

**STANDARDS FOR INTERCONNECTION OF DISTRIBUTED GENERATION****Exhibit C - Expedited/Standard Process Interconnection Application****Instructions** (please do not submit this page)**General Information**

Prior to submitting an Interconnection Application through either the Expedited or Standard Process, all Interconnecting Customers with Facilities that are 500kW or greater must request and receive a Pre-Application Report from the Company (Exhibit B). If the Pre-Application Report is not received within the applicable Time Frame, the Interconnecting Customer can file its application. The Pre-Application Report is optional for those Facilities that are less than 500 kW. Complete information regarding the Pre-Application Report is found in Section 3.2 of the Standards for Interconnection of Distributed Generation Tariff ("Interconnection Tariff") which is located on the Company's website.

If you wish to submit an application to interconnect your generating facility using the Expedited or Standard Process following receipt of the Pre-Application Report as applicable, please fill out all pages of the attached application form (not including this page of instructions). Once complete, please sign, attach the supporting documentation requested and enclose an application fee of \$4.50/kW (minimum of \$300 and maximum of \$7,500).

**Contact Information:** You must provide as a minimum the contact information of the legal applicant, i.e. Interconnecting Customer. If another party is responsible for interfacing with the Company (utility), you must provide their contact information as well.

**Ownership Information:** Please enter the legal names of the owner or owners of the generating facility. Include the percentage ownership (if any) by any electric service company (utility) or public utility holding company, or by any entity owned by either.

**Confidentiality Statement:** In an ongoing effort to improve the interconnection process for Interconnecting Customer-owned generating facilities, the information you provide and the results of the application process will be aggregated with the information of other applicants, i.e. Interconnecting Customers, and periodically reviewed by a DG Working Group of industry participants that has been organized by the Massachusetts Department of Public Utilities (DPU). The aggregation process mixes the data together so that specific details for one Interconnecting Customer are not revealed. In addition to this process, you may choose to allow the information specific to your application to be shared with the Working Group by answering "Yes" to the Confidentiality Statement question on the first page. Please note that even in this case your identification information (contact data) and specific generating facility location will not be shared.

**Generating Facility Information**

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President

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Account and Meter Numbers: Please consult an actual electric bill from the Electric Service Company and enter the correct Account Number and Meter Number on this application. If the facility is to be installed in a new location, a temporary number may be assigned by the Electric Company.

UL 1741 Listed? The standard UL 1741, "Inverters, Converters, and Controllers for Use in Independent Power Systems," addresses the electrical interconnection design of various forms of generating equipment. Many manufacturers choose to submit their equipment to a Nationally Recognized Testing Laboratory (NRTL) that verifies compliance with UL 1741. This "listing" is then marked on the equipment and supporting documentation.

DEP Air Quality Permit Needed? A generating facility may be considered a point source of emissions of concern by the Massachusetts Department of Environmental Protection (DEP). Therefore, when submitting this application, please indicate whether your generating facility will require an Air Quality Permit. You must answer these questions, however, your specific answers will not affect whether your application is deemed complete. Please contact the DEP to determine whether the generating technology planned for your facility qualifies for a DEP waiver or requires a permit.

**Generating Facility Expedited/Standard Process**  
**Interconnection Application****Contact Information:**

Date Prepared: \_\_\_\_\_

Legal Name and address of Interconnecting Customer

Interconnecting Customer (print): \_\_\_\_\_ Contact Person: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Alternative Contact Information

(e.g., system installation contractor or coordinating company, if appropriate):

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

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Ownership (include % ownership by any electric utility): \_\_\_\_\_

Site Control? (Y/N) \_\_\_\_\_

Will Facility be constructed on a single parcel of land? (Y/N) \_\_\_\_\_

Confidentiality Statement: "I agree to allow information regarding the processing of my application (without my name and address) to be reviewed by the Massachusetts DG Working Group that is exploring ways to further expedite future interconnections." Yes \_\_\_\_ No \_\_\_\_

Group Study Agreement: "I agree to allow my contact information to be shared with other parties interested in a potential group study in the same geographic area." Yes \_\_\_\_ No \_\_\_\_**Generating Facility Information**Please provide all Pre-Application Reports (either mandatory or optional).

Customer name (if Customer is not Interconnecting Customer) \_\_\_\_\_

Customer email: \_\_\_\_\_ Customer telephone: \_\_\_\_\_

Address of Facility: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Electric Service Company: \_\_\_\_\_

Account Number: \_\_\_\_\_

Meter Number: \_\_\_\_\_

Type of Generating Unit: Synchronous \_\_\_\_\_ Induction \_\_\_\_\_ Inverter \_\_\_\_\_

Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_

Nameplate Rating: \_\_\_\_\_ (kW) \_\_\_\_\_ (kVAr) \_\_\_\_\_ (AC Volts) Single \_\_\_\_ or Three \_\_\_\_ Phase

Prime Mover: Fuel Cell ☐ Reciprocating Engine ☐ Gas Turbine ☐ Steam Turbine ☐  
Microturbine ☐ Photovoltaic ☐ Other \_\_\_\_\_Energy Source: Solar ☐ Wind ☐ Hydro ☐ Diesel ☐ Natural Gas ☐ Fuel Oil ☐  
Other \_\_\_\_\_ (Please Specify)

For Solar PV provide the DC-STC rating: \_\_\_\_\_ (kW)

IEEE 1547.1 (UL 1741) Listed? Yes \_\_\_\_\_ No \_\_\_\_\_

Need an air quality permit from DEP? Yes \_\_\_\_ No \_\_\_\_ Not Sure \_\_\_\_  
If "yes", have you applied for it? Yes \_\_\_\_ No \_\_\_\_

