seven business days after the Utility notifies the Applicant that the application is complete, the Utility shall notify the Applicant whether the Generating Facility meets all of the applicable Level 1 screens.

4. Screens failure: Despite the failure of one or more screens, the Utility, at its sole option, may approve the interconnection provided such approval is consistent with safety and reliability. If the Generating Facility fails one or more of the Level 1 screens and the Utility denies interconnection, then the Utility shall provide the Applicant with detailed information on the reason(s) for failure. The Applicant may reapply for interconnection of the Generating Facility under Levels 2, 3 or 4 as appropriate with an application date based on the initial application date as provided in Section D.

5. Approval: If a Generating Facility meets all of the applicable Level 1 screens or is otherwise approved by the Utility, within three business days, the Utility shall send the Applicant a copy of the application form, signed by the Utility, forming the Level 1 Interconnection Agreement. If a Utility does not notify an Applicant in writing or by email within twenty business days whether an application is approved or denied, the Interconnection Agreement signed by the Applicant as part of the Level 1 application shall be deemed effective.[13]

6. Unless extended by mutual agreement of the Parties, within six months of formation of an Interconnection Agreement, the Applicant shall provide the Utility with at least ten business days notice of the anticipated start date of the Generating Facility.

7. Within five business days of the Applicant's notice of the anticipated start date, the Utility may contact the Applicant to schedule a Utility inspection of the Generating Facility at the Utility's expense. If the Utility does not contact an Applicant to schedule an inspection within five business days of the Applicant's notice of the anticipated start date, the Utility waives its right to inspect the Generating Facility prior to

[11] New meter installations are not considered facilities constructed on the Utility's system.

[12] Area networks and spot networks use a network protector on each feeder serving the network and these protectors normally remain closed. It is important that generation not exceed load on the network to avoid the possibility of operating one or more network protectors.

[13] Approval of an electrical inspector is still required to commence operation.

interconnection. Any inspection shall be scheduled to occur within ten business days of the Applicant's notice of the anticipated start date at a time mutually agreeable to the Parties.[14] The Utility may not determine that a Generating Facility has failed the Utility's inspection unless there is evidence of a failure of a Level 1 screen or the Generating Facility does not comply with a standard listed in Section C. If a Generating Facility initially fails a Utility inspection, the Utility shall offer to redo the inspection at the Applicant's expense at a time mutually agreeable to the Parties.

8. Upon delivery to the Utility of evidence of approval by an electrical code official with jurisdiction over the interconnection, an Applicant may begin interconnected operation of a Generating Facility, provided that there is an Interconnection Agreement in effect and that the Generating Facility has not failed an inspection required by the Utility.[15] Evidence of approval by an electric code official includes a signed Certificate of Completion in the form of Attachment 4 or other inspector-provided documentation.
9. A Utility may elect to charge an application fee of $20 for Level 1 review.[16]

(F) Level 2 Screening Criteria and Process for Generating Facilities Not Greater than 2 MW:

1. Application: An Applicant must submit a Level 2 application using the standard form provided in Attachment 2 to these Interconnection Procedures, which may be sent electronically to a recipient designated by the Utility. Within three business days of receipt, the Utility shall acknowledge receipt of the application and notify the Applicant whether or not the application is complete. If the application is incomplete, the Utility shall provide a written list detailing all information that must be provided to complete the application. The Applicant will have ten business days after receipt of the list to submit the listed information, or to request an extension of time to provide such information. Otherwise, the application will be deemed withdrawn. The Utility shall notify the Applicant within three business days of receipt of a revised application whether the application is complete or incomplete. The Utility may deem the application withdrawn if it remains incomplete.
2. Applicable screens:
    i. For interconnection of a Generating Facility to a radial distribution circuit, the Generating Facility aggregated with all other generation capable of exporting energy on a line section will not exceed 15 percent of the line section's annual peak load as most recently measured at the substation or calculated for the line section. A line section is that portion of the radial distribution circuit to which the Applicant seeks to interconnect and is bounded by automatic sectionalizing devices or the end of a distribution line.
    ii. The Generating Facility, in aggregation with other generation on the distribution circuit, will not contribute more than 10 percent to the distribution circuit's

[14] If an Applicant gives less than ten business days notice of the anticipated start date, the Utility's ten-business day window to schedule an inspection within five business days be scheduled after the anticipated start date, delaying interconnection.

[15] Upon interconnected operation, the Applicant becomes an Interconnection Customer.

[16] States have set Level 1 application fees in a range from $0 to $100. California and other states with extensive renewable energy installations have chosen $0 for net-metered facilities.

maximum Fault Current at the point on the high-voltage (primary) level nearest the proposed Point of Common Coupling.

iii. The Generating Facility, in aggregate with other generation on the distribution circuit, will not cause any distribution protective devices and equipment (including but not limited to substation breakers, fuse cutouts, and line reclosers), or Utility customer equipment on the system, to exceed 90 percent of the short circuit interrupting capability; nor is the interconnection proposed for a circuit that already exceeds 90 percent of the short circuit interrupting capability.[17]

iv. The Generating Facility is interconnected to the Utility's Electric Delivery System as shown in the table below:

Primary Distribution Line Configuration	**Interconnection to Primary Distribution Line**
Three-phase, three-wire	If a three-phase or single-phase Generating Facility, interconnection must be phase-to-phase
Three-phase, four-wire	If a three-phase (effectively grounded) or single-phase Generating Facility, interconnection must be line-to-neutral

v. If the Generating Facility is to be interconnected on single-phase shared secondary, then the aggregate generation capacity on the shared secondary, including the Generating Facility, will not exceed 20 kilovolt-amps (kVA).

vi. If the Generating Facility is single-phase and is to be interconnected on a transformer center tap neutral of a 240-volt service, its addition will not create an imbalance between the two sides of the 240-volt service of more than 20 percent of nameplate rating of the service transformer.

vii. The Generating Facility, in aggregate with other generation interconnected to the distribution low-voltage side of the substation transformer feeding the distribution circuit where the Generating Facility proposes to interconnect, will 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 voltage level busses from the Point of Common Coupling).

viii. The Generating Facility's Point of Common Coupling will not be on a transmission line.

ix. The Generating Facility's Generating Capacity cannot exceed the Applicant's existing electrical service entrance capacity.

x. No construction of facilities by the Utility on its own system shall be required to accommodate the Generating Facility.

xi. For interconnection of a Generating Facility within a Spot Network or Area Network, the Generating Facility must be inverter-based and use a minimum import relay or other protective scheme that will ensure that power imported from the Utility to the network will, during normal Utility operations, remain above one percent of the network's maximum load over the past year or will remain above a

[17] The FERC Small Generator Interconnection Procedures compromise on this point and set the threshold at 87.5 percent of short circuit interrupting capability, but this number lacks a technical basis.

point reasonably set by the Utility in good faith.[18] At the Utility's discretion, the requirement for minimum import relays or other protective schemes may be waived.

3. Time to process under screens: Within fifteen business days after the Utility notifies the Applicant that the application is complete, the Utility shall notify the Applicant whether the Generating Facility meets all of the applicable Level 2 screens.
4. Screens failure: Despite the failure of one or more screens, the Utility, at its sole option, may approve the interconnection provided such approval is consistent with safety and reliability. If the Generating Facility fails one or more of the applicable screens and the Utility denies interconnection, then the Utility shall provide the Applicant with detailed information on the reason or reasons for failure. The Applicant may request the application continue to be processed under Level 2 additional review, Level 3 or Level 4 based on the initial application date as provided in Section D.
5. Approval: If a facility meets all of the applicable screens above or is otherwise approved by the Utility, within three business days the Utility shall send an executed Interconnection Agreement to the Applicant.
6. An Applicant that receives an Interconnection Agreement executed by the Utility shall have ten business days to execute the agreement and return it to the Utility. An Applicant shall communicate with the Utility no less frequently than every six months regarding the status of a proposed Generating Facility to which an Interconnection Agreement refers. Within two years from an Applicant's execution of an Interconnection Agreement, the Applicant shall provide the Utility with at least ten business days notice of the anticipated start date of the Generating Facility.[19]
7. Within ten business days of the Applicant's notice of the anticipated start date, a Utility may require an inspection of the Generating Facility at a time mutually agreeable to the Parties at the Utility's expense. The Utility may determine that a Generating Facility has failed the Utility's inspection unless there is evidence that the interconnection fails a Level 2 screen or the Generating Facility does not comply with a standard listed in Section C. If a Generating Facility initially fails a Utility inspection, the Utility shall offer to redo the inspection at the Applicant's expense at a time mutually agreeable to the Parties.
8. Upon delivery to the Utility of evidence of approval by an electrical code official with jurisdiction over the interconnection, an Applicant may begin interconnected operation of a Generating Facility, provided that there is an Interconnection Agreement in effect and that the Generating Facility has not failed an inspection required by the Utility.[20] Evidence of approval by an electric code official includes a signed Certificate of Completion in the form of Attachment 4 or other inspector-provided documentation.

