

Knollwood Energy of MA LLC
P.O. Box 30
Chester, New Jersey 07930

October 2, 2014

Debra A. Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301-2429

NHPUC 7OCT14AM11:54

Dear Ms. Howland,

Enclosed please find the application for the Steven Billow system to be part of the Knollwood Energy of MA LLC (NH-II-13-089) Class II Photovoltaic aggregation for New Hampshire Renewable Energy Certificates (RECs) generated from customer-sited sources, pursuant to New Hampshire Code of Administrative Rules Puc 2506.

Customer and Facility Information

Steven Billow
56 Peaslee Road
Bow, NH 03304
585-727-1541
steven.billow@gmail.com

The Nepool GIS ID # for this facility is: NON43315. Also enclosed are the Simplified Process Interconnection Application and Service Agreement and the Certificate of Completion for Simplified Process Interconnections. An electronic version has been sent to executive.director@puc.nh.gov.

Please do not hesitate to contact me if you have any questions regarding this application.

Thank you for your consideration,

Alane Lakritz

Alane Lakritz
President
Knollwood Energy of MA LLC
862-432-0259
908-955-0593 (fax)
Alane@KnollwoodEnergy.com

Enclosures (3)

Email address: _____

Provide a complete list of the equipment used at the facility, including the revenue grade REC meter, and, if applicable, the inverter. **Your facility will not qualify for RECs without a REC meter.**

equipment	quantity	Type	equipment	quantity	Type
PV panels	63	Suniva OPT4-100265	other		
Inverter	2	SolarEdge SE50000A US and SE11400-US	other		
meter	1	Intron Centron Digital Fm2s cls30ta 1.0kwh ansl 12	other		

A copy of the interconnection agreement and the approval to operate your PV system from your electric utility **must be included with your application.**

For PSNH customers, both the Simplified Process Interconnection Application and Exhibit B - Certificate of Completion are required.

What is the nameplate capacity of your facility (found on your interconnection agreement)? 16.70 DC, 16.40 AC

What was the initial date of operation (the date your utility approved the facility)? 4/17/64

Provide the name, license number and contact information of the installer, or indicate that the equipment was installed directly by the customer.

Installer Name Fraser Electric Contact Kim License # (if applicable) _____
Address 789 Whittler Hwy City S Tarnworth State: NH Zip 03883
Telephone 603-284-6618 email kim@fraseelectric.com

If the equipment was installed directly by the customer, please check here:

Provide the name and contact information of the equipment vendor.

Check here if the installer provided the equipment and proceed to the next question.

Business Name _____ Contact _____
Address _____ City _____ State _____ Zip _____
Telephone _____ email _____

If an independent electrician was used, please provide the following information.

Electrician's Name Kim Frase License # 4146M
Business Name Frase Electric LLC Email kim@fraseelectric.com
Address 789 Whittler Hwy City S Tarnworth State NH Zip 03883

Provide the name of the independent monitor for this facility. (A list of approved independent monitors is available at http://www.puc.nh.gov/Sustainable%20Energy/Renewable_Energy_Source_Eligibility.htm.)

Independent Monitor's Name Paul Button Energy Audit Unlimited

Is the facility certified under another state's renewable portfolio standard? yes no_x

If "yes", then provide proof of the certification as **Attachment C**.

• Please note, if your facility is part of an aggregation, your aggregator should provide you with the following information.

• In order to qualify your facility's electrical production for Renewable Energy Certificates (RECs), you must register with the NEPOOL – GIS. Contact information for the GIS administrator follows:

James Webb
Registry Administrator, APX Environmental Markets
224 Airport Parkway, Suite 600, San Jose, CA 95110
Office: 408.517.2174 jwebb@apx.com

If you are not part of an aggregation, Mr. Webb will assist you in obtaining a GIS facility code.

GIS Facility Code # NON43315 Asset ID # NON43315

Complete an affidavit by the applicant or qualified installer that the project is installed and operating in conformance with any applicable state/local building codes. Use either the following affidavit form or provide a separate document.

The Commission requires a notarized affidavit as part of the application.

AFFIDAVIT

The Undersigned applicant declares under penalty of perjury that the project is installed and operating in conformance with all applicable building codes.

