

**STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION**

DE 09-054

Residential Renewable Electric Generation Incentive Program

Order Approving Application for Prospective Installations

ORDER NO. 25,020

October 2, 2009

On April 17, 2009, the Commission issued an order of notice to open a proceeding for the establishment of an application process for a residential renewable electric generation facility incentive payment program. Pursuant to RSA 362-F:10, V, the Commission shall make and administer a one-time incentive payment to a residential owner of a small renewable generation facility of \$3.00 per watt of generation capacity, up to a maximum payment of \$6,000, or 50 percent of the system costs, whichever is less.

Following that process, we issued Order No. 24,985 (July 14, 2009) approving an application process and the associated application form for installed residential renewable electric generation facilities that began operation from July 1, 2008 through September 30, 2009. *Id.* at 8. For systems coming into operation after September 30, 2009, we stated that we would adopt a two-step process for installation. *Id.* at 7-8.

In Order No. 24,895, we addressed several general issues, such as facility capacity (or size), thermal eligibility, additions to existing renewable systems, used equipment, payments to installers, eligibility of self-installers, and net metering. The purpose of this Order is to establish the two-step application process for residential renewable electric generation facilities that begin operation after September 30, 2009.

Two-Step Application Process—Step One

For residential renewable electric generation facilities that are installed after September 30, 2009, the applicant for the incentive payment will be required to file an “Incentive Pre-Approval Application,” which is step one in the two-step process. Completion of the Incentive Pre-Approval Application and filing it with the Commission serves two purposes. First, it provides the applicant with the terms and conditions of the incentive, thereby requiring the applicant to determine whether the proposed facility is eligible for an incentive payment. Second, it allows applicants to reserve a place in the funding queue for the incentive payment, which will help applicants who are relying on the incentive to help pay for the residential renewable electric generation facility. The incentive pre-approval will expire after 12 months, thus assuring that if an applicant is not committed to completing the installation of a renewable electric generation facility, another applicant can take its place in the funding queue.

We understand that some residents who install facilities that begin operation after September 30, 2009 may not file an Incentive Pre-Approval Application prior to installation. These residents may still apply for the incentive payment but will have to file both an Incentive Pre-Approval Application and a Final Incentive Request Form, and meet all Terms and Conditions therein.

Changes and Additions to the Incentive Pre-Approval Application

The “Incentive Pre-Approval Application” has some additional elements and changes as compared with “Application for Rebate Payment” which applies to facilities that began operation prior to October 1, 2009. We have adopted these changes to: (1) inform applicants that eligible facilities must be designed and installed to operate appropriately for the production of electricity; and (2) to assist in accountability and future evaluation of the program.

For example, the Incentive Pre-Approval Application states that the Commission will not provide an incentive payment for roof-mounted wind turbines because experience has shown that performance of roof-mounted wind turbines thus far is poor. We also require that, to minimize turbulence, any wind turbine eligible for incentive payment must be mounted on the ground and at be least 30 feet above any physical wind barrier within a 500 foot radius. Further, we require that the average wind speed at the installation site should be at least 10 miles per hour, and we have added a manufacturer's rated performance standard for wind turbines. These requirements are based on our review of other states' experience in evaluating the capacity and production of residential wind renewable energy facilities. Wind facilities that do not meet the minimum requirements contained in the Incentive Pre-Approval Application will not be eligible for an incentive payment.

Similarly, with respect to photovoltaic systems, we require the applicant to provide panoramic photos of the horizon taken from the installation location from due east through south to due west, and to provide the azimuth and tilt of the installation. In addition, the applicant is required to provide the optimal annual production in kilowatt hours and is referred to tools available on the internet to calculate this measure. Applicants are also required to evaluate the loss of production due to shading.

The Incentive Pre-Approval Application form also clearly states that solar hot water systems, geothermal heating and cooling systems and any other renewable energy systems that do not generate electricity are not eligible for incentive payment under this program.

We have decided to make it clear that installations on a second home that the residential owner occupies part of the year are eligible for incentive payments, and have stated this in the Incentive Pre-Approval Application form. The form also clearly states that a renewable electric

generation facility that is an addition to an existing facility may qualify for an incentive payment, but only if the existing facility has not previously qualified for a payment under this program.

We also clarify that used parts and self-install labor cannot be included in the cost of the facility for purposes of calculating the incentive payment.

Step Two of the Two-Step Process.