[18] The intent of minimum import relays is to minimize nuisance operation of network protectors by assuring that power is always flowing into the network. For some networks, 1% of maximum load will be too much of a minimum import requirement; for instance, a sports stadium on a Spot Network may experience very light daytime loads when the stadium is not in use. Minimum import requirements can be relaxed for such networks.

[19] For larger Generating Facilities, an Applicant may need six months or more, to secure financing, equipment, and zoning approvals.

[20] Upon interconnected operation, the Applicant becomes an Interconnection Customer.

9. Additional review: If a Generating Facility has failed to meet one or more of the Level 2 screens, but the initial review indicates that additional review may enable the Utility to determine that the Generating Facility can be interconnected consistent with safety, reliability and power quality, the Utility shall offer to perform additional review. The Utility shall determine through additional review whether Minor System Modifications would enable the interconnection to be made consistent with safety, reliability and power quality. The Utility shall provide to the Applicant a non-binding, good faith estimate of the costs of such additional review, and/or such Minor System Modifications. The Utility shall undertake the additional review or Minor System Modifications only after the Applicant consents to pay for the review and/or modifications.
10. A Utility may elect to charge an application fee of $50 plus $1 per kW of Generating Capacity for Level 2 review.

(G) Level 3 Screening Criteria and Process for Non-Exporting Generating Facilities Not Greater than 10 MW:

An Applicant may use the Level 2 process for a Generating Facility with a Generating Capacity no greater than ten MW that uses reverse power relays, minimum import relays or other protective devices to assure that power may never be exported from the Generating Facility to the Utility.[21] An Applicant proposing to interconnect a Generating Facility to a Spot Network or an Area Network may not use Level 3.

(H) Level 4 Process for All Other Generating Facilities:[22]

1. Application: An Applicant must submit a Level 4 application using the standard form provided in Attachment 2 to these Interconnection Procedures, which may be sent electronically to a recipient designated by the Utility. An Applicant whose Level 2 or Level 3 application was denied may request that the Utility treat that existing application already in the Utility's possession as a new Level 4 application. Within three business days of receipt, the Utility shall acknowledge receipt of the application or transfer of an existing application to the Level 4 process and notify the Applicant whether or not the application is complete. If the application is incomplete, the Utility shall provide a written list detailing all information that must be provided to complete the application. The Applicant will have twenty business days after receipt of the list to submit the listed information, or to request an extension of time to provide such information. Otherwise, the application will be deemed withdrawn. The Utility shall notify the Applicant within three business days of receipt of the revised application whether the application is complete or incomplete. The Utility may deem the application withdrawn if it remains incomplete.

[21] Note that the first screen in Level 2 is inapplicable to a Level 3 Applicant because that screen limits aggregate "generation capable of exporting energy."

[22] Level 4 is used for all Generating Facilities that do not qualify for interconnection under Levels 1, 2 or 3. It includes the potential for an in-depth engineering review of the interconnection addressing all aspects of the Generating Facility's performance and grid interaction. Since many Level 4 applications will be unique, the study parameters are unique, and no set fees or timelines for completion of the detailed studies can be included. However, default timelines are included for the typical case of a Generating Facility that will not have an impact on other proposed Generating Facilities.

2. The Utility will conduct an initial review that includes a scoping meeting with the Applicant within ten days of determination that an application is complete. The scoping meeting shall take place in person or electronically by a means mutually agreeable to the Parties.[23] At the scoping meeting the Utility will provide pertinent information such as: the available Fault Current at the proposed location, the existing peak loading on the lines in the general vicinity of the proposed Generating Facility, and the configuration of the distribution lines at the proposed point of interconnection. By mutual agreement of the Parties, the feasibility study, impact study or facilities study may be waived.[24]
3. If the Parties do not waive the feasibility study, the Utility will provide the Applicant with an agreement, in the form of the feasibility study agreement in Attachment 5 within five days of the scoping meeting. The feasibility study agreement shall include a good faith estimate of the cost and time to undertake the feasibility study to provide a preliminary review of the potential impacts on the distribution system from the proposed interconnection. The feasibility study will provide a preliminary review of short circuit currents, including contribution from the proposed Generating Facility, and coordination and potential overloading of distribution circuit protection devices. The feasibility study shall be completed within twenty business days of the Applicant's delivery of the executed feasibility study agreement and payment in accordance with that agreement, though the Utility may take longer when a proposed Generating Facility will impact other proposed Generating Facilities. Based on the findings in the feasibility study, the Utility may elect to waive the impact study or the facilities study, or both.
4. If the Parties do not waive the impact study, within five business days of the completion of the feasibility study, the Utility shall provide the Applicant with an agreement in the form of the impact study in Attachment 5, including a good faith estimate of the cost and time to undertake the impact study.
5. An impact study for a Generating Facility with a Generating Capacity of no more than ten MW shall include a review of the Generating Facility's protective devices for adherence to IEEE Standard 1547. An impact study for a Generating Facility with a Generating Capacity of more than ten MW shall use IEEE Standard 1547 for guidance. For Generating Facility components that are Certified, the Utility may not charge the Applicant for review of those components in isolation.
6. Each Utility shall include in its compliance tariff a description of the various elements of an impact study it would typically undertake pursuant to this section, including:
    i. Load-Flow Study
    ii. Short-Circuit Study
    iii. Circuit Protection and Coordination Study
    iv. Impact on System Operation
    v. Stability Study (and the conditions that would justify including this element in the Impact Study)
    vi. Voltage-Collapse Study (and the conditions that would justify including this element in the Impact Study).

[23] The Parties can agree that the scoping meeting will be just the mailing of the Utility's initial review.
[24] The Applicant may want a separate feasibility study to determine whether to proceed with the project, prior to committing to the expense of an impact study or a facilities study.

7. Once an Applicant delivers an executed impact study agreement and payment in accordance with that agreement, the Utility will conduct the impact study. The impact study shall be completed within forty business days of the Applicant's delivery of the executed impact study agreement, though the Utility may take longer when a proposed Generating Facility will impact other proposed Generating Facilities.
8. If the Utility determines that Electric Delivery System modifications required to accommodate the proposed interconnection are not substantial, the impact study will identify the scope and cost of the modifications defined in the impact study results and no facilities study shall be required.
9. If the Utility determines that necessary modifications to the Utility's Electric Delivery System are substantial, the results of the impact study will include an estimate of the cost of the facilities study and an estimate of the modification costs. The detailed costs of any Electric Delivery System modifications necessary to interconnect the Applicant's proposed Generating Facility will be identified in a facilities study to be completed by the Utility.
10. If the Parties do not waive the facilities study, within five business days of the completion of the impact study, the Utility shall provide a facilities study agreement, in the form of the facilities study in Attachment 5, including a good faith estimate of the cost and time to undertake the facilities study.
11. Once the Applicant executes the facilities study agreement and pays the Utility pursuant to the terms of that agreement, the Utility will conduct the facilities study. The facilities study shall include a detailed list of necessary Electric Delivery System upgrades and a cost estimate for completing such upgrades, which may not be exceeded by 125% in any future Utility facilities installation. The facilities study shall be completed within sixty business days of the Applicant's delivery of the executed facilities study agreement, though the Utility may take longer when a proposed Generating Facility will impact other proposed Generating Facilities.
12. Within five business days of completion of the last study that the Utility deems necessary, the Utility shall execute and send the Applicant an Interconnection Agreement using the standard form agreement provided in Attachment 3 of these Interconnection Procedures. The Interconnection Agreement shall include a quote for any required Electric Delivery System modifications, subject to the cost limit set by the facilities study cost estimate. The facilities study shall indicate the milestones for completion of the Applicant's installation of its Generating Facility and the Utility completion of any Electric Delivery System modifications, and the milestones from the facilities study (if any) shall be incorporated into the Interconnection Agreement.
13. Within forty business days of the receipt of an Interconnection Agreement,[25] the Applicant shall execute and return the Interconnection Agreement and notify the Utility of the anticipated start date of the Generating Facility. Unless the Utility agrees to a later date or requires more time for necessary modifications to its Electric Delivery System,

[25] Typically, the Applicant will be eager to sign and return the Interconnection Agreement quickly, particularly where no expense is involved. However, the Interconnection Agreement can include a significant commitment by the Applicant to pay for Utility upgrades. Forty business days are provided to allow the Applicant time to finalize financing, if needed.

the Applicant shall identify an anticipated start date that is within two years of the Applicant's execution of the Interconnection Agreement.