Applicant's Signature Alane Lakritz Date 10/3/14

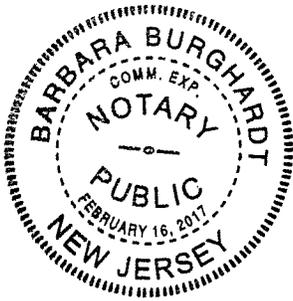
Applicant's Printed Name Alane Lakritz

Subscribed and sworn before me this 3 Day of October (month) in the year 2014

County of Morris State of New Jersey

Barbara Burghardt
Notary Public/Justice of the Peace

My Commission Expires _____

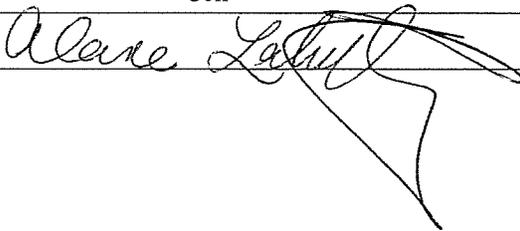


Complete the following checklist. If you have questions, contact barbara.bernstein@puc.nh.gov.

CHECK LIST: The following has been included to complete the application:	YES
• All contact information has been provided.	X
• A copy of the interconnection agreement. PSNH Customers should include both the Interconnection Standards for Inverters Sized up to 100 KVA and Exhibit B – Certification of Completion for Simplified Process Interconnection.	X
• Documentation of the distribution utility’s approval of the installation.*	X
• If the facility is participating in another state’s renewable portfolio standard (RPS) program, documentation of certification in other state’s RPS.	
• A signed and notarized attestation.	X
• A GIS number obtained from the GIS Administrator.	X
• The document has been printed and notarized.	X
• The original and 2 copies are included in the packet mailed to Debra Howland, Executive Director of the PUC.	X
• An electronic version of the completed application has been sent to executive.director@puc.nh.gov .	X
*Usually included in the interconnection agreement.	

If the application has been prepared by someone other than the applicant, complete the following. If the application was prepared by the applicant, check here and skip this section.

PREPARER'S INFORMATION

Preparer’s Name Alane Lakritz Email address: alane@knollwoodenergy.com
 Address PO Box 30 City Chester State NJ Zip 07930
 Telephone 862-432-0259 Cell _____
 Preparer’s Signature: 



Mailed on 2/28/14

Prod. 1 File

**Generating Facility
(Standard Process) Interconnection Application**

Contact Information

Legal Name and address of Interconnecting Customer (or, Company name, if appropriate)

Customer or Company Name: STEVE BILLOW Contact Person, if Company: _____

Mailing Address: P.O. Box 1352

City: Concord State: NH Zip Code: 03302

Telephone (Daytime): 585-727-1541 (Evening): 585-727-1541

Facsimile Number: _____ E-Mail Address: STEVEN.BILLOW@gmail.com

Alternative Contact Information (e.g. system installation contractor or coordinating company)

Name: Frase Electric LLC

Mailing Address: 789 Whittier Hwy.

City: So. Tamworth State: NH Zip Code: 03883

Telephone (Daytime): 603 284-6618 (Evening): 603 284-6618

Facsimile Number: 603 284-6343 E-Mail Address: kbm@fraseelectric.com

Ownership (include % ownership by any electric utility): _____

Confidentiality Statement: "I agree to allow information regarding the processing of my application (without my name and address) to be reviewed by the DG Collaborative that is exploring ways to further expedite future interconnections."

Yes No _____

Generating Facility Information

Address of Facility: 56 Pleasant Rd

City: Bow State: NH Zip Code: 03304

Electric Service Company: Unitil Account Number (if available): _____

Type of Generating Unit: Synchronous _____ Induction _____ Inverter

Manufacturer: SOLAR EDGE Model: SE6000-A-US (2)

Nameplate Rating: 6 (kW) _____ (kVA) 120/240 (Volts) Single or Three _____ Phase

Prime Mover: Fuel Cell _____ Recip Engine _____ Gas Turb _____ Steam Turb _____ Microturbine _____ PV _____ Other _____

Energy Source: Solar Wind _____ Hydro _____ Diesel _____ Natural Gas _____ Fuel Oil _____ Other _____ (Specify)

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: _____

Export Form? Simultaneous Purchase/Sale _____ Net Purchase/Sale _____ Net Metering Other _____ (Specify)

Est. Install Date: 3/15/14 Est. In-Service Date: 3/25/14 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:

Customer Signature: [Signature] Title: Home Owner Date: 2-18-14

The information provided in this application is complete:

Company Signature: [Signature] Title: owner/contractor Date: 9/28/13

Generating Facility Technical Detail

List components of the generating facility that are currently certified and/or listed to national standards