Planning to Export Power? Yes \_\_\_\_ No \_\_\_\_ A Cogeneration Facility? Yes \_\_\_\_ No \_\_\_\_

Anticipated Export Power Purchaser: \_\_\_\_\_

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**STANDARDS FOR INTERCONNECTION OF DISTRIBUTED GENERATION**Export Form? Simultaneous Purchase/Sale \_\_\_\_ Net Purchase/Sale \_\_\_\_ Net Metering \_\_\_\_  
Other (Specify) \_\_\_\_\_

Est. Install Date: \_\_\_\_\_ Est. In-Service Date: \_\_\_\_\_ Agreement Needed By: \_\_\_\_\_

**Application Process**

I hereby certify that, to the best of my knowledge, all of the information provided in this application is true:

Interconnecting Customer Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

The information provided in this application is complete:

Company Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

**Generating Facility Technical Detail**

Information on components of the generating facility that are currently Listed

	Equipment Type	Manufacturer	Model	National Standard
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____

Total Number of Generating Units in Facility? \_\_\_\_\_

Generator Unit Power Factor Rating: \_\_\_\_\_

Max Adjustable Leading Power Factor? \_\_\_\_\_ Max Adjustable Lagging Power Factor? \_\_\_\_\_

**Generator Characteristic Data (for all inverter-based machines)**

Max Design Fault Contribution Current? \_\_\_\_\_ Instantaneous \_\_\_\_ or RMS? \_\_\_\_

Harmonics Characteristics: \_\_\_\_\_

Start-up power requirements: \_\_\_\_\_

**Generator Characteristic Data (for all rotating machines)**

Rotating Frequency: \_\_\_\_\_ (rpm) Neutral Grounding Resistor (If Applicable): \_\_\_\_\_

**Additional Information for Synchronous Generating Units**Synchronous Reactance,  $X_d$ : \_\_\_\_\_ (PU) Transient Reactance,  $X'_d$ : \_\_\_\_\_ (PU)Issued by: Peter J. Clarke  
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Subtransient Reactance,  $X''_d$ : \_\_\_\_\_ (PU)      Neg Sequence Reactance,  $X_2$ : \_\_\_\_\_ (PU)  
Zero Sequence Reactance,  $X_0$ : \_\_\_\_\_ (PU)      kVA Base: \_\_\_\_\_  
Field Voltage: \_\_\_\_\_ (Volts)      Field Current: \_\_\_\_\_ (Amps)

**Additional information for Induction Generating Units**

Rotor Resistance,  $R_r$ : \_\_\_\_\_      Stator Resistance,  $R_s$ : \_\_\_\_\_  
Rotor Reactance,  $X_r$ : \_\_\_\_\_      Stator Reactance,  $X_s$ : \_\_\_\_\_  
Magnetizing Reactance,  $X_m$ : \_\_\_\_\_      Short Circuit Reactance,  $X_d''$ : \_\_\_\_\_  
Exciting Current: \_\_\_\_\_      Temperature Rise: \_\_\_\_\_  
Frame Size: \_\_\_\_\_  
Total Rotating Inertia,  $H$ : \_\_\_\_\_      Per Unit on kVA Base: \_\_\_\_\_  
Reactive Power Required In Vars (No Load): \_\_\_\_\_  
Reactive Power Required In Vars (Full Load): \_\_\_\_\_

**Additional information for Induction Generating Units that are started by motoring**

Motoring Power: \_\_\_\_\_ (kW)      Design Letter: \_\_\_\_\_

**Interconnection Equipment Technical Detail**

Date: \_\_\_\_\_

Will a transformer be used between the generator and the point of interconnection?  
Yes \_\_\_\_\_ No \_\_\_\_\_

Will the transformer be provided by Interconnecting Customer?    Yes \_\_\_\_\_ No \_\_\_\_\_

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

Nameplate Rating: \_\_\_\_\_ (kVA)      Single \_\_\_\_\_ or Three \_\_\_\_\_ Phase

Transformer Impedance: \_\_\_\_\_ (%) on a \_\_\_\_\_ kVA Base

If Three Phase:

Transformer Primary: \_\_\_\_\_ (Volts) \_\_\_\_\_ Delta \_\_\_\_\_ Wye \_\_\_\_\_ WyeGrounded \_\_\_\_\_ Other

Transformer Secondary: \_\_\_\_\_ (Volts) \_\_\_\_\_ Delta \_\_\_\_\_ Wye \_\_\_\_\_ WyeGrounded \_\_\_\_\_ Other

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

(Attach copy of fuse manufacturer's Minimum Melt & Total Clearing Time-Current Curves)

Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_ Size: \_\_\_\_\_ Speed: \_\_\_\_\_

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**STANDARDS FOR INTERCONNECTION OF DISTRIBUTED GENERATION****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.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

(If discrete components)

(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: \_\_\_\_\_

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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 & Ratio Correction Curves)

Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

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**Potential Transformer Data (if applicable):**

Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

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**STANDARDS FOR INTERCONNECTION OF DISTRIBUTED GENERATION**

**General Technical Detail**

Date: \_\_\_\_\_

Enclose 3 copies of site electrical One-Line Diagram showing the configuration of all generating facility equipment, current and potential circuits, and protection and control schemes with a Massachusetts registered professional engineer (PE) stamp. The Company will accept an electronic version of this information, in which case only 1 paper copy needs to be submitted to the Company.

Enclose 3 copies of any applicable site documentation that indicates the precise physical location of the proposed generating facility (e.g., USGS topographic map or other diagram or documentation). The Company will accept an electronic version of this information, in which case only 1 paper copy needs to be submitted to the Company.

Proposed Location of Protective Interface Equipment on Property:  
(Include Address if Different from Application Address)

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

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

Please enclose any other information pertinent to this Facility.

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