14. The Utility shall inspect the completed Generating Facility installation for compliance with requirements and shall attend any required commissioning tests pursuant to IEEE Standard 1547. For systems greater than 10 MW, IEEE Standard 1547 may be used as guidance. Provided that any required commissioning tests are satisfactory, the Utility shall notify the Applicant in writing that operation of the Generating Facility is approved.
15. The Applicant shall notify the Utility if there is any anticipated change in the anticipated start date of interconnected operations of the Generating Facility. Upon approval by an electrical code official with jurisdiction over the interconnection and notification of approval from the Utility, the Applicant may commence interconnected operations.
16. Fees: An application fee shall not exceed $100 plus $1 per kW of Generating Capacity, as well as charges for actual time spent on any interconnection study. Costs for Utility facilities necessary to accommodate the Applicant's Generating Facility interconnection shall be the responsibility of the Applicant.

(I) Online Application Requirement:

1. Each Utility shall allow interconnection applications to be submitted through the Utility's website.
2. Each Utility shall dedicate a page on their website to interconnection procedures. That page shall be able to be reached by no more than three logical, prominent hyperlinks from the Utility's home page.[26] The relevant website page shall include (i) these Interconnection Procedures and attachments in an electronically searchable format, (ii) the Utility's interconnection application forms in a format that allows for electronic entry of data, (iii) the Utility's interconnection agreements, and (iv) the Utility's point of contact for submission of interconnection applications including email and phone number.

(J) General Provisions and Requirements:

1. Applicant is responsible for construction of the Generating Facility and obtaining any necessary local code official approval (electrical, zoning, etc.).
2. Applicant conducts the commissioning test pursuant to the IEEE Standard 1547 and complies with all manufacturer requirements.
3. To assist Applicants in the interconnection process, a Utility shall designate an employee or office from which basic information on interconnections can be obtained. Upon request, a Utility shall provide interested Applicants with all relevant forms, documents and technical requirements for filing a complete application. Upon an Applicant's request, a Utility shall meet with an Applicant at the Utility's offices or by telephone prior to submission for up to one hour for Level 1 Applicants and two hours for other Applicants.

[26] For instance, a Utility's home page could have a hyperlink to a subpage for clean energy, which has a hyperlink to a subpage for customer-sited generation, which has a hyperlink to these procedures.

4. The authorized hourly rate for engineering review under additional review or Level 4 shall be $100 per hour.[27]
5. A Utility shall not require an Applicant to install additional controls (other than a utility accessible disconnect switch for non-inverter-based Generating Facilities[28]), or to perform or pay for additional teststo obtain approval to interconnect.
6. A Utility may only require an Applicant to purchase insurance covering Utility damages, and then only in the following amounts[29]:

    i. For non-inverter-based Generating Facilities:

Generating Capacity > 5 MW	$3,000,000
2 MW < Generating Capacity ≤ 5 MW	$2,000,000
500 kW < Generating Capacity ≤ 2 MW	$1,000,000
50 kW < Generating Capacity ≤ 500 kW	$500,000
Generating Capacity ≤ 50 kW	no insurance

    ii. For inverter-based Generating Facilities:

Generating Capacity > 5 MW	$2,000,000
2 MW < Generating Capacity ≤ 5 MW	$1,000,000
Generating Capacity ≤ 1 MW	no insurance

7. Additional protection equipment not included with the Interconnection Equipment Package may be required at a Utility's discretion as long as the performance of an Applicant's Generating Facility is not negatively impacted and the Applicant is not charged for any equipment that provides protection that is already provided by interconnection equipment Certified in accordance with Section C.
8. Metering and Monitoring shall be as set forth in the Utility's tariff for sale or exchange of energy, capacity or other ancillary services.
9. Once an interconnection has been approved under these procedures, a Utility shall not require an Interconnection Customer to test its Generating Facility except that the Utility may require any manufacturer-recommended testing and:
    i. For Levels 2 and 3, an annual test in which the Interconnection Customer's Generating Facility is disconnected from the Utility's equipment to ensure that the Generating Facility stops delivering power to the Electric Delivery System .
    ii. For Level 4, all interconnection-related protective functions and associated batteries shall be periodically tested at intervals specified by the manufacturer, system integrator, or authority that has jurisdiction over the interconnection. Periodic test reports or a log for inspection shall be maintained.

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27 The fixed hourly fee for engineering review may be adjusted to reflect standard rates in each state, but the hourly charge should be fixed so there are no disparities among Utilities.

[28] A number of states have allowed Utilities to require external disconnect switches but specified that the Utility must reimburse Applicants for the cost of the switch. Several states have specified that an external disconnect switch may not be required for smaller inverter-based Generating Facilities. Recognizing that non-inverter-based Generating Facilities might present a hazard, Utilities may require a switch for these Generating Facilities.

[29] Insurance requirements are not typically separated by inverter and non-inverter-based Generating Facilities. However, concerns seem to center on the potential for non-inverter-based systems to cause damage to utility property. To IREC's knowledge, there has never been a claim for damages to a utility's property caused by an inverter-based system, and it seems that there is little theoretical potential for damage to a utility's property caused by an inverter-based system of less than a megawatt.

10. A Utility shall have the right to inspect an Interconnection Customer's Generating Facility before and after interconnection approval is granted, at reasonable hours and with reasonable prior notice provided to the Interconnection Customer. If the Utility discovers an Interconnection Customer's Generating Facility is not in compliance with the requirements of IEEE Standard 1547, and the non-compliance adversely affects the safety or reliability of the electric system, the Utility may require disconnection of the Interconnection Customer's Generating Facility until the Generating Facility complies with IEEE Standard 1547.
11. The Interconnection Customer may disconnect the Generating Facility at any time without notice to the Utility and may terminate the Interconnection Agreement at any time with one day's notice to the Utility.
12. An Applicant may designate a representative to process an application on Applicant's behalf, and an Interconnection Customer may designate a representative to meet some or all of the Interconnection Customer's responsibilities under the Interconnection Agreement.[30]
13. For a Generating Facility offsetting part or all of the load of a utility customer at a given site, that customer is the Interconnection Customer and that customer may assign its Interconnection Agreement to a subsequent occupant of the site.[31] For a Generating Facility providing energy directly to a Utility, the Interconnection Customer is the owner of the Generating Facility and may assign its Interconnection Agreement to a subsequent owner of the Generating Facility. Assignment is only effective after the assignee provides written notice of the assignment to the Utility and agrees to accept the Interconnection Customer's responsibilities under the Interconnection Agreement.

(K) Dispute Resolution:

1. For a dispute related to these rules, either Party may submit a written request to the other Party for an informal meeting by phone, electronic media, or in person to attempt to resolve the dispute. Following such a request, each Party shall make available a person with authority to resolve the dispute. A meeting shall be scheduled for at least one hour, but may be shorter at the option of the Party requesting the meeting. The meeting shall take place at a time and in a manner agreeable to the Party receiving the request within three business days of the Party's receipt of the request for a meeting. If a dispute involves technical issues, persons with sufficient technical expertise and familiarity with the issue in dispute from each Party shall also attend the informal meeting.
2. If an informal meeting of the Parties does not resolve a dispute, the Parties may mutually agree to further discussions or either Party may seek resolution of the dispute through the complaint or mediation procedures available at the Commission. Dispute resolution at the Commission will be initially conducted in an informal, expeditious manner to reach

[30] In the most common case, a residential customer may designate an installer as the representative. For larger Generating Facilities, a third party owner might be the designated representative.

[31] In the most common case, an Interconnection Customer is a homeowner and this clause allows the homeowner to sell the home and assign the Agreement to the new owner. In many commercial situations, the Interconnection Customer is a lessee and this clause allows that lessee to move out at the end of a lease and assign the Agreement to a new lessee.

resolution with minimal costs and delay. If no resolution is reached after informal discussions, either Party may file a formal complaint with the Commission.

(L) Utility Reporting Requirement:

Each Utility shall electronically make available a spreadsheet listing all interconnected Generating Facilities with their respective resource types, Generating Capacities, year of interconnection, and zip code of geographic location. At a minimum, such information shall be provided to the Commission by March 1 of each year. Such information shall be submitted in both a database format for data analysis and in an image format that is legible and intuitive when printed.

Attachment 1: Level 1 Application and Interconnection Agreement for Inverter-Based Generating Facilities Not Greater than 25 kW

This Application is complete when it provides all applicable and correct information required below and includes a one-line diagram if required by the Utility and a Processing Fee of $20 if required by the Utility.