The second step in the two-step process occurs when the applicant has completed the installation and has a functioning renewable electric generation facility at the applicant's residence. The applicant will then be required to complete a "Final Incentive Request Form" requiring additional information including: (1) paid invoices indicating the total costs for parts and labor and allowing for unpaid invoices up to the amount of the approved incentive payment; (2) the applicable interconnection agreement; (3) documentation that the facility is certified by the Underwriters Laboratory (UL); (4) photographs of the installed facility; and (5) documentation that the installed facility has been inspected by a local building code official (or if there is no such local official, an electrician licensed in New Hampshire).

On a separate page in the final form, the applicant will be asked to provide his or her social security number for tax purposes. We will separate this page from the Final Incentive Request Form and maintain it in a confidential file.

Once the Final Incentive Request Form is completed and filed, and we have determined that the installation meets all Terms and Conditions in the Incentive Pre-Approval Application, we will direct the New Hampshire State Treasury to make the appropriate incentive payment to the applicant.

A copy of the adopted Incentive Pre-Approval Application form and the Final Incentive Request form are attached to this order.



State of New Hampshire
Public Utilities Commission
21 S. Fruit Street, Suite 10, Concord, NH 03301-2429



STEP 1

INCENTIVE PRE-APPROVAL APPLICATION

**FOR RESIDENTIAL SMALL RENEWABLE ELECTRICAL GENERATION SYSTEMS
LESS THAN 5 KILOWATTS**

Any New Hampshire homeowner seeking an incentive payment from the Commission for a small renewable generation facility (or "renewable energy system"), that begins operation after September 30, 2009 is required to obtain the Commission's pre-approval of the installation. Pre-approval will reserve your place in the funding queue. Once the facility has been installed at the owner's residence, the homeowner must then complete Step 2 by submitting a **final incentive request form**. The incentive pre-approval expires 12 months from the date this application is approved. Residents who choose to install systems prior to Commission pre-approval may still apply for this rebate, but the application is subject to Commission approval and availability of funds.

Because the application requires an original notarized signature,
it will not be accepted if submitted electronically.

Please submit application and all associated documents to:

Sustainable Energy Division
New Hampshire Public Utilities Commission
Sustainable Energy Division
21 S. Fruit Street, Suite 10
Concord, NH 03301-2429

TERMS AND CONDITIONS

Please read the Terms and Conditions carefully prior to completing the form.

1. This program is administered in accordance with RSA 362-F:10 and Puc 2500. Any applicant requesting an incentive payment for any renewable energy system is responsible for meeting all terms and conditions of the program.
2. You must complete a Final Incentive Request Form (Step 2) to receive your incentive payment.
3. To be eligible for a one-time incentive payment, the renewable energy systems must qualify as Class I or Class II sources of electricity in accordance with RSA 362-F and Puc 2500. Qualifying systems include solar photovoltaic (PV) systems and wind turbines, but not solar hot water systems, geothermal heating and cooling systems or any other renewable energy system that does not generate electricity.
4. The renewable energy system must be located on or at the applicant's New Hampshire residence, which may include a second home that the residential owner occupies at least part of the year.
5. An addition to an existing renewable energy system may qualify for an incentive payment only if the renewable energy system has not previously qualified for an incentive under this program. Used parts or self-installer labor cannot be included in the cost of the facility.
6. Residents who choose to install systems, in whole or in part, prior to approval by the Commission may still apply for this incentive payment by submitting both the Step 1 and Step 2 forms.
7. Solar PV systems must have a manufacturer's rated panel output under standard test conditions (STC) of less than 5 kilowatts and must be certified by a nationally-recognized testing laboratory as meeting the requirements of UL 1703.
8. Wind turbines must have a manufacturer's rated maximum output of less than 5 kilowatts measured at a wind speed of 11 meters per second or 24.6 miles per hour (mph).
9. Wind turbines must be mounted at least 30 feet above any physical wind barriers within a 500 foot radius. Roof-mounted wind turbines are not eligible for an incentive payment at this time.