	Equipment Type	Manufacturer	Model	National Standard
PHASE 1	1. <u>INVERTER</u>	<u>SOLAR EDGE (2)</u>	<u>SE-6000-A-US</u>	<u>UL1741 / IEEE 1547</u>
	2. <u>SUNIVA - PV module</u>	<u>SUNIVA (36)</u>	<u>OPT-265-4-168</u>	<u>UL1703 / IEC 61215</u>
	3. _____	_____	_____	<u>IEC 61730-1/2</u>
	4. _____	_____	_____	_____
PHASE 2	5. <u>INVERTER</u>	<u>SOLAR EDGE (1)</u>	<u>SE-5000-A-US</u>	<u>UL1741 / IEEE 1547</u>
	6. <u>SUNIVA - Panel -</u>	<u>36 more panels</u>	<u>SAME AS ABOVE</u>	_____

Total Number of Generating Units in Facility? 3

Generator Unit Power Factor Rating: ~~0.7~~ 1

Max Adjustable Leading Power Factor? NA Max Adjustable Lagging Power Factor? NA

Generator Characteristic Data (for all inverter-based machines)

Max Design Fault Contribution Current? 78 Instantaneous or RMS? _____

Harmonics Characteristics: _____

Start-up power requirements: 240W

Generator Characteristic Data (for all rotating machines) NA

Rotating Frequency: _____ (rpm) Neutral Grounding Resistor (If Applicable): _____

Additional Information for Synchronous Generating Units

Synchronous Reactance, X_d: _____ (PU) Transient Reactance, X'_d: _____ (PU)

Subtransient Reactance, X''_d: _____ (PU) Neg Sequence Reactance, X₂: _____ (PU)

Zero Sequence Reactance, X₀: _____ (PU) kVA Base: _____

Field Voltage: _____ (Volts) Field Current: _____ (Amps)

Additional information for Induction Generating Units NA

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

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): **NA**

Nameplate Rating: _____ (kVA) Single _____ or Three _____ Phase

Transformer Impedance: _____ (%) on a _____ kVA Base

If Three Phase:

Transformer Primary: _____ (Volts) Delta Wye Wye Grounded Other

Transformer Secondary: _____ (Volts) Delta Wye Wye Grounded Other

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

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

Manufacturer: _____ Type: _____ Size: _____ Speed: _____

Interconnecting Circuit Breaker (if applicable):

Manufacturer: S&D Type: CB Load Rating: 100 Interrupting Rating: 10,000 Trip Speed: INST.
(Amps) (Amps) (Cycles)

Interconnection Protective Relays (if applicable): **NA**

(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: _____

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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 & Ratio Correction Curves)

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

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

Potential Transformer Data (if applicable):

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

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

General Technical Detail

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 registered professional engineer (PE) stamp.

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).

Proposed Location of Protective Interface Equipment on Property:

(Include Address if Different from Application Address)

100 AMP meter MAIN - (REC METER) will be mounted
next to NET meter

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 installation.



Part 2

Certificate of Completion for (Standard Process) Interconnections

Installation Information:

Check if owner-installed

Customer or Company Name (print): STEVE BILLOW Contact Person, if Company: _____
 Mailing Address: P.O. Box 1352
 City: Concord State: NH Zip Code: 03302
 Telephone (Daytime): 585-727-1541 (Evening): 585-727-1541
 Facsimile Number: _____ E-Mail Address: steven.billow@gmail.com

Address of Facility (if different from above): 56 Peaslee Rd
 City: Bow State: NH Zip Code: 03304

Electrical Contractor's Name (if appropriate): Frase Electric LLC
 Mailing Address: 789 Whittier Hwy
 City: So. Tamworth State: NH Zip Code: 03883
 Telephone (Daytime): 603 284-6618 (Evening): 603 284-6618
 Facsimile Number: 603 284-6343 E-Mail Address: kim@fraseelectric.com
 License number: 4146

Date of approval to install Facility granted by the Company: _____

Application ID number: _____

Inspection:

The system has been installed and inspected in compliance with the local Building/Electrical Code of

Bow Merrimack
 (City/County)

Signed (Local Electrical Wiring Inspector, or attach signed electrical inspection): [Signature]

Name (printed): BRUCE BUTTRICK

Date: 5-5-14

As a condition of interconnection you are required to send a copy of this form along with a copy of the signed electrical permit to Unitil at the following address:

Unitil Corporation
Attention: Generator Interconnections
 6 Liberty Lane West
 Hampton, NH 03842