Applicant:

Name: _____

Address: _____

City, State, Zip: _____

Telephone (Day): _____(Evening): _____

Fax: _____ E-Mail Address: _____

Utility Customer Number: _____

Electricity Provider (if different from Utility):_____

Contact: (if different from Applicant)

Name: _____

Address: _____

City, State, Zip: _____

Telephone (Day): _____(Evening): _____

Fax: _____ E-Mail Address: _____

Generating Facility:

Location (if different from above): _____

Facility Owner (include percent ownership by any electric utility): _____

_____

Inverter Manufacturer: Model: _____

Nameplate Rating: (kW) (kVA) (AC Volts) _____

Single Phase _____ Three Phase _____ (check one)

System Design Capacity: _____ (kW) _____ (kVA)

Prime Mover: Photovoltaic / Turbine/ Fuel Cell / Other (describe) _____

Energy Source: Solar / Wind / Hydro / Other (describe) _____

Is the equipment UL1741 Listed? Yes _____ No _____

If Yes, attach evidence of UL1741 listing.

Estimated Installation Date: _____ Estimated In-Service Date: _____

List components of the Interconnection Equipment Package that are certified:

	Equipment Type	Certifying Entity
1.	_____	_____
2.	_____	_____
3.	_____	_____

If required by the Utility, attach a one-line diagram of the Generating Facility.

Applicant Signature

I hereby certify that, to the best of my knowledge, the information provided in this application is true. I agree to abide by the terms and conditions for a Level 1 Interconnection Agreement, provided on the following pages.

Signed: _____

Title: _____ Date: _____

Operation is contingent on Utility approval to interconnect the Generating Facility.

Utility Signature

Interconnection of the Generating Facility is approved contingent upon the terms and conditions for a Level 1 Interconnection Agreement, provided on the following pages ("Agreement").

Utility Signature: _____

Title: _____ Date: _____

Application ID number: _____

Utility waives inspection/witness test? Yes _____ No _____

Terms and Conditions for a Level 1 Interconnection Agreement

1.0 Construction of the Generating Facility

After the Utility executes the Interconnection Agreement by signing the Applicant's Level 1 application, the Applicant may construct the Generating Facility, including interconnected operational testing not to exceed two hours.

2.0 Interconnection and Operation

The Applicant may operate the Generating Facility and interconnect with the Utility's Electric Delivery System once all of the following have occurred:

2.1 The Generating Facility has been inspected and approved by the appropriate local electrical wiring inspector with jurisdiction, and the Applicant has sent documentation of the approval to the Utility, and

2.2 The Utility has either:

- 2.2.1 Inspected the Generating Facility and has not found that the Generating Facility fails to comply with a Level 1 technical screen or a UL and IEEE standard; or
- 2.2.2 Waived its right to inspect the Generating Facility by not scheduling an inspection in the allotted time; or
- 2.2.3 Explicitly waived the right to inspect the Generating Facility.

3.0 Safe Operations and Maintenance

The Interconnection Customer shall be fully responsible to operate, maintain, and repair the Generating Facility as required to ensure that it complies at all times with IEEE Standard 1547.

4.0 Access

The Utility shall have access to the metering equipment of the Generating Facility at all times. The Utility shall provide reasonable notice to the Interconnection Customer when possible prior to using its right of access.

5.0 Disconnection

The Utility may temporarily disconnect the Generating Facility upon the following conditions:

5.1 For scheduled outages upon reasonable notice.

5.2 For unscheduled outages or emergency conditions.

5.3 If the Generating Facility does not operate in the manner consistent with these terms and conditions of the Agreement.

5.4 The Utility shall inform the Interconnection Customer in advance of any scheduled disconnection, or as is reasonable after an unscheduled disconnection.

6.0 Indemnification

Each Party shall at all times indemnify, defend, and save the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the

indemnified Party's action or inactions of its obligations under this Agreement on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

7. 0 Insurance

The Interconnection Customer is not required to provide general liability insurance coverage as part of this Agreement, or through any other Utility requirement**.**

8.0 Limitation of Liability

Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever, except as allowed under paragraph 6.0.

9.0 Termination

9.1 This Agreement may be terminated under the following conditions:

9.1.1 By the Interconnection Customer: By providing written notice to the Utility.

9.1.2 By the Utility: If the Generating Facility fails to operate for any consecutive 12-month period or the Interconnection Customer fails to remedy a violation of these terms and conditions of the Agreement.

9.2 Permanent Disconnection: In the event the Agreement is terminated, the Utility shall have the right to disconnect its facilities or direct the Interconnection Customer to disconnect its Generating Facility.

9.3 Survival Rights: This Agreement shall continue in effect after termination to the extent necessary to allow or require either Party to fulfill rights or obligations that arose under the Agreement.

10.0 Assignment

1. For a Generating Facility offsetting part or all of the load of a utility customer at a given site, that customer is the Interconnection Customer and that customer may assign its Interconnection Agreement to a subsequent occupant of the site. For a Generating Facility providing energy directly to a Utility, the Interconnection Customer is the owner of the Generating Facility and may assign its Interconnection Agreement to a subsequent owner of the Generating Facility. Assignment is only effective after the assignee provides written notice of the assignment to the Utility and agrees to accept the Interconnection Customer's responsibilities under the Interconnection Agreement.

Attachment 2: Level 2, Level 3 and Level 4 Interconnection Application

An application is complete when it provides all applicable information required below and any required application fee. A one-line diagram and a load flow data sheet must be supplied with this application. Additional information to evaluate a request for interconnection may be required after an application is deemed complete.

Applicant requests review under (select one):

____ Level 2 ____ Level 3 ____ Level 4

Written applications should be submitted by mail, e-mail or fax to:
Utility: _____
Address: _____
Fax Number: _____
E-Mail Address: _____
Utility Contact Name: _____
Utility Contact Title: _____

1. Applicant Information

Legal Name of Applicant (if an individual, individual's full name)
Name: _____
Address: _____
City, State, Zip: _____
Generating Facility Location (if different from above): _____
Telephone (Day): _____ (Evening):_____
Fax: _____E-Mail Address: _____
Type of interconnection (choose one): _____ Net Metering
_____ Load Response (no export)
_____ Wholesale Provider
Utility Account Number (for Generating Facilities at Utility customer locations):_____

2. Generating Facility Specifications

Prime Mover: Photovoltaic / Reciprocating Engine / Fuel Cell / Gas Turbine / Steam Turbine/ Microturbine/ Other _____
Energy Source: Solar / Wind / Hydro (state type i.e. Run-of-River) / Diesel / Natural Gas / Fuel Oil/ Other (state type) _____
Type of Generating Facility: ____ Inverter ____ Synchronous ____ Induction

Generating Facility Nameplate Rating: _____ kW, or _____ kVA
Applicant Load: _____ kW (if none, so state)
Typical Reactive Load (if known): _____
Maximum Physical Export Capability Requested: _____ kW

List components of the Interconnection Equipment Package that are UL or IEEE certified:

	Equipment Type	Certifying Entity
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____

Is the prime mover compatible with the Interconnection Equipment Package? ___ Yes ___ No

Individual generator data (attach additional sheets if needed)

Manufacturer, Model Name & Number: _____
Version Number: _____
Nameplate Output Power Rating in kW: (Summer) _____ (Winter) _____
Nameplate Output Power Rating in kVA: (Summer) _____ (Winter) _____
Rated Power Factor: (Leading) _____ (Lagging) _____
Total Number of generators to be interconnected pursuant to this Application: _____
Elevation: _____
Single phase: _____ Three phase: _____ (check one)
List of adjustable set points for the protective equipment or software: _____
_____

Inverter-based Generating Facilities

Inverter Manufacturer, Model Name & Number: _____
_____
Max design fault contribution current (choose one): Instantaneous _____ RMS _____
Harmonics Characteristics: _____
Start-up requirements: _____

Rotating Machines (of any type)

RPM Frequency: _____
(*) Neutral Grounding Resistor (If Applicable): _____

Synchronous Generators

Direct Axis Synchronous Reactance, Xd: _____ P.U.
Direct Axis Transient Reactance, X' d: _____ P.U.
Direct Axis Subtransient Reactance, X" d: _____ P.U.
Negative Sequence Reactance, X2: _____ P.U.
Zero Sequence Reactance, X0: _____ P.U.
KVA Base: _____
Field Volts: _____
Field Amperes: _____

For synchronous generators, provide appropriate IEEE model block diagram of excitation system, governor system and power system stabilizer (PSS) in accordance with the regional reliability council criteria. A PSS may be determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.

Induction Generators

Motoring Power (kW): _____
I^2t or K (Heating Time Constant): _____
Rotor Resistance, Rr: _____ Rotor Reactance, Xr: _____
Stator Resistance, Rs: _____ Stator Reactance, Xs: _____
Magnetizing Reactance, Xm: _____
Short Circuit Reactance, Xd: _____
Exciting Current: _____
Temperature Rise: _____
Frame Size: _____
Design Letter: _____
Reactive Power Required In Vars (No Load): _____
Reactive Power Required In Vars (Full Load): _____
Total Rotating Inertia, H: _____ Per Unit on kVA Base

3. Transformer and Protective Relay Specifications

Will a transformer be used between the generator and the Point of Common Coupling?