10. Any renewable energy system must comply with all manufacturers' requirements and meet all applicable requirements of the State Building Code pursuant to RSA 155-A:1, IV including the National Electric Code 2008.
11. Any interconnection of the renewable energy system with your utility must comply with your Interconnection Agreement, the Puc 900 Net Metering Rules (if applicable), as well as any applicable tariffs governing interconnection.
12. Any renewable energy system is subject to inspection and monitoring by the Commission, the State Fire Marshal and local code authorities or their agents for safety and performance in addition to any monitoring prescribed in any interconnection agreement between the electric utility and the owner of the facility.
13. The incentive payment is \$3.00 per watt and is capped at a maximum of \$6,000.00 or 50% of the total cost of the facility, whichever is less.
14. The final incentive request form must be submitted after the installation is complete and within 12 months of the date that this incentive pre-approval form is approved. Applicants may submit both forms together if the installation is already complete but the incentive payment is conditioned on meeting the requirements listed herein.
15. Incentives are subject to the availability of funds received by the Commission under RSA 362-F; complete applications will be processed in the order in which they are received.
16. All program requirements and documentation must be complete and submitted in order to receive approval for an incentive payment. Payment of the incentive may be subject to Commission inspection of the facility to confirm that the system is operational and consistent with the application.
17. Certain information, including system details, zip code, and total installed costs of systems installed with program support, may be available to the public and may be publicly posted. Additional information may be released upon official request. Specific personal information including Social Security number, name, telephone numbers, and email, street and mailing addresses (but not town or zip code) will remain confidential to the extent permitted under state law.
18. The Commission reserves the right to request system performance data for a period of ten (10) years after issuing the incentive. The incentive recipient is strongly encouraged to install a utility grade electric meter to monitor and record system output. Installation of a utility grade electric meter also qualifies the system for renewable energy certificates pursuant to Puc 2500, the PUC Administrative Rules for the Electric Renewable Portfolio Standard (RSA 362-F).
19. The incentive recipient may be liable to the State of New Hampshire for the entire amount of the incentive if the incentive is obtained fraudulently.
20. Any incentive received under this program may be treated as taxable income by the IRS. It is the responsibility of the recipient of this incentive payment to consult with his or her tax advisor to determine the correct tax treatment of these payments. Applicants who do not provide their social security number on the Step 2: Final Incentive Request Form will not be eligible for reimbursement.

APPLICANT INFORMATION

Name: _____

Mailing Address: _____

Town/City: _____ State: ____ Zip Code: _____

Installation Address (if different): _____

Town/City: _____ State: ____ Zip Code: _____

Telephone: _____ Cell: _____

Email address: _____

Your Electric Utility: _____

Have you performed an energy audit of your home and undertaken energy efficiency measures? **YES** **NO** If yes, please summarize your activities: _____

If you would like to learn more about improving energy efficiency, please visit www.nhsaves.com and www.energystar.gov.

INSTALLATION INFORMATION

Anticipated start date: _____ Anticipated date of completion: _____

Will you install the system yourself? **YES** **NO**

If **Yes**, please initial here indicating that you are requesting a waiver of the requirements that you must provide a signed contract with a primary installer or vendor. **Initial:** _____

Is this an expansion of an existing system? **YES** **NO**

Note: An expansion is only eligible for an incentive if the existing system has not already received an incentive through this program.

INSTALLER (if not self-installed)

Installer Name: _____ Company: _____

Mailing Address: _____

Town/City: _____ State: _____ Zip Code: _____

Telephone: (____) ____-____ Email address: _____

NH Electrician license number (if applicable): _____

ELECTRICIAN

Electrician Name (if different than installer): _____

Company: _____

Mailing Address: _____

Town/City: _____ State: _____ Zip Code: _____

Telephone: (____) ____-____ Email address: _____

NH Electrician license number: _____

SYSTEM INFORMATION Photovoltaic Wind Other

For other renewable energy systems, please contact Jon Osgood at jon.osgood@puc.nh.gov or (603) 271-2431.

PHOTOVOLTAIC SYSTEM INFORMATION

Panel Manufacturer: _____ Model Numbers: _____

Are the panels UL 1703 listed? **YES** **NO** (if No, you are not eligible for an incentive payment.)

FOR TOTAL FACILITY POWER MULTIPLY NUMBER OF PANELS TIMES THE POWER RATING OF EACH AND ADD					
# of Panels					
Power of Panel					
Total Power					
					Total Facility Power

Inverter Manufacturer: _____ Model Number: _____

Number of Inverters: _____

Will the inverters comply with IEEE 1547 and UL 1741? **YES** **NO** (if No, you are not eligible for an incentive payment.)

The system will be mounted on: **a Roof** **the Ground** **a Pole**

PERCENT OF OPTIMAL PV PRODUCTION

Note: The applicant must provide a detailed site map that clearly illustrates all obstructions and their respective heights and distances from the system as well as panoramic photos of the horizon taken from the installation location from due east through south to due west. A shading analysis must also be provided if the applicant cannot claim 0% shading below.

Azimuth (180°=true south): _____ degrees Tilt (horizontal=0°) = _____ degrees

1. Optimal Annual Production (kWh): _____

Go to www.nrel.gov/rredc/pvwatts or use Concord, NH as a default at:
http://rredc.nrel.gov/solar/codes_algs/PVWATTS/version1/US/New_Hampshire/Concord.html. Use total array output, optimal azimuth (180°) and tilt (43.2° for Concord or actual latitude), no shading, and .77 derating factor.

2. Actual Annual Production without Shading (kWh): _____

Use total facility output, actual tilt and azimuth, .77 derating factor, and no shading.

3. Percent loss from shading: _____%

Use a Solmetric SunEye, Solar Pathfinder, or other similar device to quantify the percent loss from shading. You may enter 0% loss from shading if no obstruction is closer than 3 times the height that the obstruction extends above the PV panels or there is a clear view of the sky above 18° of the horizon from due east through south to due west.

4. Actual Annual Production with Shading (#2 x (1-#3)): _____ kWh

5. Ratio of Actual Production to Optimal Annual Production ((#4/#1) x 100): _____%

6. Is this percentage greater than 80%? **YES** **NO** If NO, please explain in an attachment why you don't meet this performance threshold.

WIND SYSTEM INFORMATION

Turbine Manufacturer: _____ Model Number: _____

Manufacturer's Power Rating of Turbine at 11m/s or 24.6 mph: _____watts

Inverter Manufacturer: _____ Model Number: _____

Will the inverter be compliant with IEEE 1547 and UL 1741? **YES** **NO**

Number of Inverters: _____

Tower Manufacturer: _____ Model Number: _____

Tower Height: _____ Height above tree line: _____

Tower Type: **Single Pole** **Guyed**

Average wind speed at installation site (if known): _____ mph

Please describe method of assessing wind resources: _____

Note: To minimize turbulence, all wind turbines must be mounted on the ground and at least 30 feet above any physical wind barrier within a 500 foot radius. The average wind speed at the installation site should be at least 10 mph. The Commission strongly recommends that the applicant evaluate the wind resources at the proposed installation site using a source other than a wind map. Small wind turbines have encountered difficulties in New England partly due to misjudged wind speed and turbulence. Please see www.masstech.org/renewableenergy/sm_renew/Small%20Wind%20Progress%20Report%20061208.pdf for more information on the issues that have contributed to their poor performance results. See also the Wind Resource Assessment Handbook by AWS Scientific, Inc. at www.nrel.gov/wind/pdfs/22223.pdf.

REQUIRED ATTACHMENTS

These items (copies) must be attached to the application:

Attached

- 1. Signed contract with installer or evidence of intent (if applicable)
- 2. Detailed site map and panoramic photos of the installation site
- 3. Quantified shading analysis if applicant cannot enter 0% shading (See note in Percent Optimal Production.)
- 4. Professional wind analysis, wind study or other method of assessing wind speed (if available)
- 5. Building permit or other documentation that the facility meets local zoning regulations. (if none, please explain)

Note: In the final incentive request form you will be expected to provide paid invoices, an interconnection agreement with your electric utility (unless the system is off-grid), pictures of the installation, and documentation that the system is UL certified and has been inspected by a local building code official or NH licensed electrician, unless the installation team includes a NH licensed electrician.

INCENTIVE CALCULATION

- 1. Total Facility Cost (less any self-installer labor costs or used equipment): _____
 - 2. System Output (Total Array Output or Manufacturer's Power Rating at 11m/s): _____
 - 3. System Output X \$3.00/watt = _____
 - 4. Total Requested Incentive: _____
- For Line 4 enter **50% of line 1** or **100 % of line 3** or **\$6,000**, whichever is less (\$6,000 max).

DECLARATION

The Undersigned applicant declares under penalty of perjury that:

- 1) the applicant intends to purchase and install the renewable energy system described in this application;
- 2) the applicant has read and understands the terms and conditions set forth in this application with attachments and has agreed to abide by those requirements;
- 3) the information provided in this form is true and correct to the best of his or her knowledge; and
- 4) the applicant agrees that the system and documents supporting the application may be audited and inspected by the Commission.

Applicant's Signature _____ Date: _____
Only one signature needed per household.