____ Yes ____ No

Will the transformer be provided by the Interconnection Customer? ____ Yes ____ No

Transformer Data: (if applicable, for Interconnection Customer-Owned Transformer)

Is the transformer: ____single phase _____three phase (check one) Size: _____ kVA
Transformer Impedance: _____ percent on _____ kVA Base

If Three Phase:
Transformer Primary: _____ Volts _____ Delta _____Wye _____ Wye Grounded
Transformer Secondary: _____ Volts _____ Delta _____Wye _____ Wye Grounded
Transformer Tertiary: _____ Volts _____ Delta _____Wye _____ Wye Grounded

Transformer Fuse Data: (if applicable, for Interconnection Customer-Owned Fuse)

(Attach copy of fuse manufacturer's Minimum Melt and Total Clearing Time-Current Curves)
Manufacturer: _____ Type: _____ Size: _____Speed: _____

Interconnecting Circuit Breaker: (if applicable)

Manufacturer: _____ Type: _____
Load Rating (Amps): _____ Interrupting Rating (Amps): _____ Trip Speed (Cycles): _____

Interconnection Protective Relays: (if applicable)

If Microprocessor-Controlled:
List of Functions and Adjustable Setpoints for the protective equipment or software:

Setpoint Function	Minimum	Maximum
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

Discrete Components: (if applicable)
(Enclose Copy of any Proposed Time-Overcurrent Coordination Curves)
Manufacturer: _____ Type: _____ Style/Catalog No.: _____
Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____
Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____
Proposed Setting: _____

Current Transformer Data: (if applicable)
(Enclose Copy of Manufacturer's Excitation and Ratio Correction Curves)
Manufacturer: _____
Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Potential Transformer Data: (if applicable)

Manufacturer: _____
Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

4. General Information

Enclose copy of site electrical one-line diagram showing the configuration of all Generating Facility equipment, current and potential circuits, and protection and control schemes. This one-line diagram must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 200 kW.

Is one-line diagram enclosed? ____ Yes ____ No

Enclose copy of any site documentation that indicates the precise physical location of the proposed Generating Facility and all protective equipment (e.g., USGS topographic map or other diagram or documentation).

Is site documentation enclosed? ____ Yes ____ No

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes.

Is available documentation enclosed? ___ Yes ___ No

Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).

Are schematic drawings enclosed? ___ Yes ___ No

5. Applicant Signature

I hereby certify that, to the best of my knowledge, all the information provided in this Interconnection Application is true and correct. I also agree to install a Warning Label provided by (utility) on or near my service meter location. Generating Facilities must be compliant with IEEE, NEC, ANSI, and UL standards, where applicable. By signing below, the Applicant also certifies that the installed generating equipment meets the appropriate preceding requirement(s) and can supply documentation that confirms compliance.

Signature of Applicant: _____ Date: _____

6. Information Required Prior to Physical Interconnection

A Certificate of Completion in the form of Attachment 4 of the Interconnection Procedures must be provided to the Utility prior to interconnected operation. The Certificate of Completion must either be signed by an electrical inspector with the authority to approve the interconnection or be accompanied by the electrical inspector's own form authorizing interconnection of the Generating Facility.

Attachment 3: Level 2, 3 and 4 Interconnection Agreement

(Standard Agreement for interconnection of Generating Facilities)

This agreement ("Agreement") is made and entered into this _____ day of _____, _____ ("Effective Date") by and between _____, a _____ organized and existing under the laws of the State of _____, (''Interconnection Customer'') and _____, a _____, existing under the laws of the State of _____, (''Utility''). Interconnection Customer and Utility each may be referred to as a ''Party,'' or collectively as the ''Parties.''

Recitals:

Whereas, Interconnection Customer, as an Applicant, is proposing to develop a Generating Facility, or generating capacity addition to an existing Generating Facility, consistent with the application completed by Interconnection Customer on _____; and

Whereas, Interconnection Customer desires to interconnect the Generating Facility with the Utility's Electric Delivery System;

Now, therefore, in consideration of and subject to the mutual covenants contained herein, the Parties agree as follows:

Article 1. Scope and Limitations of Agreement

1.1 This Agreement shall be used for all approved Level 2, Level 3, and Level 4 Interconnection Applications according to the procedures set forth in the Interconnection Procedures. Capitalized terms in this Agreement if not defined in the Agreement have the meanings set forth in the Interconnection Procedures.

1.2 This Agreement governs the terms and conditions under which the Generating Facility will interconnect to, and operate in parallel with, the Utility's Electric Delivery System.

1.3 This Agreement does not constitute an agreement to purchase or deliver the Interconnection Customer's power.

1.4 Nothing in this Agreement is intended to affect any other agreement between Utility and Interconnection Customer. However, in the event that the provisions of this Agreement are in conflict with the provisions of a Utility tariff, the Utility tariff shall control.

1.5 Responsibilities of the Parties

1.5.1 The Parties shall perform all obligations of this Agreement in accordance with all applicable laws and regulations, and operating requirements.

1.5.2 The Interconnection Customer shall arrange for the construction, interconnection, operation and maintenance of the Generating Facility in accordance with the applicable manufacturer's recommended maintenance schedule, in accordance with this Agreement.

1.5.3 The Utility shall construct, own, operate, and maintain its Electric Delivery System and its facilities for interconnection ("Interconnection Facilities") in accordance with this Agreement.

1.5.4 The Interconnection Customer agrees to arrange for the construction of the

Generating Facility or systems in accordance with applicable specifications that meet or exceed the National Electrical Code, the American National Standards Institute, IEEE, Underwriters Laboratories, and any operating requirements.

1.5.5 Each Party shall operate, maintain, repair, and inspect, and shall be fully responsible for the facilities that it now or subsequently may own unless otherwise specified in the Exhibits to this Agreement and shall do so in a manner so as to reasonably minimize the likelihood of a disturbance adversely affecting or impairing the other Party.

1.5.6 Each Party shall be responsible for the safe installation, maintenance, repair and condition of their respective lines and appurtenances on their respective sides of the Point of Common Coupling.

Article 2. Inspection, Testing, Authorization, and Right of Access

2.1 Equipment Testing and Inspection

The Interconnection Customer shall arrange for the testing and inspection of the Generating Facility prior to interconnection in accordance with IEEE Standard 1547.

2.2 Certificate of Completion

Prior to commencing parallel operation, the Interconnection Customer shall provide the Utility with a Certificate of Completion substantially in the form of Attachment 4 of the Interconnection Procedures. The Certificate of Completion must either be signed by an electrical inspector with the authority to approve the interconnection or be accompanied by the electrical inspector's own form authorizing interconnection of the Generating Facility.

2.3 Authorization

The Interconnection Customer is authorized to commence parallel operation of the Generating Facility when there are no contingencies noted in this Agreement remaining.

2.4 Parallel Operation Obligations

The Interconnection Customer shall abide by all permissible written rules and procedures developed by the Utility which pertain to the parallel operation of the Generating Facility. In the event of conflicting provisions, the Interconnection Procedures shall take precedence over a Utility's rule or procedure, unless such Utility rule or procedure is contained in an approved tariff, in which case the provisions of the tariff shall apply. Copies of the Utility's rules and procedures for parallel operation are either provided as an exhibit to this Agreement or in an exhibit that provides reference to a website with such material.

2.5 Reactive Power

The Interconnection Customer shall design its Generating Facility to maintain a composite power delivery at continuous rated power output at the Point of Common Coupling at a power factor within the range of 0.95 leading to 0.95 lagging.

2.6 Right of Access

At reasonable hours, and upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, the Utility shall have reasonable access to

the Interconnection Customer's premises for any reasonable purpose in connection with the performance of the obligations imposed on the Utility under this Agreement, or as is necessary to meet a legal obligation to provide service to customers.

Article 3. Effective Date, Term, Termination, and Disconnection

3.1 Effective Date

This Agreement shall become effective upon execution by the Parties.

3.2 Term of Agreement

This Agreement shall remain in effect unless terminated earlier in accordance with Article 3.3 of this Agreement.

3.3 Termination

No termination shall become effective until the Parties have complied with all applicable laws and regulations applicable to such termination.

3.3.1 The Interconnection Customer may terminate this Agreement at any time by giving the Utility twenty business days' written notice.

3.3.2 Either Party may terminate this Agreement pursuant to Article 6.6.

3.3.3 Upon termination of this Agreement, the Generating Facility will be disconnected from the Electric Delivery System. The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

3.3.4 The provisions of this Article shall survive termination or expiration of this Agreement.

3.4 Temporary Disconnection

The Utility may temporarily disconnect the Generating Facility from the Electric Delivery System for so long as reasonably necessary in the event one or more of the following conditions or events:

3.4.1 Emergency Conditions: "Emergency Condition" shall mean a condition or situation: (1) that in the judgment of the Party making the claim is imminently likely to endanger life or property; or (2) that, in the case of Utility, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of the Utility's Interconnection Facilities or damage to the Electric Delivery System, ;or (3) that, in the case of the Interconnection Customer, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Generating Facility. Under emergency conditions, the Utility or the Interconnection Customer may immediately suspend interconnection service and temporarily disconnect the Generating Facility. The Utility shall notify the Interconnection Customer promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Interconnection Customer's operation of the Generating Facility. The Interconnection Customer shall notify the Utility promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Utility's Electric Delivery System. To the extent information is known, the notification shall describe the Emergency Condition, the extent of the damage

or deficiency, the expected effect on the operation of both Parties' facilities and operations, its anticipated duration, and any necessary corrective action.

3.4.2 Routine Maintenance, Construction, and Repair: The Utility may interrupt interconnection service or curtail the output of the Generating Facility and temporarily disconnect the Generating Facility from the Electric Delivery System when necessary for routine maintenance, construction, and repairs on the Electric Delivery System. The Utility shall provide the Interconnection Customer with five business days notice prior to such interruption. The Utility shall use reasonable efforts to coordinate such repair or temporary disconnection with the Interconnection Customer.

3.4.3 Forced Outages: During any forced outage, the Utility may suspend interconnection service to effect immediate repairs on the Electric Delivery System. The Utility shall use reasonable efforts to provide the Interconnection Customer with prior notice. If prior notice is not given, the Utility shall, upon request, provide the Interconnection Customer written documentation after the fact explaining the circumstances of the disconnection.

3.4.4 Adverse Operating Effects: The Utility shall provide the Interconnection Customer with a written notice of its intention to disconnect the Generating Facility if, based on good utility practice, the Utility determines that operation of the Generating Facility will likely cause unreasonable disruption or deterioration of service to other Utility customers served from the same electric system, or if operating the Generating Facility could cause damage to the Electric Delivery System. Supporting documentation used to reach the decision to disconnect shall be provided to the Interconnection Customer upon request. The Utility may disconnect the Generating Facility if, after receipt of the notice, the Interconnection Customer fails to remedy the adverse operating effect within a reasonable time which shall be at least five business days from the date the Interconnection Customer receives the Utility's written notice supporting the decision to disconnect, unless emergency conditions exist in which case the provisions of Article 3.4.1 apply.

3.4.5 Modification of the Generating Facility: The Interconnection Customer must receive written authorization from Utility before making any change to the Generating Facility that may have a material impact on the safety or reliability of the Electric Delivery System. Such authorization shall not be unreasonably withheld. Modifications shall be completed in accordance with good utility practice. If the Interconnection Customer makes such modification without the Utility's prior written authorization, the latter shall have the right to temporarily disconnect the Generating Facility.

3.4.6 Reconnection: The Parties shall cooperate with each other to restore the Generating Facility, Interconnection Facilities, and the Electric Delivery System to their normal operating state as soon as reasonably practicable following a temporary disconnection.

Article 4. Cost Responsibility for Interconnection Facilities and Distribution upgrades

4.1 Interconnection Facilities

4.1.1 The Interconnection Customer shall pay for the cost of the interconnection facilities itemized in the Exhibits to this Agreement ("Interconnection Facilities"). If a facilities study was performed, the Utility shall identify its Interconnection Facilities necessary to safely interconnect the Generating Facility with the Electric Delivery System, the cost of those facilities, and the time required to build and install those facilities.

4.1.2 The Interconnection Customer shall be responsible for its share of all reasonable expenses, including overheads, associated with (1) owning, operating, maintaining, repairing, and replacing its Interconnection Equipment Package, and (2) operating, maintaining, repairing, and replacing the Utility's Interconnection Facilities as set forth in any exhibits to this Agreement.

4.2 Distribution upgrades

The Utility shall design, procure, construct, install, and own any Electric Delivery System upgrades ("Utility Upgrades"). The actual cost of the Utility Upgrades, including overheads, shall be directly assigned to the Interconnection Customer.

Article 5. Billing, Payment, Milestones, and Financial Security

5.1 Billing and Payment Procedures and Final Accounting

5.1.1 The Utility shall bill the Interconnection Customer for the design, engineering, construction, and procurement costs of the Utility provided Interconnection Facilities and Utility Upgrades contemplated by this Agreement as set forth in the exhibits to this Agreement, on a monthly basis, or as otherwise agreed by the Parties. The Interconnection Customer shall pay each bill within thirty calendar days of receipt, or as otherwise agreed by the Parties.

5.1.2 Within ninety (90) calendar days of completing the construction and installation of the Utility's Interconnection Facilities and Utility Upgrades described in the exhibits to this Agreement, the Utility shall provide the Interconnection Customer with a final accounting report of any difference between (1) the actual cost incurred to complete the construction and installation and the budget estimate provided to the Interconnection Customer and (2) the Interconnection Customer's previous deposit and aggregate payments to the Utility for such Interconnection Facilities and Utility Upgrades. The Utility shall provide a written explanation for any actual cost exceeding a budget estimate by 25% or more . If the Interconnection Customer's cost responsibility exceeds its previous deposit and aggregate payments, the Utility shall invoice the Interconnection Customer for the amount due and the Interconnection Customer shall make payment to the Utility within thirty calendar days. If the Interconnection Customer's previous deposit and aggregate payments exceed its cost responsibility under this Agreement, the Utility shall refund to the Interconnection Customer an amount equal to the difference within thirty (30) calendar days of the final accounting report.

5.2 Interconnection Customer Deposit

At least twenty business days prior to the commencement of the design, procurement, installation, or construction of a discrete portion of the Utility's Interconnection Facilities and Utility Upgrades, the Interconnection Customer shall provide the Utility with a deposit equal to fifty (50) percent of the cost estimated for its Interconnection Facilities prior to its beginning design of such facilities.

Article 6. Assignment, Liability, Indemnity, Force Majeure, Consequential Damages, and Default

6.1 Assignment

This Agreement may be assigned by either Party as provided below upon fifteen business days' prior written notice to the other Party.

6.1.1 Either Party may assign this Agreement without the consent of the other Party to any affiliate of the assigning Party and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement;

6.1.2 The Interconnection Customer shall have the right to assign this Agreement, without the consent of the Utility, for collateral security purposes to aid in providing financing for the Generating Facility;

6.1.3 For a Generating Facility offsetting part or all of the load of a utility customer at a given site, that customer is the Interconnection Customer and that customer may assign its Interconnection Agreement to a subsequent occupant of the site. For a Generating Facility providing energy directly to a Utility, the Interconnection Customer is the owner of the Generating Facility and may assign its Interconnection Agreement to a subsequent owner of the Generating Facility. Assignment is only effective after the assignee provides written notice of the assignment to the Utility and agrees to accept the Interconnection Customer's responsibilities under this Interconnection Agreement.

6.1.4 All other assignments shall require the prior written consent of the non-assigning Party, such consent not to be unreasonably withheld; any

6.1.5 Any attempted assignment that violates this Article is void and ineffective. Assignment shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. An assignee is responsible for meeting the same obligations as the Interconnection Customer.

6.2 Limitation of Liability

Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special, consequential, or punitive damages, except as specifically authorized by this Agreement.

6.3 Indemnity

6.3.1 This provision protects each Party from liability incurred to third Parties as a result of carrying out the provisions of this Agreement. Liability under this provision is exempt from the general limitations on liability found in Article 6.2.

6.3.2 Each Party shall at all times indemnify, defend, and hold the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the indemnified Party's) action or failure to meet its obligations under this Agreement on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

6.3.3 If an indemnified Party is entitled to indemnification under this Article as a result of a claim by a third party, the indemnifying Party shall, after reasonable notice from the indemnified Party, assume the deference of such claim. If the indemnifying Party fails, after notice and reasonable opportunity to proceed under this Article, to assume the defense of such claim, the indemnified Party may at the expense of the indemnifying Party contest, settle or consent to the entry of any judgment with respect to, or pay in full, such claim.

6.3.4 If the indemnifying Party is obligated to indemnify and hold the indemnified Party harmless under this Article, the amount owing to the indemnified Party shall be the amount of such indemnified Party's actual loss, net of any insurance or other recovery.

6.3.5 Promptly after receipt of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided for in this Article may apply, the indemnified Party shall notify the indemnifying Party of such fact. Any failure of or delay in such notification shall not affect a Party's indemnification obligation unless such failure or delay is materially prejudicial to the indemnifying Party.

6.4 Consequential Damages

Neither Party shall be liable under any provision of this Agreement for any losses, damages, costs or expenses for any special, indirect, incidental, consequential, or punitive damages, including but not limited to loss of profit or revenue, loss of the use of equipment, cost of capital, cost of temporary equipment or services, whether based in whole or in part in contract, in tort, including negligence, strict liability, or any other theory of liability; provided, however, that damages for which a Party may be liable to the other Party under another agreement will not be considered to be special, indirect, incidental, or consequential damages hereunder.