Subscribed and sworn before me this ____ (day) of _____ (month) in the year ____

County of _____

State of _____

Notary Public/Justice of the Peace
My Commission expires _____

For questions regarding this rebate program, see the incentive program FAQ website at www.puc.state.nh.us/Sustainable%20Energy/RenewableEnergyRebatesQAs-residential.htm, or contact Jon Osgood at jon.osgood@puc.nh.gov or (603)271-6306.



State of New Hampshire
 Public Utilities Commission
 21 S. Fruit Street, Suite 10, Concord, NH 03301-2429



STEP 2
FINAL INCENTIVE REQUEST FORM
 FOR INSTALLED

**RESIDENTIAL SMALL RENEWABLE ELECTRICAL GENERATION SYSTEMS
 LESS THAN 5 KILOWATTS**

Step 1 Incentive Pre-Approval Application must be approved by the PUC BEFORE SUBMISSION of Step 2.

Because the application requires an original notarized signature, it will not be accepted if submitted electronically.

Name: _____ Application #: _____

Brief description of your renewable energy system: _____

Date the system became operational: _____

	YES	NO
Is the system electric grid interconnected?	<input type="checkbox"/>	<input type="checkbox"/>
Do you net meter your output?	<input type="checkbox"/>	<input type="checkbox"/>
Are all major components new?	<input type="checkbox"/>	<input type="checkbox"/>
Have you installed a revenue grade utility meter that separately measures your system's electrical output?	<input type="checkbox"/>	<input type="checkbox"/>

REQUIRED ATTACHMENTS

- These items (copies) must be attached to the application:
- | | Attached |
|---|--------------------------|
| 1. Paid invoice(s) indicating total costs for parts and labor
(Invoices may be unpaid only by the amount of the approved incentive payment.) | <input type="checkbox"/> |
| 2. Interconnection agreement (unless off-grid) | <input type="checkbox"/> |
| 3. Documentation that the renewable energy system is UL certified | <input type="checkbox"/> |
| 4. Pictures of the installed renewable energy system | <input type="checkbox"/> |
| 5. Documentation that the installed system has been inspected by a local building code official or a NH licensed electrician (unless installation team included a NH licensed electrician). | <input type="checkbox"/> |

CHANGES TO PROJECT INFORMATION

In the space provided, or in an attachment to this form please inform the Commission of any changes in total project cost, equipment used, or wind/solar resources (i.e. more accurate shading/wind speed estimates or changes in tower height or tilt/azimuth), as well as any other changes to the information provided in the incentive reservation form prior to installation:

Total Requested Incentive (explain if amount has changed): _____

Note: Incentives will be issued only after application is judged complete and accurate and the Commission or its agent has confirmed, through inspection, that the system is operating consistent with the application.

DECLARATION

The Undersigned applicant declares under penalty of perjury that:

- 1) the applicant has purchased and installed the renewable energy system described above;
- 2) the applicant will not sell or otherwise transfer the equipment unless as a part of a sale of the affected property for a period of 10 years;
- 3) the information provided in this form is true and correct to the best of his or her knowledge;
- 4) the applicant understands that program funds are limited and, as a result, there may be a delay in issuing the incentive payment based on the queue position of the applicant; and
- 5) the applicant agrees that the system, interconnection and documents supporting the application may be audited and inspected by the Commission and that the Commission may request energy production data from the applicant for a period of ten (10) years.

Applicant's Signature _____ Date: _____

Must be signed by individual originally applying for incentive payment.

Subscribed and sworn before me this ____ (day) of _____ (month) in the year _____

County of _____

State of _____

Notary Public/Justice of the Peace
My Commission expires _____

For questions regarding this rebate program, see the incentive program FAQ website at <http://www.puc.state.nh.us/Sustainable%20Energy/RenewableEnergyRebatesQAs-residential.htm>, or contact Jon Osgood at jon.osgood@puc.nh.gov or (603)271-6306.

Please submit application and all associated documents to:
Sustainable Energy Division
New Hampshire Public Utilities Commission
Sustainable Energy Division
21 S. Fruit Street, Suite 10
Concord, NH 03301-2429

Your social security number is required for payment purposes. An IRS Form 1099, report of miscellaneous income, may be issued for this payment. We are asking for this information on a separate page to allow this personal information to be separated from the application and to be held confidentially at the Commission's offices or the office of the State Treasurer.

Applicants who do not provide their social security number will not be eligible for incentive payment. We thank you for your understanding.

Name: _____

Mailing Address: _____

Telephone: _____ Cell: _____

Email address: _____ SS Number: ____ - ____ - _____ (confidential)

Town/City: _____ State: ____ Zip Code: _____