6.5 Force Majeure

6.5.1 As used in this Article, a Force Majeure Event shall mean any act of God, labor disturbance, act of the public enemy, war, acts of terrorism, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, any order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond a Party's control. A

Force Majeure Event does not include an act of negligence or intentional wrongdoing.

6.5.2 If a Force Majeure Event prevents a Party from fulfilling any obligations under this Agreement, the Party affected by the Force Majeure Event ("Affected Party") shall promptly notify the other Party of the existence of the Force Majeure Event. The notification must specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the Affected Party is taking to mitigate the effects of the event on its performance, and if the initial notification was verbal, it should be promptly followed up with a written notification. The Affected Party shall keep the other Party informed on a continuing basis of developments relating to the Force Majeure Event until the event ends. The Affected Party will be entitled to suspend or modify its performance of obligations under this Agreement (other than the obligation to make payments) only to the extent that the effect of the Force Majeure Event cannot be reasonably mitigated by the Affected Party. The Affected Party shall use reasonable efforts to resume its performance as soon as possible.

6.6 Default

6.6.1 Default exists where a Party has materially breached any provision of this Agreement, except that no default shall exist where a failure to discharge an obligation (other than the payment of money) is the result of a Force Majeure Event as defined in this Agreement, or the result of an act or omission of the other Party.

6.6.2 Upon a default, the non-defaulting Party shall give written notice of such default to the defaulting Party. Except as provided in Article 6.6.3, the defaulting Party shall have 60 calendar days from receipt of the default notice within which to cure such default; provided however, if such default is not capable of cure within 60 calendar days, the defaulting Party shall commence efforts to cure within 20 calendar days after notice and continuously and diligently pursue such cure within six months from receipt of the default notice; and, if cured within such time, the default specified in such notice shall cease to exist.

6.6.3 If a default is not cured as provided in this Article, or if a default is not capable of being cured within the period provided for herein, the non-defaulting Party shall have the right to terminate this Agreement by written notice at any time until cure occurs, and be relieved of any further obligation hereunder and, whether or not that Party terminates this Agreement, to recover from the defaulting Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity. The provisions of this Article will survive termination of this Agreement.

Article 7. Insurance

The Interconnection Customer is not required to provide insurance coverage for utility damages beyond the amounts listed in Section J of the Interconnection Proceduresas part of this Agreement, nor is the Interconnection Customer required to carry general liability insurance as part of this Agreement or any other Utility requirement. It is, however, recommended that the Interconnection Customer protect itself with liability insurance.

Article 8. Dispute Resolution

Any dispute arising from or under the terms of this Agreement shall be subject to the dispute resolution procedures contained in the Interconnection Procedures.

Article 9. Miscellaneous

9.1 Governing Law, Regulatory Authority, and Rules

The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of _____, without regard to its conflicts of law principles (*if left blank, such state shall be the state in which the Generating Facility is located*). This Agreement is subject to all applicable laws and regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a governmental authority.

9.2 Amendment

The Parties may only amend this Agreement by a written instrument duly executed by both Parties.

9.3 No Third-Party Beneficiaries

This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest, and, where permitted, their assigns.

9.4 Waiver

9.4.1 The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

9.4.2 Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any failure to comply with any other obligation, right, or duty of this Agreement. Termination or default of this Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Utility. Any waiver of this Agreement shall, if requested, be provided in writing.

9.5 Entire Agreement

This Agreement, including all exhibits, constitutes the entire Agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with

respect to the subject matter of this Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, either Party's compliance with its obligations under this Agreement.

9.6 Multiple Counterparts

This Agreement may be executed in two or more counterparts, each of which is deemed an original but all of which constitute one and the same Agreement.

9.7 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties nor to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

9.8 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore, insofar as practicable, the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

9.9 Environmental Releases

Each Party shall notify the other Party, first orally and then in writing, of the release any hazardous substances, any asbestos or lead abatement activities, or any type of remediation activities related to the Generating Facility or the Interconnection Facilities, each of which may reasonably be expected to affect the other Party. The notifying Party shall (1) provide the notice as soon as practicable, provided such Party makes a good faith effort to provide the notice no later than 24 hours after such Party becomes aware of the occurrence, and (2) promptly furnish to the other Party copies of any publicly available reports filed with any governmental authorities addressing such events.

9.10 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain liable for the performance of such subcontractor.

9.10.1 The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall Utility be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this

Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

9.10.2 The obligations under this Article will not be limited in any way by any limitation of subcontractor's insurance.

Article 10. Notices

10.1 General

Unless otherwise provided in this Agreement, any written notice, demand, or request required or authorized in connection with this Agreement ("Notice") shall be deemed properly given if delivered in person, delivered by recognized national currier service, or sent by first class mail, postage prepaid, to the person specified below:

Interconnection Customer:

_____

Attention: _____

Address: _____

City: _____ State:_____ Zip:_____

Phone: _____ Fax: _____

E-mail_____

Utility: _____

Attention: _____

Address: _____

City: _____ State:_____ Zip:_____

Phone: _____ Fax: _____

E-mail: _____

10.2 Billing and Payment

Billings and payments to Interconnection Customer shall be sent to the address provided in Section 10.1 unless an alternative address is provided here:

Interconnection Customer:

_____

Attention: _____

Address: _____

City: _____ State:_____ Zip:_____

Phone: _____ Fax: _____

E-mail: _____

10.3 Designated Operating Representative

The Parties may also designate operating representatives to conduct the communications which may be necessary or convenient for the administration of this Agreement. This person will also serve as the point of contact with respect to operations and maintenance of the Party's facilities.

Interconnection Customer's operating representative:

_____

Attention: _____

Address: _____

City: _____ State:_____ Zip:_____

Phone: _____ Fax: _____

E-mail: _____

Utility's Operating Representative: _____

Attention: _____

Address: _____

City: _____ State:_____ Zip:_____

Phone: _____ Fax: _____

E-mail: _____

Article 11. Signatures

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives.

For the Utility

Signature: _____ Date: _____

Name (printed): _____

Title: _____

For the Interconnection Customer

Signature: _____ Date: _____

Name (printed): _____

Title: _____

Exhibits incorporated in this Agreement: [*which may include:*

a) one-line diagram and site maps

b) Interconnection Facilities (upgrades to the Utility's distribution system required for Level 4 Generating Facilities or those approved under the "additional review" portion of Level 2) to be constructed by the Utility. The interconnection facilities exhibit shall include any milestones for both the Interconnection Customer and the Utility as well as cost responsibility and apportionments if there is more than one Generating Facility interconnecting and sharing in the Distribution Upgrade costs;

c) operational requirements or reference to Utility website with these requirements – this exhibit shall require the Interconnection Customer to operate within the bounds of IEEE Standard 1547 and associated standards;

d) reimbursement of costs (Utility may, in its sole discretion, reimburse Interconnection Customer for Utility Upgrades that benefit future Generating Facilities);

e) operating restrictions (no operating restrictions apply to Levels 1, 2 or 3 interconnections but may apply, in the discretion of the Utility, to Generating Facilities approved under Level 4);

f) copies of Feasibility, Impact, and Facilities Study agreements.]

Attachment 4: Certificate of Completion

Installation Information Check if owner-installed ☐

Applicant: _____Contact Person:_____

Mailing Address: _____

Location of Generating Facility (if different from above): _____

City: _____ State: _____ Zip Code: _____

Telephone (Daytime): _____ (Evening): _____

Facsimile Number: _____ E-Mail Address: _____

Electrician:

Installing Electrician: _____ Firm: _____

License No.: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone (Daytime): _____ (Evening): _____

Facsimile Number: _____ E-Mail Address: _____

Installation Date: _____ Interconnection Date: _____

Electrical Inspection:

The system has been installed and inspected in compliance with the local Building/Electrical Code of _____ (appropriate governmental authority).

Local Electrical Wiring Inspector (***or attach signed electrical inspector's form***):

Signature: _____ Date: _____

Name (printed): _____

Attachment 5: Feasibility, Impact and Facilities Study Agreements

As noted in the Interconnection Procedures, a Utility may require that a proposed Level 4 Generating Facility be subject to feasibility, impact and facilities Studies. At the Utility's discretion, any of these studies may be combined or foregone. Also at the Utility's discretion, for any study, the Applicant may be required to provide information beyond the contents of the Application. Sample study agreements are provided on the following pages.

Interconnection Feasibility Study Agreement

This agreement ("Agreement") is made and entered into this _____ day of _____ by and between _____, a_____ organized and existing under the laws of the State of_____, (''Applicant,'') and _____, a _____ existing under the laws of the State of _____, (''Utility''). The Applicant and the Utility each may be referred to as a ''Party,'' or collectively as the ''Parties.''

Recitals:

Whereas, Applicant is proposing to develop a Generating Facility or Generating Capacity addition to an existing Generating Facility consistent with the application completed by Applicant on_____; and

Whereas, Applicant desires to interconnect the Generating Facility with the Utility's Electric Delivery System; and

Whereas, the Utility has determined that a "Feasibility Study" is necessary to assess the feasibility of interconnecting the proposed Generating Facility to the Electric Delivery System;

Now, Therefore, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

1. When used in this Agreement, capitalized terms shall have the meanings indicated. Capitalized terms that are not defined in this Agreement shall have the meanings specified in the Interconnection Procedures.
2. Applicant elects and the Utility shall cause to be performed a Feasibility Study consistent with Section H(3) of the Interconnection Procedures.
3. The scope of the Feasibility Study shall be based on information supplied in the Application and any other information or assumptions set forth in any attachment to this agreement.
4. The Utility reserves the right to request additional technical information from Applicant as may reasonably become necessary consistent with good utility practice during the course of the Feasibility Study. If after signing this Agreement, Applicant modifies its Application or any of the information or assumptions in any attachment to this Agreement, the time to complete the Feasibility Study may be extended by agreement of the Parties.
5. In performing the Feasibility Study, the Utility shall rely, to the extent reasonably practicable, on existing studies of recent vintage. The Applicant will not be charged for such existing studies; however, Applicant shall be responsible for charges associated with any new study or modifications to existing studies that are reasonably necessary to perform the Feasibility Study.
6. The Feasibility Study report shall provide the following information:
   6.1. Preliminary identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection,
   6.2. Preliminary identification of any thermal overload or voltage limit violations resulting from the interconnection, and
   6.3. Preliminary description and non-bonding estimated cost of facilities required to interconnect the Generating Facility to Utility's Electric Delivery System and to address the identified short circuit and power flow issues.
7. The Utility may require a study deposit of the lesser of 50 percent of estimated non-binding good faith study costs or $1,000.

8. The Feasibility Study shall be completed and the results shall be transmitted to Applicant within twenty business days after this Agreement is signed by the Parties, unless the proposed Generating Facility will impact other proposed Generating Facilities.
9. Study fees shall be based on actual costs and will be invoiced to Applicant after the study is transmitted to Applicant. The invoice shall include an itemized listing of employee time and costs expended on the study.
10. Applicant shall pay any actual study costs that exceed the deposit without interest within thirty calendar days on receipt of the invoice. Utility shall refund any excess amount without interest within thirty calendar days of the invoice.

In witness whereof, the Parties have caused this agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

For the Utility

Signature: _____ Date: _____

Name (printed): _____

Title: _____

For the Applicant

Signature: _____ Date: _____

Name (printed): _____

Title: _____

Are attachments included to supplement or modify information contained in the Application?

_____ Yes _____ No

Interconnection System Impact Study Agreement

This agreement ("Agreement") is made and entered into this _____ day of _____ by and between _____, a _____ organized and existing under the laws of the State of _____, (''Applicant,'') and _____, a _____ existing under the laws of the State of _____, (''Utility''). The Applicant and the Utility each may be referred to as a ''Party,'' or collectively as the ''Parties.''

Recitals:

Whereas, Applicant is proposing to develop a Generating Facility or Generating Capacity addition to an existing Generating Facility consistent with the Application completed by Applicant on _____ and;
Whereas, Applicant desires to interconnect the Generating Facility with the Utility's Electric Delivery System;
Whereas, the Utility has completed or waived an interconnection feasibility study and provided the results, if any, of said study to Applicant;
Whereas, Applicant has requested the Utility to perform an impact study to assess the impact of interconnecting the Generating Facility to the Utility's Electric Delivery System;
Now, therefore, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

1. When used in this Agreement, Capitalized terms shall have the meanings indicated. Capitalized terms not defined in this Agreement shall have the meanings specified in the Interconnection Procedures.
2. Applicant elects and the Utility shall cause to be performed an impact study consistent with Sections H(5)-(8) of the Interconnection Procedures.
3. The scope of the impact study shall be based on information supplied in the Application, any feasibility study on the Generating Facility completed by the Utility, and any other information or assumptions set forth in any attachment to this Agreement.
4. The Utility reserves the right to request additional technical information from Applicant as may reasonably become necessary consistent with good utility practice during the course of the impact study. If after signing this Agreement, Applicant modifies its Application or any of the information or assumptions in any attachment to this Agreement, the time to complete the impact study may be extended.
5. The impact study shall provide the following information:
   5.1. Identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection,
   5.2. Identification of any thermal overload or voltage limit violations resulting from the interconnection,
   5.3. Identification of any instability or inadequately damped response to system disturbances resulting from the interconnection and
   5.4. Description and non-binding, good faith estimated cost of facilities required to interconnect the Generating Facility to the Electric Delivery System and to address the identified short circuit, instability, and power flow issues.
6. The Utility may require a study deposit of the lesser of 50 percent of estimated non-binding

good faith study costs or $3,000.

7. The impact study shall be completed and the results transmitted to Applicant within forty (40) business days after this Agreement is signed by the Parties, unless the proposed Generating Facility will impact other proposed generating facilities.
8. Study fees shall be based on actual costs and will be invoiced to Applicant after the study is transmitted to Applicant. The invoice shall include an itemized listing of employee time and costs expended on the study.
9. Applicant shall pay any actual study costs that exceed the deposit without interest within thirty (30) calendar days on receipt of the invoice. The Utility shall refund any excess amount without interest within thirty calendar days of the invoice.

In witness thereof, the Parties have caused this agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

For the Utility

Signature: _____ Date: _____

Name (printed): _____

Title: _____

For the Applicant

Signature: _____ Date: _____

Name (printed): _____

Title: _____

Are attachments included to supplement or modify information contained in the Application and the feasibility study (if performed)?

_____ Yes _____ No

Interconnection Facilities Study Agreement

This agreement ("Agreement") is made and entered into this _____ day of _____ by and between _____, a _____ organized and existing under the laws of the State of _____, (''Applicant,'') and _____, a _____existing under the laws of the State of _____, (''Utility''). The Applicant and the Utility each may be referred to as a ''Party,'' or collectively as the ''Parties.''

Recitals:

Whereas, Applicant is proposing to develop a Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Application completed by Applicant on _____; and

Whereas, Applicant desires to interconnect the Generating Facility with the Utility's Electric Delivery System;

Whereas, the Utility has completed or waived a feasibility study and an impact study and provided the results of said studies to Applicant; and

Whereas, Applicant has requested that Utility perform a facilities study to specify and estimate the cost of the engineering, procurement and construction work needed to physically and electrically connect the Generating Facility to the Electric Delivery System in accordance with good utility practice.

Now, therefore, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

1. When used in this agreement, capitalized terms shall have the meanings indicated. Capitalized terms not defined in this agreement shall have the meanings specified in the Interconnection Procedures.
2. Applicant elects and the Utility shall cause to be performed a facilities study consistent with Sections H(9)-(11) of the Interconnection Procedures.
3. The scope of the facilities study shall be subject to information supplied in the Application, and any feasibility study or impact study performed by the Utility for the Generating Facility and any other information or assumptions set forth in any attachment to this agreement.
4. The Utility reserves the right to request additional technical information from Applicant as may reasonably become necessary consistent with good utility practice during the course of the Facilities Study.
5. A Facilities Study report (1) shall provide a description, estimated cost of (consistent with Attachment A), schedule for required facilities to interconnect the Generating Facility to the Electric Delivery System and (2) shall address the short circuit, instability, and power flow issues identified in the Impact Study.
6. The Utility may require a study deposit of the lesser of 50 percent of estimated non-binding good faith study costs or $10,000.
7. The Facilities Study shall be completed and the results shall be transmitted to Applicant within sixty (60) business days after this agreement is signed by the Parties, unless the proposed Generating Facility will impact other proposed generating facilities.
8. Study fees shall be based on actual costs and will be invoiced to Applicant after the study is transmitted to Applicant. The invoice shall include an itemized listing of employee time and costs expended on the study.

9. Applicant shall pay any actual study costs that exceed the deposit without interest within thirty (30) calendar days on receipt of the invoice. The Utility shall refund any excess amount without interest within thirty (30) calendar days of the invoice.

In witness whereof, the Parties have caused this agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

For the Utility

Signature: _____ Date: _____

Name (printed): _____

Title: _____

For the Applicant

Signature: _____ Date: _____

Name (printed): _____

Title: _____

Are attachments included to supplement or modify information contained in the Application, the feasibility study (if performed) and the impact study (if performed)?

_____ Yes _____ No